

# About GLOBE Project

Environmental problems and energy efficiency require solutions which cross the traditional subject boundaries, requiring an understanding of social, political and economic issues, as well as scientific and technological principles. National and European legislation and even global agreements will affect how industry manages its affairs. One of the main actions of the European policies and measures is promotion of close links with the local and regional economy through technology and knowledge transfer. Current MSc/PhD courses in the Member States Universities aim to improve the energy, health and environmental performance of new and existing buildings, through the co-education of people who are, or will become, building industry professionals involved in the design, construction and operation of buildings. The courses are interdisciplinary in all their aspects (aims and objectives, content, teachers and students, coursework, etc.) and this is considered a major strength reflecting the nature of the field. These MSc courses are recognized as providing a valuable postgraduate education for building services engineers.

However, in the Partner Country institutions the postgraduate programmes in built environment engineering are still delivered in traditional way without meeting needs of the local/regional economy. Although well established in their specific area of research, the current postgraduate programmes are not interdisciplinary, and therefore do not meet the needs of industry for professionals with much broader knowledge which crosses boundaries between mechanical, architectural and civil engineering. Graduates in one branch of engineering are facing a number of statutory difficulties to pursue their postgraduate education in another branch of engineering. Consequently, the Partner Country institutions are not educating specialists in interdisciplinary fields such as Building Services Engineering, Energy and Buildings, and Building and Environment, which are all well established and well recognized subject areas in the EU. Furthermore, the local/regional economy is unable to employ graduates in interdisciplinary subjects related to the built environment, simply because the existing faculties' bylaws do not recognize the term 'built environment', and consequently making it very difficult to obtain a fully recognized professional status.

Although some changes are taking place, the necessary experience both in linking academia and industry, and in creating the interdisciplinary postgraduate/research programmes in cooperation with industry, is not sufficient. However, defining a modern, high quality curriculum, for example, in building services engineering in cooperation with the local/regional

industry is not the only problem. In order to establish and promote close links with the local/regional economy, other significant issues have to be resolved:

- Legislative/Bylaws: How to satisfy the legislative requirements set up by the Government, and quality bylaws set up by the Institution of Engineers and Technicians, a body which awards a chartered engineering status in Serbia and Montenegro, which is of essential importance for engineering companies? This would require a constructive dialogue between the governing bodies, academia and local/regional industry, enhanced by programmes like the UK-style Teaching Company Schemes to promote closer links with the local/regional economy through technology and knowledge transfer.
- Educational/Academic: What is the minimum acceptable knowledge required from an applicant from industry to be enrolled on a postgraduate course? How to create a balance in the postgraduate curriculum between a need for problem solving approach required by industry while achieving high standards in specific research subject?
- Organisational/Administrative: How to implement and promote a lifelong learning strategy which is of paramount importance in developing and maintaining a flexible and educated workforce?

The GLOBE project is responding to these challenges. This project, designed as Complementary Measures, is responding to short-term needs for knowledge transfer to the Partner Country Institutions in developing, promoting and recognising the interdisciplinary MSc/PhD programmes in cooperation with the industry in the range of subjects concerning engineering and the built environment. Knowledge transfer from the EU Member States to the Partner Country Institutions including the Government would contribute significantly to the national reform and development in the area of interdisciplinary postgraduate studies and research in the higher education, while helping the local/regional economy.

Members of the Consortium from the EU countries would transfer their experience in the education and training of students, decision-makers, researchers, lecturers and engineering professionals to incorporate the ideas of sustainability, environmental awareness and industry needs in engineering curricula. This project aims to transfer this know-how to the colleagues from the Partner Country Institutions in order to achieve the specific objectives of this project presented in the Section IV of this proposal. This would be essential for the Partner Country Institutions to set targets for comprehensive reforms of their postgraduate programmes related to all subjects crossing borders between mechanical, architectural and civil engineering and in cooperation with the local/regional industry.

More information:

- project description
- specific objectives
- outcomes/outputs
- project summary

## **The project description**

GLOBE will provide the theoretical and practical foundation for the conceptualisation and development strategies by means of knowledge transfer from the institutions from the EU Member States to the institutions in the Partner Country.

The main outcome of the project will be formation of a group of fully trained academics and education related professionals in the Partner Country institutions, who will be able to disseminate the acquired knowledge and to pursue further implementations associated with interdisciplinary postgraduate programmes, not just in their own institutions but in all universities in Serbia and Montenegro. Furthermore, the group will be of invaluable help to the Ministry of Sciences and Environmental Protection in preparing new legislation which will back up reforms in the higher education sector in relation to development of interdisciplinary studies at the MSc and PhD level. Currently, there are no statutory possibilities for graduate engineers, for example, in civil engineering to pursue a postgraduate programme in architectural, mechanical or building service engineering.

GLOBE will meet short-term needs in higher education at the universities of Serbia and Montenegro, particularly in the area of postgraduate studies in Built Environment Engineering by strategic reform of existing capacities laying down foundation for more meaningful cooperation between academia and the local/regional industry. The project will introduce programmes such as the UK-style Teaching Company Schemes, Lifelong Learning strategies, and interdisciplinary teaching programmes, which do not exist in Serbia and Montenegro. In this way, GLOBE is highly innovative in reform and development of higher education

## **Specific objectives**

Specific objectives of the GLOBE which will be achieved in cooperation with the local and regional industry by the end of the grant agreement could be summarized as follows:

1. To provide guidelines on methods, procedures and other auxiliary activities required to assess the economic and educational sustainability of newly developed courses emphasising the role of industry and cooperation on the new postgraduate courses (SO1)
2. To provide guidelines on the development of project-based interdisciplinary courses, to suit the needs of the local and regional construction industry (SO2)
3. To provide guidelines on the suitability of experienced professionals from local/regional industry, to be appointed as visiting lecturers on interdisciplinary postgraduate engineering courses (SO3)
4. To provide guidelines on the accreditation of postgraduate interdisciplinary courses with appropriate professional bodies and the Government (SO4)
5. To provide guidelines on the adoption of lifelong learning strategy in all universities, i.e. to promote the links between academia and local/regional industry by means of lifelong knowledge transfer (SO5)
6. To provide guidelines on the management of interdisciplinary research consortia consist of the professionals from both the industry and academia (SO6)
7. To develop a draft regulation on the reform of interdisciplinary postgraduate studies in Serbia and Montenegro in relation to engineering studies (SO7)
8. To provide a draft proposal that will be added in the Strategy of Scientific and Technology Sustainable Development of Serbia and Montenegro; this would officially establish the need for closer links between the academia and the local/regional economy (SO8).

## **Outcomes and Outputs**

All objectives of GLOBE have been carefully formulated and are specific, measurable, and realistic in relation to the relatively short duration of the project. Knowledge transfer by means of seminars, specialised courses, presentations and a conference will ensure that the Training Group in cooperation with their EU colleagues will be fully capable of delivering all specific objectives listed above. The following outcomes/outputs are planned:

1. Seminar 1 (S1): Assessing the economic and academic sustainability of newly proposed postgraduate courses in relation to Built Environment Engineering in cooperation with the local/regional industry (Civil Engineering, Mechanical Engineering, Architecture and Building Services Engineering) covering the specific objectives SO1, SO4, SO5, and SO6.

2. Seminar 2 (S2): Development of the project based interdisciplinary courses which will suit the needs of the local and regional construction industry (Civil Engineering, Mechanical Engineering, Architecture and Building Services Engineering) covering the specific objectives SO2 and SO3.
3. Consultation with Industry (CI): Getting industry involved by arranging local meetings with 20 leading private and public building engineering companies in Serbia and Montenegro, to introduce the ideas of Teaching Company Schemes, Lifelong Learning, Interdisciplinary Studies, and research collaboration.
4. Work Meeting 1 (WM1): Work meetings with the University administration (University of Belgrade, University of Nis on development of a draft on university reform of interdisciplinary postgraduate engineering studies covering the specific objective SO7.
5. Work Meeting 2 (WM2): Work meetings with the Government's representatives on the development of a draft law on university reform of interdisciplinary postgraduate studies in Serbia and Montenegro in relation to engineering studies covering the specific objective SO7.
6. Work Meeting 3 (WM3): Work meetings with the Government's representatives on the development of a draft proposal that will be added in the Strategy of Scientific and Technology Sustainable Development of Serbia and Montenegro covering the specific objective SO8.
7. Work Meeting 4 (WM4): The partners on the project from both EU Members Universities and Partner Country Institutions will draft a guidelines on the specific objectives SO1- SO6 and will prepare a final document covering the specific objectives SO7- SO8. The meeting will address all technical details concerning further dissemination of the results including web-site development and printed material.
8. GLOBE Conferences (GC): To present the outcomes of the project to academics, research staff, industry, the Government, professional bodies and the university administration. Two workshops will be held hosted by the University in Belgrade and the University of Niš.

# Summary of the Project

GLOBE (Good Practice Guidelines and Legislation Reform On Interdisciplinary Postgraduate Studies in Design and Built Environment Engineering) is clearly defined as a complementary measure under TEMPUS framework, aimed to help the institutions from Serbia and Montenegro to pursue further reforms in their higher education system. The specific objectives of the project are carefully formulated and are specific, measurable, and realistic in relation to the relatively short duration of the project of 47 weeks. GLOBE aims:

1. To provide guidelines on the methods, procedures and other auxiliary activities required to assess economic and educational sustainability of newly developed courses, emphasising the role of industry and cooperation on the new postgraduate courses (SO1)
2. To provide guidelines on the development of project-based interdisciplinary courses, to suit the needs of the local and regional construction industry (SO2)
3. To provide guidelines on the suitability of well experienced professionals from the local/regional industry, to be appointed as visiting lecturers on interdisciplinary postgraduate engineering courses (SO3)
4. To provide guidelines on the accreditation of postgraduate interdisciplinary courses with appropriate professional bodies and the Government (SO4)
5. To provide guidelines on the adoption of lifelong learning strategy in all universities, i.e. to promote the links between the academia and the local/regional industry by means of lifelong knowledge transfer (SO5)
6. To provide guidelines on the management of interdisciplinary research consortia consist of the professionals from both the industry and academia (SO6)
7. To develop draft law on the university reform of interdisciplinary postgraduate studies in Serbia and Montenegro in relation to engineering studies (SO7)

The strength of GLOBE is not only the support, but direct involvement, of the Ministry of Science and Environmental Protection. It is believed that adopted dissemination strategy based on a project related web-site and publishing of a bilingual booklet is significant step to reach all professional interested in the subject from academics and civil servants to professionals in industry and adequate professional bodies. Furthermore, the bilingual

guidelines booklet will be distributed to all academic and major built environment engineering institutions in the region. It is strongly believed that the GLOBE is a good value for money.