

Title: Engaging Science with and for Youth

Public + Mutual Learning & Open Dialogue Event

Date: 27-28 April 2023 – *two half days*

Place: Banja Luka, Bosnia and Herzegovina

Background

The recent OECD publication¹ focusing, among others, on [education and competencies in the Western Balkans](#) (WB) as the pillars for regional development, points out the multitude of urgent issues such as the quality of teaching, infrastructure/technology/digitalization of education, training in professional skills etc. These are the challenges that should be tackled with both policies and practices across the region. The WB region still lacks the competencies needed for boosting the economy, many of which are highly relevant to STEM sectors, and for increasing public engagement. According to the PISA² testing results, there is still a lot of work ahead for the WB economies (Serbia being an exception) in improving the quality of STEM education and increasing students' outcomes in these disciplines³. Furthermore, there is a need for strengthening critical cross-cutting competencies that allow for the innovation potential to thrive, contributing to solving unanticipated problems in a creative and out-of-the-box manner. In addition to general issues in STEM education mentioned above, girls and women are still underrepresented in STEM fields and, by extension, careers. This has been recognized by different regional actors such as the Regional Cooperation Council and the United Nations Development Programme working on promoting and supporting women in STEM through different actions including the [Network of Women in STEM](#), campaigns ("[Choose STEM future](#)") and initiatives (such as [IT Girls initiative](#)).

Through the WBC-RRI.NET project, but also beyond, partners across the WB are working intensively on science education and public engagement activities, including STE(A)M education. For example, through its anchor activities, the University of Banja Luka is working on developing the "Manual for STE(A)M educators" dedicated to secondary school professors to improve aspects of their teaching in different disciplines, and is planning a series of workshops for the practical implementation of the "Manual". In addition to that, the University of Banja Luka, in cooperation with the United Nations Development Programme in Bosnia and Herzegovina (UNDP BiH), has recently launched [IDEATHON "Innovative ideas for a better quality of life"](#) seeking creative and innovative solutions to societal issues in the areas of waste management, urban planning or climate change by using the responsible research and innovation approach. The Ideathon is being organised through the UNDP BiH's Open Innovation Platform designed to promote innovative thinking and further empower Bosnia and Herzegovina's innovation ecosystem.

¹ OECD (2022), *Multi-dimensional Review of the Western Balkans: From Analysis to Action*, OECD Development Pathways, OECD Publishing, Paris, <https://doi.org/10.1787/8824c5db-en>.

² Programme for International Student Assessment

³ See section 2.2.1. in <https://www.oecd-ilibrary.org/sites/f07dab91-en/index.html?itemId=/content/component/f07dab91-en>



The Ideathon is open for the teams of three secondary school students across the Republic of Srpska (where one of the [WBC-RRI.NET](#) anchor activities took place) under the guidance of their professors, and is being funded through a specific grant of the Ministry for Scientific and Technological Development, Higher Education and Information Society of the Republic of Srpska to support additional activities for expanding the [WBC-RRI.NET](#) outreach. The initiative is also approved and supported by the Ministry of Education and Culture of the Republic of Srpska. The three winning teams will be invited to present their ideas at the [WBC-RRI.NET](#) public event to be organized on April 27-28, 2023 in Banja Luka (Bosnia and Herzegovina) where they will also receive the awards. Similarly, each WB country engaged in WBC-RRI.NET has activities with or for students in supporting their innovative potential to flourish.

Thus, the idea is to bring together the students (both secondary school students and first year of undergraduate students) from all WB countries of WBC-RRI.NET to present their innovative work (either as practical solutions/products or as innovative ideas for problem-solving) to their peers and the wider public. Furthermore, the main goal of the event is to enable mutual learning and open dialogue between and across different stakeholder groups (students, professors, policy makers, industry representatives, facilitators and supporters etc.) resulting in a list of recommendations for the improvement of STE(A)M education across the region using a responsible research and innovation approach as well as an overview of good practices in engaging youth in the innovation creation processes.

Mutual Learning and Open Dialogue: workshop (Day 1) and ‘Knowledge Café’ (Day 2)

The idea behind organizing two different formats for mutual learning and open dialogue is to adjust them to different stakeholders. The workshop on Day 1 will focus more on the cross-regional exchange between the professors and students (both university and secondary school level) on their perspectives of using the responsible research and innovation approach in STE(A)M education, as well as the perspectives for the improvement of STE(A)M education. Each WB country team comprised of professors and students will act as a small discussion group. Facilitator will introduce the topic and key questions to be discussed in the first 10 minutes, after which the groups will “break out” for discussion and generating ideas for one hour, and then reconvene all together for half an hour presentation of each smaller group’s ideas, finally ending with last half an hour of discussion and recommendations list setting. Key questions/discussion points to be covered:

- How to make lectures in STE(A)M disciplines more interesting and engaging?
- How to encourage independent thinking and problem-solving through failures?
- Why is STEM unappealing to today's students?
- How to integrate STEM into the classroom to reinforce social-emotional learning competencies?
- How to more engage and support female students in STE(A)M?
- Are there unconscious biases towards female students in STE(A)M that can be identified and tackled?
- What are the good practices to be shared in practical approaches to STE(A)M education?
- What are the challenges to STEM Education and how to overcome them?



After the Day 1 workshop on improving the STE(A)M education, during Day 2 the mutual learning and open dialogue exercise will have the format of a 'Knowledge Café' focusing on "Breaking Barriers and Harvesting Opportunities in STEM education" The 'Knowledge Café' will gather stakeholders coming from the relevant ministries, organisations supporting STE(A)M education of youth, academia, as well as the relevant industry representatives. Topics for discussion:

- What are the good practices to be shared in engaging youth in the innovation processes across the region?
- How do we use RRI concepts for improving STEM education across the WB? How to translate STEM into something that makes a difference?
- How can conceptual knowledge of the gender gap translate into programmatic practice?
- How can we tackle 'gender fatigue' in STE(A)M education across secondary and tertiary education? What are the reasons behind this fatigue?
- Which STE(A)M field shows particularly low participation of women? Why?



Agenda



Engaging Science with and for Youth 27-28 April 2023 Physical (University of Banja Luka, Faculty of Political Sciences – amphitheatre, Bulevar vojvode Petra Bojovića 1A, Banja Luka, Bosnia and Herzegovina)	
Day 1 (public)	
09:45 – 10:00	Registration of participants
What's science got to do with youth?	
10:00 – 10:10	OPENING - Welcome
10:10 – 10:30	STEM education in the Western Balkans: overview of challenges and recommendations, Ena Kosanović, <i>UNDP Bosnia and Herzegovina</i>
10:30 – 11:30	Presentation of WBC-RRI.NET 'anchor' activities focusing on Science Education / Public Engagement Partners from the region (AL, BA, MNE, MK, RS)
11:30 – 11:50	<i>Coffee & cookies break</i>
11:50 – 14:00	<i>Mutual Learning and Open Dialogue workshop</i> with students and professors on their perspectives on RRI and STE(A)M <i>Facilitator: Dalibor Drljača, HRTD</i> <i>Topics:</i> <ul style="list-style-type: none"> - <i>How to make lectures in STE(A)M disciplines more interesting and engaging?</i> - <i>How to engage and support female students in STE(A)M more?</i> <i>Output:</i> <ul style="list-style-type: none"> - <i>Recommendations for more inclusive and improved STE(A)M education</i>
14:00 – 15:00	<i>Lunch</i>
From 15:00	<i>Guided tour through Banja Luka OR Visit to labs at UNIBL (STEM lab / Chemistry lab / Mechatronics lab...)</i>
15:00 – 16:30	<i>Cross-WG meeting: WG1 and WG2 (only for the WG members), Hybrid</i> <i>Pitch-presentations (5-7 minutes each):</i> <ul style="list-style-type: none"> • <i>How to improve gender equality in STEM and R&I, Katarina Pavlović (WG1)</i> • <i>Gender dimension in public engagement, Kelly Pasmatzki (WG1, WG2)</i> • <i>Science Communication in the Age of Misinformation, Fiorda Llukmani (WG2)</i> Questions and discussion <i>Output:</i> <ul style="list-style-type: none"> - <i>Recommendations</i>
Day 2 (public)	



Engaging youth with Responsible Research and Innovation	
10:00 – 12:00	<p>Awards ceremony for the winners of the <u>“Innovative ideas for a better quality of life” Ideathon</u> organised by UNIBL and UNDP BiH</p> <p>Presentations of secondary school / first-year university students work related to RRI & STE(A)M (up to 3 per country):</p> <ul style="list-style-type: none"> - Albania - Bosnia and Herzegovina (Republic of Srpska) – <i>3 winning teams of Ideathon</i> - Montenegro - North Macedonia - Serbia
12:00 – 12:20	<i>Coffee & cookies break</i>
12:20 – 13:50	<p><i>Mutual Learning and Open Dialogue ‘Knowledge Café’: Breaking Barriers and Harvesting Opportunities in STEM education</i></p> <p><i>Moderator: Kelly Pasmatzi, SEERC</i></p> <p><i>Participants:</i></p> <ul style="list-style-type: none"> - <i>Event participants</i> <p><i>Topics to be tackled:</i></p> <ul style="list-style-type: none"> - Engaging women in STEM education - Addressing Barriers to effective STEM education - Identifying and amplifying opportunities in STEM education <p><i>Output:</i></p> <ul style="list-style-type: none"> - Co-created stakeholder knowledge and solutions; possible policy recommendations
13:50 – 14:50	<i>Lunch</i>
15:00 – 17:00	<p><i>GENERAL ASSEMBLY MEETING (only for members of the consortium)</i></p> <p><i>Reporting the progress per Work packages</i></p> <p><i>WP2 (ZSI)</i></p> <p><i>WP4 (UNS)</i></p> <p><i>WP5 (ZSI)</i></p> <p><i>WP6 (ESF)</i></p> <p><i>WP7 (NCDIEL)</i></p> <p><i>WP8 (UNS)</i></p>

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