



Specific Support for Montenegro

Towards Entrepreneurial Innovation Ecosystem

Horizon 2020 Policy Support Facility



Research and
Innovation

Specific Support for Montenegro – Towards Entrepreneurial Innovation Ecosystem

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**Towards Entrepreneurial
Innovation Ecosystem**

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List of abbreviations

<i>ARISE Europe</i>	<i>EIT Digital programme designed to stimulate regional growth in EU countries</i>
<i>COST</i>	<i>European Cooperation in Science and Technology</i>
<i>DLT</i>	<i>Distributed Ledger Technology</i>
<i>EBRD</i>	<i>European Bank for Reconstruction and Development</i>
<i>EC</i>	<i>European Commission</i>
<i>EIT</i>	<i>European Institute of Innovation and Technology</i>
<i>ESN</i>	<i>European Startup Network</i>
<i>EUREKA</i>	<i>EUREKA is a publicly funded, intergovernmental network involving over 40 countries</i>
<i>EU</i>	<i>European Union</i>
<i>FCA</i>	<i>Financial Conduct Authority in the UK</i>
<i>FDI</i>	<i>Foreign direct investment</i>
<i>FNA</i>	<i>Fonds National d'Amorçage</i>
<i>FTE</i>	<i>Full-time equivalent</i>
<i>GDP</i>	<i>Gross domestic product</i>
<i>GOVERD</i>	<i>Government expenditure on research and development</i>
<i>GRP</i>	<i>Global Residence Programme Malta</i>
<i>HEI</i>	<i>Higher education institution</i>
<i>HERIC</i>	<i>'Higher Education and Research for Innovation and Competitiveness' project funded with a World Bank loan</i>
<i>HORIZON 2020</i>	<i>European Commission's 8th Framework Programme for Research and Technological Development</i>
<i>IAEA</i>	<i>International Atomic Energy Agency</i>
<i>ICGEB</i>	<i>International Centre for Genetic Engineering and Biotechnology</i>
<i>ICT</i>	<i>Information and communication technology</i>
<i>IDF</i>	<i>Investment and Development Fund of Montenegro</i>
<i>IP</i>	<i>Industrial and/or intellectual property</i>
<i>IPA</i>	<i>Instrument for Pre-Accession Assistance</i>
<i>KIC</i>	<i>Knowledge and Innovation Community</i>
<i>NTP Belgrade</i>	<i>Science and Technology Park Belgrade</i>
<i>OECD</i>	<i>Organisation for Economic Co-operation and Development</i>

<i>PR</i>	<i>Public relations</i>
<i>PSF</i>	<i>Policy Support Facility</i>
<i>R&D</i>	<i>Research and development</i>
<i>SEEIIST</i>	<i>South East European International Institute for Sustainable Technologies</i>
<i>SEF</i>	<i>Slovenian Enterprise Fund</i>
<i>SEPA</i>	<i>Single Euro Payments Area</i>
<i>SME</i>	<i>Small and medium-sized enterprise</i>
<i>STP</i>	<i>Science and technology park</i>
<i>UNDP</i>	<i>United Nations Development Programme</i>
<i>UNESCO</i>	<i>United Nations Educational, Scientific and Cultural Organization</i>
<i>VAT</i>	<i>Value-added tax</i>
<i>VC</i>	<i>Venture capital</i>

THE PSF SPECIFIC SUPPORT PANEL

Daria Tataj (Chair): Dr Tataj is a strategy advisor, board member and entrepreneur. Since 2015, she has been a member of the RISE High-Level Expert Advisory Group to Carlos Moedas, the EU Commissioner for Research, Science and Innovation, and in 2017, she was appointed as chairwoman of the RISE Group. She also advises the World Economic Forum, the European Space Agency, multinational companies and start-ups, and is regularly invited to speak about disruptive innovation and the network society around the world. Her book 'Innovation and Entrepreneurship: A New Growth Model for Europe beyond the Crisis' was endorsed by the Holberg Prize winner Prof. Manuel Castells as 'a fundamental, innovative book that will reshape the way we think about innovation'. Dr Tataj was one of the architects of the European Institute of Innovation and Technology and its Knowledge and Innovation Communities, serving for six years as an executive member of the EIT Founding Board. She is the founder and CEO of Tataj Innovation, a strategy firm helping leaders innovate through NetworkThinking™ – a 'skill box' to restart, scale-up and accelerate growth through the power of networks. An alumna of the World Economic Forum Global Agenda Council and the WEF Digital Leader, Dr Tataj has been recognised as a 'Social Innovator 2014' in Poland, and as an emerging global woman business leader by *Fortune* magazine. She currently lives and works in Warsaw and in Barcelona where Tataj Innovation has opened a lab to develop NetworkThinking™ educational e-tools.

Totti Könnölä (Rapporteur): Dr Könnölä is an experienced manager and advisor in the area of sustainable innovation, digital entrepreneurship and strategic policy intelligence. He is a founder and CEO of Insight Foresight Institute (a Madrid-based research consultancy specialised in entrepreneurial innovation ecosystems) and previously of Impetu Solutions (a digital innovation consultancy). He also serves as a member of advisory boards in start-ups like Global Energy Alliance and FOM Asesoramiento Tecnológico. In eGauss Business Holding I+T, as Director of International Business Development, he worked with start-ups, their value definition and financing, including public support instruments and funding schemes for early-stage start-ups. Previously, Dr Könnölä served in the EC, first in the Joint Research Centre (JRC) and then in the European Institute of Innovation and Technology, and before that at the VTT Technical Research Centre of Finland. As a chair of the EIT Working Group on Outreach, he looked for measures to engage start-ups and (potential) entrepreneurs. Dr Könnölä is an adjunct professor in business and engineering schools and an accredited public university professor by the Ministry of Education of Spain. He holds Dr.Tech and Lic. Tech in Systems Analysis from Helsinki University of Technology and an MSc in Environmental Economics from Helsinki University. He is frequently invited to speak at international conferences and to write in the daily press (e.g. *Cinco Días*).

Domen Bole (Expert): Domen Bole is an experienced practitioner in the development of innovation ecosystems, including the development of innovation strategies, institutions and support programmes. He started his career as a researcher and built a strong background in entrepreneurship as a (co)-founder of three start-ups, a manager of two scale-ups and as a LEAN coach for over 400 teams and small and medium-sized enterprises (SMEs) in the Western Balkans region. Eleven years ago, he started working in the development and management of intermediary institutions in the innovation ecosystem, closely related to governments and always proactively developing and executing social goals. Since 2013, Mr Bole started applying the LEAN approach in the development of the triple helix and innovation ecosystem. In the past, he has acted as a key expert in several flagship projects in the Western Balkans in the area of public policies for entrepreneurship, start-ups and

innovation, transferring his expertise by developing local innovation initiatives in co-creation with local staff and implementing through learning by doing. As a Slovenian, he has in-depth knowledge of the local culture and languages in the Western Balkans which is essential for successful bottom-up research and development.

Jean-Michel Dalle (Expert): Jean-Michel Dalle is Director of Agoranov, France's leading science-based incubator and a professor at the Sorbonne University. Over the past decade, Agoranov's incubation and acceleration programme have created more than 350 innovative start-ups, among which are the success stories Criteo (listed on the Nasdaq), Anevia, Biophytis and Pixium (listed on Euronext) and Aldebaran Robotics, among others. Together, these companies currently represent 8 000 direct active jobs and have raised EUR 800+ million from private investors. Mr Dalle was formerly the managing director in charge of innovation at Oséo, now BPI France, France's public innovation bank. He was part of the expert panel of the H2020 PSF Specific Support to Romania, where he analysed and made recommendations for the improvement of the Romanian start-up and scale-up ecosystem. He is a member of the EIT health's Strategic Education Board and for the past five years has been leading EIT digital activities on the production and dissemination of online pedagogical contents dedicated to innovation and entrepreneurship. He is a former visiting fellow at All Souls College and the Oxford Internet Institute, both at Oxford University in the United Kingdom.

The project was overseen by the PSF Team in the EC's Directorate-General for Research and Innovation (Unit A4 - 'Reforms and economic impact - country intelligence'). **Eugenija Pučiūtė** coordinated the exercise and ensured liaison with the Montenegrin authorities. The PSF contractor supported the EC's PSF Team in this activity. This involved work by **Asel Doranova**, project manager at Technopolis Group, an independent expert, **Maja Bucar**, who prepared the background report¹, and **Jari Romanainen** (Technopolis Group) who acted as the quality reviewer.

The Montenegrin authorities made available data and background documentation useful for the panel's work, and also supported the in-depth interviews and group discussions with representatives of the entire ecosystem (government, industry, start-ups, research institutes and universities) during the two visits to Montenegro (i.e. inviting the representatives of government institutions and stakeholders; and providing meeting facilities and interpretation, as required). Coordination on behalf of the Montenegrin authorities was assured by the Ministry of Science of Montenegro which ensured the involvement of other relevant ministries, agencies or bodies and made available facilities for the meetings and workshops.

¹ <https://rio.jrc.ec.europa.eu/en/library/specific-support-montenegro-background-report>

POLICY MESSAGES

Montenegro has embarked on a learning path to arrive at a growth model based on innovation and entrepreneurship. This report provides guidance for identifying and prioritising measures at the current nascent stage of the Montenegrin ecosystem, thereby contributing to the development of such a model in the future. Successful entrepreneurial innovation ecosystems are based on dynamic processes that are captured by an entrepreneurship-driven 'knowledge triangle'. This Europe-specific framework shows the evolution of the innovation ecosystems fuelled by interconnecting traditional institutions, such as research institutes, universities, industry, and entrepreneurship with initiatives typical of the digital economy, such as emergent collaborative spaces, a wide variety of innovation projects and social ventures and, first and foremost, tech start-ups (Tataj, 2015). However, at the moment, to a large extent, the country lacks such a functional and interconnected local ecosystem. To tackle this challenge, a background report (Bucar, 2018) provided information on the economic situation, the status of research and development and innovation and, most specifically, the business environment for SMEs, especially start-ups. As regards the research and innovation system, overall, the country is still in R&I capacity-building mode, as summarised below:

Summary of key elements of the Montenegrin R&I system

Investment. Since 2010, Montenegro spent ca. 0.38 % of its GDP on research and development (R&D). By 2015, this was EUR 13.67 million, or EUR 22 in per-capita terms, one of the smallest amounts in Europe. As for many less-developed R&D environments, state budget is the main source of R&D funding.

Researchers. There are 1 766 registered researchers within the Ministry of Science. Most R&D activities are performed at universities, where research is a side activity to teaching. 60 % of researchers are employed in higher education, 21 % in the government sector and 15 % in the business sector.

Infrastructure. According to an assessment by World Bank experts (WB, 2013), with the exception of a few research areas, R&D infrastructure in Montenegro is generally weak and out of date. The country has research infrastructure potential in: (a) biomedical and life sciences; (b) ICT; and (c) materials science.

Institutions. There are 58 research institutions registered with the Ministry of Science, most of which are in the higher education sector. Only three research units are registered by companies. The University of Montenegro has the most research units (23). There are four universities in the country: the biggest is the state-owned University of Montenegro, and there are three private ones. There are also individual private faculties, but they are too small to be engaged in research.

Business R&D. The available data suggest that business enterprises invest very little in R&D (detailed statistics are not available as only a small number of firms responded to the R&D survey).

Scientific output. Until 2006, the average yearly number of publications in the country was about 40. From 2006 to 2011, scientific output increased strongly at more than 20 % per year. Montenegro is among the countries with the highest share of scientific papers with at least one international co-author². About 6 % of Montenegrin scientific publications are among the top 10 % most-cited publications worldwide, although only 0.3 % feature among the top 1% most-cited publications worldwide. Both results signal that the quality of Montenegrin scientific publications is below average and should be improved.

² For countries with low volumes of scientific output, this indicator does not necessarily signal scientific quality but rather the necessity to collaborate with foreign authors because of a lack of domestic opportunities.

In February 2018, the Ministry of Science published the Strategy of Scientific Research Activity (2017-2021) (Ministry of Science, 2018). According to the strategy, the scientific research community is fragmented, insufficiently interconnected, and subsequently producing low levels of academic and scientific contributions.

Between 2012 and 2018, with a EUR 12-million loan from the World Bank, a project on 'Higher Education and Research for Innovation and Competitiveness' (HERIC) was conducted to help the Ministry of Science and Ministry of Education improve the situation³. In 2017, the Ministry of Science launched the first-ever call to fund innovation-based entrepreneurial projects and subsequently, in 2018, the Ministry of Science received a 60 % budget increase to continue its efforts⁴. It is crucial to continue the efforts to develop the scientific community and its relations with actors in the ecosystem.

This specific support of the Policy Support Facility was launched to focus on developing the entrepreneurial innovation ecosystem and thereby to complement earlier efforts to overcome the problematic situation. The lack of a critical mass of talent and knowledge, as well as being a funding risk, make Montenegro structurally non-competitive compared to alternative locations in the region. Importantly, the country is still in its early stages of building a functional and interconnected start-up ecosystem with a nascent support infrastructure of facilitators, mentors, business angels and venture capital investors.

The background report, the country visits and further desk research all indicate the emergent state of capacity building in the national R&I system in Montenegro, as outlined in the box above. Against this background and building on the findings detailed in this report, the authors would like to draw particular attention to the following key policy messages:

1. Stronger interdepartmental synergies and a common agenda

To overcome sectoral and organisational silos, the government should begin by setting up a cross-ministerial body dedicated to the horizontal coordination of new policies, legislation and funding schemes related to innovation and entrepreneurship. The mandate of this cross-ministerial body should be to initiate and coordinate initiatives in Montenegro for the development of its entrepreneurial innovation ecosystem including, among others: harmonisation of the innovation and entrepreneurship policy agenda among the ministries, as well as with other public entities and the private sector; reaching a common understanding on how to direct support measures more effectively to innovation and entrepreneurship activities; developing a national registry of start-ups; and streamlining evaluation processes in order to enhance mechanisms for allocating public funding.

2. Showcasing innovation and entrepreneurship to gain wider support for new policies at the ecosystem level

Thus, to stimulate the ecosystem it is important to create synergies through immediate joint actions and to showcase early results, which should be then widely communicated with a positive policy message: 'Innovation and entrepreneurship can help Montenegro become a modern and competitive economy and society'. While the country has a small number of start-ups, there are far more entrepreneurs with will and ambition, but with little means. And while there are only a few internationally recognised research teams, there are creative individuals with skills both in Montenegro and in its diaspora. Therefore, the government should provide

³ <http://www.herica.me>

⁴ The budget for funding entrepreneurial projects for innovation.

opportunities and support high-potential innovators who have the courage to turn their ideas into action. This can be done even with limited resources by offering honour loans to 'start-uppers' or developing visiting fellowship programmes. Tapping into international networks can be done, for instance, via partnerships with EIT Knowledge and Innovation Communities (KICs). The outcomes of these immediate actions will help gain wider support among the ministries and other stakeholders so that later they embrace the more complex changes that are necessary to develop the whole ecosystem.

3. Targeting bottlenecks to avoid brain drain

Beyond showcasing, different policy actions should ultimately form suitable framework conditions for entrepreneurship and innovation. In the case of Montenegro, unless the government solves key bottlenecks, especially the lack of entrepreneurial culture and critical mass of talent, knowledge and funding, innovative projects will be unlikely to scale up and create an impact locally. As practice shows, entrepreneurial projects with most growth potential will be leaving Montenegro to scale up elsewhere. This brain drain must be mitigated. In this report, several recommendations target improvements to the overall framework conditions. Among other suggestions, an eCommerce taskforce should be set up to improve the conditions for international transactions and e-payments. Also, clear entrepreneurship-friendly intellectual property policy guidelines should be established to enable university-business collaboration. Furthermore, the government should develop a national policy for the internationalisation of R&I in universities.

4. Launching flagship projects to gain momentum

Developing innovative projects and fixing bottlenecks will help to gradually develop the local entrepreneurial ecosystem – although that may not be enough. To accelerate change, the Montenegrin authorities, academic institutions and businesses also need to partner and co-fund new ambitious, mission-oriented projects. Such projects can include, for example, a new-generation science and technology park. However, this may not be enough to create international visibility and impact leading to a cultural shift while also attracting global talent, investments and other resources. In collaboration with other countries in the Western Balkans, the government should search for and incubate one or two 'moon-shot' mission-oriented R&I projects to showcase the ambition, as is already the case with the SEEIIST project supported by the Ministry of Science and dedicated to cutting-edge research on cancer. In due time, the government should also consider commissioning a study on a new regional venture capital seed fund dedicated to innovative start-ups in the Western Balkans.

Roadmap towards entrepreneurial innovation ecosystems in Montenegro

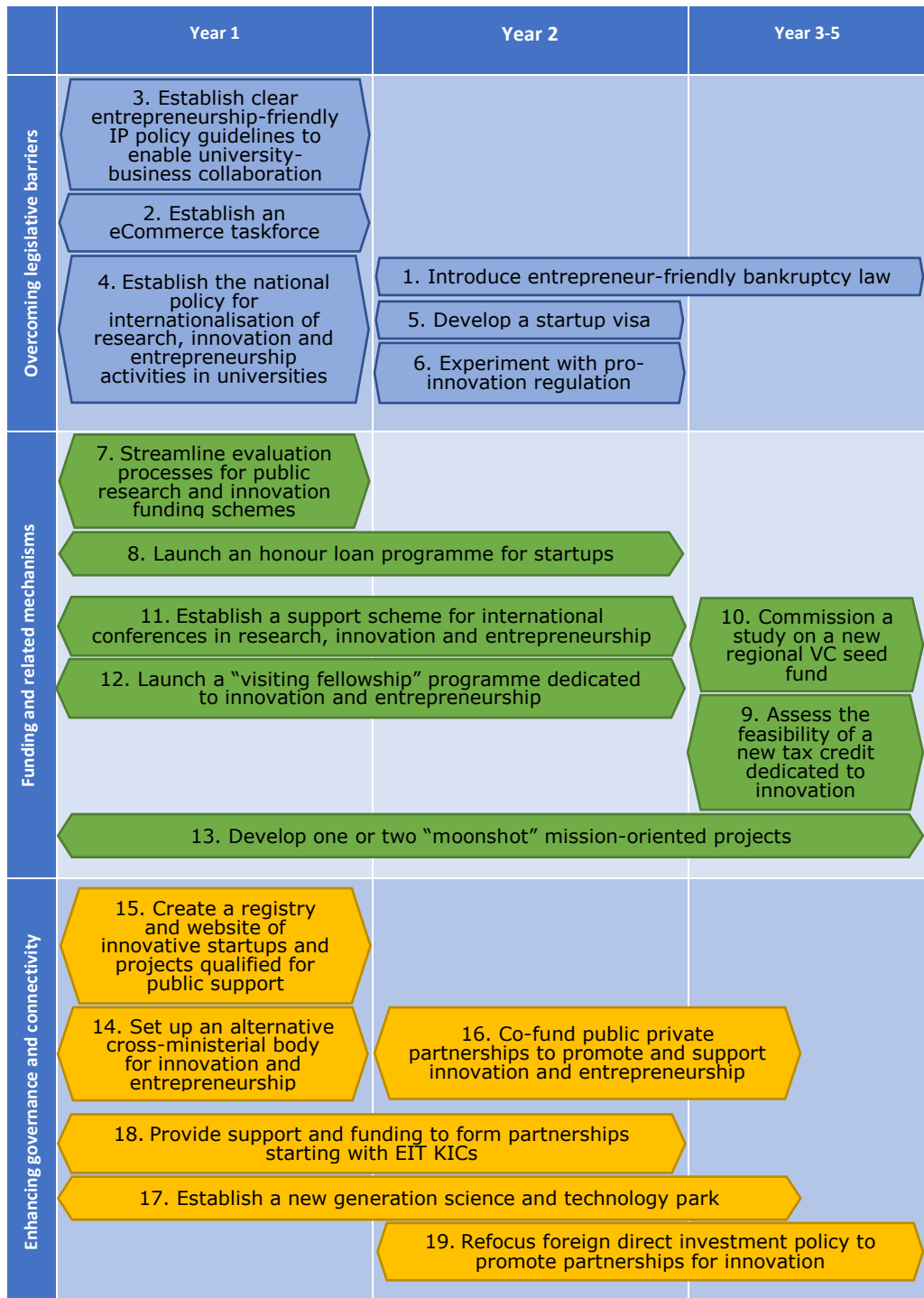
The above-mentioned four key policy messages provide the shorthand for an overall roadmap towards entrepreneurial innovation ecosystems in Montenegro (Figure 1) which uses a timeline to illustrate all the recommendations detailed in this report. The recommendations are organised into three dimensions: i) overcoming legislative barriers; ii) funding and related mechanisms; and iii) enhancing governance and connectivity. The timeline shows the start of each recommended action, the end of which refers to the recommended timing of the first results, although in many cases this is not the end of the activity.

The most urgent and important actions are those recommended to be initiated right away, with first results achieved within one year; however, it is acknowledged that some other actions will require more time. Among others, we recommend starting by setting up an alternative cross-ministerial body for innovation

and entrepreneurship activities and creating a registry of innovative start-ups and projects which qualify for public support.

The actions to be initiated immediately should be prioritised as they build the foundations for the development of later actions and for developing capacities and capabilities in the ecosystem. In line with the key policy measures outlined above, Figure 1 also illustrates recommendations that may be initiated after two years once sufficient support has been acquired for their implementation.

Figure 1: Roadmap towards entrepreneurial innovation ecosystems in Montenegro



SUMMARY OF KEY ACTIONS RECOMMENDED BY THE PANEL

Overcoming legislative barriers

The Montenegrin government has taken up the challenge to create a legislative framework favourable to innovation and entrepreneurship. Nevertheless, there is currently a lack of adequate legislative framework for developing a vibrant entrepreneurial innovation ecosystem. In addition, adding up diverse taxes, labour-related contributions and financial transaction fees makes business costly. Montenegro can learn from existing international good practices when developing its regulatory environment. In this respect, anticipatory regulation can be advanced from three viewpoints to ecosystems: to support the responsible development of a business- and entrepreneurship-friendly, innovation-friendly and start-up-friendly ecosystem (Table 1).

Table 1: Recommendations to overcome legislative barriers

OVERCOMING LEGISLATIVE BARRIERS		
Towards a business- and entrepreneurship-friendly ecosystem		
1.	Recommendation: Introduce entrepreneur-friendly bankruptcy law	The entrepreneur-friendly bankruptcy law and its implementation should focus on streamlining the process of a company closure and on a bankruptcy process and not on inhibiting an entrepreneur from starting a new venture. The regulatory framework and its implementation should avoid stigmatising entrepreneurial failures and encourage entrepreneurs who take risks to start innovation and venture (e.g. by lessening the burden of fiscal debt).
2.	Recommendation: Establish an eCommerce taskforce	To innovate and grow, the Montenegro market needs to be fully connected to global digital financial transactions and e-commerce systems. Bringing together Montenegro businesses, international institutions, payment platforms and online business representatives should be one of the first steps to growing entrepreneurial innovation ecosystem in Montenegro.
Towards a research- and innovation-friendly ecosystem		
3.	Recommendation: Establish clear innovation- and entrepreneurship-friendly IP policy guidelines to enable university-business collaboration	To build long-term collaboration between academia and firms, Montenegro needs to establish clear entrepreneurship-friendly IP policy guidelines.
4.	Recommendation: Establish a national policy for the internationalisation of research, innovation and entrepreneurship activities in universities	Establish a national policy for the internationalisation of research in universities as one of the pillars of the national growth strategy. It should include both mobility schemes to attract talent to Montenegro – specifically targeting, for example, the

		diaspora of Montenegro scientists – and mobility schemes for researchers who want to develop relations with international universities and research centres via funds for international visits, stipends and internships.
Towards a start-up-friendly ecosystem		
5.	Recommendation: Develop a start-up visa	To attract international talent to Montenegro, ensure fast-track visa procedures and communicate this practice effectively across geographies which are a priority for economic and/or scientific collaboration (see also Recommendation 12 on visiting scholarships).
6.	Recommendation: Experiment with pro-innovation regulation	Develop targeted regulatory sandbox initiatives to experiment with and test pro-innovation regulation. Together with strategic (trade) partner countries, use these tested innovation-and entrepreneurship-friendly regulations to attract and enable start-ups to test and develop new products and services in promising emerging fields of science, technology and innovation.

Funding and related mechanisms

Since 2010, Montenegro has spent approximately 0.38 % of its GDP on R&D per year, which nominally means a gradual increase in funding. By 2015 (latest available data), this translates into EUR 13.67 million or, in per-capita terms, EUR 22, which is one of the smallest amounts in Europe. In 2018, the Ministry of Science received a 60 % budget increase to continue its efforts and build an entrepreneurial innovation ecosystem. The country also has access to the European pre-accession funding which enables it to build capacity and institutional framework. Recommendations for developing funding and related mechanisms are structured in the management of funding schemes, capital-oriented schemes, subsidy-oriented schemes and other related schemes (Table 2).

Table 2: Recommendations for developing funding and related mechanisms

FUNDING AND RELATED MECHANISMS		
Management of funding schemes		
7.	Recommendation: Streamline evaluation processes for public research and innovation funding schemes	Streamline evaluation processes for funding schemes by establishing formal documentation according to which any funding scheme dedicated to innovation and entrepreneurship should fulfil criteria with respect to its selection process, notably through the involvement of external experts under non-conflict-of-interest oaths.

Subsidy-oriented schemes		
8.	Recommendation: Launch an honour loan programme for start-ups	Implement a start-up-oriented subsidy scheme in the form of 'honour loans', ideally associated with a programme encouraging founders to visit several other entrepreneurial innovation ecosystems. If technically feasible, such a programme could ideally benefit from the support of pre-accession funds (Recommendation 7 applies here).
9.	Recommendation: Assess the feasibility of a new tax credit dedicated to innovation	Conduct a detailed study, with the help of international experts, on the potential impact of a tax credit dedicated to supporting innovative companies of all sizes in Montenegro, and of its associated costs in terms of expertise, in order to specify and adapt its scope with respect to the Montenegrin economy.
Capital-oriented schemes		
10.	Recommendation: Commission a study on a new regional VC seed fund	Conduct a study on the feasibility of a new VC seed fund dedicated to innovative start-ups including moon-shot projects and focused on the Western Balkans, with an international contractor who would realistically assess venture capital opportunities in the region by contacting all potential stakeholders: national authorities, the EU and its related bodies, including the EIB & EIF, EU pre-accession funds, VC firms active in the region, local funds and business angel associations, institutions such as the World Bank or the EBRD, etc.
Related schemes		
11.	Recommendation: Establish a support scheme for international conferences in research, innovation and entrepreneurship	Establish a support scheme for international events and conferences dedicated to science, innovation and entrepreneurship. Take advantage of these events to publicise Montenegro's resources, opportunities and achievements with respect to science and innovation (Recommendation 7 applies here).
12.	Recommendation: Launch a 'visiting fellowship' programme dedicated to innovation and entrepreneurship	Establish a support scheme for a 'visiting fellowship' programme for the start-up community, for instance in the form of entrepreneurs in residence, visiting mentors, etc., that would notably be accessible to the Montenegrin diaspora and also provide support to grass-root

		initiatives that could help structure and strengthen entrepreneurship and the start-up community in Montenegro in diverse aspects, e.g. scientific, innovative, entrepreneurial, cultural, etc. (Recommendation 7 applies here).
13.	Recommendation: Develop one or two moon-shot mission-oriented projects	Search for and incubate one or two moon-shot mission-oriented projects in the field of entrepreneurship and innovation to showcase Montenegro's ambition and thought leadership in the Western Balkan region.

Enhancing governance and connectivity

In addition to having legislative frameworks and funding in place, it is crucial how the different areas within the ecosystem interact. With respect to innovation and entrepreneurship policies, silos are still prevalent in Montenegro, with no current programmes stimulating collaboration. This is reflected, for instance, in the recent Global Competitiveness Report published by the World Economic Forum which places Montenegro at 130th out of 140 countries with regard to budget transparency and 115th out of 140 countries when it comes to the willingness to delegate authority. Furthermore, the country would benefit from better integration of the Montenegro ecosystem's existing agents with other ecosystems in the neighbouring countries and Europe. A set of recommendations have been drawn up to develop national, regional and international governance and connectivity that would support the effective implementation of the other recommendations proposed in this report (Table 3).

Table 3: Recommendations for enhancing governance and connectivity

ENHANCING GOVERNANCE AND CONNECTIVITY		
In-country connectivity		
14.	Recommendation: Set up an alternative cross-ministerial body for innovation and entrepreneurship activities	Set up an alternative cross-ministerial body for innovation and entrepreneurship activities to enhance horizontal coordination on new policies and legislation among the ministries, as well as with other public entities and the private sector. The mandate of this high-level body should be extended beyond the advisory role of existing councils and should be set up under the prime minister's office to receive top-level political support and visibility.
15.	Recommendation: Create a registry and website of innovative start-ups and projects which qualify for public support	Create a registry of innovative start-up companies and projects. On the one hand, in order to deploy legislative improvements and funding schemes for the specific needs of start-ups and, on the other hand, in order to prevent the misuse of tax exemptions and public funding schemes. Publish and showcase the registered companies and innovative

		projects on a dedicated website in Montenegrin and English.
16.	Recommendation: Co-fund public private partnerships to promote and support innovation and entrepreneurship	Co-fund public private partnerships (PPP) to execute contemporary campaigns promoting innovation and entrepreneurship, to mobilise entrepreneurial talents and develop their business growth, to provide start-ups with modern support activities and to build a national innovation community linking local entrepreneurial innovation ecosystems to the main national hubs.
17.	Recommendation: Establish a new-generation science and technology park	Partner among the Montenegrin authorities academic institutions and businesses to provide thought leadership and co-fund a new-generation science and technology park in Podgorica. This would ensure that the biggest investment in innovation support will also have a substantial impact on the entrepreneurial innovation ecosystem.
Regional and international connectivity		
18.	Recommendation: Provide support and funding to form partnerships starting with EIT KICs	Provide support and funding for stakeholders to interconnect with the EIT KICs - especially EIT Digital and/or EIT Food, specialised in the future information and communication society and future global food value chains, respectively. Later, engagement with other international collaborative platforms should be explored.
19.	Recommendation – Refocus foreign direct investment policy to promote partnerships for innovation	Refocus the Montenegrin foreign direct investment (FDI) policy to attract and offer favourable conditions to investments which establish or strengthen innovation activities in the country. A public private partnership could be established to develop and implement a number of specific niche FDI promotions.

In the course of producing this report, the recommendations were tested and were very well received by the Government of Montenegro. They were largely incorporated into the “Programme of measures promoting innovative start-ups in Montenegro” and the accompanying Action Plan which was adopted by the government on 27 December 2018. The logic of the Programme is in line with the report and most of the recommendations are formulated as activities in the Action Plan. According to this, implementation should begin immediately which means that certain recommendations were put in practice before the report was published officially.

THE PSF SPECIFIC SUPPORT TO MONTENEGRO

The Horizon 2020 Policy Support Facility is an instrument that offers Member States and countries associated to Horizon 2020 practical support to design, implement and evaluate reforms that enhance the quality of their research and innovation investments, policies and systems.

The Policy Support Facility (PSF) provides best practice, independent high-level expertise and guidance at the request of Member States and Associated Countries through a number of services: peer reviews, mutual learning exercises and specific support to countries. The Facility responds to the significant need to provide more customer-oriented services to support evidence-based policymaking. To organise this process, the EC issues an annual call for expression of interest via the European Research Area and Innovation Committee.

The PSF Specific Support to Montenegro was carried out by a panel of independent European R&I policy experts to provide tailored advice and concrete recommendations to help the Montenegrin government to develop an entrepreneurial innovation ecosystem.

Aim and focus of the report

The report provides external advice and operational recommendations on how the country could develop its entrepreneurial innovation ecosystem. Building on the rationale that innovative businesses do not emerge in isolation of other actors, funding opportunities and framework conditions, the panel adopted a holistic approach to developing an entrepreneurial innovation ecosystem in Montenegro, focusing on the following three areas:

- overcoming legislative barriers to create a business-, innovation- and start-up-friendly environment;
- funding and related mechanisms to stimulate the Montenegrin entrepreneurial innovation ecosystem; and
- enhancing governance models and connectivity for the functional entrepreneurial innovation ecosystem.

Montenegro has only recently exited the transition from a planned to a market economy. It has progressed in building some elements of its entrepreneurial innovation ecosystem, but its entrepreneurial communities are still underdeveloped and unconnected. With this background, the national government saw a number of challenges related to the development of a legislative framework and an ecosystem model for developing entrepreneurial innovation ecosystems in the country. Montenegrin authorities attached high importance to this exercise since it would provide valuable input for the national start-up programme currently under preparation.

Methodology

The project followed the methodology established for PSF specific support actions⁵. Through two field missions, stakeholder meetings and background research, the PSF provided methodological support, guidance material, evidence-based analysis and good practice examples to act as building blocks in providing appropriate tailored advice for the challenges being faced in the areas of support requested by the Montenegrin authorities.

⁵<https://rio.jrc.ec.europa.eu/en/policy-support-facility/specific-support>

The kick-off meeting launched the above-mentioned support. During the meeting, the panel of experts met representatives from Montenegro and discussed their policy objectives regarding developing the start-up ecosystem in the country and their expectations from the project. The kick-off meeting was followed by the production of the background report.

The first fact-finding country visit to Montenegro took place on 25-27 July 2018. During the mission, the PSF panel met the Montenegrin authorities and representatives of the start-up, business and research community, SME support intermediaries, and other relevant stakeholders. The aim of the first mission was to acquire a better understanding of the current situation in the three focus areas, to make contact with key stakeholders in the country and gather their views on how to tackle the focus areas; to collect information on possible solutions, options and their feasibility; and to identify visions for change and the limitations of implementing them. The mission was organised in close collaboration with Montenegro's Ministry of Science.

The second country visit took place on 22-23 of November 2018. The purpose was to validate the proposed recommendations for developing entrepreneurial innovation ecosystems in Montenegro. During this second PSF expert mission, the experts met with local stakeholders again in order to follow up on their discussions during the first visit. Having gained insights into the gaps and barriers in the ecosystem facing innovative entrepreneurs, they presented their recommendations to address the challenges faced by local enterprises in initiating innovative business projects. Based on the insights gathered, the experts prepared the final report and presentation to the Montenegrin stakeholders.

1 CHALLENGES AND OPPORTUNITIES IN THE ECOSYSTEM

Montenegro is a young state in the Western Balkans with a population of 624 000. Over a period of 15 years, it has managed to establish its key democratic institutions, build good relations with the neighbouring countries, and embark on a process of accession to the European Union (EU). It appears as a stable society valuing 'small stabilisation'⁶ after the turbulent times of the Balkan war, leaving behind the former Yugoslavia and changes in the economic system which resulted in the old industries largely disappearing.

The ambition for change seems to be balanced with the appreciation for what this small nation has achieved over a short period of time. Montenegro has embarked on a path of learning how to become an innovation-driven entrepreneurial economy. There is a positive message from the political leadership to continue reforms, experiment and learn-by-doing by exploiting knowledge transfer and the help provided by international institutions such as the World Bank and the EU's Pre-accession Funding instrument.

Despite the shortcomings of the European Single market, especially the differing national regulatory regimes and fiscal systems hampering cross-border investments, the perspective of accession to the EU is important for Montenegro in its economic, social and geopolitical context. Besides giving access to European funding and know-how, EU membership offers the additional security of making the country more attractive in the eyes of potential private investors.

The quality of this learning process is an important foundation for future sustainable success. This PSF Specific Support was launched to complement earlier efforts to overcome the problematic situation. The lack of critical mass of talent and knowledge, as well as funding risks make Montenegro structurally non-competitive when compared to other locations in the region. The country is still in the early stages of building a functional and interconnected start-up ecosystem with a nascent support infrastructure comprising facilitators, mentors, business angels and VC investors.

Based on the 'Strategic Plan for the Establishment of STP in Montenegro' (2012), the country's national science and technology park was conceived as a networked structure with a seat in Podgorica and three decentralised units – innovation and entrepreneurship centres constituting an integral part of the STP and located in Nikšić, Bar and Pljevlja. In 2014, work started in Nikšić on setting up 'Technopolis', the first centre for innovation and entrepreneurship. While the main unit in Podgorica is still not operational, Technopolis in Nikšić currently houses 14 tenants and has a co-working space with around 30 more. In addition, Montenegro has two business incubators:

- Incubator BSC Bar began operating in 2010, with the main mission of supporting the promotion of entrepreneurship; 20 companies were listed as tenants in July 2018;
- In 2016, the 'Regional Business Centre' Berane LLC was established in Rudeš business zone by the Municipalities of Andrijevica, Berane, Plav, Rožaje, Bijelo Polje and the Regional Development Agency for Bjelasica, Komovi and Prokletije.

Also, the Montenegro's Chamber of Economy, Union of Employers, Association of Managers, the American Chamber of Commerce, and the Montenegro Business

⁶ Small stabilisation is a popular term used in post-communist countries when referring to the period of relative stabilisation after the turbulence of the political and economic transformation.

Alliance all provide general business development support to companies (Bučar, 2018).

Building on the nascent support infrastructure, Montenegro can continue to develop solid foundations for its entrepreneurial and innovative economy. There are multiple possible pathways. Among others, the government could support start-ups linked to developing further innovation capacities in existing industries such as agriculture and tourism. This could be done, for instance through digital transformation, digital presence and branding, encouraging private-public partnerships, engaging practitioners in teaching at universities, and dual appointments. For example, industrial chairs sponsored by and connected to the industry could facilitate the transfer of knowledge from research to business and thereby strengthen the innovation capacity of an industrial firm.

This report provides guidance for defining and prioritising measures for the creation of a successful unique model. In particular, this has been done by establishing links between Montenegro's specific conditions and challenges with international experience on '**entrepreneurial innovation ecosystems**' which we understand as (Leceta and Könnölä, 2016):

"the dynamic, inter-organisational, political, economic, environmental and technological milieu of ...

interaction between entrepreneurial attitudes, ability, and aspirations, by individuals, mediated by institutions ...

which drives knowledge and value creation towards a structural change and the enhanced allocation of resources."

Such overlapping ecosystems can be found in different levels and focus areas. For instance, businesses and universities may form their own ecosystems which interact within the ecosystems of cities and regions and, in turn, form the national ecosystem. In this report, the ecosystem refers to the national ecosystem of Montenegro, unless specified otherwise.

According to the approaches used to address ecosystems of entrepreneurship and innovation, the relationships between businesses and their social, political, academic and economic environment are more fluid in environments where all the elements are aligned. As it is difficult to determine their relationships, it is more appropriate to address them all together. Thus, Isenberg (2011) argues that each ecosystem arises under a unique set of conditions and circumstances. Building on Isenberg (2011), the OECD-Eurostat Entrepreneurship Indicators Programme (EIP) and the framework developed by Kantis et al. (2014) on the Index of Systemic Conditions for Dynamic Entrepreneurship (ICSEd-Prodem), Könnölä et al. (2017) propose an ecosystem model comprising the following interrelated areas (see also Figure 2):

- **legislation and governance**
- **financing and access to capital**
- **knowledge creation and diffusion**
- **access to talent**
- **entrepreneurial culture, and**
- **market access.**

Figure 2: Key dimensions and actors of entrepreneurial innovation ecosystems (modified from Könnölä et al., 2017)



This report focuses on establishing favourable framework conditions for the Montenegrin ecosystem. This is done by overcoming legislative barriers, developing advanced funding schemes and defining inclusive governance and organisational models in order to stimulate knowledge and value creation and the diffusion and entrepreneurial culture of and market access for innovative and entrepreneurial projects.

1.1 Legislative framework

In 2006, after the Federal Republic of Yugoslavia and the State Union of Serbia and Montenegro, Montenegro became independent and started its journey towards Euro-Atlantic integration (Bučar, 2018). Now, the government has taken up the challenge to create a legislative framework favourable to innovation and entrepreneurship.

Nevertheless, we identified a lack of adequate legislative framework for developing a vibrant ecosystem to systematically promote business, research, innovation and entrepreneurship activities. Adding up the various taxes, labour-related contributions and financial transaction fees makes business activity costly. Even if the country has a favourable flat rate capital income tax of 9 %, this is offset by a complex system of additional taxes (e.g. tourist tax applied to all businesses located in tourist areas) and labour contributions.

Montenegro is also perceived as a high-risk country (Moody's: B1, S&P: B+), which affects FDI, seen as one of the key aspects for improving the situation. To enhance investments in Montenegro, the government has taken several measures. First, foreign investors are encouraged to invest capital in local businesses even if they are not residents, thanks to a series of government incentives, such as signing double tax treaties with several countries. Secondly, it had established eight business zones (Kolašin, Berane, Nikšić, Bijelo Polje, Podgorica, Cetinje, Mojkovac, Ulcinj) that could be beneficial for attracting direct investments and could create some spillover effects. Thirdly, it has established an investment fund which supports activities which attract FDIs. Finally, since 2013, Montenegro has developed strong support for commercial

diplomacy, the main tasks of which are to promote the export of Montenegrin businesses and to seek and support inward and outward FDIs. However, despite these measures, Montenegro is still suffering from a growing deficit, increasing debt and a low country credit ranking (Bučar, 2018).

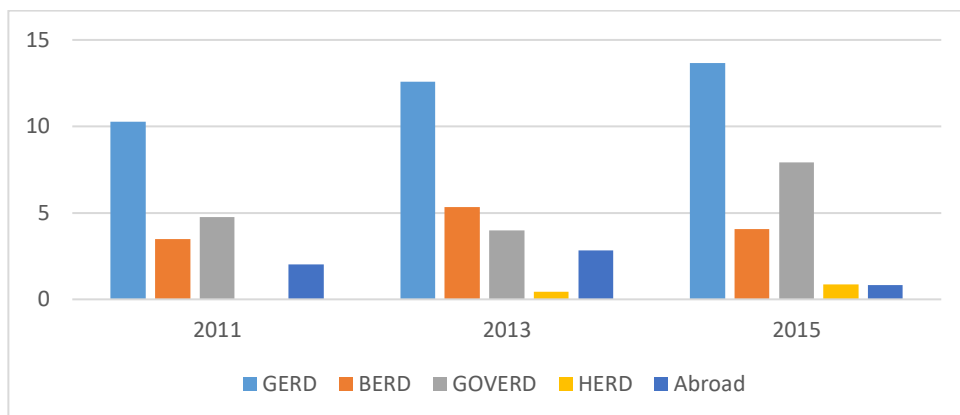
In June 2004, Montenegro adopted the Law on Free Zones which offers businesses benefits and exemptions from custom duties, taxes and other duties. The Port of Bar is currently the only free-trade zone in Montenegro. Despite the amended legislation to curb special rights in free zones, free-zone users enjoy benefits provided by the Law and other regulations (imports free of customs duties, customs fees and VAT; storage of goods in a duty-free regime for an unlimited period of time; low corporate tax, and simplified procedures) in addition to the use of infrastructure, port-handling services and telecommunication services. However, local administrations impose local taxes and other expenses that may hamper business development. One notable example is the tourist tax in Bar for businesses (profitable or not), and even for those not operating in the tourist sector.

Furthermore, the lack of an Intellectual Property (IP) framework in practice prevents academia-industry collaboration. We discovered that the only major case of such a collaboration has ended due to the lack of an IP regulation which would facilitate agreeing on the IP and allow the firm to continue developing and commercialising the joint IP solution. Thus, the legislative barriers to developing the entrepreneurial innovation ecosystem are the natural starting point for this report, developed in detail in Section 2.

1.2 Financing innovation and entrepreneurial activities

As in every nation and every region, the country has its own specific boundary conditions, talent pool, knowledge and industrial base. Since 2010, Montenegro has spent approximately 0.38 % of its GDP on R&D per year, which nominally means a gradual increase in funding; the Strategy of Scientific Research Activity targets a 50 % increase by 2021 (Ministry of Science, 2018). By 2015, (latest available data) this translated to EUR 13.67 million GERD (gross domestic expenditure on R&D) or, in per-capita terms EUR 22, one of the smallest amounts in Europe (e.g. in 2015, Malta's GERD was EUR 71.48 million). As for many less-developed R&D environments, government budget is the main source of R&D funding, while most of the R&D activities are performed by higher education institutions (HEI) (Bučar, 2018) (see a Figure 3):

Figure 3: Research and development expenditure by sectors of performance in EUR million (Eurostat, 2018)



Montenegro’s government has voiced an ambition to embrace innovation-driven entrepreneurship as a way to develop a new growth model and secure a better future for the country in the long-term.

Between 2012 and 2018, with a EUR 12-million loan from the World Bank, the project ‘Higher Education and Research for Innovation and Competitiveness’ (HERIC) was conducted to help the Ministry of Science and Ministry of Education improve the situation⁷. Among others, HERIC supported the setting up of a competitive grants programme funding larger, more impactful R&D activities which should lead to international collaboration and generate commercial innovations (Ministry of Science, 2018).

In 2017, the Ministry of Science supported by the Ministry of Finance launched the first-ever call to fund innovation-based entrepreneurial projects. Of 30 submitted proposals 5 projects from the private and public sectors have received funding. In 2018, the Ministry of Science received a 60 % budget increase to continue its efforts and build an entrepreneurial innovation ecosystem by strengthening local capacity and connections with regional and European entrepreneurial innovation ecosystems⁸.

The country has access to European pre-accession funding which enables it to build capacity and institutional framework. Better absorption of such funding can also strengthen its entrepreneurial innovation ecosystem, should this be the Montenegro government’s priority. In this respect, and as a potential opportunity, Recommendation 8 suggests mobilising pre-accession funds to develop a new mechanism of ‘honour loans’ to stimulate innovation and entrepreneurship in Montenegro.

1.3 Governance and organisational models

Beyond having legislative frameworks and funding in place, it is crucial how different areas of the ecosystem interact. Given the small size of the country, actors across the entire Montenegro ecosystem should be engaged to collaborate in order to exploit their knowledge, human capital and financial resources to boost sustainable economic growth and job creation in the country. However, Montenegro remains governed in

⁷ <http://www.heric.me>

⁸ The budget for funding entrepreneurial innovation projects.

silos with few programmes stimulating collaboration and integration. At the end of 2017, the TAIEX⁹ mission on the 'Establishment of a Science and Technology Park held in Nikšić'¹⁰ examined the state of the triple-helix ecosystem in Montenegro, concluding that the most significant and commonly mentioned challenge was the lack of communication, understanding and collaboration among and within helixes – for instance, there was little collaboration between the Ministry for Science and Ministry of Education, and poor collaboration between academia and business and between incumbent businesses and start-ups. Furthermore, representatives of the business community claim they are not informed or consulted by government when the framework conditions are changed.

In addition, the recent World Economic Forum's Global Competitiveness Report places Montenegro in 130th position out of 140 countries with regard to budget transparency (which facilitates checks and balances) and 115th out of 140 countries when it comes to the willingness of the delegate authority (WEF, 2018). Furthermore, the country would benefit from better integration of the existing agents in the Montenegro ecosystem with other ecosystems in the neighbouring countries and Europe.

One attempt by the Government of Montenegro to reduce organisational silos concerned the constitution of inter-ministerial councils, the mandate of which is limited to an advisory role by law. Specifically, there are three councils that should influence the entrepreneurial innovation ecosystem: the Competitiveness Council, the Council for Scientific Research Activity, and the Council for Higher Education. However, there are no members from other ministries either in the Council for Scientific Research Activity, governed by the Ministry of Science, or in the Council for Higher Education, governed by the Ministry of Education. The composition of the Competitiveness Council reflects the triple-helix and includes members from different ministries although strengthening the entrepreneurial innovation ecosystem has yet to be part of its work programme. This is due to the fact that innovation is seen as an important matter to only a few of the 30 members¹¹ of this heterogeneous council.

Digital transformation of the public sector and a strategic focus on the e-government strategy could help create a more transparent business environment, shorten and simplify administrative procedures, and possibly create a demand for IT services in the private sector, thereby helping to grow the entrepreneurial innovation ecosystem.

The development of any ecosystem requires collaboration beyond institutional, organisational or sectoral silos. Thus, the success of the Montenegrin ecosystem depends largely on how the activities and communities emerge and how they are organised and coordinated in the country and beyond. Section 4 looks at the challenge of governance and connectivity in detail and develops recommendations for different ecosystem stakeholders.

1.4 Knowledge creation and diffusion

The Strategy of Scientific Research Activity for the period 2017-2021 (Ministry of Science, 2018) confirms that the scientific research community is producing low levels of academic and scientific contributions. From on average of eight domestic patents a year, the strategy targets a 50 % increase by 2021.

⁹ TAIEX is the EC's Technical Assistance and Information Exchange instrument. Focus groups with 38 participants from academia, government and the business sector discussed the main barriers and challenges of the Montenegro ecosystem.

¹⁰ <http://www.tehropolis.me/online/en/tehnopolis-two-day-taix-workshop-started/>

¹¹ Available in Montenegrin: <http://www.srr.gov.me/vijesti/177008/Obrazovan-Savjet-za-konkurentnost.html>

There are 58 research institutions, registered with the Ministry of Science, most of them in the higher education sector (Bučar, 2018). The country has one public university – the University of Montenegro and Academy of Sciences and Arts – and three private universities, i.e. the University of Donja Gorica, the Mediterranean University and the Adriatic University. There are also some individual private faculties. As part of the HERIC project, the first centre of excellence came into operation on 1 June 2014 in the University of Montenegro – Faculty of Electrical Engineering, in Podgorica, for the implementation of the bioinformatics project – BIO-ICT. There are also plans to establish the first Montenegrin technology transfer centre in the University of Montenegro. The technical and engineering talent is located mainly in the capital city of Podgorica.

According to findings in the cross-cutting summary report 'Evaluations of ten higher education institutions in Montenegro', which is based on the work performed by Institutional Evaluation Programme (Jørgensen and Surssock, 2014), Montenegrin higher education institutions had only a limited research capacity at that time. For instance, the country's H-index¹² of 41.7 puts it in 131th position out of 140 countries in the latest Global Competitiveness Report (WEF, 2018). The report stressed the relevance of allocating financial resources to areas where there was potential for developing excellence and to areas that are deemed valuable to Montenegrin society. It also stated that the country would benefit from participating in international networks to develop its research capacity (Bučar, 2018).

Secondly, the cooperation between enterprises and scientific and research institutions is incidental. There is an obvious lack of confidence among domestic enterprises in domestic scientific know-how, whilst the national scientific community is more interested in producing knowledge destined for use in academic publishing rather than economically viable results. In fact, within the academic community there is almost no research on start-ups or high-tech companies. Moreover, the entire higher education system is predominantly oriented towards theoretical knowledge rather than its practical application (Bučar, 2018).

Existing industry actors could be encouraged to develop their research and development activities, too. Only three research units are registered by businesses and these are mainly engaged in testing and certification activities. Plantaze, a large wine producer, has an R&D department with international collaboration. At best, such activities are open to other actors in the ecosystem. One such open example is mTel Digitalna Fabrika, created as a co-working space for digital entrepreneurs and freelancers and as a meeting point for the entrepreneurship community in Podgorica. It is equipped with 3D printers and laser cutters to fast-prototype products and models. Such initiatives could also be undertaken by the state-owned industry leaders.

1.5 Access to talent

While there are 1 766 registered researchers with the Ministry of Science, this nominal figure translates into only 523 full-time equivalents (FTE). Even if the Strategy of Scientific Research Activity for the period 2017-2021 foresees a 10 % increase in this figure as well as a 20 % increase in a number of doctors of science (856 in 2015), the Montenegrin R&I community continues to be small (Ministry of Science, 2018). Although size alone does not necessarily mean a lack of critical mass, the country has a very limited talent pool.

¹² For comparisons see <https://www.scimagojr.com/countryrank.php>

In particular, we found out that there is a shortage of entrepreneurial talent and business growth management skills. Our perception is that this is partly due to the lack of effective, modern entrepreneurship education programmes, as is the case in many other countries. Although entrepreneurship is taught as a subject from primary school through to secondary school, teachers are not practitioners. At the moment, there is no entrepreneurship centre at any public or private university although creating them could help build a space for students and practitioners to interact. Having such a centre would help build systematically organised entrepreneurship education and business support activities.

However, brain drain is the main threat to the Montenegro innovation ecosystem. The 'Analytical study of Montenegrin Diaspora'¹³, conducted under HERIC project, examined the available data to assess the plausibility of the involvement of the scientific diaspora in innovation processes inside Montenegro. According to the study, over 8.1 % of Montenegrin citizens live abroad, and 2 605 or 6.2 % of them have a university diploma. Students and researchers participating in European programmes such as Erasmus and Marie Curie still tend to choose to stay abroad.

In addition, according to the study, there are 236 Montenegrin researchers living abroad which accounts to more than one third of research capacity, since all the registered researchers nominally translate into only 523 FTE. As a result, Montenegro has a strong diaspora of researchers compared to the local pool. The Ministry of Science has reached out to the scientific diaspora inviting researchers of Montenegrin origin to build ties with the country in an effort that has been welcome by some, although the reality has shown difficulties in reintegrating individual researchers into the existing ecosystem.

The country has been building an international brand as a tourist destination. Safe, clean and welcoming, it is creating its image based on the beauty of the Adriatic coastline with the most southern fiord in Europe and picturesque mountains. The natural beauty of the country and the price-to-life-quality ratio attracts tourists as well as freelancers and digital nomads who chose to settle in the Mediterranean climate and work out of Montenegro for the global digital economy. Russian programmers and American freelancers are being quoted as examples of lifestyle choices for a certain class of people pursuing the new types of work patterns emerging in the global economy.

Until 2009, Montenegro had been very successful in attracting FDIs in traditional fields, such as tourism and real estate where investors mainly came from Russia, Italy and Cyprus. Since then, FDI has been significantly smaller and, according to the data of the Central Bank of Montenegro in 2017¹⁴, accounted for just 43.7 % of the 2009 figure. Therefore, Montenegro could consider refocusing its FDI policies to attract foreign innovative businesses, e.g. Estonian IT businesses, which could also bring with them the know-how related to their leading practices in e-government. Such know-how transfer could accelerate the build-up of the entrepreneurial innovation ecosystem in Montenegro by spreading digital technologies and making the government both the adopter of this technologies and market driver by creating demand for IT solutions. Indeed, the small size of the country itself does not need to be a weakness if a growth strategy is based on carefully selected niches as, for example, in the case of the Maltese start-up ecosystem which is recognised internationally¹⁵.

¹³ https://wbc-rti.info/object/document/14654/attach/Study_of_Montenegrin_Scientific_Diaspora.pdf

¹⁴ http://www.cb-cg.org/slike_i_fajlovi/fajlovi/fajlovi_publikacije/statistika/bop_nov_2018.zip

¹⁵ <https://startupgenome.com/reports/2018/GSER-2018-v1.1.pdf>

1.6 Entrepreneurial culture

The in-country interviews showed that there is the widespread lack of entrepreneurial culture. Even if the Global Entrepreneurship Monitor data from 2010 indicates that entrepreneurial intentions and activity are relatively high compared to others in the region and on a par with the global average¹⁶, the latest Global Competitiveness Report placed the country in 100th position among 140 countries with regard to attitudes towards entrepreneurial risk (WEF, 2018). There is a cultural bias according to which hard work is not seen as a badge of honour but rather either as a sign of lack of capacity to succeed in life or a failure. A secure work path in government is perceived as a favoured career choice.

Furthermore, actors in the existing Montenegrin ecosystem seem to approve the status quo and appear compliant with existing boundary conditions. There is a significant level of frustration among entrepreneurs and other innovation actors both in the private and public sectors, and dissatisfaction that not much can be changed and that procedures are not transparent.

1.7 Market access

The country has two dominant industries: tourism and agriculture. In this context, it is lacking success stories showing how innovative projects and start-ups can offer new opportunities. The only international success story, BeeAnd.me, appears to relate to a business which was started in Montenegro but had to move to Austria to succeed¹⁷.

In fact, apart from some exemptions such as the *.me* domain registry and *Perpetuum Games*¹⁸, most of the Montenegrin start-ups created in recent years have left the country. Seven in total have left in search of better opportunities for market access, and as a precondition set out by investors to sign investment agreements. While some entrepreneurs still spend time working in Montenegro, the business operations have been moved out to countries such as, for example, Austria, Bulgaria and Germany. Among other factors, this is because Montenegro lacks integration with global markets and financial services which hampers business access to global payment systems such as PayPal, Apple Pay, etc. As a consequence, there appears to be a profound lack of changemakers, investors and successful entrepreneurs to start a business in Montenegro and achieve major success by staying in the country.

1.8 Towards the Montenegrin model

Policymakers and business leaders in Montenegro look to Estonia, Malta and Slovenia as the counties of reference for the new growth model. International experience at the regional level may also provide valuable insights – for instance in Spain, notably Catalonia, the Basque Country, Valencia and Madrid – where public policies have not only created legal bases but also physical environments for companies and

¹⁶ <https://www.gemconsortium.org/country-profile/88>

¹⁷ BeeAnd.me offers a smart monitoring system for beehives. It aims to help beekeepers overcome the traditional challenges of beekeeping by providing them with technological assistance. BeeAnd.me got the idea during the second Digitalizuj.me start-up weekend in 2015 and won first prize. Shortly afterwards, the firm was accepted into the HUB:raum Kraków accelerator and received an undisclosed investment from Acccoi Partners Accelerator (Bučar, 2018).

¹⁸ The domain registry company *.me* operates mainly through domestic markets. Perpetuum Games, a start-up registered in Montenegro, has developed an award-winning electronic bomb defusal game, but its ability to scale up has still to be seen: http://www.dlabac.com/me/clockwork_briefcase.html, <https://www.perpetuumgames.com/>

universities to thrive: see, for example, 22@Barcelona, a post-industrial part of the Catalan capital which has been transformed into an innovation district¹⁹.

While some policy solutions deployed elsewhere can be learned from and adapted to Montenegro, they should not simply be replicated or copied. In order to accelerate growth and development, Montenegro must build on its above-mentioned strengths and forthcoming opportunities and remove or reduce the limiting factors coming from its weaknesses and threats (see also Table 4):

Table 4: Summary of the SWOT analysis of the Montenegrin ecosystem

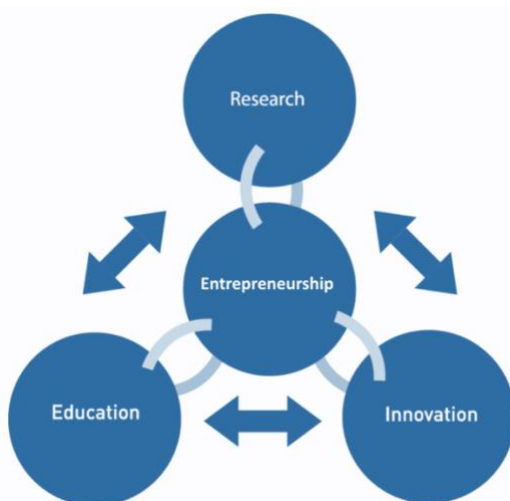
STRENGTHS	WEAKNESSES
<ul style="list-style-type: none"> – Tourism and agriculture – Stability – Flat income tax, double taxation agreements – International relations – Access to international R&I funds 	<ul style="list-style-type: none"> – Lack of entrepreneurial culture and role models for start-ups – Lack of critical mass of talent, knowledge and funding – Lack of serial entrepreneurs and business angels – Low credit ratings and high transaction fees – No access to C2B online payments
OPPORTUNITIES	THREATS
<ul style="list-style-type: none"> – EU accession negotiations and pre-accession funds – Reforming legislative framework and governance – Entrepreneurial knowledge triangle integration – Attracting foreign talent and direct investments for innovation – Digital transformation of public sector and established industries – Turning scientific diaspora into international networks – Collaboration with neighbouring countries 	<ul style="list-style-type: none"> – Failure to address the brain drain – Failure to enhance collaboration between universities and businesses – Failure to improve interministerial and vertical coordination – Failure to overcome corruption and opaque governance – Disintegration from the Balkans, Europe and global markets

¹⁹ Over the last two decades, Poblenou has attracted dozens of research labs, university campuses, Spanish and global tech companies. The success of this gentrification project spun out to other urban areas within the metropolitan zone. Only in 2018, 17 international companies opened innovation labs in Barcelona and with one biotech company being created every week, Catalonia has become one of the leading entrepreneurial hubs in Europe. (Tataj, D. Preface, Biocat Report 2017, Barcelona 2018: <https://informe.biocat.cat/biocat-report-2017.php>).

The Montenegrin model needs to establish new collaboration practices to overcome the sectorial and organisational silos. The model of entrepreneurial innovation ecosystem gives guidance for considering different dimensions and actors. It emphasises the importance of the systemic and holistic view in developing the ecosystem. It is also crucial to think about the dynamics and processes within in the ecosystem and how different actors collaborate.

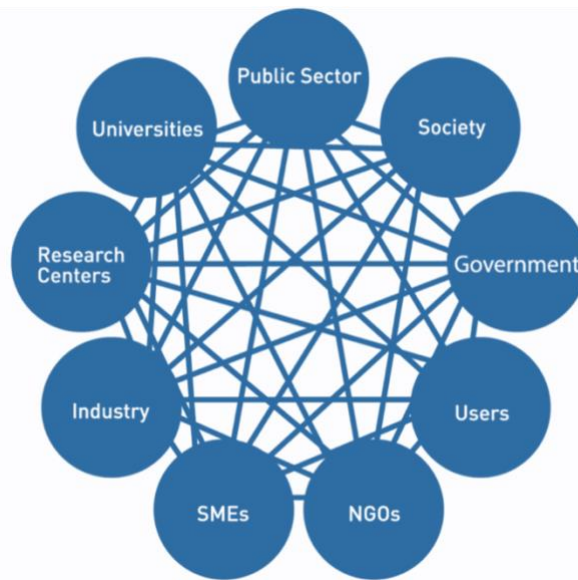
Recent innovation policy experiments in Europe (Tataj, 2015) show that productivity growth and job creation can be transformed through collaboration between networks of partners from research, education, innovation and entrepreneurship (Figure 4).

Figure 4: Entrepreneurship-driven knowledge triangle as the model of a networked innovation ecosystem (Tataj, 2015)



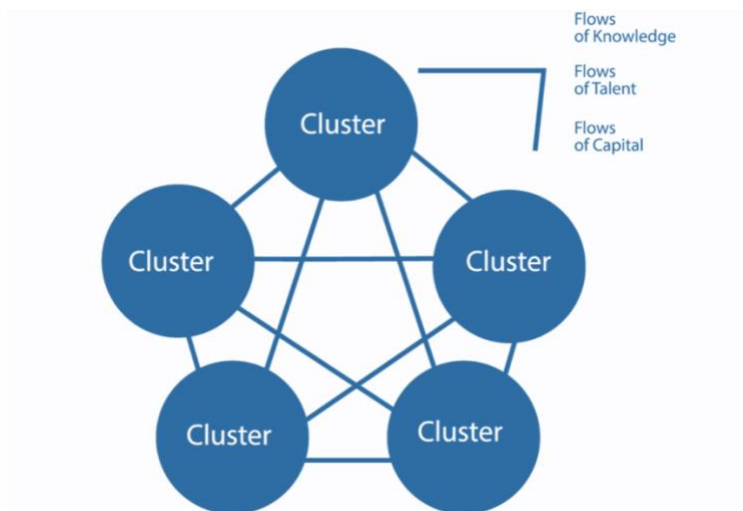
Activities such as research, innovation, education and entrepreneurship still occur in traditional environments such as research institutes, industry labs, universities, small or mid-size companies. However, activities are taking place more and more often in new settings in which non-traditional actors are involved. One example could be government agencies innovating through private-public-partnerships or taking the role of investors in high-risk ventures through public investment funds. Another example is social innovation whereby society – through non-profit organisations or individual groups of social activists – creates value and jobs based on innovation and entrepreneurship. This diversity of actors and settings characterises value-creation processes in the network economy (Figure 5). How they are included or excluded from local innovation networks largely determines the formation of local entrepreneurial innovation ecosystems.

Figure 5: Diversity of innovation actors and settings (Tataj, 2015)



These networks create value if they reach a critical mass and if – rather than functioning in silos – they become co-located and integrated forming tightly-knit networks in local entrepreneurial innovation ecosystems. These networks must be structurally and culturally interconnected with networks in other entrepreneurial innovation ecosystems across Europe and beyond. Through joint projects, partnerships or short but creative interactions during meet-ups, workshops or exchanges of talent, these innovation networks form open innovation environments. Knowledge, talent and capital – three key resources for value creation – flow more or less freely across these local, regional and global innovation networks (Figure 6). The vibrancy and relevance of these local ecosystems depend on the level of interconnectedness with global innovation networks.

Figure 6: Flows of knowledge, talent and capital across innovation networks (Tataj, 2015)



Following the dynamics of the network economy, these resources tend to cluster in major nodes within the global innovation ecosystem since these mega hubs offer superior opportunities for growth. Small nodes in the global network tend to suffer from brain drain and capital outflow. To prevent these dynamics, governments and public policies play a major role (Tataj, 2015).

The entrepreneurship-driven knowledge triangle is a model of a networked innovation community designed to overcome 'the innovation paradox' that refers to Europe's relatively low ability to translate its knowledge assets into growth and jobs creation (see box below).

European-wide innovation policy experiment; EIT Knowledge and Innovation Communities (KIC)²⁰

The KICs co-funded by the EIT are pan-European networks of partners from areas of research, education, innovation and entrepreneurship. Their programmes aim to create value by connecting actors and institutions from these domains. As entrepreneurship is often a missing link in European innovation ecosystems, special attention is given to entrepreneurship education programmes to accelerate the process from lab to market and business incubation and acceleration programmes. Seven years since the establishment of the first three EIT KICs, the entrepreneurship education and university policies for start-up support have become mainstream at institutions which partnered in the KICs. Hundreds of start-ups and thousands of jobs have been created within these Communities.

Evidence-based policy is the basis for informed decisions and the outcomes of policy measures expressed in numbers and indicators are important. However, in the case of the emergence of entrepreneurial innovation ecosystems, the intangible aspects play a critical role. These aspects are the main collaborative and entrepreneurial culture of innovation communities and skills enabling them to create and capture value. Unlike networks, communities are based on trust, shared values and the ability to communicate and collaborate across business and academia silos. They

²⁰. More information on the EIT KICs: <https://eit.europa.eu>

offer superior learning opportunities which is key in our fast-changing environment. In the case of the EIT KICs, these trust-based relations have induced a cultural change in the entire ecosystems in which KICs' partners are based. This cultural shift towards entrepreneurship and strategic networking has become the glue which holds the community together (Tataj, 2015).

In the case of Montenegro, developing innovation communities which attract entrepreneurial talent from all institutional settings where innovation takes place may become the most relevant although, at the same time, the most difficult aspect of the transformation of the Montenegrin ecosystem outlined in this report.

Entrepreneurship is often the missing link in European innovation ecosystems, and is certainly the case for Montenegro. It is important for Montenegro's policymakers to pay special attention to how new policies will tackle key issues underpinning the European 'innovation paradox' as well as its specific limitations, which include:

- fragmentation of the innovation ecosystem – i.e. insufficient integration of actors and institutions from the domains of research, education, innovation and entrepreneurship sectors which tend to function in silos;
- insufficient critical mass in co-locating and interconnecting actors and institutions from research, education, innovation and entrepreneurship sectors;
- lack of incentives for collaboration in the open innovation paradigm between industry, entrepreneurial firms and academia;
- lack of effective policies to prevent brain drain and capital outflow, which are inherent characteristics of the entrepreneurial innovation ecosystems in the network economy, where larger innovation nodes or hubs tend to attract knowledge, talent and capital;
- entrepreneurship as the missing link in the entrepreneurial innovation ecosystems characterised by low start-up activity due to the lack of entrepreneurial talent, lack of access to markets and early-stage finance, and a lack of serial entrepreneurs as role models, mentors and investors; and finally
- low innovation activity among existing entrepreneurial firms.

Hence, for future policies in Montenegro, entrepreneurship should be considered as the key component but defined in the broadest sense beyond start-up activity. Some entrepreneurs conduct their activity for profit while others search for social impact, developing non-profit ventures or striving to make a state become more entrepreneurial by building new institutions such as entrepreneurial departments at universities or research centres. It is important to recognise that the entrepreneurial talent in all domains of society and the economy should be nurtured and empowered as a change agent creating value, jobs and wealth.

To sum up, the growth model for Montenegro should take into account the dynamics of how entrepreneurial innovation ecosystems emerge in today's network economy. To establish the strong basis for Montenegro to enable it to navigate through this process, the report provides the rationale and analysis in three core areas: the legislative framework, funding schemes, and governance for collaborative innovation models.

2 OVERCOMING LEGISLATIVE BARRIERS

2.1 Introduction

Montenegro can learn from existing international good practices when developing its regulatory environment to support entrepreneurship and innovation. Furthermore, in order to develop truly vibrant ecosystems, it is worth having a closer look at the latest international initiatives for more adaptive regulation. In this respect, anticipatory regulation can be advanced with three viewpoints on ecosystems: to support the responsible development of business and entrepreneurship-friendly, innovation-friendly and start-up-friendly ecosystems.

2.2 Towards business- and entrepreneurship-friendly ecosystems

Over the last decade, the value added of Montenegro's information and manufacturing sectors declined in relative terms by more than 25 %, while tourism and agriculture have played an increasingly important role. As a result of this shift, today the Montenegrin economy largely depends on SMEs with limited access to finance and a low level of internationalisation. Of the 28 268 registered businesses, 99 % are SMEs; 73 % of firms are in services, compared to 18 % percent in manufacturing and 9 % in construction and other sectors. Micro firms account for about 25 % of all employment and small firms for 28 %. SMEs provide more than 75 % of all employment (Bučar, 2018). Only 7 % of Montenegrin firms export their goods, which is less than half of the regional average and one-quarter when compared to Estonia. A geographical and compositional diversification of the Montenegrin economy and exports would be beneficial not only for the country's economic stability (and its resilience to economic shocks), but also for greater innovativeness and a better business environment (Bučar, 2018). Entrepreneurship and innovation play a key role in scaling up existing businesses and creating new ones. However, innovative businesses face a number of legislative barriers that hamper the harnessing of their full potential to develop the Montenegrin economy.

Bankruptcy law hampering serial entrepreneurship

We found that the 9 % profit tax regime may encourage the choice of an entrepreneurial carrier. While setting up a new business appears to be less cumbersome, despite some discouraging labour costs, it is also important to consider the ecosystem renewal and constraints when closing a business. Wymenga et al. (2014) ranked Montenegro as having the worst entrepreneur-friendly bankruptcy law out of 33 countries in Europe and beyond²¹. In particular, judicial and administrative roles were not separated, creditor's committees were not compulsory (which in theory would increase the efficiency of in-court procedures), and the average length of bankruptcy procedures in Montenegro was seen as rising to 60 months, while the average in Europe was 24 months. Furthermore, the same study revealed that Montenegro databases stored negative entrepreneur ratings even longer after their discharge, which hampered businesses restarting.

The Law on Business Insolvency in Montenegro, adopted in 2011 and amended in 2017, addresses the situation by allowing for the reorganisation of businesses which are in financial difficulties and promoting the liquidation of non-viable companies and creditors' protection. Based on discussions with entrepreneurs, however, it was

²¹ Wymenga et al. (2014) developed a country scoring system on bankruptcy and second chance for honest bankrupt entrepreneurs, covering the following aspects: 1. court neutrality; 2. length of time of debt repayment plan; 3. repayment plan as part of the bankruptcy court procedures; 4. separation of judicial and administrative roles; 5. creditors' committees; 6. tax legislation increasing the recovery rate of creditors; 7. average time of bankruptcy procedures; 8. exemptions protecting the bankrupt entrepreneur; and 9. non-financial consequences.

concluded that the current bankruptcy law and how it is implemented and communicated in the ecosystem still reduces the willingness to become an entrepreneur and the ability to launch a new venture.

eCommerce stumbling on difficulties in receiving online payments

Montenegro has advanced its legislative framework for e-commerce, for instance by establishing the E-commerce Law (2004), Electronic Document Law (2008) and the Electronic Signature Law (2005). The adopted legislation promotes the secure and efficient utilisation of electronic communication by specifying requirements for certain electronic signatures and authorising the issuance of certificates for electronic signatures²². However, the impact of these laws is limited given the limited adoption of innovations such as electronic signatures among the population²³.

The Montenegrin regulatory framework for payment system transactions is aligned with the EU *acquis*, with the exception of Regulation 924/2009 on cross-border payments in the Community and Regulation 260/2012 on the establishment of technical and business requirements for credit transfers and direct debits in euros. However, for instance, Single Euro Payments Area (SEPA) payments are not yet possible in Montenegro. The Programme for Montenegro's Accession to the European Union 2018-2020 envisages the alignment of the regulatory framework for payment system transactions by the fourth quarter of 2019, with their application no later than the date of the accession of Montenegro to the EU.

For the time being, however, these shortcomings together with the high-risk country consideration means that Montenegrin businesses are facing difficulties especially with high transactions fees, which are defined by financial entities to cover the higher risks, and establishing electronic payment systems for customers. When businesses do not have access to electronic payment platforms to enable online payments for their customers, they need to turn to smaller, less-trusted payment services. This has a direct impact, for instance, on the modernisation of tourism services for foreign customers.

Need for reforms to facilitate businesses receiving online payments²⁴

Due to the inability to charge and thus receive money through several online payment systems (e.g. PayPal), Montenegro citizens have fewer opportunities to earn from internet jobs. In addition, the service would make foreign transactions to Montenegro easier, and fees would be lower. Entrepreneurs would thus have easier access to the global market.

Since June 2014, the most prominent online payment system in the world, PayPal has been available in Montenegro, but only for making but not receiving payments crucial to business. Montenegrins can only pay through PayPal, the globally accepted and one of the safest systems of sending and receiving money via the internet.

Montenegro expected the PayPal receive service to be enabled in 2014 together with Serbia, but the reason given for not doing this was problematic legislation. Montenegro and Macedonia are the only countries in the region without a complete

²² <https://www.export.gov/article?id=Montenegro-ECommerce>

²³ Data gathered during 1st country visit during interviews with focus groups.

²⁴ Modified from the article by Vijesti, 'Montenegro still without full PayPal service', <http://www.total-montenegro-news.com/business/909-montenegro-still-without-full-paypal-service>, 15 Apr 2018; translated from Vijesti Online from the original at <http://www.vijesti.me/vijesti/crna-gora-jos-bez-potpune-usluge-paypala-984342>

PayPal service. In November 2018, a PayPal representative did not identify any one single measure the Montenegrin government should take to facilitate the situation²⁵.

Earlier, PayPal stated that its ambition, ultimately, is for everyone to have access to their services for digital payments and trade, in line with regulations, although when this might happen remains unclear. Communication with PayPal representatives was initially handled by the Ministry for Information Society and Telecommunications. After it has been abolished near the end of 2016, its duties were divided up between the Economy Ministry and Public Administration Ministry, of which the latter, in particular, has been in contact with PayPal.

To sum up, to develop an overall business- and entrepreneurship-friendly ecosystem, the following two legislative barriers need to be overcome:

- bankruptcy law hampering serial entrepreneurship
- eCommerce having difficulties receiving online payments

Recommendation: Implement and communicate an entrepreneur-friendly bankruptcy law

The entrepreneur-friendly bankruptcy law and its implementation should focus on streamlining the company closure process and a bankruptcy process so as not to inhibit an entrepreneur from starting a new venture. The implementation of and the communication on the regulatory framework should avoid stigmatising entrepreneurial failures and inform and encourage entrepreneurs who take risks to start innovation and ventures (e.g. by lessening the burden of fiscal debt).

Bankruptcy laws vary among countries and are often a product of overall culture and societal perceptions on risks and failure. Components of an entrepreneur-friendly bankruptcy law entail, in particular (Lee et al., 2008):

- the availability of a reorganisation bankruptcy option;
- the time spent on bankruptcy procedure;
- the cost of bankruptcy procedure;
- the opportunity to have a fresh start in liquidation bankruptcy;
- the opportunity to have an automatic stay of assets;
- the opportunity for managers to remain on the job after filing for bankruptcy; and
- the protection of creditors at the time of bankruptcy.

In Montenegro, further attention should be paid as to how the entrepreneur-friendly regulatory framework could avoid stigmatising entrepreneurial failures and encourage entrepreneurs who take risks to start innovation- and technology-driven ventures²⁶. The entrepreneur-friendly bankruptcy law in Montenegro should encourage

²⁵ On 18 November, a teleconference with Claire Alexandre, Head of Government Relations, EMEA at PayPal.

²⁶ See also Wymenga et al. (2014) for further guidance and good practices on entrepreneurship-friendly bankruptcy law.

entrepreneurship, protect creditors and renew the business ecosystem, in particular by:

- developing measures to prevent bankruptcy, including information campaigns, and online information on prevention, training and automatic warnings;
- streamlining the process of company closure (in case an entrepreneur wants to discontinue economic activity) and a **bankruptcy** process that does not inhibit an entrepreneur from starting a new venture (e.g. by lessening the burden of fiscal debt);
- providing free or sponsored consulting, legal and accounting services related to bankruptcy;
- informing entrepreneurs as to the ways forward after bankruptcy and after discharge; explaining a bankruptcy procedure along with the steps and 'content' of each step;
- eliminating the measures that prevent second starters from accessing start-up finance;
- ensuring that honest entrepreneurs get rid of negative credit scorings almost immediately after discharge;
- making the discharge process as fast as possible to save the failed entrepreneur's resources for a possible restart.

Recommendation: Establish an eCommerce taskforce

To innovate and grow, the Montenegro market needs to be fully connected to global digital financial transactions and e-commerce systems. Bringing together Montenegro businesses, international institutions, payment platforms and online business representatives should be one of the first steps towards growing an entrepreneurial innovation ecosystem in Montenegro.

To innovate and connect Montenegro businesses internationally, its market must also be fully connected to the global digital financial transactions and e-commerce systems. Integrating Montenegro businesses into global e-commerce platforms and payment systems requires government coordination to overcome fiscal, legislative, operational and practical barriers.

Speeding up the legislative changes is extremely important for Montenegro's internationalisation. Because of the importance of businesses having a good way to receive online payments, public administration could negotiate at the earliest with financial institutions and payment platforms to overcome high transactions fees and to establish electronic payment systems. Otherwise, promising eCommerce businesses will continue to be badly affected by these constraints which could benefit from temporal measures to alleviate the negative impacts.

Establishing an e-Commerce task force would help create a common understanding and agreement on key responsibilities among different stakeholders to enhance e-payment systems. While the key tasks of this group would be to solve the specific issue of e-commerce, it would continue its work within the more permanent structure, for instance as part of a cross-ministerial body for innovation activities described later in the report under the governance section.

2.3 Towards an R&I-friendly ecosystem

As one of the main drivers of economic growth, innovation is regarded as the basis for Montenegro's economic transformation and modernisation. The country continues to have very few businesses that base their activities on innovation, knowledge and modern technologies. This is having negative effects on productivity and competitiveness, and ultimately on the economy at large.

Generally, business culture is based on imported conventional technologies, so that the country has very few businesses that are focusing their activities on innovation, knowledge and modern and self-developed expertise. Even the market-leading businesses, which are able to bear the risks related to R&D, prefer the safe haven of ready-to-use imported solutions (Bučar, 2018).

Scientific research activities in the country are primarily financed from the budgets of the scientific research institutions, the Montenegrin government and EU funds (IPA, Horizon 2020, EUREKA, COST), and other international funding sources (UNESCO, IAEA, ICGEB, etc.).

The Strategy of Scientific Research Activity for the period 2017-2021 pinpoints that the scientific research community is fragmented, insufficiently interconnected, and subsequently producing low levels of academic and scientific contributions.

Cooperation between businesses and scientific and research institutions is incidental, leaving little space for the production of significant results applicable in practice in the form of novel competitive products or services. The entire higher education system is predominantly oriented towards theoretical knowledge. It should also develop knowledge for practical application. There are only embryonic examples of research commercialisation, which is partly attributed to the poor ability to convert intellectual property into business.

Since universities are predominantly focused on teaching, they lack time which could otherwise be dedicated to working for external users. University staff salaries are based exclusively on teaching commitment, with compensation for participation in research projects being regulated outside of the basic salary (Bučar, 2018).

Researchers are focused on job security and individual career progression, based on the university's requirements. As a result, researchers focus on their own research or on research topics that are common among small research groups. Furthermore, the University of Montenegro limits the number of positions through its Internal Act on Systematisation. So far, efforts between universities and the Ministry of Education have been limited as regards introducing the required changes to increase research activities, knowledge and technology transfer and achieve better collaboration with industry.

Beyond the limited R&I resources, these activities are conducted in silos rather than in cross-disciplinary and sectoral networks. New regulation should encourage cross-feeding: bringing practitioners into university and researchers into businesses.

Lack of IP regulations hampering commercialisation of research

The lack of a regulatory framework is creating confusion in any possible commercialisation of research in Montenegro, especially in terms of industrial and intellectual property rights (IPR). The commercialisation of research has been regulated at the university level. In the case of the University of Montenegro, the payments derived from projects and earnings from research commercialisation are regulated in a special university act and not by the Ministry.

The Strategy 2017-2021 recognised the problems concerning the protection of IPR and planned to further adapt the regulatory framework for IPR and logistical support for stakeholders in the process of protecting their rights. In this regard, it states: 'A strong regulatory framework for the protection of intellectual property rights is the best guarantee for relaxed investment in R&I, especially if it provides for a fair and appropriate distribution of potential profits between researchers, research infrastructures in which they work and investors.' Within the HERIC project, a workshop was also held at the University of Montenegro entitled 'How to successfully implement technology transfer and commercialise the results of scientific research', which also addressed the importance of clarifying the IPR issue. Our discussions with university representatives and entrepreneurs indicate the need for clarifying both the IP regulation and its implementation.

Internal university rules hampering internationalisation

Montenegrin research capacity and capabilities to support innovation are affected by the lack of internationalisation in universities. Internationalisation is being hampered by university rules and practices predominantly focused on teaching. Special emphasis should be placed on acquiring international professional and scientific experience and access to modern research infrastructures. For instance, researchers at the University of Montenegro find it difficult to acquire sabbaticals and stays in foreign universities due to internal regulations, especially because they are obliged to stay to perform their teaching obligations.

Furthermore, the Ministry of Science has reached out to the scientific diaspora, inviting researchers of Montenegrin origin to build ties with the country in an effort which has been welcome by some. However, the reality reveals difficulties in reintegrating individual researchers into the existing ecosystem to develop a talent pool from which some will opt for entrepreneurship. According to an analysis by the Ministry of Science, carried out in 2014, there are 236 Montenegrin scientists (180 with a PhD) living abroad (Bučar, 2018). Building on the mapping done, further steps can be taken to engage and leverage these networks of researchers as well as other innovators and entrepreneurs abroad.

To sum up, to develop an R&I-friendly ecosystem, the following two legislative barriers need to be overcome.

- lack of IP regulations hampering commercialisation of research
- internal university rules hampering internationalisation

Recommendation: Establish clear innovation- and entrepreneurship-friendly IP policy guidelines to enable university-business collaboration

To build a long-term collaboration between academia and firms, Montenegro needs to establish clear and transparent entrepreneurship-friendly IP policy guidelines that encourage the commercialisation of R&D efforts.

The revision of the legal basis includes, but is not limited to, IP rules, flexible employment schemes, and structured dual-career paths for faculty. The legal basis should be complemented with transparent rules on how to deal with emerging incompatibilities, terms and conditions to engage in research commercialisation, exploit publicly funded research, and combine entrepreneurial careers with tenure-track careers.

In particular, the clear and transparent IP guidelines that would also address incompatibilities, terms and conditions to engage in research commercialisation and start-up business would encourage such activities and prevent stalemate situations. In most Organisation for Economic Co-operation and Development (OECD) countries, ownership of academic inventions in public research organisations is designated to institutions to varying degrees. Some still maintain a system of inventor ownership (e.g. Sweden and Italy) considering it better to incentivise researchers to take care of the commercialisation of their own inventions. There are arguments for both forms of IP ownership. In any case, researchers should report their IP holdings to their universities. And if the university takes control, it should then have the capacity to ensure the commercialisation of the holding, too. The legislative framework should clarify how R&D can lead to the creation of commercial products as well as start-ups in which scientists can be involved.

Recommendation: Establish a national policy for internationalisation of research, innovation and entrepreneurship activities in universities

Establish a national policy for the internationalisation of research, innovation and entrepreneurship activities in universities as one of the pillars of the national growth strategy. It should include mobility schemes to attract talent to Montenegro specifically targeting, for example, the diaspora of Montenegro scientists, and mobility schemes to give equal access to opportunities for researchers who want to develop relations with international universities and research centres via funds for international visits, stipends and internships.

The brain drain is an important problem in Montenegro and university rules should be revised and changed to offer flexible and attractive ways to attract talent. These rules should be supported with funding for multiple talent schemes. Such schemes could target specific groups, for example: affiliate foreign researchers, open university teaching posts for industry practitioners, or promote re-immigration talent schemes.

Research capacity and capabilities are affected by the brain drain, and the international diaspora of Montenegrin researchers who are not connected either to their homeland research community or between themselves are an underutilised resource. Among other concerns, researchers at the University of Montenegro have difficulties in acquiring sabbaticals and stays in foreign universities due to internal

regulation. They are often obliged to stay to carry out their teaching obligations with no alternative arrangements being made available. The national policy for the internationalisation of universities and the funding schemes associated with this policy should be measured to show progress on an annual basis with an open data policy.

2.4 Towards a start-up-friendly ecosystem

In general, the Montenegrin start-up ecosystem is still in the early stages of development without the appropriate practice and infrastructure necessary to make it a promising start-up location. The current measures present a balanced approach to developing incubators and start-ups in different geographical areas and establish connections between local and regional business centres. However, the construction of buildings alone is not enough, as investment in technology and skills development are also needed (EC, 2017a).

At the moment, local investment opportunities are scarce. Investments from the business sector are insufficient, in the absence of a network of VCs and angel investors, and accompanied by the lack of mentors necessary to help boost the existing start-up community to a more advanced level (Bučar, 2018). Montenegro can learn, among others, from the experience of developing the Startup Act in Italy to address the needs of start-ups in a coordinated manner (see the box below).

Startup Act in Italy

Italy's Startup Act²⁷ aims to create favourable conditions for the establishment and development of innovative businesses in order to contribute significantly to economic growth and employment. With the Decree Law 179/2012 on 'Further urgent measures for Italy's economic growth', converted into Law 221/2012, a definition of an innovative start-up is a new innovative business of high technological value that has been introduced into the Italian legal system. For the very first time, this type of business could draw upon an exhaustive body of regulations (Articles 25-32) that launched new instruments and support measures on subjects which have an impact on the entire business life cycle:

- exemption from fees normally due to the Chamber of Commerce;
- possibility to remunerate workers and consultants through stock options and work for equity schemes which are tax deductible;
- possibility to raise capital in exchange for shares through equity crowdfunding portals;
- robust tax incentives by up to 27 % on seed and early-stage investment amounting up to EUR 1.8 million (please read circular 16/E by the Italian Revenue Agency for more information);
- streamlined, free-of-charge access to public guarantees by 80 % on bank loans amounting up to EUR 2.5 million.

All this was achieved without distinguishing between sectors or introducing age limits for entrepreneurs. The Act is an ongoing process that draws from the analysis and evaluation of its empirical impact through a structured monitoring system involving the National Statistics Institute.

²⁷Executive Summary of the Italian Startup Act 26th May 2015:

www.mise.gov.it/images/stories/documenti/Executive_Summary_of%20Italy_Startup_Act%2026_05_2015.pdf

Missing foreign talent due to visa procedures

Montenegro could be an interesting haven for digital nomads and start-up entrepreneurs benefiting from, among other things, a good climate, an attractive profit tax scheme, and a sufficient ICT infrastructure. However, potential candidates may find it easier to go to other countries which have smooth visa procedures and financial incentives in place. To make it easier for foreign talent to come and set up in the country, some countries have established specific simplified visa procedures, for instance the Baltic countries, Cyprus and Italy.

Italian startup visa

Launched on 2014 by the Italian Ministry of Economic Development, the Italia Startup Visa²⁸ has introduced a rapid, exclusively online, centralised and simplified mechanism for granting work visas to applicants intending to set up a new innovative start-up in the country or join an existing one as a shareholder (official website and guidelines for the Italia Startup Visa programme).

In parallel, the Italia Startup Hub was launched, whereby the procedures were extended to extra-EU citizens already in possession of a regular residency permit (obtained, for example, for study purposes) and intent on staying beyond its expiry to launch an innovative start-up.

Lack of experiments in regulating innovation

By its very nature, regulation tends to advance cautiously to avoid negative far-reaching impacts. However, in the rapidly changing globalised environment, countries that are able to test and remain agile in their regulatory moves can gain a competitive advantage. Montenegro, as a young country, is in a relatively good position to leapfrog and develop innovative new regulations. However, beyond the example of the tax-free zone, such legislative experiments are not easy to find in Montenegro. Around the world, regulatory sandboxes tend to be employed when a regulator wants to help facilitate the development of new products or services that are tested in a restricted environment. Later, the innovation and/or existing regulations are adapted to bring the product or service to market. Developing such experiments, especially in connection with the revision of the tax-free zone, could also be explored in the context of Montenegro.

To sum up, overcoming legislative barriers to developing a start-up-friendly ecosystem should pay particular attention to:

- the absence of foreign talent due to visa procedures
- the lack of experiments in regulating innovation

²⁸Italia Startup Visa: <http://italiastartupvisa.mise.gov.it/#ISVhome>

Recommendation: Develop a start-up visa

To attract international talent to Montenegro, ensure fast-track visa procedures and communicate this practice effectively across those geographies which are a priority for economic and/or scientific collaboration (see also Recommendation 12 on visiting fellowships).

Montenegro could be an interesting haven for digital nomads and start-up entrepreneurs able to benefit from, among other things, a good climate, an attractive profit tax scheme and a sufficient infrastructure. However, to increase the attraction of Montenegro to foreign talent, the government could develop smooth visa procedures and communicate them effectively.

Recommendation: Experiment with pro-innovation regulation

Develop targeted regulatory sandbox initiatives to experiment with and test pro-innovation regulation. Together with strategic (trade) partner countries, use these tested innovation- and entrepreneurship-friendly regulations to attract and enable start-ups to test and develop new products and services in promising emerging fields of science, technology and innovation.

As the regulatory changes may have wider impacts on a particular sector or industry, the process of changing regulations has to be done through wider engagement with industry stakeholders. In the UK, the Financial Conduct Authority's (FCA) Innovate²⁹ project is one of the most well-known examples of a regulatory sandbox. Working closely with the FCA has given businesses the ability to develop their ideas and business models with consumers in mind and in a way that mitigates potential risks through the use of appropriate safeguards to prevent harm. For instance, many of the participating businesses are around distributed ledger technologies (blockchain). One area for piloting could be defined in connection with the revision of the tax-free zone.

²⁹ FCA's Innovate project: <https://www.fca.org.uk/firms/regulatory-sandbox>

3 FUNDING & RELATED MECHANISMS

3.1 Introduction

Funding schemes for start-ups and other actors in innovation and entrepreneurial innovation ecosystems constitute key elements of national acceleration strategies. These schemes mainly fall into two separate categories: one concerning capital investments, i.e. typically oriented towards business angels and VC firms that invest directly in start-ups, and the other concerning subsidies and subsidised loans, notably dedicated to R&D and innovation or more generally to start-ups.

First, it should be clarified that these two categories of schemes address two separate, but potentially additive, complementary issues. For the first (capital-oriented schemes), the critical need is for entities like start-ups to finance their growth to invest in assets too risky for them to be supported by the banking sector in its traditional activities, such as loans or even guarantees. For the second (subsidy-oriented schemes), the critical is to address the existence of market failures, especially as far as R&D or innovation are concerned – but also, more generally, the existence of state-aid frameworks and mechanisms dedicated to start-ups. Since markets have been shown not able to provide by themselves sufficient investments in these risky activities, there is the need for public authorities to set up dedicated funding schemes.

These two separate issues are particularly relevant when it comes to innovative start-ups that suffer from both the need to find risk-oriented investors to finance their growth *and* from the very frequent desire to find public sources of funding to support their R&D and innovation activities. Finding funding from both private and public sources is one of the key activities endorsed by start-up founders, on a daily basis, in all entrepreneurial innovation ecosystems in the world, including the most thriving ones.

In recent decades, in most EU countries, a more or less developed VC and investment community has been created, often supported, and increasingly so, by international actors from the USA and Asia when it comes to later and larger funding rounds, due to the current and severe limitations of EU ecosystems in terms of available funding at the start-up growth stage.

Most EU countries have also put in place direct subsidies for R&D activities, typically as fiscal schemes (tax deductions and/or credits), such as France's well-known and particularly attractive 'Crédit d'Impôt Recherche', in addition to other mechanisms that can directly support innovation, notably in start-ups, through contests or other competitive or open calls supported by innovation agencies or dedicated administrative bodies.

In addition to capital-oriented and R&D subsidy-oriented funding schemes, most countries regularly implement dedicated funding schemes, i.e. those dedicated to supporting certain types of actors within entrepreneurial innovation ecosystems that have been found to play key ecosystem roles, such as the support provided by various European Member States to science-based incubators.

3.2 Management of funding schemes

Generally, the well-functioning national and international funding schemes strongly rely on their selection processes. The experience of governments and public authorities shows that selection has had to be sufficiently reliable to gain credibility both nationally and internationally. Non-functioning funding schemes, with either/or

inappropriate delays, a lack of transparency with respect to their processes, only administrative interactions and no hearings, no external expertise, etc. tend to have very counterproductive consequences and result in a significant loss of credibility, both within the country and internationally. Indeed, a few standard elements stand out in such contexts: digital, traceable and transparent procedures; schedules that give applicants sufficient time to prepare their proposals and potentially to connect with local and international partners; feedback to applicants on their proposals, including proposals that were not actually selected and, most importantly, the involvement of neutral and international experts in a framework akin to peer review. If possible, this should go up to the point where these experts get an opportunity to interview the candidates at a later stage in the selection process.

Need for transparent and inclusive funding scheme evaluation procedures

As regards selection processes, an international standard often rests on the use of peer review. Peer-review procedures are particularly strict in the scientific world, such as for the European Research Council in Europe. Not following such procedures results in an immediate loss of credibility if not the actual exclusion from the academic community. Similar procedures exist to promote innovation, too. The EU commonly asks external experts to review applicants in many of its procedures, including the new schemes directly oriented towards start-ups and SMEs, such as the SME Instrument. Many local and national authorities do the same and rely on external expertise from peers or experts to select applicants. Implementing such processes is a must for Montenegro whenever it would like to push forward any funding scheme.

Recommendation: Streamline evaluation processes for public R&I funding schemes

Streamline evaluation processes for funding schemes by establishing formal documentation according to which any funding scheme dedicated to innovation and entrepreneurship should fulfil criteria with respect to its selection process, notably through the involvement of external experts under non-conflict-of-interest oaths.

Implementing transparent and international peer-review processes helps in developing successful funding schemes, and certainly with the involvement of international experts, due once again to the limited size of the country and its communities.

Ideally, the selection of innovation projects should follow two stages: first, the double-blind peer review associated with a conflict-resolution process when the two referees disagree, and secondly an expert panel and candidates' pitches. Experts and referees should sign strict agreements on conflicts of interest, guaranteeing notably that experts from the private sector, if and when involved, would have to disclose the existence of past or current ties, most notably investments, that could influence their review.

3.3 Subsidy-oriented schemes

Below we identify unharnessed opportunities in Montenegro relating to subsidies for start-ups and, more generally, to measures related to taxation to promote entrepreneurship and innovation.

Lack of subsidies for start-ups

R&I subsidy-oriented schemes do not address an important need within the Montenegrin entrepreneurial innovation ecosystem: start-ups' very early funding needs, i.e. in the EUR 10 000-50 000 range, and not related to R&I expenses but to the costs incurred by start-ups during their launch.

In addition, with respect to additional subsidy schemes dedicated specifically to start-ups, clear principles should apply to the selection process. Again, since innovation is, by nature, relative – novelty, by definition, always being relative to a pre-existing state of the world – no definition of innovation proper will ever be able to be set in law. Even if a law did set out characteristics focusing on recently incorporated and smaller businesses, only the concomitant reliance on an evaluation framework with the intervention of human beings could also discriminate between innovative start-ups and other types of businesses. As a consequence, subsidy schemes dedicated specifically to start-ups should, in particular, be implemented with the help of a panel of external experts, at least some of whom have an international background, and some also come from the Western Balkans region, so as to further foster existing links and develop new ones.

Recommendation: Launch an honour loan programme for start-ups

Implement a start-up-oriented subsidy scheme in the form of 'honour loans', ideally associated with a programme encouraging founders to visit several other entrepreneurial innovation ecosystems. If technically feasible, such a programme could benefit from the support of pre-accession funds (Recommendation 7 applies here).

Frameworks such as honour loans, as they exist in several countries, could prove especially useful since, instead of providing subsidies to the start-up, they provide a loan to an individual founder or founders who, even if this loan is by definition not guaranteed and its reimbursement is based on 'honour', tends to enhance both the founders' feeling of responsibility and their recognition. Honour loans are accessible to individuals even before their start-up has been incorporated, and all the more so as they often help founders to bring in the initial capital for their start-up. They are granted without the need for any collateral or co-investment, by a dedicated programme that can either be supported by a public agency or a financial institution, provided it can operate in a stand-alone manner vis-à-vis other programmes. Conditions exclude any interests and any reference to the start-up's success or profits. The individuals benefiting from honour loans should also be included in a specific acceleration or incubation programme which, in the case of Montenegro, would typically involve at least short stays for the selected founders in several other countries, including those in the region and elsewhere in Europe.

Recommendation: Assess the feasibility of a new tax credit dedicated to innovation

Conduct a detailed study, with the help of international experts, on the potential impact of a tax credit dedicated to supporting innovative companies of all sizes in Montenegro, and of its associated costs in terms of expertise, in order to specify and adapt its scope to the Montenegrin economy.

Montenegro should certainly consider updating its regulations so that Montenegrin entities of all sizes could benefit from similar conditions to other entities in the region and elsewhere in Europe, with respect to innovativeness. However, it should be noted that focusing on innovation as a key criterion induces the necessary setting up of an expertise capability within the Montenegrin administration and/or through external experts.

Since evaluating what is innovative and what is not cannot rely on any simple criterion, it is indeed necessary to evaluate each situation, on a case-by-case basis, to determine whether the activities considered are innovative. This process, which can only be undertaken by experts who have some knowledge of the field, at least broadly speaking, be they independent and external contractors or regular part-time employees of an administration.

Among the fields that could deserve special attention are tourism and agriculture, where Montenegro's economy has strong assets and where innovative businesses should be able to benefit from a new subsidy scheme. Another question with respect to EU accession is whether subsidiaries of foreign businesses should be allowed to benefit from such a scheme, which has been the case in many countries, not least to raise a country's attractiveness with respect to foreign investments.

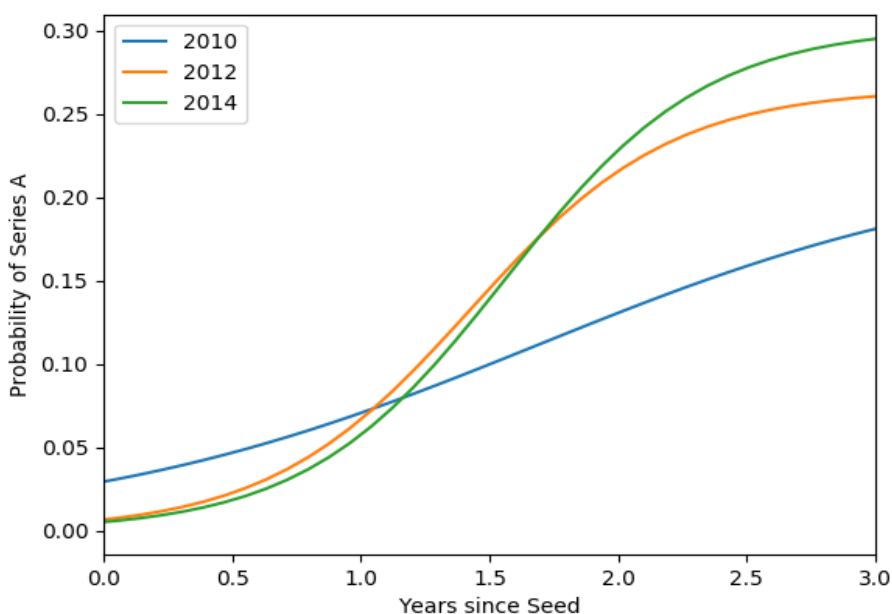
3.4 Capital-oriented schemes

Developing the funding part of any entrepreneurial innovation ecosystem can take different paths but can certainly benefit from some elements of partial bootstrapping by public authorities. The current and striking difference between the French and German VC industries – the first being significantly more developed than the second (according to Eurostat, in Germany, the ratio of yearly investments in VC to GDP is approximately 0.025 whereas in France it is approximately 0.035), can be related, among other factors, to the activism of French public authorities during the past 50 years. This has gradually supported, including during periods of economic downturn, the emergence and strengthening of a national VC industry.

Needless to say, this bootstrapping has to be adapted to the prevailing situation, notably in terms of potential deal-flow, i.e. with respect to the number of businesses that could actually be suitable to benefit from the funding schemes, and to their stages of development. To give an example, it has become crucial to support EU start-ups at the growth stage, since more and more are raising large or very large investment rounds with a strong contribution from international investors. This was not the case just a few years ago, when the crucial need was to support the emergence of national communities of business angels and seed funds, i.e. when the population of start-ups mainly comprised new and emerging entities whose funding was to be in hundreds of thousands of euros – and not in tens of millions of euros, as is often the case today.

Effect of the 'Fonds National d'Amorçage' in France, Figure 7 below represents the evolution of the transformation curve of seed to Series A investments for start-ups (with the probability that a start-up that has received seed funding receives Series A funding over time) in Île-de-France region (the ecosystem including and around Paris), comparing the years 2010, 2012 and 2014. It shows a marked difference for 2012 and 2014 which is attributable, at least in part, to the setting-up and operationalisation of a new national fund of funds dedicated to early-stage VC investments – the Fonds National d'Amorçage (FNA) – and probably also to a globally much more active start-up ecosystem in the country.

Figure 7. Seed to Series A investments for start-ups in Paris (Agoranov, 2015)



Lack of VC fund pooling in the Western Balkans

However effective they might prove, the need and opportunity for setting-up capital-oriented funding schemes must be assessed with regard to the prevailing economic situation and landscape. In this respect, Montenegro's situation, because of its size and inclusion in the Western Balkans region, activism, as well as to the youth of its entrepreneurial innovation ecosystem, creates both opportunities and constraints.

In this respect, only an extremely limited number of Montenegrin start-ups could benefit from capital-oriented schemes. Furthermore, their investment needs would be mainly in the range of tens of thousands or a few hundreds of thousands of euros.

Furthermore, gaining leverage is important for capital-oriented mechanisms. Co-investment is a common mechanism within the VC and investment community, first

to share risks, but also to accommodate the need for later investment rounds for the most promising start-ups. These financial practices give rise to investor networks, whose existence is well documented and studied, and whose significance for the success of VCs and start-ups is well established. At the same time, since money invested in these schemes – and even more so when public – is by definition limited, there is a need to find national and/or international counterparts in case such a funding scheme would not actually manage to create a positive impact by remaining too small, too local and too isolated, eventually becoming anecdotal.

Recommendation: Commission a study on a new regional VC seed fund

Conduct a feasibility study for a new VC seed fund dedicated to innovative start-ups, including moon-shot projects and focused on the Western Balkans, with an international contractor that would realistically assess VC opportunities in the region by contacting all potential stakeholders: national authorities, the EU and its related bodies, including the EIB & EIF, pre-accession funds, VC firms active in the region, local funds and business angel associations, institutions such as the World Bank or the European Bank for Reconstruction and Development (EBRD), etc.

Until now, there has been no VC activity in Montenegro. A couple of Montenegrin start-ups have found funding abroad, and the South Central Ventures fund, based in Belgrade, has started considering investments in Montenegro, the first investment, for a very limited amount, about to be announced when this report was written. Establishing a fund or supporting an existing capital-oriented funding scheme in Montenegro should not be done in isolation. The limited size of the Montenegrin entrepreneurial innovation ecosystem, especially the limitations of the deal flow, would make it extremely difficult to raise such a fund at seed stage or later.

Conversely, a strategy at the level of the Western Balkans, in relation to existing VC actors in the region, would have a better chance of succeeding. Existing initiatives in the region should also be fully taken into account to establish whether they could be partners and co-investors, or even potentially something more.

In every respect, Montenegrin authorities should take the opportunity offered by this study to develop relationships and create links with VC funds and other private investors who could potentially consider Montenegro as a source of investment opportunities.

3.5 Related schemes

Other significant funding schemes often target incubators in their capacity as key ecosystem actors, although many different kinds of actors and even individuals who are social entrepreneurs and key to the emergence and building of ecosystems, can be considered in the context of such dedicated funding schemes. In recent years, the emergence of accelerators has challenged these schemes by suggesting that profitable business models could even exist for actors intervening in the earliest part of start-up life. Now, with more than a 10-year track record, the limited success of private accelerators, even in the digital sector where the most successful actors in the USA have had to raise full-flight VC funds to sustain their model, has put dedicated schemes back into consideration. They now have a greater focus on the performance of these actors, on their specialisation, typically with an emphasis on science-based and deep-tech programmes, and on their actual role within ecosystems.

In addition, other schemes could be explored which, in particular, would allow Montenegro to benefit from its assets and to exploit existing opportunities perhaps more efficiently and in the shorter term. At least three areas stand out: international conferences and events, the diaspora, and the EIT model (see also Section 4).

Lack of government support for international conferences

Several international scientific conferences, and at least one event dedicated to innovation (SparkMe), are organised in Montenegro each year, benefiting from its beautiful countryside and coast and related hosting facilities. However, we found out that national authorities do not seem to provide real support for these conferences, even though doing so would help them to scale up and generate international awareness of Montenegrin initiatives in terms of science and innovation (of note, see the recommendation on moon-shot projects below).

Lack of institutional measures to address innovative diaspora

The diaspora – scientific and cultural and innovative and entrepreneurial – represents an asset for Montenegro that is probably underexploited just now, but could contribute to creating extremely valuable assets for the country, thanks to the networks built by diaspora members while working abroad (see also Recommendation addressing the internationalisation of universities).

Lack of support activities for start-ups

We established that Montenegro lacks an active and vibrant community of innovators, entrepreneurs and start-uppers to foster entrepreneurship and innovation activities. Collectively, they can take initiatives from the bottom-up that can help structure their ecosystem, and become interlocutors for those public authorities willing to implement new schemes, so as to improve them by taking into account the constraints and realities facing innovators and entrepreneurs 'in the field'.

Lack of visible and ambitious innovation projects

Furthermore, fostering entrepreneurship and innovation relies heavily on the existence of an active and, hopefully, vibrant community of innovators, entrepreneurs and start-uppers.

In addition, the emergence and development of at least a limited number of visible and ambitious projects is also key in helping an ecosystem to thrive. Not only do they become role models but also, more generally, they can reassure ecosystem actors on the feasibility, within their ecosystem, of such ambitious endeavours – and therefore, of their own, which is particularly key when they express doubts in this respect, all the more so as they are generally sufficiently mobile to develop abroad – especially true of the more promising projects.

To sum up, other schemes for promoting entrepreneurial innovation ecosystem should address, in particular, the following four challenges:

- lack of government support for international conferences
- lack of institutional measures to address scientific diaspora
- lack of support activities for start-ups
- lack of visible and ambitious innovation projects.

Recommendation: Establish a support scheme for international conferences in research, innovation and entrepreneurship

Establish a support scheme for international events and conferences dedicated to research innovation and entrepreneurship. Take advantage of these events to publicise Montenegro's resources, opportunities and achievements with respect to science and innovation (Recommendation 7 applies here).

Montenegrin authorities could provide clear-cut support for international conferences related to innovation in order to raise international awareness of their country and their innovation activities. In addition, the costs of such support would be very limited according to international standards.

Recommendation: Launch a 'visiting fellowship' programme dedicated to innovation and entrepreneurship

Establish a support scheme for a 'visiting fellowship' programme for the start-up community, for instance in the form of entrepreneurs in residence, visiting mentors, etc., that would be accessible in particular to the Montenegrin diaspora and also provide support to grass-root initiatives that could help structure and strengthen entrepreneurship and the start-up community in the country in diverse aspects, such as scientific, innovative, entrepreneurial, cultural, etc. (Recommendation 7 applies here).

Besides spending vacations in their home country, members of the scientific diaspora willing to involve Montenegrin entities in intentional collaboration could receive support from the government, for instance through a simple visiting fellowship that would allow them to spend time in Montenegro while receiving some support, probably non-stipendiary but rather in the form of travel, hosting or other support directly targeted at their projects.

There are important functions in all entrepreneurial innovation ecosystems that tend to be endorsed by ecosystem actors in a quasi- or explicitly not-for-profit role. Recognition of and support for these 'grass-root' contributions can significantly strengthen the community and foster structuration of the ecosystem. By providing support to entities which play a key role in the functioning of the Montenegrin entrepreneurial innovation ecosystem via visiting fellows, such as entrepreneurs in residence or visiting mentors, Montenegrin authorities could help their innovative and entrepreneurial community to structure more rapidly.

Recommendation: Develop one or two moon-shot mission-oriented projects

Search for and incubate one or two moon-shot mission-oriented projects in the field of entrepreneurship and innovation to showcase the ambition and thought leadership of Montenegro in the Western Balkan region.

All the previous recommendations might not be enough to address the need for bootstrapping that the Montenegrin ecosystem crucially needs, in a context where entrepreneurial innovation ecosystems are thriving all around the world and elsewhere in Europe including the Balkans. In order to bootstrap an ecosystem and leapfrog the current situation, one or two moon-shot projects might also considerably help start-ups and innovation activities. This is already the case in the scientific field with the SEEIST project which is supported by the Ministry of Science. This world-class research infrastructure dedicated to cancer therapy equipment and facility is intended to help Montenegro address the brain drain by attracting scientists, having been built by the private sector.

It is, of course, impossible to determine in a report like this the precise nature of such moon-shot projects as they always rely on particular, sometimes serendipitous situations. The Montenegrin government needs to be extremely selective in this respect, considering that only one, maybe two such projects could receive appropriate support over a decade. Assessing potential opportunities implies access to international expertise, and international acknowledgement of the importance of a moon-shot project, which is absolutely key for its development, will always require the endorsement of recognised international experts.

However, despite the difficulties of finding the right projects, the conscious and systematic search might considerably enhance the eventuality of its happening. Among key elements are pre-existing direct connections and links between Montenegrin nationals and foreign entities that could provide the context for such opportunities. Likewise, members of the diaspora involved in start-ups and/or innovation in the framework of ambitious projects might consider developing at least part of it in Montenegro, providing they receive the appropriate support at the highest level.

Needless to say, the potential leverage of just one such moon-shot project could be considerable in the medium term. This could have positive impact on culture, which is often more difficult to change than policies.

4 ENHANCING GOVERNANCE AND CONNECTIVITY

4.1 Introduction

Entrepreneurial innovation ecosystems are primarily about communities, not formal contractual arrangements between organisations. Unlike collaborative arrangements between organisations, communities cannot be created through contracts or by establishing formal organisations or networks. However, when a community is weak, public intervention is beneficial to create and strengthen it.

The Montenegrin ecosystem is fragmented and in the early stages of development, so it is essential that institutions and businesses develop interfaces to connect with the new more dynamic environments to overcome fragmentation of the ecosystem and build bridges to enable the flow of talent, knowledge and funding. These connections should be developed at the national, regional and international level.

In a fast-changing world where old economies are being transformed or broken down at an unprecedented rate and scope through technology advances and changing patterns in consumer behaviour, policies must also be flexible and agile. Therefore, to stimulate the growth and interconnection between these pillars, policies should also include new types of emerging and temporary digital environments driven by collaborative projects and public-private partnerships (PPP).

Subsequently, we have developed a set of recommendations and examples of good practice in developing national, regional and international dimensions and organisational models of entrepreneurial innovative ecosystems that would support the effective implementation of recommendations from the two previous sections.

4.2 In-country governance and connectivity

Below, we present four key challenges related to in-country ecosystem connectivity for which specific recommendations have been developed.

Silos and lack of horizontal government coordination

While the country has talented people, ultimately, as a small country it lacks critical mass. In addition, the region's local culture and historical legacy has led to even greater fragmentation which clearly is not beneficial when introducing changes. Achieving critical mass which drives knowledge and value creation towards structural change is even more difficult as 'silos' dominate the national ecosystem.

Digital transformation is one promising area for reducing silos and fragmentation. According to the Government of Montenegro, digital transformation is a great opportunity because it offers a chance for small and smart systems to solve problems in a short time while becoming competitive on a global scale³⁰. In particular, the government could focus on developing innovation and entrepreneurship through digital transformation, digital presence and branding, encouraging private-public partnerships, engaging practitioners in teaching at universities and dual appointments. Unfortunately, however, the digital transformation process lost some momentum when the Ministry of Information Society and Technology was discontinued, and its activities were distributed under the jurisdictions of two different ministries.

To address complex challenges that demand the active involvement of different ministries and representatives from business and academia, the government

³⁰ Available in Montenegrin at <http://www.mju.gov.me/vijesti/187527/Saopštenje-Digitalna-transformacija-velika-prilika-za-Crnu-Goru.html>

constituted several cross-ministerial councils. The procedure to constitute such a body is short (two months), but the size of such councils, like the Council for Competitiveness³¹, can stretch to over 30 members, which can make it difficult to manage. Their mandate is advisory and they are not expected to take concrete actions³². Therefore, existing cross-ministerial councils may not be the most effective way to develop solutions to critical challenges within the entrepreneurial innovation ecosystem.

Working group 'Slovenia – the land of start-ups'

In December 2017, the report 'Startup Investment & Innovation in Emerging Europe' was published. It was prepared on the basis of the first comprehensive research into start-up ecosystems in 24 countries of Central and Eastern Europe. The Slovenian start-up ecosystem was recognised as the second best in the region.

One of the key bodies in charge of developing the framework conditions for start-ups is a working group sponsored by prime minister, gathering together representatives from several ministries, the most prominent representatives from the start-up community and intermediary organisations, and legal experts.

The working group, which was set up in 2017, has the following main tasks:

- (1) to determine whether there are obstacles in practice;
- (2) and, if they exist, examine them and present comparable good practices and solutions from abroad;
- (3) and on the basis of preparing and implementing the Action Plan 'Slovenia – the country of start-up businesses'.

In less than nine months, a new registry of start-up businesses was implemented enabling the state to differentiate true start-ups from other newly established businesses. In addition, significant progress was made in the introduction of 'start-up visas'.

Similar cross-ministerial bodies governed by the prime minister's office have also been developed in several other EU Member States, such as Sweden³³ and France.

Lack of common understanding about start-ups and their support measures

To promote innovation activity, the government has adopted several strategic documents, including the Law on Innovation Activity, 2016, and the Strategy on Innovation Activity (2016-2020), with an action plan. The Ministry of Science wants to support innovative, high-tech start-ups. The Innovation Law provides the following definition of a start-up: '*a newly formed company established with the aim of developing innovation ideas or business models and their commercialization on the market*' (Article 8); as well as for a spin-off: '*... is a newly formed company created as a result of scientific research, technology transfer or separation from the existing*

³¹Available in Montenegrin at <http://www.srr.gov.me/vijesti/177008/Obrazovan-Savjet-za-konkurentnost.html>

³² Data gathered in interviews during a country visit.

³³ Towards a holistic innovation policy: Can the Swedish National Innovation Council (NIC) be a role model? at <https://www.sciencedirect.com/science/article/pii/S0048733318302403>

business, with a view to commercial exploitation of research results or innovations'. However, the concept has not been adopted or applied widely.

Most of the current support measures (Agency of Employment, Investment and Development Fund of Montenegro - IDF) finance any type of new business, not specifically the most innovative ones. This is because they differentiate conditionality not according to the area/ type of activity, but rather according to the founder (individual entrepreneur, college graduate, women, etc.) (Bučar, 2018).

Furthermore, neither the national IDF nor the commercial banks recognise innovative start-ups as particularly attractive customers deserving specially tailored credit lines. Similarly, the labour law does not recognise any relaxation in the obligation of businesses that employ PhD holders or other research personnel (Bučar, 2018).

In addition, due to the lack of common understanding of start-ups, legislative- and funding-related challenges are not being addressed as government officials do not have the means to distinguish between innovative start-ups and other newly established business.

Because of multiple factors which may be hampering the development of start-ups, some countries have developed specific legislative packages to coordinate and support the innovative ones.

Case: Slovenian National Register of innovative startup companies

The Slovenian National Register of innovative startup companies (Register) was set up through the Investment Promotion Act, adopted by the National Assembly of the Republic of Slovenia on 15 February 2018. Details on the establishment and management of the Register are defined in the Rulebook of the Register of innovative startup companies.

This Register has been established and is managed by the public Slovenian Enterprise Fund (SEF). Start-ups in the Register are independent companies that develop or market an innovative product, service or business model with high innovation and financial potential, and which meet the conditions laid down by the law governing the promotion of investments.

To enter the Register, a company must undergo a face-to-face assessment process whereby it needs to prove its high innovation and financial potential. For the purposes of verifying high potential, the SEF established a public list of experts demonstrating direct experience in the context of the operation of innovative start-up companies, namely as start-up founders, owners or managers, active investors, or managers of start-up support programmes.

The SEF checks fulfilment of the conditions when a start-up is entered on the Register. In addition, compliance with the conditions are checked at least once a year, at the beginning of each three-month period in a calendar year.

Should a company no longer meet the conditions, it must inform the SEF in writing within 30 days of the event occurring. An enterprise is deleted from the Register if the SEF determines that the entity no longer fulfils the conditions. Only the companies registered are viable for using targeted support measures and the simplified procedures specifically intended for start-ups e.g. start-up visa.

Lack of coordinated actions to promote entrepreneurship

There is a lack of general entrepreneurial culture, talent and business growth management skills. Work in the public sector is recognised as the favourite career option by 75 % of youngsters. While it is being taught in primary and secondary schools, this is done by teachers who are not practitioners and are using dated methodologies. At the moment, there is only one entrepreneurship centre at the University Donja Gorica, while in other public or private universities traditional entrepreneurship is only treated as a subject in courses related to economics. Currently, the Ministry of Science has insufficient resources to implement the required cultural changes. Furthermore, this situation has been escalated by a high fragmentation among existing business-support institutions and the absence of ongoing national promotion and support programmes holistically addressing the needs of both existing and future entrepreneurs.

'PONI' - Slovenian programme to stimulate entrepreneurship

After the last economic crisis, Slovenia faced the problem of high youth unemployment: there were virtually no jobs for young, highly educated people. Young people resorted to apathy and hopelessness, whereby entrepreneurship was not considered to be a popular career option.

In 2013, the national pilot programme 'Entrepreneurially in the business world' was introduced, co-financed by EU Structural Funds. The objective was to stimulate self-employment among young educated people through a series of motivation events, the selection of promising business ideas, and the intensive training and mentoring of selected individuals. To ensure the entire focus of these individuals was on business development, they were all assured a minimum wage for the six-month period. **The programme was carried out across all Slovenia's regions by consortia of different actors.** The final goal was to stimulate youth employment and the emergence of new businesses with the potential for growth.

The results of the test project, which lasted for two years, were extraordinary. Of the 610 individuals selected for intensive training and mentoring, 73 % found employment. During the two years, the programme participants established 227 businesses and worked for them for at least one year after completing the programme.

Results exceeded all expectations and the Entrepreneurially in the business world project was therefore recognised as best practice and subsequently presented in the European Parliament. The programme also be carried out in 2019 under the name of PONI and aimed at a broader target group: motivated individuals of all ages with innovative business ideas.

Lack of coordinated actions to promote innovative start-ups

There is no consensus on the meaning of term 'start-up'. The general perception is that any newly established company is already a start-up, which is not in line with the global definition: a young innovative company or a team developing a product with global potential in search of a repeatable and scalable business model. This misconception may lead to inadequate and uncoordinated actions to promote and support innovative start-ups.

There is a very fragmented and dispersed set of business and innovation support actors, the activities of which activities depend on winning sporadic calls by national and international sponsors such as the United Nations Development Programme

(UNDP) and the United States Agency for International Development (USAID). There is no state-supported registry of intermediaries, support actors, testing or prototyping facilities that would offer standardised ongoing support to ecosystem actors and could implement newly developed support programmes.

Next to proactive individuals in different parts of the government advocating for change, the main institution driving change is the Ministry of Science. Although very ambitious and proactive, the Ministry employs just 30 staff and has no implementation agencies. As such, it suffers from limited resources for the implementation and coordination of planned activities.

The general impression is that the great majority of academia and government is still governed in silos which is seriously preventing the flow of talent, technologies and funding and consequently hampering the innovation performance of the whole ecosystem.

Major challenges remain in terms of the general perception of start-ups, the lack of motivated young people, the anonymity of a few success stories and the lack of adequate support measures to develop start-up ideas and early-stage start-ups. This is aggravated by the small critical mass of change agents and competent start-up coaches and mentors.

Case: Initiative Start:up Slovenia

In 2012, Slovenia's start-up ecosystem was facing the low performance of the support institutions that were executing outdated national support programmes, working with badly selected start-ups with poor outcomes. This inadequate support and bad framework conditions caused the brain drain of all relevant start-ups and general outrage.

In response, most proactive technology parks, incubators and individuals from the start-up community and academia joined forces and formed the Initiative Start:up Slovenia. Using a bottom-up approach, members of the initiative developed a national start-up strategy with key social goals, thereby stimulating the interest of the state to become an active partner. Next, the Initiative developed new public promotion, education and empowerment programmes for start-ups at different stages of development. In addition, it also co-created the proposal of an institutional, legislative and financial framework for start-ups.

Since 2012, the Initiative Start:up Slovenia has been leading execution of the public support programmes for start-ups and the development of a national start-up ecosystem.

Further recognition is the fact that Initiative Startup Slovenia is one of founding members of the European Startup Network (ESN), which was set up in 2016 under the auspices of the EC and top European representatives with the purpose of unifying leading European national start-up associations to create a common voice for European start-ups so that more can start, scale and succeed in the EU.

The National Science and Technology Park initiative is biased towards physical infrastructure

In December 2017, the Ministry of Science published the Strategy of Scientific Research Activity for the period 2017-2021. Besides better utilisation of the existing infrastructure, establishing the National Science and Technology Park (STP) is scheduled for completion by 2020. This, the Strategy hopes, will not only strengthen the institutional framework and help the emergence of innovative ideas and their

commercialisation into new or improved technologies, products and services, but will also provide new employment through the creation of SMEs in the form of innovatively motivated start-up and spin-off businesses (Bučar, 2018).

The STP should reduce the current lack of intermediaries, support actors and absence of testing and prototyping facilities and improve ongoing support for ecosystem actors. It should also enhance the collaboration between main innovation ecosystem actors, thereby overcoming the small critical mass for open innovation activities due to fragmentation and silos.

According to the Ministry of Science³⁴, EUR 13 million will be invested in the construction within the public University of Montenegro campus which will indeed strengthen the institutional framework. This is a huge amount compared to the statistical data on GERD and the annual budget of the Ministry of Science. However, limited attention has been paid to developing skills, know-how and a social network to exploit such investments and ensure maximum spill-overs. In conjunction with the STP, 'hardware' and 'software', such as strategic goals and support activities, should be carefully co-created with key actors from the entrepreneurial innovation ecosystem to better connect such actors and create a really positive effect on the ecosystem. Otherwise, the low impact resulting from such a significant institutional investment as the future national STP could lower even further the general perception of the importance of entrepreneurship, innovation and start-ups for the country's economic development.

Science and Technology Park Belgrade

The Science and Technology Park Belgrade (NTP Belgrade) in Serbia was established in 2015. Today, it is supporting the development of dozens of start-ups and R&D SMEs.

NTP Belgrade plays the main role in improving the national start-up ecosystem by developing and executing pilot acceleration programmes for pre-seed and seed start-ups in early development stages. Programmes are being tested for possible further application in collaboration with the National Innovation Fund which provides financial instruments for start-ups and other innovation ecosystem actors.

NTP Belgrade is cooperating closely with the University of Belgrade, managing the Technical Faculties' Business and Technology Incubator which supports early-stage start-ups and teams from the university. It developed and executed the pilot start-up optional subject at the Technical Faculties. Based on the experience of the pilot, it developed and executed a very successful entrepreneurial summer school, and programmes for the motivation and activation of students from the University of Belgrade.

It is continuously developing start-up promotion and support programmes for the Municipality of Belgrade. Financial aid from the municipality has been boosted by quality promotional and sourcing activities, bootcamps, mentorship programmes and pitching events with foreign investors, and have resulted in 10+ internationally recognised start-ups that have received private investments.

Furthermore, NTP Belgrade is an important actor in the national smart specialisation process supporting the Ministry of Education, Science and Technological Development of the Republic of Serbian, bringing together stakeholders from all four helixes to detect areas of specialisation, tackle obstacles and develop a policy-

³⁴Available in Montenegrin at: <http://www.vijesti.me/tv/naucno-tehnoloski-park-u-podgorici-pocinje-da-radi-2020-1001751>

mix to support collaboration.

One of NTP Belgrade's important tasks is to transfer experience and knowledge in the application of the bottom-up methodology used for the development of NTP Belgrade to other cities in the Western Balkans region.

Besides numerous other recognitions, the NTP Belgrade model was presented as the best practice example in the Western Balkans during the 4th Joint Science Conference of the Western Balkans process/Berlin process, which took place in Rome from 30 May-1 June 2018.

To sum up, governance of in-country connectivity should be improved in particular in the following five areas:

- silos and the lack of horizontal government coordination
- lack of common understanding on start-ups and their support measures
- lack of coordinated actions to promote entrepreneurship
- lack of coordinated actions to promote innovative start-ups
- impact of the future National Science and Technology Park limited to physical infrastructure.

Recommendation: Set up a cross-ministerial body for innovation and entrepreneurship activities

Set up an alternative cross-ministerial body for innovation and entrepreneurship activities in order to enhance horizontal coordination for new policies and legislation among the ministries, as well as with other public entities and with the private sector. The mandate of this high-level body should be extended beyond the advisory role of existing councils and should be set up under the prime minister's office to ensure top-level political support and visibility.

This collegial body should have a direct impact on new policies aimed at accelerating the emergence of the entrepreneurial innovation ecosystem in Montenegro. The mandate of this body would be to overcome the 'silos thinking' and address critical challenges in the ecosystem by developing and coordinating the implementation of innovation- and entrepreneurship-friendly regulation.

The body's mandate should also be extended beyond the advisory role of the already existing council towards taking concrete actions to develop and test new solutions for innovation- and entrepreneurship-related challenges by coordinating existing public and private actors with support coming from international connectivity (see also the recommendations on international connectivity in this section). Such body could be organised in the form of a:

- 'national office for implementation', as planned in the draft Montenegrin 'Research and innovation strategy for smart specialisation'
- 'working group' with flexible and incrementally developed list of tasks to be executed
- 'task force' with a fixed list of tasks to be executed.

The body would initiate and coordinate the following activities:

- the incremental development of a national innovation strategy with social goals to address the brain drain, knowledge transfer and job creation;
- identification of needs and implementation of changes that would improve the framework conditions for innovation and entrepreneurship.

Among the concrete challenges this body should address are:

- integration into international digital sales channels and payment systems (see also Recommendation 2 on eCommerce task force);
- overcome legislative barriers for business, entrepreneurship, research, innovation and start-ups (see also recommendation in Section 2);
- develop and implement changes in access to funding and attractiveness of ecosystem (see also the recommendations in Section 3);
- the low level of in-country and international connectivity that would overcome the lack of available funding, mentors, success stories, export promotion and inflow of talent (see also other recommendations in Section 4);
- develop an effective model for stronger coordination between higher education, research, innovation and digitalisation policies that will unlock the innovation potential.

The body should be made up of competent and proactive individuals experienced and active in all sectors of the triple helix with the ability to make decisions and implement them:

- The leader, a special advisor in the prime minister's office;
- 'Change champions' able to make decisions and execute or delegate activities for implementation:
 - proactive senior employees at the Ministry of Science, Ministry of Finance, Ministry of Economy and Ministry of Public Affairs
 - renowned and proactive actors from the start-up sector
 - proactive senior officials from universities;
- Independent experts who would support the development of solutions and integration in international networks;
- As there is a great aversion to change among employees at crucial ministries, the prime minister should take the role of sponsor and patron of change.

The activities of the body would be executed using the ministries' resources. The prime minister's office, with support from the EU delegation in Montenegro, should secure minor financial resources to cover the engagement of external experts and international networking associated with the above-mentioned activities.

Recommendation: Create a registry and website of innovative start-ups and projects qualifying for public support

Create a registry of innovative start-up companies and projects: on the one hand, to deploy legislative improvements and funding schemes for start-ups' specific needs and, on the other hand, to prevent the misuse of tax exemptions and public funding schemes. Publish and showcase the registered companies and innovative projects on a dedicated website in Montenegrin and English.

It is recommended that this register is managed by a government body and that the start-ups registered meet the definition of an 'innovative start-up'. Only the companies registered in this national database would be eligible to use targeted support measures and simplified procedures specifically intended for start-ups.

It is important to clarify the role of start-ups in designing new measures to ensure they are recognised and to avoid any confusion or outright inconsistencies. For instance, the recent call for proposals for R&I projects initiated by the Ministry of Science raised some concerns among the start-up community as to whether or not they were eligible to apply.

While the introduction of the start-up concept in the legislation is good progress, it is worth considering further refining the definition and harmonising its use across the administration, in particular with regard to:

- Innovation – The definition rightly refers to developing innovation ideas or business models. However, further focus could be introduced by a start-up's reliance on innovation, with reference to new products, services, processes, organisational changes and new business models (see also the Oslo manual³⁵). While technology development is not the only way to achieve innovation, this can be explicitly specified case by case depending on the scope of a related policy measure.
- Age – The definition defines a start-up to be a new business. When a start-up is too old to be considered a start-up depends on the local context and sector it is based on. Furthermore, sometimes it is better to build on the established legal entity with a track record rather than to launch a new one. Some even consider start-up as a 'state of mind' rather than defined by the age of a business. To avoid confusion, if the term 'new' is utilised it is good to explicitly define the accepted maximum age of a start-up subject to any measure. The European Startup Monitor considers 'start-ups to be less than 10 years old'. Other alternatives are six years (EU state aid regulations, provision for young innovative businesses) and five years from entry into the markets (e.g. a UK start-up scheme).
- Size – The definition as it stands does not relate to the size of a business, which in general terms is a suitable practice. Whether or not a start-up is too big to be considered a start-up depends on the local context and the sector it is based on. Still, in some policy measures it may be appropriate to explicitly define the accepted maximum size of a start-up in terms of the number of employees or revenue. Such considerations should be linked with the EC definitions for micro, small and medium-sized enterprises³⁶.

³⁵ <http://www.oecd.org/science/oslo-manual-2018-9789264304604-en.htm>

³⁶ http://ec.europa.eu/growth/smes/business-friendly-environment/sme-definition_en

Growth potential - It is also worth considering that start-ups strive for significant employee and/or revenue growth. While this key target for start-ups to scale the business may be difficult to be included in the legislation, it is widely considered to be characteristic of start-ups. For instance, Stanford professor Steve Blank describes a start-up as an organisation set up to search for a repeatable and scalable business model. Furthermore, considering the difficulty in defining clearly what an innovative start-up is and what it is not, it is also possible to define responsibilities to label or select start-ups meeting the specific criteria, which would then accredit them to apply for specific target funding and other types of support.

To ensure the integrity of the register, start-ups should undergo a thorough face-to-face assessment before being registered. The management body of the register should be able to seek support from external experts in assessing the innovation and growth potential. In addition, periodical check-ups on the legibility of registered start-ups should be introduced to assure continuous integrity so that all the companies on the register meet the conditions.

The official registry website in Montenegrin and English should be published to showcase the registered companies and innovative projects, although the promotional activities should be developed and maintained by the start-up community. As the start-up community across Montenegro is weak, the government should support the process of developing the promotional activities which would also strengthen the community. How the government should outsource these activities is described in Recommendation 16.

Recommendation: Co-fund PPPs to promote and support innovation and entrepreneurship

Co-fund PPPs to execute contemporary campaigns promoting innovation and entrepreneurship, to mobilise entrepreneurial talents and develop their business growth, to provide modern support activities to start-ups, and to build a national innovation community linking local entrepreneurial innovation ecosystems to main national hubs.

The mission of these PPPs would be to promote and support citizen engagement and local bottom-up initiatives to promote innovation and entrepreneurship across Montenegro. Activities promoted by these PPPs could include, for example: networking events, skills-building workshops for entrepreneurial talents, coaching and mentoring programmes with peers, serial entrepreneurs and possible investors.

These PPPs should comprise proactive entities with demonstrated traction, skills and ability to execute the above-mentioned activities to high standards:

- business associations and NGOs in the field of entrepreneurship to carry out topical promotion campaigns for the dissemination of success stories;
- universities, regional schools and vocational education institutions as a source of talent, and also by recognising the programme provided by the PPPs as an elective course;
- regional business centres that would provide premises;
- regional coaches and mentors, practitioners who would execute modern educational workshops, select talents and carry out learning-by-doing.

Selected PPPs which win the public calls financed by national or EU funds would award funds for:

- execution of public relations (PR), networking events and education workshops and mentoring;
- sourcing and selection of the teams, project management and administration;
- premises for the events, travelling and material costs.

The supervision of these PPPs would be executed by a cross-ministerial body for innovation activities.

One example of such a national consortium in the form of a PPP for start-up promotion and support is to bring together the most proactive actors and provide 'hands-on' support and working spaces in start-up hubs in Podgorica and Bar. Crucial activities to be executed by this PPP are:

- start-up promotion and activation such as roadshows and meet-ups in the larger towns across Montenegro to promote success stories;
- workshops on contemporary start-up development methodologies and skills, start-up weekends and hackathons in bigger towns across Montenegro to develop entrepreneurial talent and create start-up teams;
- pitching sessions and the selection of potential early-stage start-ups (teams) that would be offered hands-on mentoring support and office space within start-up hubs in Podgorica and Bar;
- domestic and international networking with peers, business partners, mentors and investors also provided through partnership with EIT Digital (see also Recommendation 18);
- facilitating access to public funds for start-ups also provided through partnership with EIT Digital (see also Recommendation 18);
- an additional strategic task of this PPP would be to provide input for the incremental development of a national innovation and start-up strategy and support programmes to the cross-ministerial body for innovation activities.

Recommendation: Establish a new-generation science and technology park

Partnering among Montenegrin authorities, academic institutions and businesses to provide thought leadership and co-fund a new-generation science and technology park in Podgorica. This would ensure that the biggest investment in innovation support will also have a substantial impact on the entrepreneurial innovation ecosystem.

Science and technology parks can play an important role in building an innovation ecosystem. However, evidence shows that the traditional model of science and technology parks struggles to bring real impact beyond office space. The strategic and holistic development of the future national STP is one of the cornerstones of the Montenegrin entrepreneurial innovation ecosystem.

The essence of each ecosystem is the relationships between stakeholders. In an ecosystem marked by silos, a contemporary STP acting as a 'boundary spanner' creates and maintains relations between different stakeholders from different parts of the entrepreneurial innovation ecosystem, namely government-university-industry

partnerships and capital investments, thereby bridging gaps between silos. Such a role for the STP is in line with findings of the EC Joint Research Centre's study on The Role of Science Parks in Smart Specialisation strategies³⁷.

To start creating relationships, initially the STP should mobilise a network of stakeholders from different parts of the entrepreneurial innovation ecosystem, namely government-university-industry partnerships and capital investments, by identifying the key stakeholders, their critical challenges and adopting them as strategic goals of the future STP. The STP will develop a value proposition through new services and programmes co-created with key stakeholders to address their key challenges.

To further develop and manage relationships, the STP should execute new services and programmes to deliver solutions to critical challenges. This builds trust, strengthens the relationship with different stakeholders and enables the STP to start acting as a catalyst, connecting up different stakeholders. Consequently, it is positioned as the main national hub for collaborative innovation projects and digitalisation pilots.

Some of the programmes and services that could be developed are:

- a university innovation centre: uniting the innovation activities of different faculties to ensure a critical mass of talent from HEIs to engage in research or start-up projects;
- promotion and activation activities: success stories, hosting industry personalities at universities as guest professors, industry-academia meet-ups, hackathons and innovation summer schools;
- training for collaborative innovation: applied research, business development, management skillset and applying for public calls;
- support for collaborative innovation: linking centres of excellence to industry, especially SMEs and state-owned businesses;
- support domestic businesses such as Plantaže in the development and execution of corporate innovation programmes;
- living lab: infrastructure and equipment for prototyping and small-scale manufacturing and a 'fab lab' facility.

Typical activities for the strategic and holistic development of future national STP programmes and services are:

- capacity- and awareness-building;
- strategic network building by identifying interested key stakeholders and adopting their critical challenges as the STP's strategic goals;
- co-creation of customised programmes and services as solutions for identified critical challenges and the identification of early adopters, and stakeholders most interested in participating in pilots;
- pilot planning and execution with early adopters.

³⁷The Role of Science Parks in Smart Specialisation Strategies:
http://s3platform.jrc.ec.europa.eu/documents/20182/114990/JRC90719_Role_ScienceParks_S3.pdf/9c07a1b3-3722-4883-9ebf-f62f6ce559e3

Typical partners involved in this activity include:

- project leaders at the Ministry of Science and University of Podgorica;
- independent experts.

Members of the 'cross-ministerial body for innovation and entrepreneurship activities' would monitor the activities.

According to information from officials at the Ministry of Science, public funds for the development of STP programmes and services have already been reserved³⁸.

4.3 Regional and international governance and connectivity

Below, we present two key challenges related to regional and international ecosystem connectivity for which specific recommendations have been developed.

Lack of regional and international networks within the knowledge triangle

Montenegrin research institutions are not well embedded into networks or beneficial relationships and they do not recognise their existence and potential (EU4Tech, 2018). Furthermore, not being an EU Member State, Montenegro does not have full access to the EU's innovation networks and funding schemes.

Montenegro lacks innovation ecosystem infrastructure with qualified facilitators, fund-raisers, mentors, and business angels, not to mention investors. This is made worse by the lack of success stories, change agents, investors and successful entrepreneurs. In particular, digital transformation may be losing momentum in Montenegro reducing both the international competitiveness of the business environment and opportunities for developing digital start-ups.

EIT Digital in Slovenia³⁹

EIT Digital is working on setting up a partnership with the Slovenian government. An EIT Digital Hub would become a key element in facilitating the development of digital technologies in Slovenia. It would comprise:

- industry partners
- education partners
- a start-up accelerator with pre-seed and seed financing scheme
- and other partners such as R&D institutions.

The Hub will contribute to the development of the regional digital technology, entrepreneurial, education and innovation ecosystem in Slovenia and South-East Europe, providing:

- an entry point into a European-wide network of partners
- access to (foreign) markets
- access to finance
- access to interesting innovation projects, start-ups, scale-ups and corporations in the ICT industry.

³⁸ Data gathered in interviews during a country visit.

³⁹ Interview with Dr Aleš Pustovrh, co-founder of ABC Accelerator, Innovation Partner of EIT Digital for Western Balkans.

It would be supported and sponsored by EIT Digital and the Slovenian government and would become an integral part of the EIT Digital's network.

Having successfully prepared and implemented the business and activity plans within the Arise project's collaboration in 2016 and 2017, and capitalising on these experiences and know-how, local ABC Accelerator is coordinating the activities for setting up the EIT Digital Hub. Upon its formal establishment, the Hub will take over the coordination of these activities.

The potential of foreign investments and talent for innovation is not exploited

Montenegro is a tourist brand and, because of its small size, is an ideal destination for a corporate innovation centre and test-bed environment for digital services and products. It has been proven in practice that it is an attractive destination for some digital nomads and fintech start-ups⁴⁰ thanks to its favourable tax conditions, geopolitical position and climate. Montenegro could build a country-branding strategy to attract creative professionals' and digital nomads as temporary residents to work or start businesses and to establish their innovation-related activities and to test new technologies and solutions.

FinanceMalta⁴¹ is the public-private initiative set up to promote Malta as an international financial centre

FinanceMalta came on the scene at a critical time, just as Malta entered the euro-zone. The financial services sector is now a major force in the country's economy. Malta has some significant benefits to offer the industry, such as a well-trained, motivated workforce, a low-cost environment, and an advantageous tax regime backed up by more than 60 double-taxation agreements. To these, FinanceMalta can add a world-class information and communications technology infrastructure and an enviable climate and strategic location.

The programmes and measures include: (1) Malta Residence Visa Programme; (2) Global Residence Programme Malta; (3) Grant Investment Schemes; (4) Blockchain solutions portfolio; (5) iGaming solutions portfolio; and (6) Insurance and financial intermediaries' solutions portfolio.

Today, 98 % of FDI in Malta originates from financial and insurance activities. However, the country is developing even further and is one of fastest-rising hubs for crypto businesses in the world. The country is aiming to become a magnet for crypto businesses worldwide through a top-down initiative that is being led by Prime Minister Joseph Muscat.

It plans to establish the Malta Digital Innovation Authority and introduce three bills in relation to distributed ledger technology (DLT) and blockchain. The government is in the process of formalising a Virtual Currency Act that will pave the way for an auditing framework made specifically to regulate blockchain-driven investment operations. Although the public consultation is still in process, many start-ups and token issuers have already chosen Malta as the country to open up their business.

⁴⁰We found there are several start-ups and scale-ups from Eastern European countries that have migrated entire teams to Montenegro to take advantage of the beneficial climate and good quality telecommunications infrastructure which enables them to work seamlessly. Furthermore, some of them have built 'talent pools' in Montenegrin businesses employing local talents working for mother businesses abroad.

⁴¹ FinanceMalta: <https://www.financemalta.org/>

Binance, the world's largest crypto exchange, has recently moved its headquarters from Hong Kong to Malta. OKEx, one of the world's largest digital asset exchanges, has recently moved its headquarters from Hong Kong to Malta. Coinvest has become the latest major actor to move its headquarters to Malta. This crypto investment trading firm relocated to Malta and announced a new collaboration with the Maltese government to establish a blockchain council that is reportedly set to create hundreds of local jobs, too.

Efforts to attract FDI could be targeted to promote innovative activities. In general, FDI promotion tends to counter market imperfections in decision-making processes and is most effective when it⁴²:

- overcomes information asymmetries;
- compensates for the imperfect functioning of international markets, which makes parent businesses reluctant to consider new production sites;
- leads to product differentiation in the host country as a location for targeted activities.

To sum up, to further develop regional and international connectivity, it is important to address the following two challenges:

- a lack of regional and international networks within the knowledge triangle;
- the potential of foreign investments and talent for innovation not being exploited.

Recommendation: Provide support and funding to form partnerships starting with EIT KICs

Provide support and funding for stakeholders to interconnect with the EIT KICs – especially EIT Digital and/or EIT Food, specialised in the future information and communication society and future global food value chains, respectively. Later on, engagement in other international collaborative platforms should be explored.

Over the past decade, the EIT has been reshaping the European innovation ecosystem using a specific model to integrate research, innovation, education and entrepreneurship through PPPs known as knowledge and innovation communities.

Montenegro could explore existing outreach schemes offered by the EIT KICs or try to develop a custom partnership model. One of the existing options within the EIT Digital umbrella is a programme called Digital ARISE. Partnership in the EIT Digital ARISE programme would provide the following benefits:

- connecting the Montenegrin local ecosystem to a network of about 140 partners representing global businesses, leading research centres and top-ranked universities;
- strengthening the capabilities of Montenegrin Innovation Centres, linking them to EIT Digital's innovation activities, business communities, access to market and access to finance services;

⁴² Henry Loewendahl, A framework for FDI promotion: <https://www.investmentmap.org/docs/FDI-2547.pdf>

- fostering Montenegrin entrepreneurial skill development by connecting local talents and educators to EIT Digital entrepreneurial schools;
- improving the services to the Montenegrin ecosystem and boosting the acceleration of its start-ups and scale-ups by working together with EIT Digital's experts – mentors, business developers, access to finance experts, business communities;
- gaining greater visibility at the European level by connecting to EIT Digital's innovation and education activities;
- extending and strengthening the Montenegrin local ecosystem by jointly mobilising, attracting and involving new stakeholders.

A partnership would give additional visibility to the Montenegrin government's efforts to improve its innovation ecosystem by co-branded events that promote:

- among start-ups, the ARISE Venture Program opportunity;
- among students, the EIT Digital education opportunities (Master schools, doctoral and professional schools, summer schools), to organise design thinking and innovation games for students at IT faculties
- among scale-ups, the EIT Digital Accelerator opportunities for access to market and access to finance and internationalisation in the EU and USA.

As partnerships with EIT KICs have already been successful in South-East Europe, this option is recommended first. Later on, engagement in other international collaborative platforms should be explored.

Recommendation: Refocus FDI policy to promote partnerships for innovation

Refocus the Montenegrin FDI policy to attract and offer favourable conditions to investments which establish or strengthen innovation activities in the country. A PPP could be established for the development and implementation of a number of specific niche FDI promotions.

FDI plays an important role in the growth and development of a country since it brings funds and also allows for transfer of skills and creates knowledge spill-overs in the mid to long term. The FDI promotion programme would be aimed at niche target groups in the field of innovation, such as:

- promoting Montenegro for corporate innovation centres as a test-bed environment for digital services and products for public sector or services and mobile operators, because of the country's small size;
- start-ups and scale-ups developing services that address the problems of small countries like Montenegro, such as the inability to receive money using a global payment system (see also Recommendation 2 on the eCommerce task force);
- digital nomads and freelancers, because of the favourable tax conditions, geopolitical position and climate;
- free-zone development and special tax exemptions (currently applicable to the gambling industry) could be adjusted to further support cross-sectoral and transformative initiatives, for instance in favour of investments in R&I activities in connection with existing industries.

The first steps the government should take are:

1. An international comparative analysis and identification of the niche target groups;
2. Developing a strategy (setting the national policy context, objectives, structure of investment promotion, competitive positioning, and sector-targeting strategy);
3. Developing support programmes that would be based on the specific needs of the segments and developed by integrating the unique characteristic and advantages Montenegro already has or can develop using best practices. Typical programmes already used in successful destinations for FDI are:
 - Individual investor programme – a programme intended for wealthy foreigners who, for example, due to climate, tax benefits and future EU membership, want to become residents and later citizens of Montenegro;
 - Residence and visa programme – a programme for facilitating obtaining visas or residency for foreigners who are leading experts and are living and working in Montenegrin and 'FDI' high-tech businesses (see also Recommendation 5 on Startup visa);
 - Support programme and services adjusted to the specific needs of start-ups and scale-ups that are in FDI niche sectors.
 - Support programme and services adjusted to the specific needs of digital nomads and freelancers who are using digital technologies and can work anywhere.

Besides the usual positive effects of FDI, these measures would cause additional spillovers for the innovation ecosystem:

- Montenegro's citizens would benefit from the new public digital services being tested;
- an inflow of successful individuals who have succeeded in innovative ventures would reduce the lack of success stories. In combination with the national entrepreneurship and start-up promotion programmes described in Recommendation 16, this would have a positive effect on the entrepreneurial mindset;
- also, the successful foreign investors and entrepreneurs would start investing in local ventures thereby bridging the current financing gap for local start-ups.

Typical activities to be performed by PPPs within the investment promotion partnership are:

- lead generation (marketing; business targeting);
- FDI facilitation (project handling);
- investment services (after-care and product improvement; monitoring and evaluation).

Developing the strategy should be coordinated by the Government of Montenegro with the **cross-ministerial body for innovation activities** and with the active involvement of those municipalities which strategically opted for FDI and independent FDI experts.

Typical PPP members to carry out niche FDI promotion are:

- high-quality marketing and PR agencies for lead generation;
- big consulting businesses with corporate clients facilitating FDI;
- state agencies and municipalities providing business-support services;
- local providers of investment services that usually pay for membership

The public funding should be provided for:

- the incremental development of the niche FDI promotion strategy;
- continuous niche FDI promotion execution, in particular lead generation;
- monitoring.

The execution should be monitored by:

- the Government of Montenegro with the cross-ministerial body for innovation activities;
- independent FDI experts.

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The PSF Specific Support for Montenegro was carried out by a panel of independent European R&I policy experts from June 2018 to March 2019. This final report aims at providing tailored advice and concrete recommendations to help the Montenegrin government to develop its entrepreneurial innovation ecosystem by overcoming legislative barriers, developing funding and other related mechanisms and, overall, by enhancing governance and connectivity.

Studies and reports

