



# GLOBAL GRANTS COMMUNITY ASSESSMENT RESULTS

Use this form to report community assessment findings to The Rotary Foundation when you apply for a global grant.

Assessing the strengths, weaknesses, needs, and assets of the community you plan to help is an essential first step in designing an effective and sustainable global grant project. See [Community Assessment Tools](#) for full instructions and helpful tips.

This form will help you report the results of your community assessment, and it's required when you apply for any humanitarian or vocational training team grant. Complete a separate form for each beneficiary community (e.g., school, health care system, or village), using information that is both current and specific to each community. Remember, you can't use global grant funds to cover the cost of doing an assessment, but you can use district grant funds.

Beneficiary community or institution

**We will create digital hubs in approximately 500 elementary school libraries in Croatia by deploying advanced but affordable technology (micro:bit), supported with rich content and training.**

Primary beneficiaries of this project will be **elementary school students grade 1-4 and related teachers and librarians** by helping them use and integrate powerful tool into formal, every day education (micro:bit has endless scalability and possibilities for creative use especially to connect to real world challenges). Secondary beneficiaries will be: **parents**, to rest assured that their kids will be well prepared for their digital future; **Ministry of Science and Education (MoSE)**, to have such a powerful but low cost, unlimited scalability tool to support accelerated adoption of digital literacy from the earliest stages of education; **Croatian IT Industry**, to be more optimistic about future availability of STEM skills for the needs of the industry and last but not least, **society in general**, to see constructive efforts in building future generations of digital professionals and citizens, and valued members of Croatian/EU/global digital society.

Groups in the community that would receive a clear, direct, and immediate benefit from the project

These **digital hubs** will be used to **introduce conceptual coding nationwide in lower grades (1-4)** of elementary schools. This way **we redefine literacy** and enable kids to adopt skills and knowledge required for the global challenges thus **radically improving equality of opportunities** irrespective of country's GDP, gender, school systems or personal preferences.

Key groups are therefore: **elementary schools kids grade 1-4** (targeting **between 60-70,000** pupils in schools that will have access to our digital hubs) and **teachers and librarians** (targeting an average 6 teachers and librarians per school in those 500 schools, totaling 3,000 educators).

What is the nature of these benefits:

Digital era has made coding, including algorithmic way of thinking and problem-solving skills, widely recognized as the key competency in STEM (and many other fields), that is being introduced into elementary schools' curricula worldwide.

Many countries, including the UK, Croatia, Denmark, Singapore, Norway, Sri Lanka ... converged to a specific small, universal computer called micro:bit, characterized by very low price thus lowering entering barriers, and very rich content and ecosystem. The UK is leading the way in deploying it to all the pupils in Grade 7, Croatia following with national deployment specifically to Grade 6, Singapore nationwide, Denmark to all the pupils in Grades 4-6 etc. The technology is owned by a not for profit 'The Micro:bit Education Foundation' whose founders include BBC, Microsoft, Amazon, Samsung and others.

Together with **IRIM** (Institute for Youth Development and Innovativity), strong and experienced partner with proven implementation model, we are ready to deploy micro:bit empowered teaching of digital skills and STEM competencies in Croatia from the earliest student ages.

With this project Croatia will be the first country in the EU to have interactive coding introduced from grade 1, setting the inspirational path for **other countries to follow**.

Beneficiaries' demographic information, if relevant to the project

In Croatia today we have around 2,000 elementary schools with approximately 50% being full grade 1-8 schools which have libraries, and 50% affiliated grade 1-4 schools. Our **Global Grant project, which targets grades 1-4 of elementary schools** is based on the experience with the micro:bit project in grades 6, where 85% of the schools had been covered, and **the Pilot in Slavonia, where we introduced micro:bit in grades 1-4 in 57 elementary schools in Slavonia region**. Based on the results, feedback and assessment received from students and teachers and analyses made, we have decided to initially target 50% of mostly full grade 1-8 schools, totaling 500 schools.

Based on the above experience, in collaboration with MoSE, we'll communicate program benefits and scope to all of the schools and will identify 500 motivated schools across Croatia. As we have determined during the assessment and previous linked activities, the planned project is very inclusive in terms of gender equality, ethnicity and income groups.

Target beneficiaries are: **60-70,000 students and 3000 teachers and librarians**.

Reaching the targeted number of schools should not be a problem as Croatian elementary school system is 99% public, funded in major part by local community and governed by the MoSE. The MoSE performs administrative and other tasks related to all preschool education, elementary and secondary education in the country and abroad; develops the National Curriculum etc. We have excellent relationship and full support from the MoSE and the Minister personally, for this project, with full alignment on activities with schools and libraries as well as with imbedding the micro:bit into existing curriculum.

Who conducted the assessment? (check all that apply)

- Host sponsor members
- International sponsor members
- A cooperating organization
- University
- Hospital
- Local government
- Other International primary education research organizations

Assessment dates

May & June 2019.

Pilot project in Slavonia had covered introduction and integration of micro:bit devices into curricula in grades 1-4 through libraries in 57 schools and was used to test and make an assessment on a limited scale. Equipment had been distributed, librarians and teachers educated and surveys made before and after the pilot.

One of the resulting conclusions was that number of workshops and overall teachers' training needs to be strengthened so, in this project we have planned to have two sets of three rounds of workshops.

What methods did you use? (check all that apply)

- Survey
- Community meeting
- Interview
- Focus group
- Asset inventory
- Community mapping
- Other : **Pilot project in 57 elementary schools in Slavonia**

Who from the community participated in the assessment?

Rotary and our partner organization IRIM, have chosen Croatian region Slavonia to run a Pilot with KPIs and results monitoring including local Rotary Clubs' support. This **pilot included 57 elementary schools with 157 teachers and librarians while 135 randomly selected kids 7-11 years old have been interviewed.** Survey response outlined that 90% of boys and girls think that coding is important and want to learn to use micro:bit.

List the community needs you identified that your project would address.

1. Lagging behind most EU countries in use of computers in science teaching
2. Teachers (in general) unprepared for modern digital literacy tools usage
3. Low interest for STEM education impacting future STEM higher education
4. Lacking more girls in STEM education
5. IT Industry lacking STEM skills (medium to long term requirement)
6. Government unable to attract 21<sup>st</sup> century industry movers and shakers (AI, robotics, 3D printing etc.) due to inadequate skills availability – this is strategic and ongoing requirement

List any needs you identified that your project would not address.

1. Changes in official Curriculum
2. Infrastructure needs like buildings, transportation, additional Internet links

List the community's assets, or strengths.

1. Mobile devices penetration in population is 130%
2. Large number of elementary schools in Croatia already have access to Internet (Wi-Fi for students)
3. There is an ongoing project of MoSE to introduce Wi-Fi, laptops and other digital equipment all of the schools in order to enable them for digital content.

Considering the needs and assets you listed, explain how you determined the project's primary goal.

Our partner IRIM had made an in depth analyses of Croatian education system and that was the basis and motivation to initiate STEM Revolution. Additional learnings and assessments were gathered through H1 2019 Pilot project 'Slavonia' (57 school libraries), 2017 Public Libraries Project', TIMSS research <https://timss.bc.edu/> , IRIM 2016-2019 <https://croatianmakers.hr/en/home/> etc.

Rotary Clubs of Croatia, District 1913 have been engaged in multiple STEM projects in 2017, 2018 and 2019, where we have tested multiple ways to improve competitiveness and equality of opportunities for our kids. We have helped with computers, electrical engineering equipment, training, Arduino robots, digital cameras etc. as well as micro:bit pilots in public and school libraries including STEM mobile units (STEM car). The most important projects were:

- 1) RC Zagreb Centar & IRIM: STEM car (STEM laboratory and training centre on wheels, providing training in remote areas, out of school season, 2015-2019)
- 2) RC Zagreb Centar, GG High School Glina, Bridge to a Better Future (Computer classroom, Robotics, Digital photography, electrical engineering, 2016-2018)
- 3) RC Varaždin: GG Rotary STEM Lab (33 schools with 10 Inventor sets and 100 teacher training) 2019
- 4) RC Zagreb Sljeme, RC eClub, RC Zagreb Centar, RC Zrinjevac: Public Libraries as Digital Hubs in 5 Croatian cities, 2018
- 5) RC eClub Croatia - STEM micro:bit lab in SOS Children Village, Austria, 2019
- 6) RC Zagreb Centar – Sri Lanka pilot: 1000 micro:bit, 2019
- 7) Rotary District 1913: micro:bit pilot Slavonia covering 57 school libraries in 57 elementary schools in Slavonia region, 2019

IRIM has developed unique framework of voluntary school participation (can be initiated by teacher or principal) which enables rapid deployment, training and integration of digital equipment in elementary school curriculums. This framework had been tested, amongst other projects, together with the MoSE in 85% of all grade 6 in elementary schools across Croatia as well as the Pilot in Slavonia. Croatia with IRIM, is globally among frontrunners in introducing micro:bit implementations in elementary schools with almost 25,000 deployed units.

IRIM is Croatia-based non-profit organization (private foundation), which developed and implemented the largest extracurricular STEM program in EU – the Croatian Makers movement, which now includes over 120,000 children in Croatia. Although IRIM originates from, and primarily operates in Croatia, it has recently transposed its activities to Serbia, BiH and Kosovo, where IRIM and local partners deliver IRIM-designed major projects (with initial funding from IRIM), reaching tens of thousands children more. Some programs are joint regional activities and such cross-border co-operation are of utmost significance in the region which still suffers consequences stemming from the conflicts in the 1990s. We are seeing increased interest of other Rotary organizations so, the latest joint project was initiated in Sri Lanka.

As such we also believe that with our project we can create and test **scalable and sustainable model for acceleration of national digital literacy adoption starting from the Grade 1** of elementary school, with desired future integration with robotics, IT and other advanced programs in upper grades. No one has done this yet!

How would your project's activities accomplish this goal?

We have outlined a robust implementation plan with the following steps:

- 1) Utilize IRIM's knowledge and experience, in alignment with MoSE, to reach and communicate program benefits to beneficiaries. Identify motivated schools in Croatia nationwide to transform their libraries into digital hubs.
- 2) Provide on average 2 sets of 25 micro:bit devices to each library/digital hub (in 500 targeted schools)
- 3) Assign local Rotary Club Ambassadors to provide support and ensure adoption in targeted schools.
- 4) Provide online access to localized training materials, use cases and ideas in various disciplines, both STEM and humanities
- 5) Provide 2 sets of 3 on-site workshops for teachers and librarians (micro:bit basics, how to embed devices and content into existing curriculum, advanced capabilities, best practice and developed content sharing etc.). There will be no change of curriculum → no shock to the system → easy absorption.
- 6) Provide a path for seamless integration of this program with robotics and/or IT trainings in higher grades
- 7) Measure outcomes, adjust if necessary and create scalable, replicable concept/model
- 8) capitalize on one of the strengths in deployment and scalability of this project through rich library of exercises and lots of free content already developed by IRIM, teachers in Croatia as well as globally.

Examples and materials supporting existing curriculum for grade 6 can be found online (in Croatian):

<https://izradi.croatianmakers.hr/bbc-microbit-predmetni-materijali/>

- 9) Develop and continuously enlarge a library of lab and exercises to support and enhance existing curriculum for grades 1-4.

What challenges have prevented the community from accomplishing the project's goals?

Within existing curriculum and available funding there is no platform that can effectively support such a project. Also, teachers (in general) are unprepared for modern digital literacy tools usage. IRIM and our Rotary District 1913 have envisioned this project that will combine IRIM's proven capabilities and platform for STEM skills deployment with Rotary's funding, quality and reputation of local Rotary Clubs' members as well as Rotary's direct engagement, assistance and support with local schools.

How is the community addressing these challenges now?

Some teachers are trying to use online resources and enrich their teaching, however in most cases students will not work with digital tools in lower grades at all.

Why are the project's activities the best way to meet this community need?

We have the reach, organization, platform, skills and model to execute the project, as well as experience gathered in previous projects in how to drive support and adoption from all of the stakeholders and beneficiaries – from students, teachers and librarians to parents, school staff and MoSE, to name a few. Competencies and experience of our strategic project partner IRIM, projects already executed, like the one related to the implementation of micro:bit in Grade 6 and especially the Pilot in Slavonia, where we successfully tested the concept in 57 schools, give us the confidence for the overall success.

Additionally, our training plan, based on the above experiences is to work with an average six teachers and librarians in targeted schools and provide hands-on training workshops for groups of 10 persons per session. It is estimated that teachers will participate in 3 workshops per semester in both spring and autumn semester (1H 2020. and 2H 2020.) bringing it to a total of 6 training cycles. Every cycle will have 300 workshops executed by 35-40 already trained micro:bit ambassadors which will ensure rapid knowledge transfer to educators and fast adoption and integration of micro:bits into everyday education.