



DELIVERABLE D.T2.2.3  
FINAL RI ROAD MAP  
PP08



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## 1 Regional Innovation Policy Context

There are 5 thematic priority areas with relevant technological and production fields as the main focus for the S3 in Croatia: (1) Health and quality of life, (2) Energy and sustainable environment, (3) Transport and mobility, (4) Security and (5) Food and bio-economy. Additionally, Croatia has identified two cross-cutting themes able to create the biggest added value and foster the emergence of new economic activities, rising of the productivity of the Croatian economy and the creation of new and sustainable job opportunities. Cross-cutting themes are KETs and ICT. All described thematic priority areas as well as cross cutting themes are relevant for SME's and their R&D potential.

The national priority for the first few years of S3 implementation is to create a climate favourable for innovation and to stimulate business sector investments in R&D activities in order to develop new products, services and technologies that will enable modernization and diversification of the Croatian economy. Successful implementation depends on monitoring and metric system that shell provide information leading to termination of "unsuccessful" priorities. Proposed priorities are specific and strongly linked to expected results, i. e. development/application of new product and technologies. The future context is envisaged as one in which all research funders must prioritize and must be able to show a return on investment.

According to the Regional Innovation Scoreboard Jadranska Hrvatska with Šibenik, belongs to the group of moderate innovators with innovation performance decreasing over time. Highlighted strengths for 2017 are non R&D innovation expenditures, trademark and design applications and weaknesses, that are to emerge in this study as well are on the level of business R&D expenditures, EPO patent applications, public to private co-publication, in house SME innovation, SME innovative collaboration.

In this report we will further analyse the gap arising from identified weaknesses. We will also take into the account strengths that can be leveraged to increase regional and local SME competitiveness.

## 2 Regional RI Maturity

### 2.1 RI Performance of Regional Policy Making

RI Category	RI Component	Indicator	Type of measurement	Metric	Data source	Assessment (Modest/Moderate/Substantial) + Short description
Purpose	Motivation for doing/supporting research/innovation	M1: Integration of innovation/S&T in policy planning and strategies	Qualitative	Inclusion of innovation/S&T components in the official policies of the organizations (e.g. strategic plans, policy documents, etc.)	Regional policy/planning documents – Partners’/Experts’ assessment	<b>Moderate:</b> Innovation is included in strategies both on the national and local level: Innovation encouragement strategy 2014-2020, Smart Specialization Strategy, National innovation strategy 2013-2020, Strategy for entrepreneurship development, Strategy for the development of women's entrepreneurship and in Strategic Commitment - Strategy for the Development of the City of Šibenik. The strategy for promoting the innovations in the Republic of Croatia 2014-2020 focuses on the long-term development and stimulation of innovation as a fundamental value of the economy's success, but also of the society as well. With this strategy, the Government of the Republic of Croatia sets the strategic direction for the development of an innovation system through the vision, the strategic goals, and the four thematic pillars. The main goal and vision of the City of Sibenik is to be recognized for entrepreneurial innovation, emerging technologies in the green tech industry as well as higher education. It aims to create the prerequisites for the development of an economy based on knowledge, innovation, better exploitation of resources, and emerging technology.

						Also, one of the main goals of the City of Sibenik is to provide infrastructure, services, technologies and equipment for the development and growth of SMEs, start-ups, innovation organizations and young entrepreneurs.
	<b>Motivation for engaging with RI</b>	M2: Integration of RI components in policy planning and strategies	Qualitative	Inclusion of RI components in the official policies of the organizations (e.g. strategic plans, policy documents, etc.)	Regional policy/planning documents – Partners’/Experts’ assessment	<p><b>Moderate:</b> The main strategic goal of the strategy for promoting the innovation in the Republic of Croatia 2014-2020 is to increase the level of competitiveness of the Croatian economy and to increase social welfare as a result of investments in knowledge, creativity, and innovation. The specific objectives of The strategy for promoting the innovation in the Republic of Croatia 2014-2020 is to improve the innovation performance of the Republic of Croatia, increase share of the business sector's through investments in research and development, increase number of basic and appropriate research aimed at boosting economic competitiveness, increase human capacity for research, technological development and innovation. The thematic pillars of the strategy for promoting the innovation in the Republic of Croatia 2014-2020 are: 1. Development of the innovation system of the Republic of Croatia and the improvement of the legislative and the fiscal framework for the promotion of innovation, 2. Strengthening the innovation potential of the economy, 3. Encouragement of cooperation and flow of knowledge between the business and scientific sector 4. Strengthening of the human potential for innovation and the creation of an attractive environment for "world class "researchers.</p> <p>Components included in policy planning and strategies are:</p> <ul style="list-style-type: none"> <li>- Engagement of all societal actors;</li> </ul>

						<ul style="list-style-type: none"> <li>- Open access;</li> <li>- Science education;</li> <li>- Governance;</li> <li>- Gender equality.</li> </ul>
		M3: Financial commitment on RI components	Quantitative	Budget allocation for RI components in the budget of regional policy makers: (a) presence of specific budget headings for RI or its components; (b) annual amount (% , or €); (b) evolution (increase, decrease, stable over the last 3 years – or other programming period where appropriate)	Budget documents – Partners’/Experts’ assessment	<p><b>Moderate/substantial:</b> The annual budget in 2018. for Agency for investment and competitiveness was approximately 2 million euro and for Croatian Agency for SMEs, Innovations, and Investments annual budget is approximately 80 million euro. One of the main instruments for financing RI projects is in the EU grants available to the Republic of Croatia under the Competitiveness and Cohesion Operational Program 2014-2020. Ministry of Economy, Entrepreneurship, and Crafts are responsible for the Priority Axis 1 of the Competitiveness and Cohesion Operational Program 2014.-2020. The specific objectives are - Strengthening the Economy by Research and Innovation ", Investment Priority 1b, Specific Objectives 1b1 New products and services as a result of research, development and innovation activities (IRI) and 1b2 Strengthening business research, development, and innovation activities through the creation of a favourable investment environment (IRI). Total allocated funds under Priority Axis 1 is amount to 664.792.165,00 EUR. Also, there is Program Horizon 2020 and Program EUREKA and Eurostar’s 2. Program Horizon 2020 is a main program of European for research and innovations for the period from 2014 – 2020. The budget of the program Horizon 2020 is 78.6 billion EUR. And, Program EUREKA and Eurostars 2 is the program that encourages small and medium-sized</p>

						enterprises (SMEs) to co-operate with international partners in launching R & D (IR) activities.
	<b>Ethics (justification of intended outcomes)</b>	E1: Significance of UNDGs in policy planning and strategies	Qualitative	Reference to UNDGs in regional policy documents (e.g. strategic plans, policy documents, etc.)	Regional policy/planning documents – Partners’/Experts’ assessment	<b>Substantial:</b> UNDGs have high significance in policy planning and strategies both on regional and local level.
<b>Process</b>	<b>Anticipation</b>	A1: Foresight and strategic planning activities (e.g. Scenario building, delphis, etc.) (adapted from Eastwood et al. 2017)	Quantitative/Qualitative	Number of foresight and strategic planning activities in the current and preceding governing period (e.g. regional legislature, depending on local regulation) [Presence/Absence of activities if the number is not available]	Regional policy/planning documents – Partners’/Experts’ assessment	<b>Modest:</b> The strategic activities are usually connected to the previously mentioned EU grants. But, the Šibenik –Knin County and the City of Sibenik have main strategic planned activities:  STRATEGIC GOAL C1 - A competitive economy based on international and domestic investments in tourism and accompanying services, traditional agriculture and industry-based innovations and advanced technologies in the economy.  STRATEGIC GOAL C2 - A faster development of assisted areas  STRATEGIC GOAL C3 - Development of communal and public infrastructure for balanced economic development and the preservation and protection of the environment to raise the quality of life  STRATEGIC GOAL C4 - Developing Competent and Employable Human Resources and strengthening social inclusion
	<b>Public engagement</b>	PE1: Public perceptions on	Quantitative	% of respondents who stated that	Special Eurobarometer	<b>Moderate:</b> Local demand for new services

		public involvement in science and technology (Tsanos and Apospori 2017)		“the public should be consulted and public opinion should be considered when making decisions about science and technology”	340 (national data), p. 87.	<p>In order to identify the requirements of entrepreneurs in the local market, the City of Šibenik has conducted two analyses that included the Requirement Research for the services and content of PODI Business Centre (2015) and research on the requirements of the IT and Start-up community (2016). The conducted research included the key questions about requirements of the economic subjects study and the interested public, and based on them and further determined the functional profile of the planned future services, especially according to the planned type services to be provided to future tenants and exterior users - this research is partly relevant to the subject matter of our project.</p> <p>The PODI business center service and business requirements study included 50 companies in The City of Šibenik area, including one Open University. Entrepreneur’s analysis of demand conducted through the study indicated the requirements for capacity building in the field of intellectual services, most of which were consulting services related to preparations and tips for success the use of EU funds and national funds (28.1%). There is also a request for coordination improvement between state and city institutions for the purpose of faster issuance of required documents including consultations when preparing project investor documentation for investment in the City of Šibenik (19.3%) and financial consulting services (14.8%). Based on the answer it can determine how entrepreneurs have a very high need for educating employees in order to improve their business, and that education in the area of the City of Šibenik is general and unspecified (67.6%).</p>
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						<p>The IT and Start-up community study covered mostly young people between 18 - 35 age (73,0%), and the total respondent number of the highest share were composed students with status (29.7%) and young people who are in employment - with the employer (18.9%) or in their own company (16.2%).</p> <p>The study identified the requests related to spatial capacities and the corresponding infrastructure, the need for specialized equipment and software, then the relevance and type of education required and the demand for mentors and experts who will provide professional support to business development. In addition to the services, education needs are most pronounced in the field of IT business (12.5%) and branding (10.6%), but after this kind of education that is closely related to improved business model, follows specific knowledge about intellectual property protection and design. Similar demand structure is also expressed in the need for mentoring support, especially for IT Advisor (14.3%), Marketing Advisor (14.3%) and Intellectual Property Advisor (13.0%). The most wanted experts are: developer (33.3%), designer (26.1%) and retailer (21.7%). From recognized challenges to successful start-up entrepreneurship the most difficult to approach is initial capital (16.1%), lack of systematic start-up institution support (13.2%) and too little public networking events (13.5%).</p> <p>The development of new quality services adapted to needs of MSPs is directly responsive to most identified problems in the analysis of entrepreneurship. New services as a combination of education and mentoring are designed and developed with</p>
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						<p>aim of satisfying the recognized, more specific MSP needs. Specialized education from the requested areas and mentoring will be provided individually, and that only needs to some MSPs. by analysing entrepreneurship, it is recognized that despite the long-lasting negative trends in the opening rates of new business/trades, 2016 recorded a strong growth of new Start-up - enterprises (29.8% newcomers compared to the previous year compared to 2015, while the increase was 19.8% at the level of SCC); and an increase in the number of newly opened crafts in the City of Šibenik by 34% in comparison 2015. Also, the IT Needs and Start-up community research shows a lack of systematic start-up institution support (14.2%). For those reasons, new counselling services are designed with the purpose to the requirement of beginner entrepreneurs, as well as providing support to MSPs at all development stages. It is planned that new existing advisory services will be used “one-time” trough 34 MSPs which operate for more than three years (30 of them will use newly developed high-quality services) and 31 MSPs which operate less than 3 years (24 of them use the newly developed high-quality services). From the total number of MSPs (65) that will “one-time” use the consulting services, in accordance with the recommendations The Strategy for the Development of Entrepreneurship of Women in the Republic of Croatia to participate in the activities will motivate women in particular entrepreneurs.</p>
		PE2: Formalisation and extent of public involvement in	Qualitative	Qualitative discussion and self-classification as:	Partners’/Experts’ assessment	<b>Modest:</b> Not formalised/low involvement

		regional science and technology decision-making (Tsanos and Apospori 2017)		<ul style="list-style-type: none"> <li>- Formalised / high involvement</li> <li>- Formalised / low involvement</li> <li>- Not formalised / high involvement</li> <li>- Not formalised / low involvement</li> </ul>		
	<b>Responsiveness</b>	RES1: Potential to adapt policies and strategies (adapted from Eastwood et al. 2017)	Qualitative	Existence of stakeholder/public feedback mechanisms in policy/strategy implementation	Regional policy and strategy documents/ Partners'/Experts' assessment	<p><b>Moderate:</b> One of the most important thematic pillars for the Innovation is cooperation between business, public and science sector (triple helix). Also in the Strategy of science, education and technology one of the priorities is to strengthen national research and innovation infrastructure through public access and connect it with European infrastructure. The development strategy of the City of Šibenik is aligned with the County Development Strategy of the Šibenik-Knin County in order to set the goals in accordance with development of the whole region. The county development strategy is aligned with goals and priorities of Adriatic region and with Regional Development Strategy of the Republic of Croatia.</p> <p>Established strategic goals: 1." Competitive economy based on international and domestic investments in tourism and accompanying services, traditional agriculture and industry-based on innovations and advanced technologies in the economy", 2."A faster development of assisted areas", 3."Development of communal and public infrastructure for balanced economic development and the preservation and protection of the environment to raise the quality of life", 4." Developing Competent and Employable Human Resources and</p>

						<p>strengthening social inclusion” and horizontal measures are linked to the state – level strategic documents, goals and principals of the EU. Regional strategic goals were made according to the following state strategic documents:</p> <p>Strategic Development Framework</p> <ul style="list-style-type: none"> <li>- Rural Development Strategy of the Republic of Croatia</li> <li>- Water Management Strategy of the Republic of Croatia</li> <li>- Waste Management Strategy</li> <li>- IPA Operational Programs</li> <li>- Regional Development Strategy of the Republic of Croatia</li> <li>- Draft National Strategic Reference Framework (NSRF) and Operational Drafts programs from NSRO</li> </ul> <p>At the moment a working group of experts is working actively on National strategy 2030. All citizens are invited to be part of development of the strategy. Also, a regional strategy 2030. is in the process of emergence. In the regional strategy 2030. the City of Sibenik is going to be recognized for developed entrepreneurship, green based industry, advanced technologies and higher education. Currently there are 4 main objectives for regional strategy 2030. - Objective 1 “Developed economy”, Objective 2 “Developed educational, scientific, research, communal, and traffic social infrastructure”, Objective 3 “Sustainable tourism”, Objective 4 “A preserved environment, valorised and preserving natural and cultural values”</p>
		RES2: Openness and transparency of the planning	Qualitative	Existence of stakeholder/public communication	Regional policy and strategy documents/	<b>Modest:</b> One of the thematic pillars of the Innovation encouragement strategy is cooperation between business, public and science sector. Also in the Strategy of science,

		and policy process (adapted from Eastwood et al. 2017)		mechanisms in policy/strategy implementation procedures	Partners'/Experts' assessment	<p>education and technology one of the priorities is to strengthen national research and innovation infrastructure with public access and connect with European infrastructure. At the moment a working group of experts is working actively on National strategy 2030. All citizens are invited to be part of development of the strategy.</p> <p>Public communication mechanism for create and implement innovative strategy has being implemented through working groups. Through working groups, individual meetings, interviews and presentations, the City of Sibenik communicated with entrepreneurs, , tourism workers, institutions for the economy, representative institutions of cultural heritage, representatives of health institutions, representatives educational institutions, representatives of social welfare institutions, representatives of sport institutions, representatives of institutions for environmental protection, municipal utility companies, representatives of institutions for protection of natural value, etc.</p>
	<b>Reflection</b>	REF1: Reflexive guidance in regional policy/strategy on RI (adapted from Eastwood et al. 2017)	Qualitative	Existence of offices, fora, committees, etc. for the monitoring and assessment of program/project implementation activities involving RI and its components	Regional policy and strategy documents/ Partners'/Experts' assessment	<p><b>Moderate/substantial:</b> HAMAG BICRO – agency for innovations, SMEs, investments;</p> <p>Projects involving RI and its components are frequently funded from various Interreg programmes and they are subject of Agency for regional development;</p> <p>Various technology transfer offices opened at the Universities.</p>

		REF2: Regional support/incentives for the use of standards and certifications related to RI (e.g. ISO, SA, UNI) (adapted from Eastwood et al. 2017)	Qualitative	Existence of regional programs/actions supporting /requiring the use of instruments such as codes of conduct and standards in R&I	Regional policy and strategy documents/ Partners'/Experts' assessment	<p>The Croatian Institute for Standards is an independent and non-profit public institution established as the national standard body of the Republic of Croatia in order to achieve the objectives of standardization. The main tasks of the Croatian Institute for Standards are:</p> <ul style="list-style-type: none"> <li>- Increasing the level of product and process safety,</li> <li>- Preserving the health and life of people and protecting the environment,</li> <li>- Promoting the quality of products, processes and services,</li> <li>- Ensuring the purposeful use of work, materials and energy,</li> <li>- Improvement of production efficiency,</li> <li>- Diversity constraints, connectivity and interchangeability assurance, and</li> <li>- Removing technical barriers to international trade.</li> </ul> <p>The Croatian Standards Institute is a member of:</p> <ul style="list-style-type: none"> <li>- International Standardization Organizations (ISO)</li> <li>- International Electro technical Commission (IEC)</li> <li>- European Committee for Standardization (CEN)</li> <li>- European Committee for Electro technical Standardization (CENELEC)</li> <li>- Of the European Telecommunications Standards Institute (ETSI) (status: NSO member)</li> </ul>
	<b>Governance</b>	G1: Extent of R&I networks (e.g. platforms, hubs, incubators,	Quantitative/Qualitative	Self-assessment in terms of: - Number of networks	Regional policy and strategy documents/	<b>Substantial:</b> The City of Šibenik is constantly working on connecting its start-ups with mentors and investors, as well as with the educational system. City of Šibenik's Centar of Emerging Technology and Entrepreneurship Trokut already

		<p>accelerators) promoting / supporting RI in the region (Tsanos and Apospori 2017)</p>		<p>[Existence of networks if the number is not available]  - Extent of involvement of regional policy makers in these networks  - Formal / informal character of networks</p>	<p>Partners'/Experts' assessment</p>	<p>cooperates with ABC Accelerator from Slovenia and ZIP HUB from Zagreb and has good connections with H-FARM from Italy, HUB385 and Impact HUB from Zagreb. Also, the City of Šibenik has cooperated with the BLUE 1647 (Hub from Chicago/USA), the Norwegian University of Science and Technology (NTNU), SINTEF Ocean (SO), Blått Kompetansesenter AS and University College Frederikstad. According to data from the Registry and available data from the Development Agency of Šibenik - Knin County in the area of Šibenik and Šibenik - Knin County, 4 entrepreneurial zones are currently active: PZ Kosa, PZ Radonić, PZ Drniš and PZ Podi Šibenik.</p> <p>There are 3 entrepreneurial support institutions in the Šibenik - Knin County, of which 1 is development agency and 2 business incubators (entrepreneurial incubator and incubator for new technologies).</p> <p>Public Institution Development Agency of Šibenik - Knin County is the basic supporting institution for the promotion of entrepreneurship, innovation and the preparation and implementation of regional development projects in the county.</p> <p>CroNoMar d.o.o. is an incubator for new technology in the Šibenik - Knin County. CroNoMar d.o.o. is oriented towards developing and providing support to Croatian companies within the maritime, shipping and energy sectors.</p>
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						The Entrepreneurial Incubator Šibenik is founded by the city of Šibenik, with the aim of creating support for small and medium entrepreneurship.
		G2: Activities of funders to promote RI at regional level (Tsanos and Apospori 2017)	Quantitative/Qualitative	Self-assessment in terms of: - Number of funding mechanisms to support RI activities [Existence of mechanisms, if the number is not available]; - € invested in RI-relevant projects	Regional policy and strategy documents/ Partners'/Experts' assessment	<b>Substantial:</b> RI activities can be funded through Interreg programmes, Horizon 2020, Erasmus+ programme, OP Competitiveness and cohesion 2014.-2020. Budget allocation of priority axis Strengthening the economy by applying research and innovation is 664.792.165 euro (OP Competitiveness and cohesion 2014.-2020.).
	<b>Ethics (deontology)</b>	E2: Ethical considerations in the evaluation for the regional funding of R&I proposals (Tsanos and Apospori 2017)	Quantitative/Qualitative	% of R&I proposals for funding by regional policy makers that are subject to evaluation of ethical concerns (i.e., R&I practices, ethical implications for the objects of R&I, ethical acceptability of	Regional policy and strategy documents/ Partners'/Experts' assessment	Data is not available.



				R&I outcomes) over total number of R&I proposals [Existence of evaluations, if the number is not available]		
<b>Products</b>	<b>Gender/equality and diversity</b>	GE1: Gender gap of core human resources in science and technology (Tsanos and Apospori 2017)	Quantitative	% difference between the share of economically active population for women and the share of economically active population for men in science and technology	EU regional statistical yearbook 2015, p. 256	<b>Substantial:</b> According to Croatian bureau of statistics in 2016., of the total number of human resources in science and technology, share of women was 56% while the share of men was 44%.  Source: <a href="https://www.dzs.hr/Hrv_Eng/publication/2017/08-02-03_01_2017.htm">https://www.dzs.hr/Hrv_Eng/publication/2017/08-02-03_01_2017.htm</a>
	<b>Gender/equality and diversity</b>	GE2: Support for gender equality in regionally funded R&I projects (adapted from Tsanos and Apospori 2017)	Quantitative/Qualitative	Number of regionally funded R&I projects supporting gender equality and/or creating of RDI jobs that employ women [Existence of funded projects, if the number is not available]	Regional policy and strategy documents/ Partners'/Experts' assessment	<b>Moderate:</b> At the moment, programme ZAŽELI – women's employment programme, which is in line with European and national recommendations on improving the position of women on the labor market. Being part of one of the horizontal principles and both European and national recommendation, gender equality is part of all funded projects.

	<b>Open access</b>	OA1: Regional policies for dissemination of and open access to scientific, technical and economic information (adapted from Tsanos and Apospori 2017)	Qualitative	Qualitative discussion and self-assessment in terms of: - Existence of a regional policy for open access - Regional institutional mechanisms for establishing, maintaining and monitoring open science and innovation	Partners'/Experts' assessment	<b>Substantial:</b> The Croatian Chamber of Commerce and County Chamber of Sibenik offers a variety of scientific and technical information, databases, entrepreneurial education, legal advice, assistance in finding business partners, co-sponsoring fairs, providing information on sources of financing for entrepreneurs and advising on applying for EU funds. Croatian chamber of trades and crafts provides advice on economic, tax, customs, accounting, finance, law and technology and technology to the essential legally described task of the Croatian Chamber of Trades and Crafts. By providing advice, it helps craftsmen in everyday work by providing quality advice. Counsellors provide expert assistance to craftsmen when establishing and practicing crafts through everyday communication and information. The City of Sibenik new project "The Centre for New Technologies and Entrepreneurship Trokut" (Project in development) will provide professional business services and highly sophisticated equipment and technology to increase the level of innovation, development of new products, services and enhance the transversal of knowledge and technology for SME-s and innovation organizations. The Centre will improve networking between existing and newly established companies and institutional networking that will help SME-s at all level of development and contribute to increase their competitiveness and consequently strengthen their position on the market. To SME-s and innovation organisations, the DIH will provide incubation services (The service of rental and use of the entire infrastructure of the center, intended for the development of start-ups and existing SME-s, which includes renting office space, using fabrication laboratory and using other entrepreneurs infrastructure like: Internet access, administration service, meeting room, multimedia equipment, etc.)
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		OA2: Inclusion of open access / open science measures in research policies and calls for proposals (adapted from Tsanos and Apospori 2017)	Qualitative	Existence of Regional open science / open innovation repositories or of regional support (e.g. financial) for the participation in sector or other repositories	Regional programming documents	<p>- Competitiveness and Cohesion Operational Programmes - Investment Priority 1b, Specific Objectives 1b1 New products and services as a result of research, development and innovation activities (IRI) and 1b2 Strengthening business research, development and innovation activities through the creation of a favourable investment environment (IRI)</p> <ul style="list-style-type: none"> <li>- Horizon 2020</li> <li>- EUREKA</li> <li>- Eurostars</li> <li>- Interreg programmes</li> <li>- Crossborder cooperation programmes</li> </ul>
	<b>UN Development Goals</b>	UN1: Degree of impact on UNDGs	Qualitative	Qualitative discussion and partners' assessment in terms of the UNDGs which regional policy impacts the most	Partners'/Experts' assessment	<p><b>Substantial:</b> UN Development Goals that are mostly highlighted in local and national policies are:</p> <ul style="list-style-type: none"> <li>- Quality Education</li> <li>- Gender Equality</li> <li>- Decent Work and Economic Growth</li> <li>- Industry Innovation and Infrastructure</li> <li>- Reduced Inequalities</li> <li>- Sustainable Cities and Communities</li> <li>- Climate Action</li> <li>- Life Below Water</li> </ul>

## 2.2 RI Performance of Enterprise

Category	Component	Data source	Metric	Type of measurement	Indicator	Assessment (Modest/Moderate/Substantial) + Short description
Purpose	Motivation for doing/supporting research/innovation	RRI Development plan, "1. Formulate your goal"	Inclusion of innovation/S&T components in the official planning of the organizations (e.g. strategic plans, vision and mission statements, etc.)	Qualitative	M1: Integration of innovation/S&T in corporate planning and strategies	<b>Modest:</b> SME's showed weakly developed strategic planning, and lack articulated mission and vision statements. Nevertheless, they all express an interest for incorporating innovation to own processes, it seems that they all rely on personal involvement of their founders. Said that, it is expected from SME's to rely on CEO or founder's leadership and vision, yet they all will soon need to articulate that vision into strategic plans, and statements. From this point, no SME has innovation institutionalised in process or strategy.
	Motivation for engaging with RI	RRI In-depth Assessment Tool	Inclusion of RI components in the official planning of the organizations (e.g. strategic plans, vision and mission statements, etc.)	Qualitative	M2: Integration of RI components in policy planning and strategies	<b>Modest:</b> the lack of existing strategies, written long term plans, and focus on marketing and non-R&D innovation is significant limitation to the effective inclusion and organisational institutionalisation of RI components.
		Self-assessment (*)	Budget allocation for RI components in companies' budget: (a)	Quantitative	M3: Financial commitment on RI components	<b>Modest:</b> (a) there are no present programs targeting any RI component, (b) no expenditure have been identified regarding RI, (c) companies are trying to improve their position regarding RI,

			presence of funded programs targeting (selected) RI components; (b) annual amount (% or €); (b) evolution (increase, decrease, stable over the last 3 years – or other programming period where appropriate)			and appreciate actions like this for it allows them to start with planning to incorporate RI components to future strategies.
	<b>Ethics (justification of intended outcomes)</b>	Self-assessment(*)	Participation in programs and schemes, and adoption of instruments both mandatory and voluntary relevant for the achievement of the UNDGs (e.g. ethics codes, voluntary guidelines, certifications, standards)	Qualitative	E1: Significance of UNDGs in companies' activities and strategies	<b>Moderate:</b> Nevertheless, UNDG are significantly influencing policies and regional programs, their significance to SME's activities and strategies is still moderate. SME's are adopting UNDG's values through publicly founded programs and projects. It is expected that large companies have those values already adopted for they are obliged to report on sustainability, have well developed strategies and are implementing different industrial and ethical standards.
<b>Process</b>	<b>Anticipation</b>	Self-assessment(*)	Number of foresight and strategic planning	Quantitative/ Qualitative	A1: Foresight and strategic planning activities (e.g. Scenario	<b>Modest:</b> SME's are not implementing strategic planning activities. They are usually focused on everyday business, lacking the knowledge or

			activities in the current and preceding planning period (specify the relevant planning period) [Presence/Absence of activities if the number is not available]		building, delphis, etc.) (adapted from Eastwood et al. 2017)	resources to perform, in example scenario workshop and strategize around different scenarios.
	<b>Public engagement</b>	RRI In-depth Assessment Tool	Qualitative discussion and self-assessment of the companies' experience in users' engagement techniques (e.g. living labs)	Qualitative	PE1: Users' involvement in design and development processes	<b>Modest:</b> cocreation with users is not developed for SME ecosystem. There is still low local government engagement in creating surrounding that can provide right ecosystem for SME's cocreation and cross fertilisation. Also the lack of large enterprises further reduces opportunities for cocreation. Therefore, SME's need an opportunity to engage more actively in cocreation. This would also contribute to the harmonisation on the level of ethics and societal values between SME's and other stakeholders.
		RRI In-depth Assessment Tool	No. of public-sponsored projects on engagement in R&I joined [Presence/Absence of activities if the number is not available]	Quantitative/ Qualitative	PE2: Participation in public-sponsored engagement projects on R&I	<b>Modest:</b> a low number of SME's is participating in public-sponsored engagement projects on R&I. It is due to modest motivation with respect to RRI.

	<b>Responsiveness</b>	RRI In-depth Assessment Tool /Self-assessment	Implementation of users/communities feedback mechanisms in companies' operations	Qualitative	RES1: Potential to adapt production processes and business strategies (adapted from Eastwood et al. 2017)	<b>Substantial:</b> since there is already a regulation for all companies on the market to implement users feedback in operations, and allow for traceable and documented information, potential to adapt production processes and business strategies for improvement and innovation is significant.
		RRI In-depth Assessment Tool /Self-assessment	Adoption of CSR instruments, such as social budget, sustainability reporting etc. detailing the social/environmental value of corporate operations to customers and stakeholders	Qualitative	RES2: Openness and transparency of corporate operations (adapted from Eastwood et al. 2017)	<b>Moderate:</b> corporate operations are more transparently documented in large organisations, where sustainability reporting is obligatory. For SME's the adoption of CSR instruments can be seen as an opportunity to voluntarily make own operations transparent and visible to customers. For that to happen, SME's need to be aware of the competitive advantage they can gain if they make own operations transparent. More and more SME's start to understand that as an opportunity.
	<b>Reflection</b>	Self-assessment(*)	Existence of/participation in offices, fora, committees, etc. for the monitoring and assessment companies activities relevant to RI	Qualitative	REF1: Reflexive guidance in companies strategies (adapted from Eastwood et al. 2017)	<b>Moderate:</b> there is a rise in involvement of SME's in activities that are connected to monitoring and especially assessment. Croatian chamber of commerce and its local branches offer projects that involve SME assessment and capacity building activities.
		Self-assessment(*)	Instruments used by companies, such	Qualitative	REF2: Use of standards and certifications related	<b>Moderate:</b> SME's are extensively applying standards such as ISO and HACCAP to optimise

			as codes of conduct, standards, etc. related to RI (e.g. ISO, SA, UNI)		to RI (e.g. ISO, SA, UNI) (adapted from Eastwood et al. 2017)	processes and operations. Those standards are still linked more to efficiency than to RI.
	<b>Governance</b>	Self-assessment(*)	Self-assessment in terms of: - Number of networks joined [Existence of networks if the number is not available] - Extent of involvement of companies in these networks (e.g. leading working groups, participating in exchanges of best practices, etc.) - Formal / informal character of networks	Quantitative/ Qualitative	G1: Participation in R&I networks (e.g. platforms, hubs, incubators, accelerators) promoting / supporting RI in the region (adapted from Tsanos and Apospori 2017)	<b>Moderate:</b> Networks for knowledge exchange exist, and are further encouraged and developed on the level of local government. Those are formal networks, and less informal, like Enterprise Europe Network, Croatian Chamber of Commerce local branches or SME incubators (as described above). Participation in such networks is welcomed but still not exploited optimally. A lot more interest should be shown by SME's and a lot more activities by networks.
		RRI In-depth Assessment Tool	Self-assessment in terms of: - Number of successful bids [Existence of	Quantitative/ Qualitative	G2: Third party funds acquired to promote companies' RI related activities (adapted from	<b>Moderate:</b> There are substantial funds available through ERDF, R&D financing. Those grants are becoming more and more complex and demanding for SME's participation. Therefore, regardless of significant availability, EU grants are

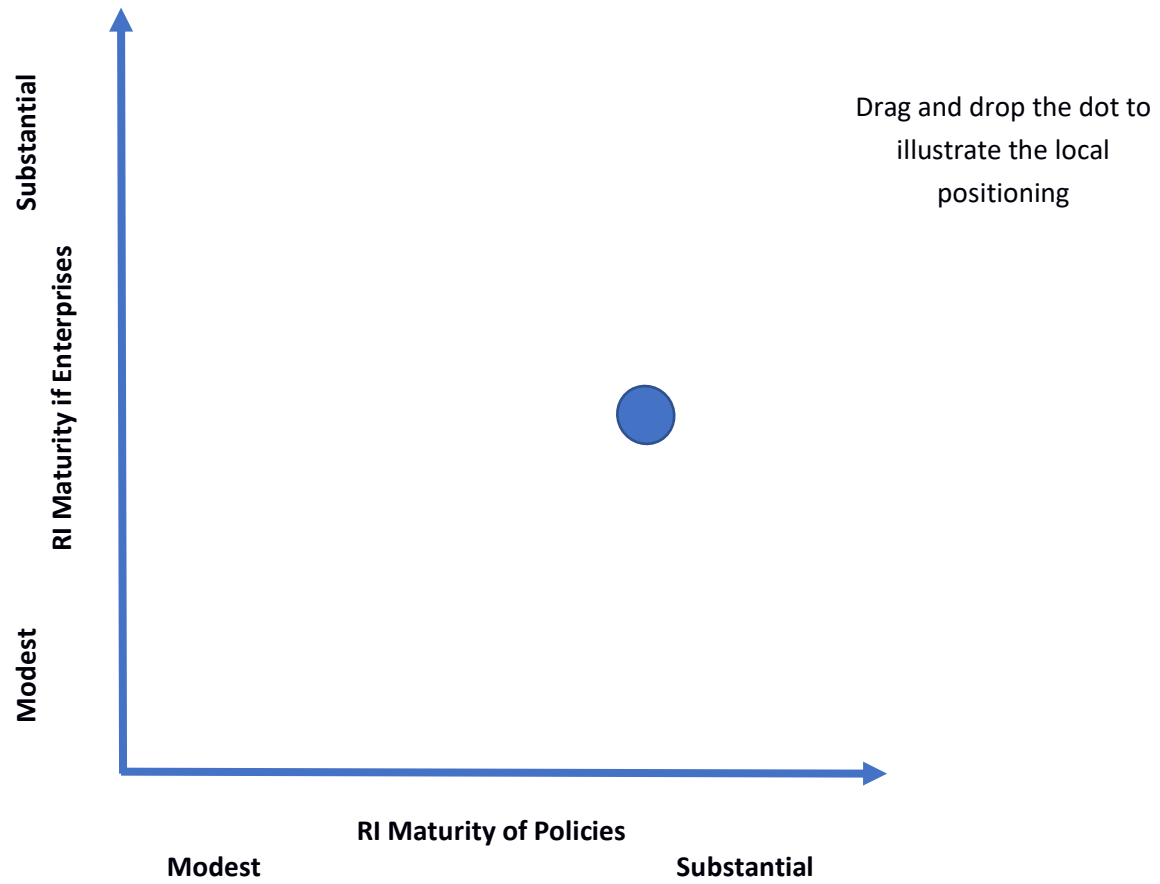


			mechanisms, if the number is not available]; - € acquired to invest in RI-relevant projects - Sources of funds acquired by the companies		Tsanos and Apospori 2017)	sometimes hard to implement. There are very few local and national grants for RI.
	<b>Ethics (deontology)</b>	Self-assessment(*)	Qualitative discussion and self-assessment of the utilization of Codes of Conduct or other instruments for ensuring the integrity of R&I practices	Qualitative	E2: Adoption or adherence to Codes of Conduct or other instruments for ensuring the integrity of R&I practices in the company	<b>Modest:</b> the institutionalisation of practices in written documents is a dependent on SME's age, organisational maturity, sector in which SME operates, and many other elements. For that reason, many SME's do not have any written Code of Conduct or R&D strategy.
<b>Products</b>	<b>Gender/equality and diversity</b>	RRI In-depth Assessment Tool / Self-assessment	% female employee in R&I roles in companies	Quantitative	GE1: Gender gap of human resources in companies' R&D/technical offices/divisions (adapted from Tsanos and Apospori 2017)	<b>Moderate:</b> Due to the fact that there are no distinct roles focused on R&D in involved SME organisations, it is only possible to draw conclusions that are based on the origin of the original idea the SME is based on. There are cases that are more linked to the female leadership in all business relevant areas, but are more of illustrative nature, making it hard to generalise.

	<b>Gender/equality and diversity</b>	RRI In-depth Assessment Tool / Self-assessment	Number of companies' initiatives supporting gender equality and/or creating of R&I jobs that employ women [Existence of initiatives, if the number is not available]	Quantitative/ Qualitative	GE2: Companies' programs/measures to support for gender equality in R&I activities/functions	<b>Substantial:</b> all EU R&D grants that finance innovations in SME sector are promoting gender equality. For that reason, EU gender equality initiative is at the same time adopted by SMEs involved. Taken into account equal gender distribution in R&D sector in Croatia, it can be concluded that there is an equal gender distribution in private sector as well. On the other hand, SMEs involved in this study either do not have any research organisational unit or is represented by low number of employees.
	<b>Open access</b>	RRI In-depth Assessment Tool / Self-assessment	Qualitative discussion and self-assessment in terms of the frequency of using open access/open data sources to know up-to-date research outputs for the business operations	Qualitative	GE2: Companies' programs/measures to support for gender equality in R&I activities/functions	<b>Substantial:</b> open access/open data sources are important knowledge sources for SME's. They often source knowledge important for RI and decision making.
		RRI In-depth Assessment Tool / Self-assessment	Number of R&I funding/policy programs joined by companies [Existence of programs, if the	Quantitative/ Qualitative	OA2: Participation in R&I funding/policy programs requiring a commitment to an open access / open science policy	N/A

			number is not available]			
	<b>UN Development Goals</b>	Self-assessment tool, “RI Drivers - Responce of the innovation process to the dimensions of RRI”	Self-assessment of the impact of companies’ innovative products/services on sustainable and inclusive development (10 point scale)	Quantitative	UN1: Degree of impact on UNDGs (17 indicators, on for each indicator)	N/A

### 2.3 Assessment of Local RI Maturity Level





### 3 Priorities for Action

Assessment of overall performance of regional policies shows higher development score than for small and medium enterprises for RI. The gap identified arises out of a number of determining conditions linked to the overall country's level of development (World Economic Forum, Competitiveness report, <http://www3.weforum.org/docs/GCR2018/05FullReport/TheGlobalCompetitivenessReport2018.pdf> ) with innovation ecosystem rank below Europe and North America average. Still, in this study, higher score for RI policies maturity can be assigned to the extensive aid received for Croatian institution capacity building during EU pre-accessing phase. At the same time, in Jadranska Hrvatska the economy was restructured to comply with rising touristic demands and less to ensure the development of real sector (manufacturing, engineering, technical and technological businesses).

We confirmed that on the level of SME's, regardless of their sectoral belonging, there is a lack of written and articulated strategies that should be linked to existing regional policies. It seems that regional and local government, should perform more active approach and increase visibility and promote awareness of RI objectives and goals that are already articulated through existing policies. One good example is the Blue Boost Interreg project that was organised by Croatian Chamber of Commerce in Zadar (<https://www.zadarskilist.hr/clanci/03122018/inovacije-od-uzgoja-i-eksploatacije-ribe-do-brodogradnje> ) where advanced strategy development techniques were applied as an aid to regional SME's.

An important source of knowledge and innovation for local SME's is cocreation with users that is underdeveloped. There is still low local government engagement in creating surrounding that can provide right ecosystem for SME's cocreation and cross fertilisation. Also, the lack of large enterprises further reduces opportunities for cocreation. Therefore, SME's need an opportunity to engage more actively in cocreation. This would also contribute to the harmonisation on the level of ethics and societal values between SME's and other stakeholders.

It can be concluded that local government's engagement in promotion and coordination of RI activities shall be increased in order to involve SME's and harmonise goals between SME's, local government, academia, users, tourists and large economy (Triple helix). Having said that, the Open innovation approach is necessary to enable cocreation and close the gap arising out of misalignment between policies and practices, public and private sector. Therefore major activities shall be taken by local government that should enable functional eco system capable of providing services, local vision and mission, resources, knowledge and regional brand that could ease overall and RI specific SME development and growth.

What is the priority?

Development of Šibenik specific action plans and projects focused on RI and local SME's. Projects can be focused on different locally important topics that can bring quick wins to SME's and at the same time promote RI values. Some of the examples of well defined topics are; fishery and tourism, Šibenik the smart city, nature and technology or similar. The nexus of topics described can provide the real world proof of concept for start-ups and interesting solutions for local government, at the same time emphasizing an importance of RI.



Inclusion of SME's in policy planning and execution.

How to do this?

Formation of committees and joint working groups that involve discussion with SME's and aim to plan activities and actions harmonised with policies on the local level.

There are more than few approaches that can result in the Open innovation model and triple and quadrupole helix alignment among relevant stakeholders. In practical terms, the living lab approach is among the most complex approaches, where short sprint events like hackathons seem to be better choice for current development stage of relevant stakeholders. Hackathons allow for incentivisation of SME's, quick proof of concept, fosters formation of business networks, and allows for selection of the best solutions for local government. In such a controlled environment RI shall be promoted as important for the first design phase of new product development.

Priorities can be described as:

- Develop regional action plans for RI promotion and start target engagement/communication initiatives to raise firms' awareness on the matter. This would result in expanded firms' participation in regional policies for RI.
- Through sprint events foster the development of new products and services designed in accordance to RI principles.

## 4 Lessons from the Pilot Actions

The main outcomes from the local pilot actions:

- D.T3.2.1 - Pilot Local Area Start-Up Report

In autumn of 2018 City of Sibenik launched online training on their website, the aim of the training was to raise awareness on Responsible Innovation and to choose 5 SMEs participants in the Pilot action.

For the purpose of in-depth RI assessment and improvement are planned one-to-one and group meetings with selected SMEs.

Results of described activities are presented above.

The start of the pilot action is planned for the beginning of 2019.

- D.T3.2.2 - Pilot Local Area Mid-Term Report

In February 2019 the workshop on RI with 5 SME's was organised. During the workshop, information on feasibility of further activities was collected from each participant. The RI concept was explained as well as methodologies foreseen for project execution. We concluded that initially proposed methods involving STIR, Living lab and UNI/PdR 27:2017 are not feasible and that the Open innovation



approach combined with design thinking operationalised through sprint events like hackathons would work much better considering the effect and feasibility.

The second stage pilot activity is being prepared for Šibenik.

- D.T3.2.3 - Pilot Local Area Final Report

Due to the situation with COVID 19, we had to cancel our plans of organizing Hackathon in March (26. & 27.03.2020.) because City of Šibenik had to cancel all scheduled rallies due to instructions from the national headquarters. Despite that we were in constant communication with SMEs, they received materials from our external expert that they can use after the project ends. We are also in everyday communication about opportunities for financing various ideas entrepreneurs have and want to implement in their management. We will keep being their support in implementation of RI.

## 5 Lessons from the Study Visits

Specific inspiration from the study visits, as described in:

- D.T2.3.2 - Report and material from Transnational Study Visit 01
- D.T2.3.3 - Report and material from Transnational Study Visit 02

Visit to Lublin ended up with acceptance of our proposal to apply design thinking and the Open innovation approach to future pilots. Method to apply those approaches as the pilot study can be a sprint event like hackathon or design thinking events. Also we concluded that cooperation with other stakeholders like Croatian Chamber of Economy and Interreg projects is welcomed for it fosters cross-fertilisation of ideas.

- D.T2.3.4 - Report and material from Transnational Study Visit 03

On the third study visit we discussed progress so far and our future plans regarding pilot actions and progress in general. We explained our plans for the upcoming period to organize at least one more workshop or meeting with our SMEs and finalize our activities as the project end was coming closer. As the COVID 19 situation happened in Croatia and all over the world, we were not able to organize above mentioned workshop but still, we were in a everyday communication with our SMEs via telephone, emails and other online tools as they were available. We have also made ppt presentation, the script and short video for our entrepreneurs that they can use also after the project ends.



## 6 The Roadmap

### 6.1 Action #1

#### The Goal

Develop regional action plan for RI promotion and start target engagement/communication initiatives to raise firms' awareness on the matter. This would result in expanded firms' participation in regional policies for RI. It is a mid-term initiative, and proposal that can be achieved together with local government as a part of separate project.

#### The Strategy

The people	Local government, SME representatives, large enterprise representatives, educational system (from high schools to academia) and institute representatives. Representatives of described stakeholder groups would participate in the committee dedicated to bring RI closer to stakeholders through developing the action plan.
The resources	It is hard to predict financial resources needed for this action at this point, since they depend on different parameters, but engagement of external consultant, the key expert in the area of the Open innovation is necessary. The comprehensive approach to this action would imply timeframe of 6-12 months.
Institutional incentives	There is a need for local government support. Benefit for all stakeholders would arise from such an action. Firstly, the negotiation process among all stakeholders that is very weak and caused the gap between policies and practices would be strengthened and would allow for effective and efficient inclusion of RI into practice. Incentives provided by the local government can involve promotion of local products that are in compliance to RI principles, but also i.e. inclusion of RI principles to procurement practices favouring those solutions that comply to quality principles of RI. The regional identity would be able to be linked to RI, that would rise a quality of services in tourism as well.
Tasks and timeframe	Gaining the support of the local government, Rising stakeholders awareness, and gaining their support Formation of committee Negotiating KPI's, objectives and incentives (committee) Drafting the action plan (committee) Accepting the action plan by the local government
Opportunities and strengths	This action presents an opportunity for all stakeholders to agree over policy execution, find joint interests and improve practice. Since Jadranska Hrvatska is dominantly a touristic destination, hosting non-permanent residents, this action can present an opportunity to involve them as a relevant group of stakeholders through targeted focus groups or surveys to participate in adopting of RI to local policies and practices.
Threats and risks	There is a threat of a lack of support from different stakeholders, a mitigation measure is to gain a support through carefully prepared awareness rising campaign. There is a risk of unsuccessful negotiation process, a mitigation measure is to introduce an expert in the field of Open innovation to moderate the process





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There is a risk of unsuccessful action plan drafting, a mitigation measure is to involve an expert in the field of Open innovation to help the action plan drafting process.

#### The Monitoring System

Major outcome and deliverable of the process is the action plan accepted by the local government. Accepted action plan presents the local government and other stakeholders' commitment to improve RI practices and provide better surrounding for the RI implementation. For that reason the success indicator and the proof of concept is the local governments' acceptance of the action plan.

#### The Dissemination

The whole process shall be transparent. Once successful, this action can be transferred to other local governments that want to comply with the RI principles.

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## 6.2 Action #2

### The Goal

Foster the development of new products and services designed in accordance to RI principles through sprint events, Hackathons, using design thinking approach. Another goal is to promote excellence in the idea generation process through incentivising the best proposals.

### The Strategy

The people	SME's, academia, enthusiasts that jointly propose new ideas for products and services and apply RI principles.
The resources	If jointly organised with Chamber of Commerce or local government, those activities can be financed from their budgets. Time necessary to organise such an events vary from few weeks to several months, depending on preparation but actually happen within one or two days. The cost of event can vary between few thousand and 15000 EUR.
Institutional incentives	Support from local government and institutions such as Croatian Chamber of Commerce local branches is necessary. They can provide incentives and prizes for hackathon winners.
Tasks and timeframe	<ul style="list-style-type: none"> <li>- Promotional campaign for the hackathon and RI concept</li> <li>- Event organisation</li> <li>- Hackathon</li> <li>- Visibility and PR</li> </ul>
Opportunities and strengths	Hackathons are fast and cheap actions that can effectively promote RI as the concept. If they are combined with design thinking approach, the RI can be even more efficiently applied in the earliest design phase of product development. This is therefore at the same time a strength and of proposed approach for it combines open innovation model (stakeholders external to SME's) and advanced social technology (design thinking) that emphasize empathy.
Threats and risks	The lack of cooperation from local government, or institutions. Not enough of interested SME's and other participants, mitigation is to organise promotional campaign, and prepare attractive incentives for participants.

### The Monitoring System

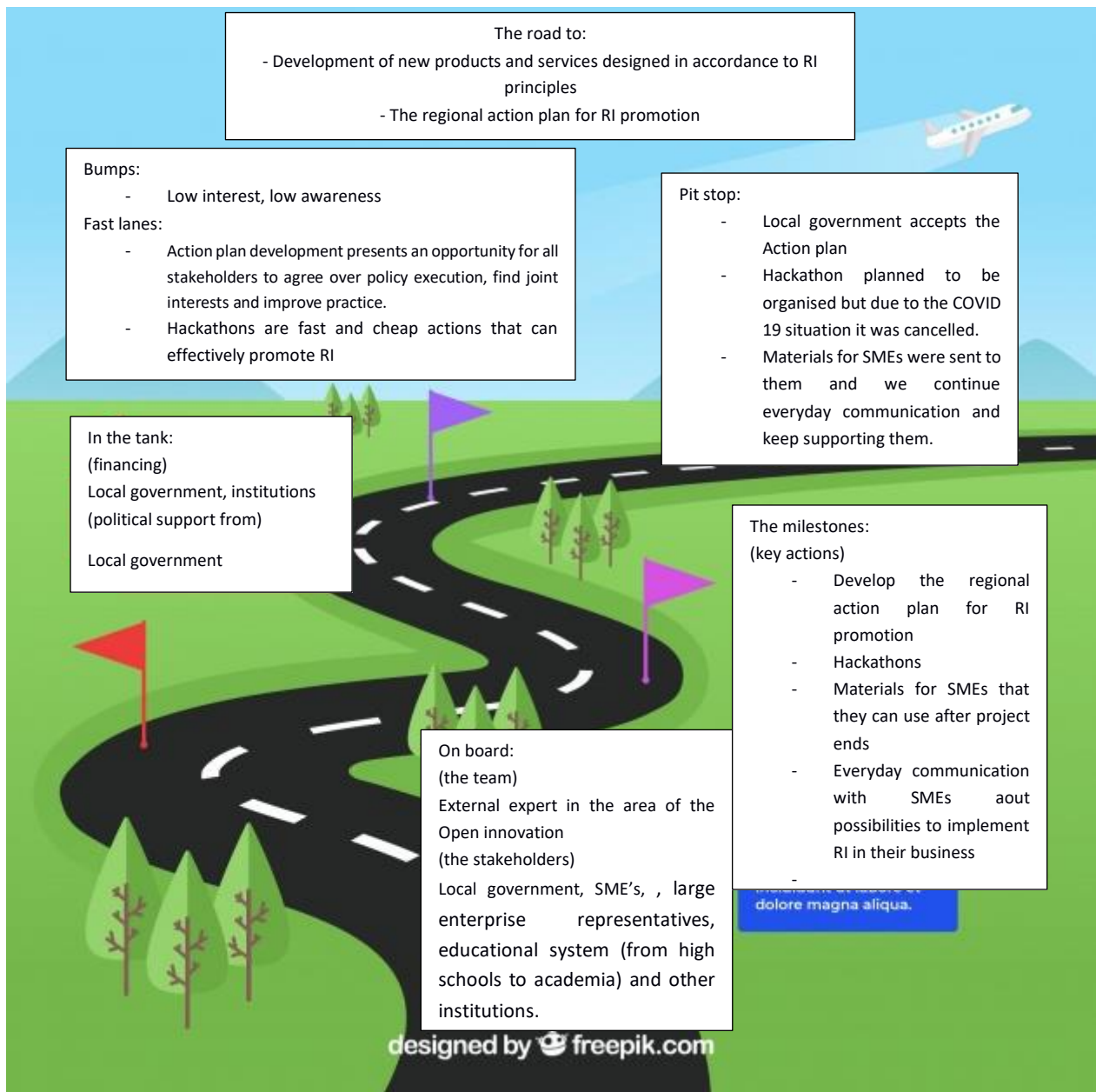
The successfully organised event and successfully completed activities during the COVID 19 crisis.

### The Dissemination

The whole process was transparent. Once successful, this action can be transferred to other local governments that want to comply with the RI principles.



### 6.3 A Visual Rendering of the Roadmap



<a href="https://www.freepik.com/free-photos-vectors/infographic">Infographic vector created by freepik - [www.freepik.com](http://www.freepik.com)</a>

[https://www.freepik.com/free-vector/timeline-concept-with-winding-road\\_2485842.htm](https://www.freepik.com/free-vector/timeline-concept-with-winding-road_2485842.htm)