

SUSTAINABILITY STRATEGY

Project: Reforming doctoral studies in Montenegro and Albania – good practice paradigm **(MARDS)**

PROJECT: MARDS - Reforming doctoral studies in Montenegro and Albania – good practice paradigm

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Introduction

The sustainability of MARDS project is a capability of a system designed by this project to endure and maintain itself. It is one of the most important work packages, because no sustainable project has no purpose. Here, some dimensions, elements and examples of MARDS sustainability are given as well as practical recommendations.

This is not a complete roadmap for sustainability, but just a starting point for reflection on this topic.

Sustainability Strategy defined key mission and vision principles at national levels in Montenegro and Albania. Specified goals were used as hard objectives to be achieved in Montenegro and Albania, all aimed on raising the awareness of reforming doctoral education, transfer of knowledge, establishing of Joint Doctoral programme and possibilities for for further generations. This document provides review of achieved results cross matched with defined goals.

The MARDS Sustainable Strategy is aimed on providing the basis for sustainable academic and non-academic, educational system, with highlights on strategic goals and corresponding implementation plan. This strategy is focused on the period after project realization, i.e. this strategy plan represents long term sustainability plan of doctoral education in Albania and Montenegro.

The mission can be define in one sentence, on the following way: creation and development of modern PhD educational environment to extend and enhance research the knowledge and skills.

1. Overview of the project

The MARDS project addresses one of the most acute problems in Montenegrin and Albanian education systems, the doctoral studies. Its main objective is to reconstruct them in line with Salzburg Principles and establish sustainable and modern Pilot Joint Doctoral Schools between two friendly neighbors partner countries that will serve as an example of “good practice” for the WB Region. At all, **to improve and establish sustainable capacities in field of doctoral studies in two countries.**

The **specific objectives** of the MARDS projects are:

- to reconsider the existing national policies/standards for doctoral studies in two countries and their compatibility with EU practices.

- to develop and propose a new model of doctoral studies in two countries, adapted to the acquired experiences over past decades and current and future countries' needs.
- to propose a sustainable method of financing doctoral studies in two countries on national levels.
- to establish **two Joint Doctoral Schools** "Natural sciences and Technology for Sustainable Development" with place in Montenegro (Podgorica) and "Economy and Tourism for Sustainable Development" with place in Albania (Shkoder) as the recommendable examples of cross-border PhD programmes.
- to establish a sustainable cooperation with EU partners and established Doctoral School in order to maintain developed standards

There are **15 partners** on the project:

EU (5): University of Vienna, University of Zagreb, University of Maribor, University of Banska Bistrica, Association of professionals in doctoral education.

ME (5): University of Montenegro, University of Donja Gorica, Ministry of education of Montenegro, Ministry of Science of Montenegro, Montenegrin Chamber of Commerce

AL (6): University of Schroder "Luigj Gurakuqi", Technical University of Tirana, Vlore University, University Metropolitene Tirana, Ministry of sport and education of Albania.

Coordinator of the project is University of Montenegro.

2. Outcomes

The project outcomes include:

1. Report on existed doctoral education in Montenegro and Albania with Action plans.
2. Proposal of basic legal documents including the model of funding doctoral studies in Montenegro and Albania.
3. Conference on PhD education in Montenegro and Albania.
4. Guidelines and recommendations for WB academics and professionals in doc. Studies;
5. Accredited Joint Pilot Doctoral Schools: "Natural sciences and Technology for Sustainable Development" with place in Montenegro, Podgorica and "Economy and Tourism for Sustainable Development" with place in Albania, Shkoder;
6. The First Scholarships for doctoral studies in two countries based on recommended funding model (if allowed by policy makers?)
7. Curricula for new Joint Doctoral Schools with all info and guidelines related to the study process.

8. Enhanced capacities to support joint schools (human and research infrastructure at partner universities, capacity building)
9. MARDS Doctoral Colloquium of first PhD generation enrolled under title “Science, Technology and Services for Sustainable development”

MARDS 's main deliverables (36) Months

DE1.1	Report on the “state of the art” in doctoral education in Montenegro and Albania and comparison with EU practices
DE1.2	Proceedings from conference about doctoral education in Montenegro and Albania
DE1.3	Legal documents to be send to responsible bodies for adopting
DE2.1	Report on academic and professional training of WB staff/professionals/administrative' at EU
DE2.2	Guidelines and recommendations for WB academics and professionals in doctoral studies
DE3.1	Report on appropriate funding doctoral studies in Montenegro and Albania
DE3.2	Obligatory decision on adopting MARDS's methodology on funding for Montenegro
DE3.2	Obligatory decision on adopting MARDS's methodology on funding for Albania
DE4.1	Curricula book for Joint School suited in Albania (Shkoder)
DE4.2	Curricula book for Joint pilot school in Montenegro
DE4.3	The report on MARDS’s equipment resources
DE4.4	Final version of accreditation application
DE4.5	Decisions on accreditation
DE4.6	The list of enrolled students

DE5.1	Quality Plan adopted
DE5.2	Internal quality assurance reports delivered
DE5.3	Tender for subcontracting external QC experts completed
DE5.4	External quality control and monitoring delivered
DE6.1	Setting up and maintaining the project web site
DE6.2	Dissemination material created and distributed
DE6.3	Dissemination events with relevant stakeholders organised
DE6.4	MARDS doctoral Colloquium organised
DE7.1	Sustainability strategy adopted
DE7.2	University – Stakeholders network created
DE7.3	Doctoral scholarships provided
DE8.1	Overall project management
DE8.2	Project coordination meetings
DE8.3	Periodical and Final reports

3. Overview of MARDS achievements in Montenegro and Albania¹

As for Montenegro, the strengths are the 45 years of tradition in doctoral education, existence of vision and strategy, relatively good academic staff, especially in natural and technical sciences, regulations related to study programmes within doctoral education,

¹ The key elements of MARDS sustainability prepared by Betim Cico and Radovan Stojanovic

defined curricula, small easily collaborative research community, sufficient experience in introducing European practices and intensive international collaboration, strict criteria for mentors, integrated university that provides multidisciplinary work, investment in infrastructure as well as young and motivated students. Last year's there is a trial to assist doctoral education is maintained by Ministry of Science. However, the scarcity of doctoral students because of high tuition fees, neglecting state-based regulations in doctoral education, lack of motivated supervisors, especially in humanities and social sciences workflow mismatch between colleagues and universities, dissonant system of documents flow on college-university level, irrelevance of doctoral degree outside the university, inadequate infrastructure (labs, libraries), inaccessibility to research and scientific databases, inbreeding (reproduction within institution), limited involvement of experts from foreign institutions or industry, insufficient funding, especially by non-academic sector and others are only some of the, overloading doctoral students with teaching activities in their home institutions, limited research mobility and internationalization, no clustering in research groups etc., are only some of the problems that doctoral education faces in Montenegro.

MARDS was the first project introducing PhD education in sustainable development and eco-design in Montenegro. As such, it succeeded to integrate industry, services and academia. MARDS extended its activities on cross-border cooperation of two friendly and neighboring countries, Montenegro and Albania. Scheduled PhD programme in Montenegro is quite modern with following courses:

Remote sensing

Power System Control and Protection

Human-Computer Interaction in the media

Intelligent Data Analysis

Distributed data storage systems

Mining unstructured data and natural language processing

Contemporary building materials

Experimental analysis of structures

Risk management in civil engineering

Energy efficiency of buildings

Selected topics in electrical machines

IoT ecosystems

Power analyse in HVAC systems

Metal complexes and their application

Environmental chemistry

Environment and ecology

Ecology and biodiversity of aquatic ecosystems

Biological processes in the environment - selected chapters

Science Communication and Writing

Advanced Entrepreneurship

Technological Entrepreneurship

Precision Agriculture

Ships' Alternative Fuels and Propulsion

Reliability-based maintenance

Modeling the Supply Chain

Methodology of science and research work

The program is performed by University of Montenegro and University of Maribor by the help of overall MARDS consortium. As seen, research and education fields are strongly targeted to eco-design and sustainability.

On the other hand, in this project it is foreseen to initiate PhD Studies, which in Albania have gone through many phases, not being able to be stabilized in the last decade.

This Project created the possibility of resuming the third phase of doctoral studies in Albania, as a collaboration between 4 universities, the Ministry of Education and the Chamber of Commerce. This fruitful collaboration summarizes all the necessary elements to stabilize a Doctoral School such as Universities, accreditation through the Ministry of Education and a University-Industry Integration, through the Chamber of Commerce.

The main innovation of this project was the closed cooperation of 4 universities in Albania (3 Public and one Private) as 1 University allocated in the North of Albania (Shkoder), 1 University in the South Albania (Vlora), and in Tirana 2 universities, the Public (PUT) and the one Private (UMT), in cooperation with the University of Podgorica and supported by several European Universities (Croatia, Slovenia, Slovakia and Vienna).

This European Project named MARDS, created a new reality of PhD studies in Albania.

The project is also supported by the videoconferencing infrastructure for each university, to create the best possible cooperation between them.

The project has gone through several phases so far, creating the possibility of a greater stability in its progress. The first year was associated with some elements, where some of them had a normal performance, making possible the development of other steps. For the first year it should be mentioned the very good progress of all trainings done for the staff of Albanian universities by European Universities. This has made enough preparation for the Albanian staff to respond to the European levels of doctoral studies.

One of the main elements that came to the fore during the first year was the necessity of establishing a fair cooperation relationship between the Albanian university partner

In this regard, the MARDS project Consortium gave a great contribution. The opening of a doctoral school in Shkodra, supported by 3 other universities is a new innovation, which highlighted various problems that had to be solved step by step. The organization of two meetings in Tirana, one supported by UMT-Metropolitan University of Tirana, and the other by UPT-Polytechnic University of Tirana and with the participation of 4 Albanian universities, as well as the Chamber of Commerce and the Ministry of Education led to increased cooperation and in stabilizing the relations between the universities for the realization of this project. These two meetings were very well organized by the project coordinator, based on the contributions provided by Albanian universities.

In relation to these applications that were made, we will explain the effort and efforts of the Albanian side and the Project Coordinator to reach the application to the Ministry of Education for the opening of the Doctorate. This was a very long process, that despite the full commitment of the universities and the coordinator, the Albanian Government had initially decided that applications for these schools to be made in October, but it became possible to start in January 2020. This opened the possibility for the University of Shkodra to apply for the Doctoral School and for the UMT-Tirana Metropolitan University to apply for the opening of the Doctoral School in Smart-Tourism Area.

It should be noted that in the case of the application from the University of Shkodra in the framework of the MARDS Project, the application was approved by the Ministry of Education with some relevant additions. It should be noted that this was one of the rare projects, which was approved by the Ministry Education, as it was part of a European Project.

This was another positive step, which led the MARDS project to continue, increasing the premises to continue in a sustainable way.

The third important step is related to the cooperation of the University of Shkodra with other Universities to better complete the syllabi of the courses. All these syllabi were prepared by groups of Professors, both from the University of Shkodra and other Universities. So, in a spirit of cooperation that will continue in the future to have the highest possible level of this Doctoral School in Shkodra.

From the point of view of on line video-conference infrastructure, it should be said that even here many elements related to public universities were exceeded in order to enable the development of tenders and the use of funds based on the rules of the Albanian State. But in the end the problem of funds was overcome, and based on the specific requirements of the universities, requests were made for the realization of the necessary on-line video conference infrastructure. Due to the coronavirus situation, a joint test could not be performed between all universities. This process should continue during the period September-October 2020 to make possible the realization of connections between 2 or 3 universities at the same time, in the case of lectures at one university and attendance by students of other universities.

So, it can be considered that this process is towards stabilizing, so that these video systems are in the service of the Doctoral school.

It should be noted that these video systems will serve the Universities not only for the Doctoral School, but also in the possibility of developing on-line lectures, when professors from abroad can conduct on-line lectures due to the pandemic Covid19 situation.

In this process, there are two important steps for the project to continue in a stable way:

The first and most important step is the Opening of Applications to recruit the best Phd students, as well as with the opportunity of 5-10 such, to provide a qualitative group of Phd students, supporting students from Shkodra, Vlora or Tirana .

The second step is to carry out a supervision of students by at least two Supervisors, where one can be from Shkodra and the other from cooperating universities, either from inside or outside the country. This would increase the level of the Doctoral School, ensuring a sustainable continuation of these studies.

The third necessary step is the preparation of the pedagogical staff for the subjects of the first semester.

It must be said that the Sustainable Development of the Project in the conditions of the Pandemic may have its own problems, especially in the beginning of studies in the autumn of 2020. But in cooperation with other universities, hopefully this phase will be successfully passed by the University of Shkodra.

The fourth step, that is more critical, is the cooperation with companies, especially those related to Tourism, to have the best possible cooperation with the Chamber of Commerce. Some activities have been done, but I think that the November 2019 Earthquake and the Covid19 Pandemic, have not left much space in this type of cooperation. We think that the period October-November 2020 will give an opportunity, both in terms of selected topics and concrete scientific problems, that would serve Tourism in Albania. It is clear to everyone that this is a very difficult period for companies, but efforts must be made.

Finally, we think that this project was more valuable as a model to reopen and stabilize Doctoral Schools in Albania.

4. Elements of MARDS sustainability

Within the project and idea cycle the measures to be taken should ensure:

- short range sustainability and
- long range sustainability.

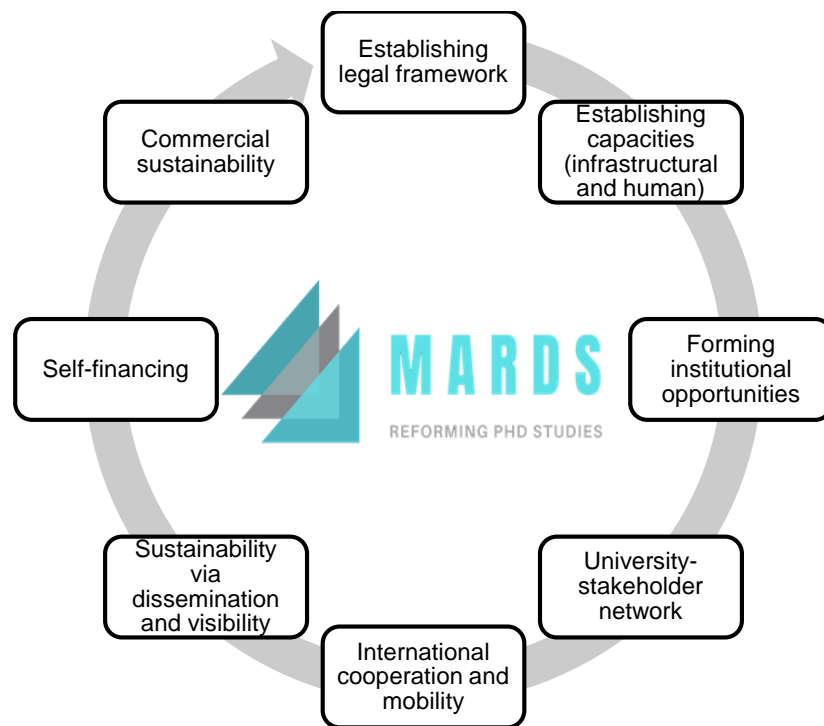


Figure 1 MARDS Sustainability key elements

The Sustainability plan should take into account academic, institutional and financial aspects, focusing on:

- 1) **Establishing legal framework** for fostering doctoral studies in Albania and Montenegro. Main point of the framework will be sustainable funding process done by Institutions, Ministries, research projects, different grants and cooperation industry-services-academia. Ministry of education, science, culture and sport of Montenegro already did some steps toward funding by establishing PhD Fellowships. The plan is to have a least 3-5 fellowships from this source for

purpose of MARDS project. For Albania, the MARDS consortium will propose similar Funds.

2) **Establishing capacities (infrastructural and human)** for running advance programme. Establishing capacities include:

- Capacity building through improvement of universities infrastructure - With project activities, the research equipment used by students and academic staff in their research was modernized and additionally the software tools used in multidisciplinary research were improved including both Montenegrin and Albanian universities. Academic staff and PhD students can both use improved infrastructure.
- Capacity building through training of staff and PhD students - During project lifetime, Montenegrin and Albanian academic and administrative staff participate in trainings organized by EU partners. EU partners has proven work experience and competences in the field of doctoral education. The participation and cooperation with EU partners gives to Montenegrin and Albanian partners access to a comprehensive pool of knowledge and experience that enables to benefit quickly and easily from good practice at all levels. Also, teaching staff has prepared courses and syllabus for Joint Doctoral Degree which will be used for implementation of programme.
- Accreditation of doctoral programme in Montenegro and Albania. The accreditation of PhD programme will be issued for a period of five years.

3) **Forming institutional opportunities** to grant PhD students. Institutions that are the holders of doctoral studies will be obligated to ensure a number of scholarships for PhD students involved in MARDS. The special agreement about this opportunity will be signed between university and internal faculties.

4) **University-stakeholder network.** Agreements of cooperation will be signed between the universities and enterprises and other stakeholders (from non-academic sector) to ensure the cooperation after the ending the project. Having in mind attractiveness of the developed pilot programmes the consortium expects the interest of different industries and services. There is also achieved cooperation with the economy and the Agreement with Chamber of Commerce.

Agreements that were signed:

- Agreement between UNISHK and UoM
- Agreement between UNISHK and PUT
- Agreement between UNISHK and UCCIAL
- Agreement between UNISHK and UV
- Agreement between UNISH and UM (Maribor)

Also, **Agreement of cooperation between University of Montenegro, University of Donja Gorica and the Chamber of Commerce** will be signed with purpose the cooperation of the University (as a representative of Higher education institutions in Montenegro) with the Chamber of Commerce, which through its network will allow Ph.D. students access to companies for certain practical research and testing of innovative solutions.

The purpose of the Agreement is to connect companies with Higher education institutions (UCG and UDG), during the research and development of Ph.D. Theses. In that way, it will enable students to solve theoretical and practical problems in the field of innovation and sustainable business and to efficiently transfer new knowledge to companies with an emphasis on sustainable solutions.

Ph.D. Students will gain new knowledge and skills, academic staff will have the possibilities to create new projects with industry.

- 5) **International cooperation and mobility.** Universities will in the function of the MARDS students publish available programs of mobility that they have at their disposal, they will potentially use some concrete programs such as Marie Skłodowska-Curie Research and Innovation Staff Exchange programme (MSCA-RISE), COST action, Erasmus+ programme mobilities or similar. MARDS will try to connect with EU resources for funding PhD students as well as with resources of worldwide institutions dealing with sustainable development.
- 6) **Sustainability via dissemination and visibility.** The main aim of the MARDS dissemination campaign will be to achieve sustainability. The project site as well as other dissemination channels will be upheld after the end of the project in order to promote information on the success of the program and PhD students.
- 7) **Self-financing.** One of the requests by MARDS project will be decreasing PhD tuition fees in Albania and Montenegro. Although, some number of the students will have possibility to pay tuition fee by themselves.
- 8) **Commercial sustainability.** Some number of MARDS PhD students will work in laboratories or startups. They are expected to realize their ideas on the market.

5. Recommendations

Recommendations to take into account after the end of MARDS proje - Questions and recommendations for improving project sustainability:

- **Resolve the dilemma** whether we want a project that lives or ends after last report?
- Define precisely **the topic and activities of Programme.**
- **Compose the team** of lecturers, collaborators and infrastructural resources.

- **Predict a set of sustainability actions** in short (one year) and long term? Can we connect MARDS to other existing actions at university regarding PhD studies? We need to embed MARDS in financial and strategic plan of each institution participating into project.
- **Income diversification and redirecting.** Use not only internal incomes. At least 60% of the planned budget for MARDS implementation must come from different sources: national, international, local, governmental. Do you have a list of the donors? Do you have procedures how to achieve funding from them? “Try to work as much as possible with external money”? What is your organization’s total budget devoted to the MARDS? Be ready to have backup in your own resources in case of “rainy days”. Try to redirect some of the internal resources for MARDS purposes.
- **Inclusion of the external stakeholders (policy and industry makers).** Can we put in existing state legislatures the requirements for MARDS programme? As example, some agencies or bodies within country requests such profiles like MARDS PhDs? Whether the MARDS PhD product can be requested for industry and services?
- **Sound Administration and Finance.** Accounting-administrative procedures of MARDS should fit the organization’s needs.
- To adjust the sustainability measures, **perform monitoring of the project**, taking in account quality and quantitative indicators. It is recommendable to do periodically SWOT and statistical analysis. ²

6. Conclusion

As it can be seen the process of sustainability is a process of many elements and a complex one indeed. What is crucial is that a strong cooperation and synergy is maintained between the project and stakeholders, which is of great importance. The project should definitely have a clear vision of the future and its effect on it taking into account that it is PhD studies and one it has a broad social and development impact. The received accreditation will be for 5 years. The presence of the three ministries in the project is an element that is encouraging for sustainability, but not sufficient on its own, meaning other actors should be proactively engaged. This strategy aims to be a starting point in achieving the above mentioned and aims to provide key directions and recommendations for sustainability of the project.

²Parts of this document were taken from: “The key elements of MARDS sustainability” - Betim Cico and Radovan Stojanovic Sustainability Strategy.