POLICY ANSWERS

ALBANIA'S ERA INTEGRATION

An update by POLICY ANSWERS

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Executive summary

Progress related to ERA integration was achieved since the establishment of the new ERA along the following aspects:

- Albania has participated in the European analysis of the European Innovation Scoreboard 2021.
- Albania took part in the most recent "She Figures 2021" report.
- Research and Innovation (R&I) have been reinforced as part of the Economic Recovery Plan (ERP) 2021-2023.
- There has been a promising increase in international publications with good citations records.
- The first Research Infrastructure Roadmap for Albania[1] was published in March 2022 by the Regional Cooperation Council funded by the European Commission.
- Albania has launched its EURAXESS Profile https://www.euraxess.al/.
- Albania shows good progress in the design of its Smart Specialisation Strategy (S3) in terms of planning.
- New strategies and regulations are put in place to promote innovation, and particularly SMEs.
- The mutual recognition of higher education diplomas was reached with partners in the region.
- Albania is developing its capacities as a geopolitical actor.

Challenges for further ERA integration:

- The lack of funding can be a serious challenge for the planned reform, the new Law of Science and the National Strategy for Research, Technology and Innovation 2023-2027.
- The lack of coordination, seriousness and belief in R&I at governmental, institutional and research performer level can hinder success of planned actions.
- The lack of funding for research facilities, labs and infrastructure is endangering research activity and corrupting researchers' willingness to participate in collaborative projects.
- The lack of belief in the potential attractiveness of Albanian R&I hinders the optimism for quality. Pessimism and lethargy among research-related staff and higher education institutions are the biggest challenges.
- Opportunities of participation and leadership in European projects, including COST, Horizon Europe and Eureka, among others, may fade if there is no professionalisation in the support for possible participants and no incentives of recognition.
- Limiting STEM areas of study to only teaching can hinder the future Albanian scientific and technological workforce.
- The absence of vision in knowledge valorisation and transfer maintains the research performing organisations disconnected from the productive sector.
- The lack of coordination effort at all government levels reduces effectiveness for the development of the Smart Specialisation Strategy.
- The lack of adequate spaces where companies can meet researchers can aggravate the disconnection between the higher education and the productive sector.
- The lack of access to research publications maintains the "iron curtain" in the nationally driven research activity.

[1] https://www.rcc.int/download/docs/RI%20Roadmap%20Albania%20digital.pdf/c4abcbbc24ec0f623156ef8b257adebf.pdf Page last accessed on 06 December 2022.

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List of abbreviations used in this document

CEI	Central European Initiative
EC	European Commission
EIP	Economic and Investment Plan
EIS	European Innovation Scoreboard
EIT	European Institute of Innovation and Technology
ERP	Economic Recovery Plan
ERP	Economic Reform Programme
EU	European Union
EUSDR	EU Strategy for the Danube Region
FTE	Full-Time Equivalent
GEP	Gender Equality Plan
HEI	Higher Education Institution
HRS4R	Human Resources Strategy for Researchers
INSTAT	National Institute of Statistics
KIC	Knowledge and Innovation Community
MESY	Ministry of Education, Sports and Youth
MSCA	Marie Skłodowska-Curie Actions
NASRI	National Agency of Scientific Research and Innovation
NCP	National Contact Point
NPR	National Public Reform
OA	Open Access
QS	Quacquarelli Symonds
R&D	Research and Development
R&I	Research and Innovation
RAS	Albanian Academic Network
RCC	Regional Cooperation Council
S3	Smart Specialisation Strategy
SME	Small and Medium Enterprises
STEM	Science, Technology, Engineering, Mathematics
STI	Science, Technology and Innovation
WB	Western Balkans
WIDERA	Widening Participation and Strengthening the European Research Area

1. National measures in support of the Horizon Europe association: achievements and challenges by ERA priority

1.1 ERA Priority 1: More effective national research systems

The Albanian national research system is regulated by the "Albanian Law 80/2015 on Higher Education and Scientific Research in the Higher Education Institutions"[2]. A new law is supposed to be released in 2023. The "National Strategy for Science, Technology and Innovation 2017-2022"[3] identifies key policies, a vision, goals and strategic objectives for the development of scientific research, technology and innovation by harmonising it with the principles of the ERA. A new strategy will be adopted by the government in 2023. The Ministry of Education, Sports and Youth (MESY) leads the implementation of the National Strategy for Science, Technology and Innovation. The funding of research is carried out by the National Agency of Scientific Research and Innovation (NASRI) that responds to the ministry. NASRI is also responsible for the promotion of Albanian participation in Horizon Europe and other European initiatives.

In 2022, Albania participated for the first time in the European analysis of the European Innovation Scoreboard (EIS), with data being collected for 23 indicators (out of 32 in the full framework) with the support of the Albanian Statistical Office[4]. The Albanian government has included "Increasing innovation and skills for young people and adults to enhance employment" as key challenge no. 1 of the Economic Recovery Plan 2021-2023[5] For the future, the Albanian government is planning a new Law of Science that will replace the law from 1994 and a new National Strategy for Research, Technology and Innovation 2023-2027[6] - both to be adopted in 2023.

Data on R&D funding and expenditure in Albania to-date or FTE personnel or researchers carrying out research activity is not available. These indicators were missing in the EIS, too. With 23 indicators available, Albania is considered an Emerging Innovator with a performance at 41.7% of the EU average, below the average of the Emerging Innovators (50.0%). The performance is increasing (5.1%-points) at a rate lower than that of the EU Member States (9.9%-points), meaning that Albania's performance gap to the EU is becoming larger. Nevertheless, Albania shows some good results in the share of the top 10% most cited publications per total publications: in the EIS, the most recent year being 2019, Albania has a value of 50,3 points in performance relative to the EU, having increased its performance in the period 2015-2022 by 48.4 points (10.4 points more in 2021-2022). These are positive results and show an improvement after a very low start. As a baseline, university education in Albania is of low quality and largely disconnected from the labour market. In a list of 400 higher education institutions (HEIs) in the Quacquarelli Symonds (QS) World University Ranking 2021, the University of Tirana is ranked in tier 351-400, behind its regional peers. As regards the performance based institutional funding,

[2] https://www.unitir.edu.al/images/dokumenta/Legjislacion/Ligj_80-2015_22.07.2015.pdf Page last accessed on 8 January 2023

[3] https://arsimi.gov.al/wp-content/uploads/2019/07/Vendim-i-KM_710_01.12.2017_Strategjia-e-Kerkimit-Shkencor.pdf Page last accessed on 8 January 2023

[4] https://op.europa.eu/en/publication-detail/-/publication/f0e0330d-534f-11ed-92ed-01aa75ed71a1/language-en/format-PDF/source-272941691 Page last accessed on 6 December 2022.

[5] https://www.financa.gov.al/wp-content/uploads/2021/02/Economic-Reform-Programme-2021-2023.pdf Page last accessed on 6 December 2022.

[6] Such as informed by the authorities in writing and in a virtual meeting on 16 December 2022.

the Albanian authorities are planning the support of centres of excellence for 2025[7]. This will be the first time that institutional funding will be allocated competitively.

As regards Horizon Europe participation, there are three Albanian participants under the "Excellent Science" Pillar, but no ERC grants. Albania is chairing the Western Balkans (WB) MSCA Chapter. As regards the patent applications[8], during 2020, the Patent and Utility models sector received 948 patent applications, out of which 23 are national patent applications filed by Albanian citizens, two are patent applications filed under the Patent Cooperation Treaty, and 923 are patents issued by the European Patent Office seeking protection in Albania. The number of applications for national patents for 2021 is 23, which is twice as much as the number of applications for national patents in 2020.[9] As regards the funding of research, this is managed by NASRI's Directorate for National Programmes. There are several focused programmes funding research projects: Social and Albanological Sciences; ICT; Agriculture (Veterinary, Zootechnics), Food and Biotechnologies; Water and Energy; Biodiversity and Environment; and Health.

Among the challenges for this priority are: 1) Albania lacks an effective national R&I system, although its regulation and strategic framework includes the promotion of science among the objectives of Albania's development. Albania has to make serious efforts to establish a solid R&I system. In general, the National Strategy of Scientific Research and Innovation[10] needs to be implemented with rigorous National Plans that are put into action through funding and co-funding mechanisms. The S3 can be useful in this process. 2) Universities/Higher Education Institutions in Albania lack quality of education and mostly of research activity. Performance based indicators related to research activity should be linked to the professional career of research professors in Albania, and top departments should be rewarded. 3) Funding of research in Albania needs to be sustainably increased. The government has to revisit its R&I funding structure and mechanisms. More performance based institutional funding should be considered. Peer review evaluation of project applications with support of international peers could be useful, and it would be useful to provide the information in the call for proposals in English.

1.2 ERA Priority 2a: Optimal transnational cooperation and competition

Very recently, the Albanian government narrative is focused on the transnational cooperation in R&I. International relations require stable efforts and continuous institutional work. There are some attempts to encourage transnational collaboration, especially by NASRI, but these are vaguely structured. For example, Albania does not provide a portal on Horizon Europe and other European funding opportunities that could assist researchers benefiting from the programmes. In addition, a professionalised network of National Contact Points (NCPs) is not provided, in spite of the efforts of the government to recently put in place a new arrangement of 33 NCPs working on a voluntary basis and located in their public organisations.

Albania's participation in the Western Balkan Regional R&D Strategy for Innovation is highlighted in the implementation of the strategy. Albania is also a full member of the Central European Initiative (CEI) since 1996 and one of the three member states of the Open Balkan Initiative

[7] Such as seen under the new draft of the "ERP Measure 3 Research and Innovation", provided by the Albanian authorities in December 2022.

[8] Information by the Albanian Directorate General of Industrial Property; http://dppi.gov.al/en/raportivjetor/ Page last accessed on 8 January 2022.

[9] Annual Report 2021, p. 25-26

[10] Information by NASRI director: "The National Strategy for Research, Technology and Innovation 2017-2020 was reviewed by the Ministry of Education and Sports as regards the accomplishments of the objectives of the strategy. NASRI has also made an assessment of the strategic objectives that are only related to NASRI's activity." The author has received the specific document; nevertheless, the challenge of implementation remains, such as indicated in the text by the author.

together with North Macedonia and Serbia. Albania doesn't participate in the European Digital Agenda Observatory.

The EIS indicates that the Albanian international scientific publications have increased about 10.2 points since 2015, and 3.8 points during 2021-2022. This period (2021-2022) shows a strong increase in the most cited publications, too. More specifically, Albania has increased its participation in COST Actions11, i.e., it is 64% in 2021 compared to 56% in 2020, and Albania led 7 projects in 2021, one more than in 2020; having received a budget of 92,220.19 euros.

Albania continues to rank low in the OECD's 2021 Competitiveness Index, below the Western Balkans (WB) average on science, technology and innovation. The proportion of companies investing in R&D was the second lowest in the region; public spending on research has been insufficient to strengthen the link between business and academia12. In June 2021, Albania has joined EUREKA, however, there are no assigned projects to-date13.

Albania holds 15 science, technology and innovation (STI) agreements with EU Member States to-date14 in a larger number of international collaborations. Through NASRI, Albania participates in bilateral agreements for research and innovation with: Bosnia and Herzegovina; Malaysia; Kosovo; North Macedonia; Austria; France; Germany; Hungary; Italy; Czech Republic; Slovakia; Croatia; Romania; Slovenia; Bulgaria; Poland; Greece; Turkey and the United Emirates. In total, there are 52 international bilateral agreements for R&I cooperation with the EU, the other WB Partners, America, Asia and Africa. Albania is active in the implementation of macro-regional strategies such as the EUSDR (EU Strategy for the Danube Region) and Danube Strategy Flagships.

The challenges under this priority are: 1) There is little emphasis on promoting transnational cooperation and competitiveness. Serious action must be taken, for example, in the shape of "An Incentive Plan" to institutionally support the best Albanian researchers and the most active departments at universities to increase their transnational collaboration, as well as their collaboration with the businesses sector. This must be linked to the S3 strategy. 2) Improve the capacities of individuals and institutions in charge for promoting European programmes, primarily the NCPs. In Albania, there are currently researchers and project managers who have participated in European projects. These should be targeted to train others. The support for transnational cooperation should be professionalised. Additionally, more work needs to be done to improve academia-business sector linkages through Knowledge and Technology Transfer/Knowledge Valorisation initiatives at universities. The operating Albanian NCPs need to be supported and the NCP network should be institutionalised/professionalised.

1.3 ERA Priority 2b: Make optimal use of public investments in research infrastructures

The Albanian R&I system suffers from the lack of adequate research facilities, labs and research infrastructures to perform research at all levels – a key condition for carrying out scientific and technological activities. The Albanian government has included the support for research infrastructures in its Economic Recovery Plan (2021-2023)[15] with key revisions from the European

[11] https://www.cost.eu/uploads/2022/10/COST-Albania-factsheet-2021.pdf Page last accessed on 18 December 2022.

[12] https://ec.europa.eu/info/sites/default/files/economy-finance/ip180_en_0.pdf Page last accessed on 6 December 2022.

[13] The authorities are planning to have at least 2 applications for EUREKA projects in 2024, such as seen under the new draft of the "ERP Measure 3 Research and Innovation", provided by NASRI in December 2022.

[14] Such as informed by NASRI in December 2022.

[15] https://www.financa.gov.al/wp-content/uploads/2021/02/Economic-Reform-Programme-2021-2023.pdf Page last accessed on 6 December 2022.

Commission (EC) in June 2022 recommending a strong support for a clear inter-institutional coordination, finding solutions to the budget constraints, and building trust among universities and companies – entities that lack collaboration in Albania[16]. The first Research Infrastructure Roadmap for Albania[17] was published in March 2022 by the Regional Cooperation Council (RCC) funded by the EC. The review of the National Public Reform (NPR) envisages the Mapping of Research Infrastructures in 2024[18].

The Research Infrastructure Roadmap for Albania is based on the most essential data collected through a survey of the higher education entities. The survey was completed by only 12 entities out of 58, and the quality of answers is deemed as vague, indicating low awareness on the topic and insufficient knowledge of the importance the research facilities have[19]. The map is based on the survey answers only.

Albania does not participate in ESFRI Roadmaps or ERICs.

As regards the Innovation capacities, with the objective to boost innovation, the Albanian government has put in place in 2021 the Strategy on Business and Investment Development 2021-2027 and in 2022 the Law on Innovative Start-Ups. Albania participates in the Economic and Investment Plan (EIP) for the WB that aims at helping increase the competitiveness of Albania's economy backed by a green and digital transition. These policies, together with the ones focusing on digitalisation and industrialisation, may have the impact to increase the technological and innovative capacity in Albania as long as they are backed with adequate funding and support for their implementation.

In terms of data, according to the National Institute of Statistics (INSTAT), Albania has 101,000 SMEs (with less than 50 employees) and around 88,000 MSMEs with 1-4 employees. The economy has a very narrow industrial base. The business environment has structural deficiencies, low skills development, and steep competition from the informal sector. The Law on Innovative Start-Ups was put in practice through budgeting 10 million euros of funding for grants under start-up support programmes over 4 years.[20]

Some of the challenges for enhancing technological innovation are: 1) Entrepreneurs and businesses are not connected to the top industrial sectors. The strategic development of industry should be done hand-in-hand with the development of innovation. The S3 can play a role in this process. This requires a very effective interinstitutional coordination in Albania, where different ministerial departments and agencies have to work together to reach the same goal. 2) Entrepreneurs and businesses have little support to grow and improve their international activities and the support by already existing European initiatives may be needed. Being associated with the European Institute of Innovation and Technology (EIT) and its Knowledge and Innovation Communities (KICs) can prove advantageous. A starting point would be to create hubs, spaces of innovation and "scientific parks" where innovators and entrepreneurs can meet companies and academia.

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[16] https://ec.europa.eu/info/sites/default/files/economy-finance/ip180_en_0.pdf Page last accessed on 6 December 2022.

[17] https://www.rcc.int/download/docs/RI%20Roadmap%20Albania%20digital.pdf/c4abcbbc24ec0f623156ef8b257adebf.pdf Page last accessed on 6 December 2022.

[18] Such as seen under the new draft of the "ERP Measure 3 Research and Innovation", provided by the Albanian authorities in December 2022.

[19] https://www.rcc.int/download/docs/RI%20Roadmap%20Albania%20digital.pdf/c4abcbbc24ec0f623156ef8b257adebf.pdf Page last accessed on 6 December 2022.

[20] https://op.europa.eu/en/publication-detail/-/publication/f0e0330d-534f-11ed-92ed-01aa75ed71a1/language-en/format-PDF/source-272941691 Page last accessed on 06 December 2022.

Among the challenges for this crucial priority are: 1) The long-lasting generational lack of investment in research facilities and infrastructures in Albania has created a stagnant research environment, where not only the Albanian researchers don't have access to state-of-the-art facilities, but they are not even trained to understand and perform research by using these facilities. On top of it, they use the lack of research infrastructure as a mechanism for not participating in any research. It is urgent that the university labs are upgraded and that the economy starts investing in research facilities in its top performing institutions. 2) The policy narrative on "supporting" research infrastructures such as it is stated in the Economic Recovery Plan is not enough. Putting it into practice requires a well-articulated plan and roadmap for improving or constructing research infrastructure and facilities, as well as strong funding provisions for maintenance and updates. Also, the Albanian participation in international research infrastructures, i.e., the ESFRI Roadmap, should be planned. Strategic prioritisation is needed in critical areas for economic development. In this context, S3, as well as health and green technologies may be advantageous. The reconstruction of the research facilities in Albania has to become a top priority for the Albanian investments in R&I.

1.4 ERA Priority 3: An open labour market for researchers

The Albanian government has included improving human capacities for Research and Innovation under its Economic Reform Programme (ERP), reform measure 03 "Improving institutional, financial and human capacities for research and innovation" with very ambitious targets till 2024[21]. Albania has launched its EURAXESS Profile https://www.euraxess.al/ with very little information on Albania's attractiveness in R&I. The EURAXESS platform's potential is not fully exploited, as there are currently no positions advertised.

The review of the EPR envisages further support on the implementation of Charter and Code among the Albanian institutions for 2024[22]. Regarding diploma recognition and researcher mobility, cooperation between the Republic of North Macedonia, Kosovo, and Serbia resulted in the mutual recognition of university degrees in June 2022.

Albania has seen a positive increase in higher education levels in the last decade as the share of university graduates aged 30-34 rose from 11.4% to 33.2% during 2012-2022, while this share reached 40.3% for the age group 25-29 during the same period (2012-2022). However, 27.5% of these graduates are unemployed, showing a skills mismatch as a consequence of the quality of universities and the structure of the productive sector and businesses. No data on human resources and researchers is available yet, and these indicators are lacking in the EIS 2022. 23 Albanian entities[23] have endorsed the European Charter for Researchers and the Code of Conduct

[21] "2022 Economic Reform Programmes of Albania, Montenegro, North Macedonia, Serbia, Turkey, Bosnia and Herzegovina and Kosovo* https://ec.europa.eu/info/sites/default/files/economy-finance/ip180_en_0.pdf Page last accessed on 6 December 2022.

[22] Such as seen under the new draft of the "ERP Measure 3 Research and Innovation", provided by the Albanian authorities in December 2022.

[23] These are: the University of Tirana, the Academy of Sciences of Albania, the Academy of Security, the Agricultural University of Tirana, the Albanian University, the Association BAZH NGO, the Barleti Institute for Research and Development, the EPOKA University, the European University Tirana, the Foundation "Partnership for Development" (FPD), the Institute of Public health (IPH), the Mediterranean University of Albania, the Polis University, the Polytechnic University of Tirana, the Institute of Geosciences, Energy, Water and Environment of the Polytecnic University of Tirana, the Professional Business Academy, the Sports University of Tirana, the Agency for Research, Technology and Innovation, the University of Vlora, the University of Gjirokaster "Eqrem Çabej", the University of New York Tirana, and the Wisdom University. (Information retrieved from https://euraxess.ec.europa.eu/jobs/charter/declaration-endorsement, Page accessed on 8 January 2023.)

for the recruitment of researchers; only the University of Tirana was granted the Human Resources Strategy for Researchers (HRS4R) in 2020[24].

No information is available regarding foreign students in Albania.

Challenges towards this priority are: 1) The responsible authorities lack confidence in promoting the Albanian R&I system's attractiveness and Albanian researchers in Europe. The EURAXESS portal's potential has to be exploited. 2) The departure of highly skilled young Albanian professionals from Albania creates a sense of pessimism among those who remain. Universities must systematically tackle this issue by focusing on talent development, providing opportunities for them to flourish, connecting them with the productive sector, giving them support towards entrepreneurship and connecting them with their fellows abroad. This requires a systematic effort.

1.5 ERA Priority 4: Gender equality and gender mainstreaming in research

In Albania, the political representation of women is encouraged, the Albanian government having the highest share of women in the World. Albania has participated in the last "She Figures 2021" indicating capacity and responsibility in terms of gender equality issues in R&I.

As regards the data (She Figures 2021) in comparison to the EU-27 and Associated Countries, Albania has the highest proportion of women among doctoral graduates (62.3%[25]). Albania had the highest compound annual growth rate for both male and female doctoral graduates. The number of female doctoral graduates has grown by 37% per year on average since the doctoral programmes reopened in 2019. Similarly, the number of male doctoral graduates grew by 27.6% per year on average. According to She Figures 2021[26], the gender dimension was most commonly included in "Medical and Health Sciences" with more than 5% of the publications. In contrast, it was least included in "Engineering and Technology" with only 1.48% of publications for the period under study 2015-2019. This is in line with the European average. As regards to Albanian women contributing to publication output, Albania is in line with the group of countries in which women and men contributed equally (ratio of 1.0) as corresponding authors generally. This rate was the largest in the area of Humanities & Arts and Social Sciences. As regards the number of females in STEM, the percentage of female graduates in STEM amounts to 4.3% of all graduates, which is higher than that of male graduates in STEM, which is only 2.8% of the total. In 2021, a Network of Albanian Women in STEM was established[27]. Its aim is to increase the representation of women in STEM fields, both in academia and industry. The objective is to contribute to the social and economic empowerment of women. The network is also open to other groups funded by foreign initiatives.

Some of the challenges for this priority are: 1) There are no strategies or plans to promote gender equality in R&I, and the other priorities linked to that. There are no specific measures to support women in research, technology and innovation. This action needs to be taken seriously by the government in line with the promotion of R&I as an urgent need for Albania's future. More specifically, Gender Equality Plans (GEPs) in Horizon Europe are becoming mandatory, especially for public entities. Therefore, Albania should make an effort for enhancing this policy in the framework of success in Horizon Europe calls. 2) Career perspectives of women and men

[24] https://euraxess.ec.europa.eu/jobs/hrs4r/dashboard Page last accessed on 06 December 2022.

[25] She Figures 2021.

[26] https://op.europa.eu/en/web/eu-law-and-publications/publication-detail/-/publication/67d5a207-4da1-11ec-91ac-01aa75ed71a1 Page last accessed on 06 December 2022.

[27] https://scidevcenter.org/network-of-albanian-women-in-stem/ Page last accessed on 06 December 2022.

in STEM are not geared towards work in the R&I sector, but towards becoming teachers in primary and secondary schools. That's why careers in STEM should be encouraged while the universities pursue their third mission of connecting with the productive sector and enterprises, as well as by raising the quality of their facilities and labs and by involving these graduates into experimentation.

1.6 ERA Priority 5a: Optimal circulation, access to and transfer of scientific knowledge including knowledge circulation

Albania has the regulation/normative that may enable an optimal circulation, access to and transfer of scientific knowledge, including knowledge circulation. On the contrary, it fails to effectively promote and realise the importance of this priority, that may support raising the quality and relevance of its higher education institutions, it may bring proximity to the business needs and it may create a vibrant local knowledge intensive environment. In the framework of the follow-up of the ERP 2023-2025, the Albanian authorities are planning to establish the first Science and Technology Park[28] in Albania.

The EIS 2022 shows no data for Albania regarding R&D expenditure in the business sector or job-to-job mobility. The number for innovative SMEs collaborating with others is 73 points, with a decrease of 3 points from the last survey. As regards the number of public-private co-publications per million population, the score for 2022 is 6.3[29], showing an increase from the past. No change is observed related to the knowledge transfer centres, technology transfer offices and incubators.

Another indicator under this ERA Priority is the public-private collaboration that is left unattended by the government. To-date there is no information on funding of joint research by the public and private sector; INSTAT is working on this in the framework of the Albanian participation in the EIS. Public-private collaboration needs to be in the focus of support by the government with the objective to involve private entities in research and innovation. Under this specific objective, there exist no training and career measures. They are mainly focused on the doctorate programmes quality.

The challenges that exist are: 1) The Albanian authorities' lack of support in promoting knowledge circulation to the Albanian R&I stakeholders. Designing programmes that provide funding and skills, such as Knowledge and Technology Transfer Offices at universities, could be a solution to support knowledge circulation. 2) Silo-like competences among the ministries in charge of knowledge circulation and in charge of the Smart Specialisation Strategy can hinder the effectiveness. S3 should include knowledge circulation promotion and capacity building as its intrinsic part (see section on S3 below).

1.7 ERA Priority 5b: Open Access

The scientific publication output and activity in Albania are very low hindering policymakers from taking "Open Access" (OA) policies seriously, although the process can be seen vice-versa as well. The legal framework in Albania does not incorporate Open Access strategies to-date, and neither the government, its agencies nor the research performing institutions promote

[28] Such as seen under the new draft of the "ERP Measure 3 Research and Innovation", provided by the Albanian authorities in December 2022.

[29] Such as retrieved from Scopus SciVal database in November 2022.

them[30]. Despite actions taken in 2019 aimed at strengthening repositories both within universities and on joint platforms such as the Albanian Academic Network (RAS) https://www.rash.al/en/, Albanian researchers still do not have free access to research publications, guaranteed by their institutions. In the Review of the ERP, the government is planning to create a platform for promoting Open Science in 2023[31].

Scopus data show that there is a total of 8,119 documents for Albania, out of which 3,282 (40%) documents are Open Access (being 1,496 (45%) Gold, 707 Hybrid Gold, 636 Bronze and 2,191 (67%) Green Open Access). This good number of Open Access publications is based on international collaborations. No legal measures exist to-date on policies of Open Science (Open Access) and research data and publications. The new Law of Science, supposed to be released in 2023 and coordinated by the Albanian Ministry of Education and Sport (in charge of Science) and the Albanian Academy of Sciences, aims at filling the legal gap.

Albania lacks behind regarding OA standards and initiatives; this is something to be tackled in the new Law of Science and the new Strategy to be adopted in 2023.

The following challenges exist: 1) The importance of supporting the publication process and therefore the OA strategies in Albania are not understood by the government making no effort in providing its research and innovation base access to the research publications. It is necessary to take serious action regarding these aspects. On one hand, Albanian researchers must have guaranteed access to scientific publication databases through a central system. On the other hand, the Albanian data and publications should be accessible through coordinated open repositories like the NASH initiative. 2) There may be no trained people/resources who can support the Open Access strategies in Albania. Thus, it is urgent to provide support for this aspect, particularly to ensure that scientists and innovators can access the publications and comply with the open access strategies at the European level. The Open Science campaign and training can start in parallel to the new normative coming into place with the planned new Law of Science.

1.8 ERA Priority 6: International cooperation

Albania has become a strategic geopolitical actor in the WB, something that the sector of research and innovation has started to explore very recently. The Albanian government representatives have organised bilateral visits with European and non-European counterparts with the objective to internationalise their institutions, especially universities. The European integration and internationalisation are in the political narrative and in the National Strategy for Science, Technology and Innovation (2017-2022).

The majority (67.4%) of the Albanian scientific publications are international, most of them done in the framework of European collaborations[32]. Innovation related data remains very weak with no international patent recorded. As of 2020, high-technology exports in Albania made up only 0.36% of manufactured exports, showing an increase of 0.13% in 2019[33]. The double doctorate

[30] The new "Law of Science" - now in its early stages of drafting – will have a dedicated article to "Open Science", such as informed by the NASRI director in writing and by the Ministry's representatives during the interview held on 16 December 2022.

[31] Such as seen under the new draft of the "ERP Measure 3 Research and Innovation", provided by the Albanian authorities in December 2022.

[32] 67.4% of the publications are international. It is hard to distinguish between ERA and non-ERA partners. Information retrieved by Scopus SciVal database in November 2022.

[33] https://www.indexmundi.com/facts/albania/high-technology-exports Page last accessed on 6 December 2022. Definition: High-technology exports are products with high R&D intensity, such as in aerospace, computers, pharmaceuticals, scientific instruments, and electrical machinery.

programmes with foreign universities are put in practice, but this depends on the proactiveness of the universities themselves.

No statistics are available to-date on the private sector R&D, something INSTAT is working on in the framework of the EIS.

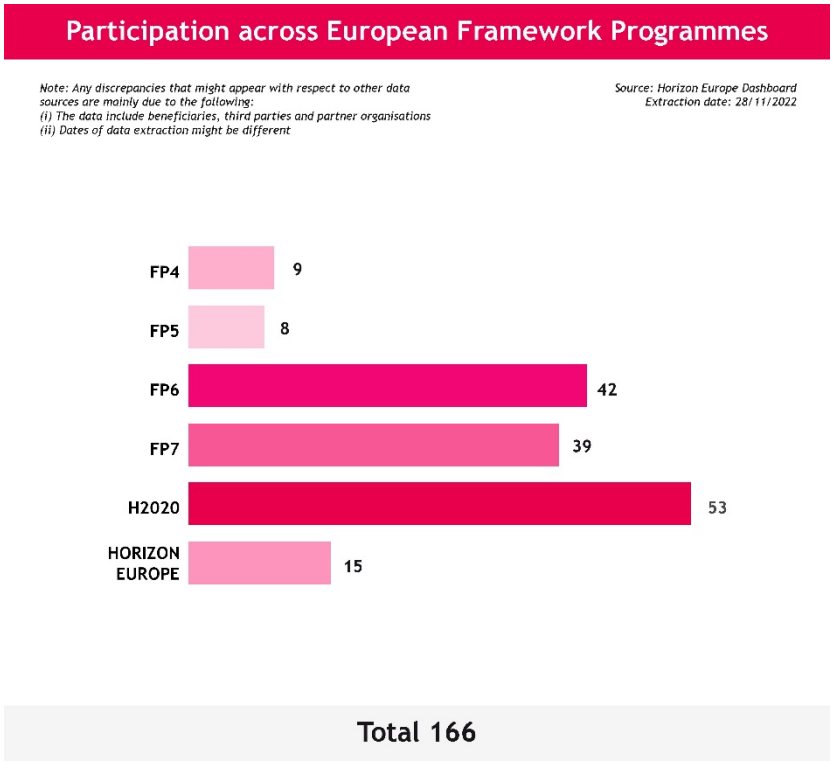
Albania does not have cooperation agreements in R&I with countries like China and India, but it does, such as NASRI has reported, with Malaysia, Turkey and the United Emirates.

Two main challenges are: A) There are no internationalisation strategies/plans/roadmaps that can enable taking serious action for internationalisation. The Ministry's and NASRI's websites lack sufficient visibility for European/international programs. An incentive plan for Horizon Europe and the development of the ERA can be beneficial. B) The innovation sector and the academia-business links are very weak. The government has done some work regarding innovation (see section "Innovation and Digitalisation" below), but the lack of business-academia links is not targeted yet.

2. Horizon Europe participation and financial contribution

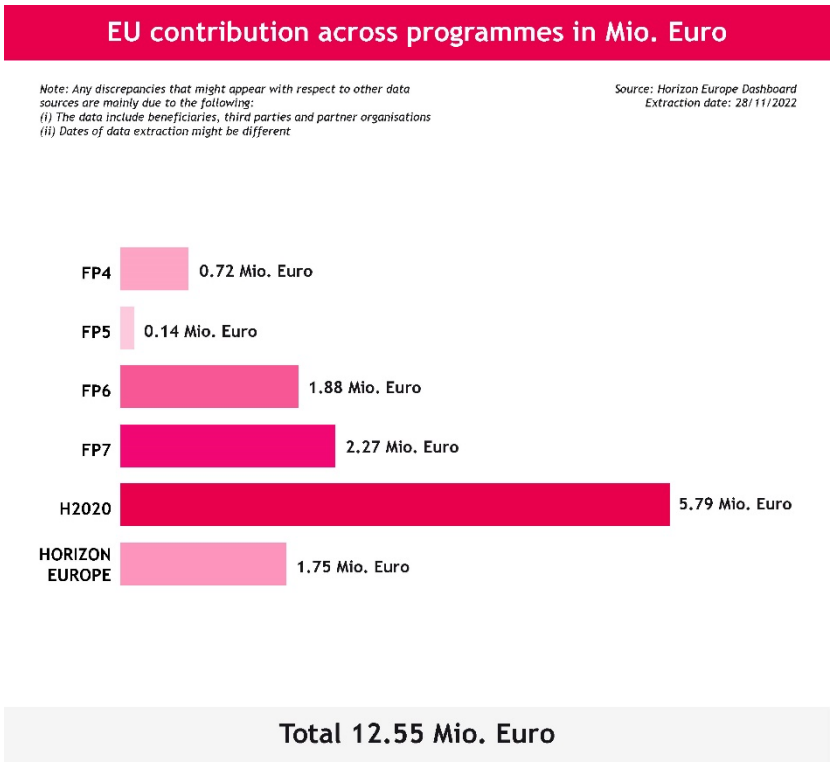
The Albanian participation across European Framework Programmes has increased on the long run from 9 participations during FP4 over 42 participations under FP6 to 53 participations under H2020, making the total number of participations 166.

Figure 1: Participation across European Framework Programmes



The Albanian entities have received a total EU contribution of 12.55 million euros, being the highest during the H2020 programme (2013-2020) with a total of 5.79 million euros. The increase from FP5 to H2020 is significant.

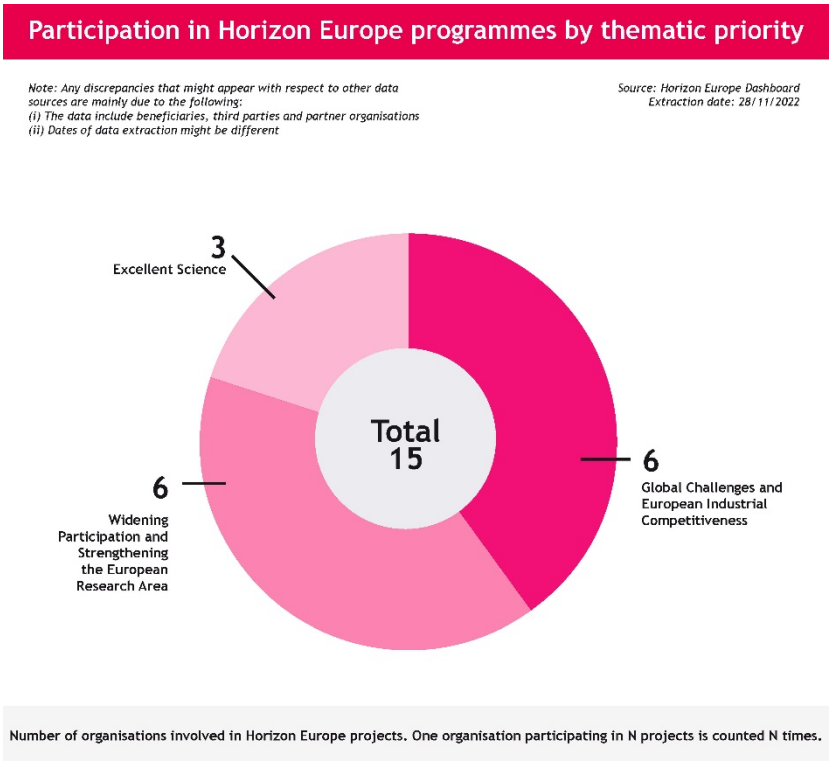
Figure 2: EU contribution across programmes in Mio. Euro



Under Horizon Europe (2021-2027), with a total number of 15 participations and a total net EU contribution of 1.75 million euros, the Albanian entities have had a success rate slightly above the average of the EU Member States and which is only behind Serbia and Montenegro but above the other WB.

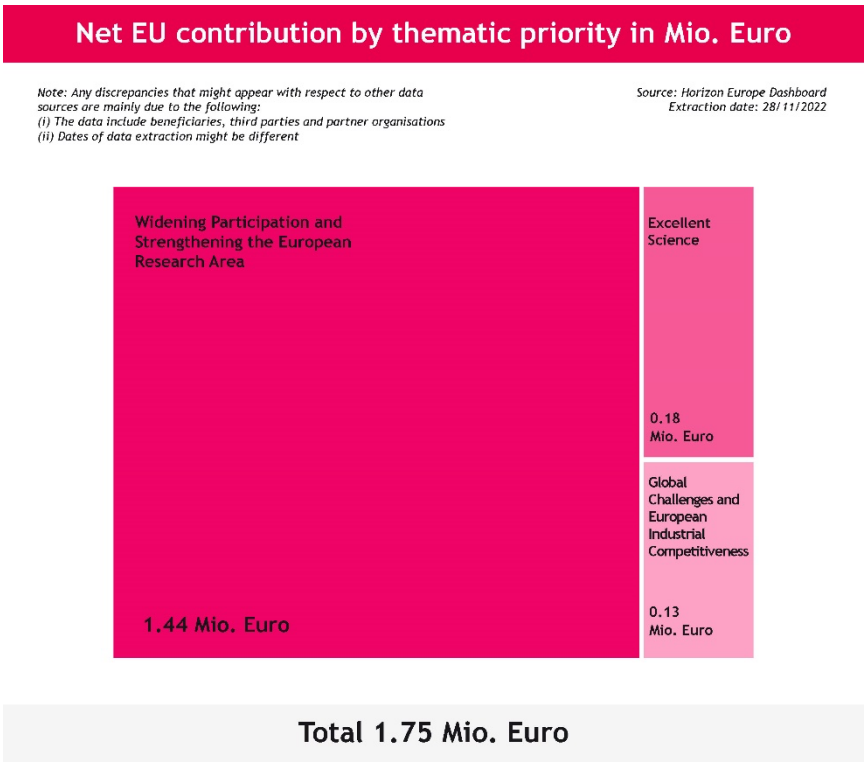
As regards the thematic priorities of the Programme, to-date there are in Horizon Europe three participations under Excellent Science, six under Global Challenges and European Industrial Competitiveness, and six under Widening Participation and Strengthening the European Research Area (WIDERA), making a total of 15 participations in Horizon Europe during 2021 and 2022.

Figure 3: Participation in Horizon Europe programmes by thematic priority



The net EU contribution by thematic priority is: 1.44 million euros under WIDERA, 0.18 million euros under Excellent Science, and 0.13 million euros under Global Challenges and European Industrial Competitiveness, making a total of 1.75 million euros during 2021 and 2022 under Horizon Europe.

Figure 4: Net EU contribution by thematic priority in Mio. Euro



120 applications were received during 2021-2022, 96 of them were eligible proposals. The total number of signed grants was 11, with only one SME. The full data is given in the graph below.

Figure 5: Data for signed grants up to 28/11/2022

Albania	
Total number of participations	15
Total net EU contribution	1.75 Mio. Euro
Number of applications	120
Number of EIC participations	0
Number of MSCA participations	0
Number of Seals of Excellence	0
Number of SME participations	1
Number of signed grants	11
Number of eligible proposals	96

3. Smart Specialisation Strategy

Albania shows good progress[34] in the design of the Smart Specialisation Strategy (S3), which are clearly identified as a commitment in the ERP for 2022-2024. Some good planning is underway with a good identification of sectors and stakeholders across Albania. The S3 is now undertaking the "Entrepreneurial Discovery Process", which is expected to be approved in 2023[35]. As outlined in the report "The identification of Smart Specialisation priority domains in Albania. A mapping exercise"[36] the selected domains are: agriculture, forestry and fishing; manufacturing; energy; accommodation and support service activities; information and communication; and administrative and support service activities.

Some of the challenges are: 1) Organisational: need for a clear governance and coordination; 2) Budgetary: need for a compromise to avoid budgetary constraints for a realistic planning and to create synergies between different structural and competitive funds managed by different bodies; 3) Institutional Culture: The success of S3 requires the cooperation of different institutions in its implementation, i.e., universities, companies, etc. A lot of work should be done to accommodate different interests and to create trust for the S3 implementation.

4. Conclusion

Albania has made significant achievements towards the contribution and development of the ERA:

- For the first time Albania contributed with statistical data to the European analysis of the EIS 2022, but key data on research funding, expenditure and FTE researchers and employees in the R&I sector are missing.
- The reinforcement of R&I is part of the ERP 2021-2023 where Albania's progress is being assessed by the EC, yet more work should be carried out in line with the European Commissions' recommendations. New norms need to be coupled with robust funding.
- The first Research Infrastructure Roadmap for Albania[37] was published in March 2022 by the RCC funded by the EC, but it is limited in scope and understanding due to methodological approaches - the Albanian R&I system suffers from a lack of adequate research facilities, labs and research infrastructures to perform research at all levels.
- Albania has launched its EURAXESS Profile https://www.euraxess.al/, although with very little information on Albania's attractiveness in R&I.
- The mutual recognition of diplomas was reached with the Republic of North Macedonia, Kosovo and Serbia in June 2022.
- Albania has participated in the last "She Figures 2021" indicating capacity and responsibility in terms of gender equality issues in research and innovation.
- Albania is a strategic geopolitical actor in the WB, something that the sector of R&I has started to explore very recently, but not in a structured and well-articulated manner.

[34] https://S3platform.jrc.ec.europa.eu/albania Page last accessed on 18 December 2022.

[35] Such as informed by the NASRI Director in December 2022.

[36] https://s3platform.jrc.ec.europa.eu/w/the-identification-of-smart-specialisation-priority-domains-in-albania.-a-mapping-exercise Page last accessed on 8 January 2023.

[37] https://www.rcc.int/download/docs/RI%20Roadmap%20Albania%20digital.pdf/c4abcbbc24ec0f623156ef8b257adebf.pdf Page last accessed on 6 December 2022.

- Albania shows good progress in the design of its Smart Specialisation Strategy (S3) in terms of good planning, yet inter-institutional coordination is needed for an effective implementation.
- New strategies and regulation are put in place to promote innovation that may have an impact to increase the technological and innovative capacity in Albania as long as they are backed with the adequate support for implementation.
- A promising increase in international publications with good citation records shows that an active research base exists in Albania and that has the potential to grow, be cultivated and strengthened.

Recommendations

- Albania has to make serious efforts to establish a solid R&I system. The National Strategy of Scientific Research and Innovation needs to be implemented with rigorous National Plans that are put into action through funding and co-funding mechanisms. The S3 can be useful in this process. The opportunity for the new National Strategy 2023-2030 – now in the process of drafting – should be well optimised for an effective change.
- The government has to revisit its funding structure and funding mechanisms for R&I. Peer review evaluation should be put in practice. Performance based institutional funding can be considered, beyond the already planned funding Centres of Excellence for 2025. Top departments should be rewarded. With the objective to raise the quality of universities/higher education institutions, performance-based indicators related to research activity should be linked to the professional career.
- Serious action must be taken to increase Albanian participation in European programmes and initiatives. "An Incentive Plan" to institutionally support the best Albanian researchers and the most active departments at universities to increase their transnational collaboration, as well as their joint work with the businesses may be drafted. The potential of the Albanian project coordinators, including COST projects, should be explored in order to be considered as success stories within the system. Participation in other European programmes can be enhanced towards excellence, such as the example of ERASMUS+ participants[38]. The NCP network has to be professionalised even further.
- It is urgent that university labs are updated and that the economy starts investing in research facilities in its top performing institutions.
- The EURAXESS Portal potential has to be exploited, and contribution to the Human Resources related activities needs to be proactively ensured.
- Careers in STEM should be encouraged while universities develop their third mission of connecting with the productive sector and enterprises, as well as by raising the quality of their facilities and labs and by involving these graduates into experimentation, etc.
- Design programmes to support the valorisation and circulation of knowledge in terms of funding and skills, such as Knowledge and Technology Transfer Offices at universities. Coordination with other initiatives should be ensured. Develop academia-business linkages.
- Action must be taken to support the publication process and promote OA. Resources and trained people and need to be put in place. Access to scientific publications should be guaranteed for all researchers and university students.
- Work inter-institutionally to enable progress in the implementation of the S3.

[38] Assuming that the economy will continue its participation in the programme.

- Ensure an effective interinstitutional coordination and prioritisation regarding innovation and industrial development. Create spaces where entrepreneurs, businesses and researchers can meet and work together.

POLICY ANSWERS

ABOUT POLICY ANSWERS

POLICY ANSWERS (R&I POLICY making, implementation ANd Support in the WEsteRn BalkanS) supports policy coordination in the Western Balkans and with the EC and the EU. 14 partner organisations, representing network nodes in the region and EU expert organisations, support policy dialogue through formal meetings (such as ministerial and steering platform and ad-hoc policy meetings), monitoring and agenda setting, capacity building and implementation of the EU's Western Balkan Agenda, as well as the alignment of thematic priorities. The project implements regional pilot activities and offers an information hub based on the westernbalkans-infohub.eu online information platform. The partners provide analytical evidence via monitoring and mapping activities of the stakeholder ecosystem, of the implementation of the Western Balkans Agenda and of the Western Balkans' integration into the European Research Area as well as via strategic foresight. POLICY ANSWERS also allows for tailored and targeted capacity building activities in the Western Balkans as well as regional alignment of priorities in relation to the digital transformation, the green agenda and towards healthy societies. Pilot activities provide learning opportunities on policy and programme level and reach out to final beneficiaries related to improved academia-industry cooperation, researcher mobility, inclusion of youth in policy processes, promotion of research infrastructures and increased innovation skills in all areas.

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