



Erasmus+ CBHE Project:
CREATING THE NETWORK OF KNOWLEDGE LABS
FOR SUSTAINABLE AND RESILIENT ENVIRONMENTS
561675-EEP-1-2015-1-XK-EPPKA2-CBHE-JP

WB Institution: State University of Novi Pazar

Date: May 2016.

Study on the needs, constrains and possibilities for the development of postgraduate study programme *Sustainable and resilient environments*

Summary:

*The study presented in this document falls within the scope of the **Work Package 1.2: Analysis of needs, constrains and possibilities for curricula development**. It includes:*

- *general introduction with explained common need for study programmes (extract from the application),*
- *analysis of national regulations in terms of higher education and the level concerned, and comparison with the application proposal,*
- *national state in the fields Sustainability and Resilience: regulations, practice, existing study programmes; gap detection; comparison with the application proposal,*
- *consideration of national qualification framework and comparison with the European standards in higher education,*
- *institutional capacities in terms of development of study programme (institution description, staff capacity, equipment, space (premises), relevant knowledge base at lower levels of education - bachelor and master studies, existing teaching methodology, virtual mobility practice, etc.),*
- *educational material in national language about Sustainable and Resilient Environments - availability, scope, subjects, etc.,*
- *results of the survey done among students and working professionals (presentation of the survey sample, number of questioned persons and interpretation of results. The survey includes assessment of the knowledge about Sustainability and Resilience, critical issues recognition, actual practice review, etc.),*

- *conclusions with accented direction and conditions for curriculum development and foreseen contribution to the fields Sustainability and Resilience, and*
- *any other issues that individual WB partners find as relevant for further work within the scope of Work Package 2.*

The aim of the study is to set objective base for curricula development.

1. General introduction

The original idea for the project titled CREATING THE NETWORK OF KNOWLEDGE LABS FOR SUSTAINABLE AND RESILIENT ENVIRONMENTS (acronym KLABS) was born from educational and research activities and related awareness about the complex existing conditions. Project formula is research-oriented, meaning that the methodology for its development is based on realistic problem definition or, in another words, need for the project.

Indeed, the included region, that is Western Balkan, today is faced with significant challenges in the fields of sustainable development and adaptation to climate change; these challenges are visible in both urban and rural built environments, where the second are often undeservedly more underestimated.

Sustainability and resilience are two separate, but strongly interrelated concepts. The development process and its main credo by which the needs of present generation must be met in a way which will not compromise the ability of future generations to meet their own needs today is compounded by manifestation of past unsustainable actions in society - the climate change. Increased pressure on the environment thus doesn't origin just from the population, their activities or technology, but as well from the nature itself. Therefore, the sustainability - preservation or upgrade of the possibilities for future generations, and the resilience - development of adaptive capacity of the social environments to the climate change consequences, need to be studied concurrently.

Despite the scientifically proved facts, the measures to achieve sustainability and resilience in practice are rarely applied in subject Region. One of the main reasons for the current state is the lack of knowledge. "Malpractice" leaves significant and permanent damage in the environment and contributes to the increment of environmental, but as well social and economic risks.

In regard to the said, the project intends to contribute to the preparedness for coping with, managing and shaping the conditions of growing complexity. Through capacity building, the project aims to create the base for equipping the professionals with new competences and skills necessary to respond to the recognized needs of today's society and job market.

The overall broader objective is to support the modernization of higher education in WB Region by implementing strategic approach in the development of **innovative platform for the delivery of knowledge about sustainable and resilient environments.**

To define the form and scope of knowledge delivery, foreseen by KLABS project, the current state in higher education sector in included Western Balkan countries was studied. It was concluded that the separate study programmes related to sustainability are rare and mostly focused on energy aspect, while the programmes which would include comprehensive education on both sustainability and resilience do not exists at all.

The two topics are in overall rarely present in existing university curricula and are mostly delivered to the students in a form of isolated theoretical classes; this separation from the curriculum backbone reflect negatively on knowledge integration and its practical application in professional work and real life situations. Additionally, the past generations of students didn't get any in-institutional education in subject themes. Finally, to understand the two concepts and their complexity one must own the sufficient broader professional knowledge and skills.

All these considerations led to the conclusion that incorporation of the themes of sustainability and resilience into existing study programmes would not bring completely satisfying results, although would certainly help to develop knowledge base.

This is why KLABS project proposes the introduction of new postgraduate study programmes Sustainable and Resilient Environments. By doing this, the possibility to gain the knowledge opens not just to graduated students, but also to all working professionals who completed their studies long time before the terms sustainability and resilience were introduced at all, and they are therefore considered as important and large target group to be impacted by project.

2.

At Architecture Study Program at State University of Novi Pazar, three levels of studying have been organized after Bachelor Academic studies:

-one year of Master Studies "Energetic Efficiency in Building", of the school year 2010/11.

- two year Specialist Studies "Energy Efficiency, Renewable Energy Sources and Environmental Impacts - Master Study, "ENERESE" 2012/13 and 2013/14.

Since at these studies have been educated experts for energetic efficiency and renewable sources of energy in buildings with their environmental impact, there has been a need for a broader reconsideration of this issue at a qualitative and quantitative level, i.e. an urban level.

What does it mean to improve energetic efficiency of a building in a city? Whether an application of new technologies in a building shall considerably improve ecological conditions? What is the speed and procedures to make energetic passports for all objects in the city?

By studying different appearances in wider samples, city settlements and units, it can be approached more efficiently to desired results in the issue area.

We think the conditions have been created to form a new cycle of Specialist Studies that shall emphasize energetic efficiency and a sustainable development of city units with their influence onto the environment and constructed unit regarding their strategies and procedures for their application in broader contexts: streets, settlements and a city, as an entire unit.

In this sense, besides already established Courses of Energetic Efficiency in Building, the actions should be directed towards the improvement of energetic efficiency in city parts:

- Improvement of thermal characteristics of a collective building constructed in 1950s and 1960s, through reconstructing their façades and redefining their heating system,
- Reconsidering of strategies for improvement of the same characteristics in individual housing, with a special emphasize onto units built in different time periods,
- Reconsidering of improvement and reduction of harmful emanates in traffic through improvements in organization of the system itself,
- Reconsidering of urban waste management, from the ways of its collection until a possibility of its separation and recycling.

The cycle of Specialist Studies under its working title “Urban Energetic Efficiency” is formed to be followed by graduated Architecture engineers and Civil Engineers who have finished their 3-year and 4- year Bachelor Studies.

Specialist Studies would last 2 semesters, 120 ECTS, and we suggest for successful candidates to have a title of:

A Specialist for Urban Energetic Efficiency.

Regarding the adjustments with the national regulations of higher education, this Specialist Studies shall be completely adjusted and altered its curricula to the existing law regulations in the issue area.

Besides, the experts with these qualifications should bridge a relation of an individual-citizen and an owner of a business premise and national strategies, so as for national strategies would get closer to the individual through formation of strategies at different urban levels within the Local Governments.

We think, State University in Novi Pazar, especially Study Programs Architecture and Civil Engineering, have enough capacities for development of these Specialist Studies within its teaching personnel, and through engagement of eminent experts from the given area. Also, there is a base for attending the defined Specialist Studies at State University in Novi Pazar itself, within the Study Programs of Architecture and Civil Engineering, and also a needed space, and accompanying spaces of labs and a library.

The teaching process would be in the Serbian language with using available domestic and foreign literature from the given area.

At the State University in Novi Pazar, there are Bachelor Academic Studies at Study Programs Architecture and Civil Engineering lasting 4 years, and we have done a questionnaire among 3 and 4 year students with questions related to their knowledge of the issue area and initial knowledge of the basic principles of energetic efficiency and sustainability.

At Architecture Study Program, there are 32 students in the third (3) year and 26 students at the fourth (4) year, while at Study Program Civil Engineering there are students at 3rd year and 4th year.

QUESTIONNAIRE FOR THE STUDENTS

1. Do you intend to continue your schooling after finishing Bachelor Academic Studies immediately or after a certain period of practice?
2. Are you interested in the area close to energetic efficiency in building?
3. Do you think waste management in our area is satisfactory?
4. Do you think that after your studying you can influence traffic improvement in your area?
5. Does the object you live in have an energetic passport?
6. Do you think the owners of flats in apartment buildings can solve the issues of energetic sustainability individually?
7. What is the level a local community, at any level, can have more influence than an individual (not at all, little, a lot and completely)?
8. Are concrete and clearly defined strategies at an urban level transparent in practice?
9. Do you think with this Specialist Studies you can find a job easier at the Labor Market?
10. Do you think (in concrete Novi Pazar or your city) have a need for experts in this area?

From all previously stated, we think that this Specialist Studies would be useful in application of national strategies at local levels, with the aim of better organization and management of desired processes, and also dissemination until a final user, with the aim of concrete aim implementation.

The Specialist Studies are a base for future PhD Studies from this area that would include the issue aforementioned at an urban level, with the optimal emphasize onto urban system functioning: energetic efficiency, flexibility, urban recycling, urban system functioning and material application and environmentally friendly procedures.