



Report on external evaluation of the SWARM project “Strengthening of master curricula in water resources management for the Western Balkans HEIs and stakeholders”

ERASMUS 597888-EPP-1-2018-1-RS-EPPKA2-CBHE-JP

The overall goal of this project is to educate experts for water resources management in the Western Balkans (WB) in line with the national and EU policies. Crucial project objectives include: a) improving the level of competencies and skills in high education institutions (HEI)s, b) developing new and innovative master programmes in the field of water resources management (WRM) by October 2021 c) designing and implementing seven new and up-to-date laboratories in WB partner HEIs in cooperation with EU project partners by November 2019, d) developing and implementing long-life learning (LLL) courses for the water sector in line with EU Water Framework Directive by January 2021.

Activities are organized in 7 work packages to deliver the desired outcomes.

Overall achievement

WB regional issues related to WRM in the field of HEI are analyzed in WP1. The corresponding report (output) of the first activity to identify the current state targets Bosnia and Hercegovina, Kosovo, Montenegro, and Serbia presenting the following topics: a) the policy, strategic planning and legal framework; b) governance and institutional frameworks; c) management instruments; d) infrastructure development and financing; e) sources of financing for WR development; f) outcomes and impact; g) priority challenges; and g) issues in WRM in WB. The second activity targets analysis of EU innovations in water policy and EU recommendations and legislation in water sector by analyzing the EU legislation for the directives targeting: a) water framework; b) floods; c) drinking water; d) ground water; e) urban waste-water treatment; f) industrial emission; g) renewable energy; h) habitats; i) birds; and other related directives. Analysis of master curricula related to WRM in EU and WB countries is reported in the third activity. Needed laboratory resources in WB HEIs are identified in the fourth activity in alignment with formed EU HEIs WM laboratory equipment. The fifth activity targets the barriers and opportunities for innovative EU practices in the WRM reported by the organized workshop. The general overview of existing successful models of education in the field of WRM of EU HEIs and comparative analysis with the existing curricula in WB partner countries will represent the basic guidelines for the definition and development of the new courses and master curricula in WB countries.

WP2 addresses curricula development activities organized in 6 activities, which are completed besides the fourth activity. The first activity aiming at development of specific competencies and learning outcomes of curricula in WB is reported by a corresponding catalogue, along with career opportunities with specific job descriptions. Development of courses content and syllabi is reported in the corresponding report for the second activity WP.2.2 and Innovation of existing and development of new master curricula for WRM in WB in the third activity. The fourth activity for course accreditation is on-going. The fifth activity on acquired teaching and learning methods is well documented covering both the strategy and realized activities and their outcomes. Purchase of required literature, equipment and software is documented in the report of the sixth activity.

Trainings for professionals are objective of WP3 realized in three activities. The first activity introduces LLL courses about WRM in EU countries, and the second analyses water sector needs and companies in WB countries. The last activity targets development of training material on WRM.

WP4 is dedicated to implementation of developed master curricula (accreditation) that are forthcoming activities or currently in progress.

Quality assurance and monitoring are developed within WP5. The first activity to develop quality plan is well documented with corresponding procedures, tools, and specification of relevant internal and external evaluation, along with specification of reporting templates, questionnaires and forms. The other activities cover a) Regular Quality Assurance Committee meetings; b) External evaluation of the project; c) External financial control; and d) Inter-project coaching, which are on-going activities in progress.

Dissemination and exploitation constitutes WP6 in 6 planned activities. The dissemination and exploitation plan contains all necessary elements and details for dissemination, communication and exploitation strategy, with defined objectives, activities, target groups, key messages, specification of dissemination tools, monitoring and evaluation, and exploitation including sustainability. Branding activities resulted with clear development of logos and key messages. Opened social network profile and project web site has ensured electronic presence and wider dissemination. The project participants have created a very functional and transparent web site within the second activity, where one can get info on reports on realized project activities. The web site is constantly updated with new information. The project management platform is used to communicate all partners about activities. Promotional materials include brochure, poster, rollup, folder, notebook, bag, tags, etc. All partners have created their web pages and links to other web sites with the project results. The following activities are still in progress and are regularly updated (info day for student enrolment, roundtable with academic sector, winter/summer schools and promotional symposium).

WP7 is devoted to project management activities. The first three activities include local project and Brussels kick-off meetings, and development of the project management plan. They are completed and well documented. The remaining three activities about steering committee meetings, regular project coordination and development of reporting documents are on-going in progress. The management guide contains all relevant specifications of management structure, roles and responsibilities, decision-making, management procedures, monitoring of realization, output delivery, reporting templates and forms, communication methods, protection of intellectual property, financial management, and contingency plan. All public documents are transparent on the web site and they confirm that relevant activities were undertaken to manage all required activities and solve problematic issues, by established project management procedures. A software platform was used to enable monitoring of activities by corresponding project management bodies and coordinators. Detailed reports including presentations are given for all meetings, including, kick off meeting, steering committee and project management meetings, developed project management and reporting guidelines. For day-to-day activities, they use relevant project management software. Preventive monitoring visits are documented by relevant agenda, minutes and presentation slides.

Relevance

This project addresses relevant and actual issues about WRM in WB countries. A lot of activities were realized within the project scope to develop curricula and organize specific trainings for improving the skills and competence level. The realized activities defined in the project *correspond* to the *project objectives* and addressed *real problems and needs*. The

project partners have analysed and defined requirements, state-of-the-art situation in WRM developed curricula and trainings and organize relevant dissemination activities.

Unfortunately, within the WP3 there is no specific action that plans realization of LLL courses in WB, although the state-of-the-art in EU is well documented, needs for WB are analysed and training material developed. I would encourage additional activities outside the project scope to organize such courses. This would be a great add on value to the project to cover the third specific objective of the project.

The *target beneficiaries*, as defined within the project proposal have participated in planned activities and organized events (seminars, trainings, etc.) and other measures were taken to support the project realization. In addition, I recommend raising the awareness level at wider community, including other WB countries, by inviting them on dissemination or training events. This will improve the regional cooperation and overall visibility of the project results and outcomes.

The project outputs need to be disseminated to non-academic persons and business partners, including those that were contacted for analysis of the needs within WP.2. Although, the project participants have already realized several contacts and influenced several national initiatives, this project should also raise awareness about skills and competences that will be achieved by the prospective master students, and influence governmental institutions about competent staff for future WRM on national and local levels. Also, these governmental institutions and relevant business sector may support realization of new curricula by introducing possibility of scholarships and internships or provision of lectures and courses for relevant staff.

In addition, I recommend the Universities to plan adding subjects on resource management of other environmental resources, including renewable energy resources or waste management within the scope of the studies as electives or branches of currently defined studies. Also I recommend adding knowledge and skills of modelling and simulation within WRM.

Curricula were developed according to a relevant methodology, analysing the needs, and mapping skills and knowledge to competences and learning objectives. All trainings and presentations were carefully prepared and organized. Final reports on all organized events and delivered presentations are transparent and accessible on the web containing details on the organization, intended goal, lecturers and participants.

Relevance can also be confirmed by a relatively high number of participants, quality of presentations and evaluation reports of these events. I recommend that the event organizer and project coordinators also to report on the selection criteria for all participants on realized activities, in order to ensure that the main target audience is communicated.

Efficiency

The well documented reports about realized project activities and delivered outputs confirm well transformation of the inputs to outputs. The used project management software ensures that all participants are communicated. In addition, it enables a platform for monitoring of realized activities, raising the efficiency on a higher level, although the projects targets coordination of a relatively huge number of project participants.

Analysing the execution of activities, one can conclude that all scheduled tasks started and are executed in planned deadline. No severe deviations have been noticed in project executions, besides small delays due to Corona-19 situation, expecting to prolong accreditation of new curricula.

Effectivity

All wider and specific objectives defined in the project proposal are fulfilled and all main outputs delivered. I recommend organization of LLL courses in WB countries as add-on to

the WP 3, since all training material is developed, staff trained and state-of-the-art analysed, sharing the experience of the EU countries.

The reports shared on the project web site confirm that the project purpose was reached by a high number of participants on the organized events.

I would encourage the project coordinator to explain the strategy or methodology how the target group was selected for participation on the events, trainings or mentoring, giving details if all relevant target audience is communicated.

Impact

The project has a large contribution to the realization on the general goal to educate experts from WRM in WB. The overall impression of the project is that it will have a great overall impact. All planned outcomes are being delivered or are in progress according to the initial project plan without deviations.

I strongly encourage at the last report to include comparison of the situation prior to project start and the situation after finishing the project, such as number of experts in WRM, number of job positions, number of held LLL courses and improvement of competences of existing employees in WRM. This would give sufficient answer on the project impact and quality of project results.

Sustainability

Are the benefits of the project and exploitation of the results going to be extended also after the project lifetime/financing period?

WP6 specifies details on exploitation including sustainability.

Analysing the project sustainability, I would suggest more efforts to be set in enabling work positions for prospective students, as this will be motivator for students to study the proposed master curricula. This can be achieved by initiating a development strategy on a national or local level that will organize administration or institutional support of WRM.

Financial sustainability needs to be supported by action plans or decisions in addition to the adopted University strategic documents in order to ensure that the University will continue to finance and organize the new master curricula and organize trainings after project termination.

Recommendation

A list of minor issues to be corrected in the reporting documents include:

- The strategy for identification of the current state should be documented and explained why only the selected criteria are analysed for a specific topic. For example, policy and strategic planning is not sufficient, I recommend to include action plans and monitoring of their realization in the report since the annexes reference them.
- Although a comprehensive analysis of the state-of-the-art is provided in WP.1 only the needed equipment was reported to upgrade the HEIs in the project context. The report does not contain a summary of missing skills and knowledge topics that are essential for development of curricula. Note that the fifth activity (WP.1.5) includes the presentation of challenges and barriers, and a relevant summary will increase the quality of the WP 1 results.
- The competences in WP.2 should follow the summary of the skills and knowledge requirements identified in WP.1. Therefore, these requirements are missing, although there is a comprehensive list of generic and specific competences expected within the new curricula.

- The WP.2.1 report needs a clear distinction of WRM competences from competences for other sciences or engineering topics.
- The potential links in the report of WP.2.1 is obsolete since it is presented in details for each University in the report of WP.2.2.
- Some of the generic competences are neither covered by mandatory nor by elective subjects, and they need to be specified, or relevant clarification where these competences will be achieved.
- Although a comprehensive strategy for implementation of course innovation is developed and specified in the report WP.2.3, still the report targets details on the developed curricula and does not present what is the innovation achieved. The document should more clearly specify what is new (method of achieving competences, the program itself) and what is the benefit of the invention in order to justify the innovation, instead of presenting just the study program details. This needs to be updated, also, with a possible list of social, technology development, environment or other benefits.
- No need to present the links between the competences and subjects in WP.2.3 since they were elaborated in WP.2.2.
- Details on study programs should be enlisted as annex to the report. Also a description of a study subject needs to be accompanied by recommended and optional literature and the methods how will be the course delivered (weekly hours of lectures, tutorials, practical assignments etc.)
- The register of companies for WRM in WB countries is developed, but no competences and responsibilities are associated for each company.
- The developed training (learning) material should be mapped to skills, knowledge and competences specified in the LLL program.
- Dissemination activities should include raising awareness of general population and government officials about the importance of competent staff for WRM.
- Elaboration of selecting the participants in the project activities needs to be extended with explanation why those participants have been included in the events.
- There is no report how many handbooks were printed or distributed, and/or promoted to relevant staff working in governmental institutions fro WRM.

A list of additional activates suggested to improve the relevance, and overall project impact include:

- Four WB countries are included in the project. I strongly recommend including also North Macedonia and Albania, at least in the dissemination phase.
- Although not directly planned, I strongly recommend to organize LLL courses within developed curricula and training material.

Skopje 30.08.2020

Marjan Gusev
