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ERAWATCH COUNTRY REPORTS 2010: Albania

ERAWATCH Network – ACER

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Executive Summary

Albania has an area of 28,748 km² and is located on the Balkan Peninsula, wedged between Montenegro, Kosovo, FYROM, and Greece. While it has a long coast on the Adriatic and Ionian seas, around 70% of the country is mountainous and often inaccessible from the outside-which helped contribute to the country's long political and economic isolation from the rest of Europe. In 2010, the country had a total of 3,195,000 inhabitants, around 0.6% of the EU population. Albania experienced tremendous structural change since the early 1990s, resulting in initially high economic growth rates, with real GDP growth averaging more than 6% in 2000-2008. While the country was less affected by the economic crisis of 2008 than others in the Balkan region, its GDP growth slowed to 3.3% in 2009. GDP reached around €8.5b (ALL1,122,566m) in 2009, or 0.07% of EU27 GDP. Albania is considered a middle income country, but its GDP per capita in PPS of €6,400 represents only 27.1% of the EU27 average.

The [National Strategy for Science, Technology and Innovation](#)¹ in Albania indicated that annual Gross Expenditure on Research and Development (GERD) was close to €15m in 2009, and that total public sector spending on R&D and research structures is foreseen to reach €151.95m for the period 2009-2015. Spending on scientific research remains extremely low, estimated at less than 0.2% of GDP in 2009 and far below the Lisbon target and EU average of 1.9%. GBAORD increased from €0.6m in 2006 and €0.8m in 2007 to €2.1m in 2008, though this decreased to €1.7m in 2009. The National Strategy for STI aims at reaching a GERD of 0.6% of GDP by 2015, while increasing the share of GERD financed by foreign sources, notably the EU and international donors, to 40% of all research spending in the years 2010-2015, meaning that the foreign share of RTD spending will have to increase substantially. Gross foreign investment in RTD was estimated to be 0.025% of GDP in 2009 with World Bank support (€3.3 m) to higher education and science playing a major role in this.

Around 80% of R&D funding comes from the state budget, and R&D performance is concentrated in public sector centres and institutes, higher education institutions, line ministries, and the government sector, which together account for about 97% of R&D output. In contrast, private sector R&D is marginal. Due to lack of statistics and systems to collect data from the private sector, there are no means to monitor the targets set in Albania. According to estimation² the ratio of gross business enterprise expenditure on RTD to GDP is around 0.0025%.

Albanian private companies have tended to buy innovations on the market rather than investing in internal R&D, and there is minimal cooperation between public research performers and businesses. The National Strategy for STI seeks to increase innovation in 100 medium and large private companies either through investment in own R&D or in partnership with academic research institutions or foreign partners. As measured by Doing Business indicators, Albania moved from

¹ The National Strategy for Science, Technology and Innovation reports all main figures in terms of Euros.

² Middle East Technical University, Science and Technology Policy Research Centre (METU - STPS), Ankara, Turkey, Workshop Paper "Research and Development in Albania - International Cooperation", Alma KOPLIKU, 25 May 2010. Source: <http://www.stps.metu.edu.tr/workshop/papers/Albania.pdf>

rank 136 in 2007 to rank 82 in 2010 and achieved the second-highest rank among the top 10 reformers worldwide in 2009.

Albania's research system was reorganised in 2006, following amendments to the Law on Higher Education, and underwent further restructuring in 2009 with the establishment of the [Agency of Research, Technology and Innovation](#) (ARTI). The governance structure was put into place to design and implement research and innovation policies and define broad policy orientations on a multi-annual basis. However, it is not yet fully effective in so far as the research is not supported properly by networks involving industry, regional and local authorities. R&D and innovation statistics are as yet not collected in Albania according to OECD, Eurostat or UNESCO standards. This has made it difficult to both assess progress and make precise comparisons between Albania and other countries in the EU and the Balkan region.

The main efforts of Albania's government to support **national R&D targets** have been to increase public support for research, promote active human resources policies, reorganise and strengthen research institutions, including those now integrated with the universities, and strengthen international cooperation in science and technology initiatives. Regarding the **policy mix to increase private R&D**, the National Strategy for STI promotes innovation in businesses and seeks to bring together academic institutions with the private sector under the National Technology Programme. New structures (ARTI, NAIS, etc.), which may co-operate with the private sector in research and innovation initiatives, were set up. The government has strongly promoted pro-business and -investment policies, increasing FDI sharply since 2006, though the technological level remains relatively low, constrained by availability of adequately skilled workers and low levels of productivity. The [Business Innovation and Technology Strategy](#) (BITS), in the process of being adopted, seeks to increase innovation in Albanian firms, particularly SMEs, through the [Business Relay and Innovation Centre](#) (BRIC), which is soon to be fully operational. It remains to be seen how effective these policies and structures will be in increasing private investment in R&D.

There are no restrictions on private investments in R&D, but the policy framework still lacks incentives. Major weaknesses remain in framework conditions for private investment in R&D and private-public cooperation and knowledge transfer, unattractive employment conditions for researchers, lack of mechanisms for monitoring and evaluation to develop and sustain overall quality and competitiveness, weak linkages between research and societal challenges as well as a low social valuation of R&D and scientific activity.

Knowledge Triangle

The reform of the research system and adoption of the National Strategy for Science, Technology and Innovation introduced important changes to improve the effectiveness and complementarities of mechanisms that support the knowledge triangle. The first steps were made in terms of setting up institutions and developing a strategy for the innovation system of the country, but it still needs to be better oriented toward real societal needs and more funding is needed. Furthermore, transparency, competitiveness, management capacity and the ability to monitor and evaluate progress made, including standardised statistics on the R&D and innovation system of Albania, need to be improved.

Effectiveness of knowledge triangle policies

	Recent policy changes	Assessment of strengths and weaknesses
Research policy	<ul style="list-style-type: none"> • Adoption of National Strategy for Science, Technology and Innovation 2009 – 2015', 29 June 2009, set goals for increasing R&D. • Education system reforms, National STI strategy and reorganisation of ASA strengthen university research capacities and improve public research structures. 	<ul style="list-style-type: none"> • + Substantial progress in institutional and strategy development. • + Despite budget constraints, slight increase in financial support to research achieved. • - Lack of research orientation toward economic and social needs; lack of transparency of recruitment policies and non-competitive payment systems; low scientific output.
Innovation policy	<ul style="list-style-type: none"> • National Strategy for Science, Technology and Innovation 2009 – 2015', 29 June 2009. • 'Cross-Cutting Strategy of Information Society 2008 – 2013', CoM Decision No. 59, dated on 22.1.2009. 	<ul style="list-style-type: none"> • + Substantial progress in institutional and strategy development. • - Lack of capacities to evaluate & monitor scientific projects and introduce statistical standards. • - Budgetary constraints. • - Strategy objectives too broad; goal-oriented interventions difficult to identify, unlikely to generate expected benefits.
Education policy	<ul style="list-style-type: none"> • Law N. 9741, dated 21.5.2007, 'On Higher Education in the Republic of Albania', (updated with law N.9832, dated 12.11.2007 & N. 10 307, dated 07.22.2010). • National Strategy for Higher Education (HE Strategy) 2008-2013. 	<ul style="list-style-type: none"> • + University autonomy to be increased for external and internal accountability and better management. • + Efforts to link research and higher education, and strengthen international S&T cooperation. • -- Lack of homogeneity of system. • -- Weak link of education to real societal needs and requirements of private sector.
Other policies	<ul style="list-style-type: none"> • Business Innovation and Technology Strategy (BITS) drafted, dated 19 July 2010. • Strategic Programme for Innovation and Technology Development of SMEs for 2011–2016 approved (<i>Addition to Strategy "for Business Development and Investment", adopted by Decision no. 795, dated 11.7.2007 of the Council of Ministers</i>). 	<ul style="list-style-type: none"> • + Rapid increase in registered businesses, high level of entrepreneurship. • - Lags behind other countries in innovation, putting at risk competitiveness and sustainability <i>Clusters initiatives</i> did not establish sustained cluster structures and activities. • -- BITS still in process of being adopted and BRIC not yet fully operational. • - Low technological level of SMEs and staff competencies.

European Research Area

ERA and ERA-related policies have been critical in helping to open up the Albanian research system to international cooperation and provide much-needed funding for research. The Brain Gain programme and policies to improve conditions for professors and researchers in universities as well as increased international cooperation are boosting Albania's human intellectual capital, though R&D jobs continue to be unattractive because of low pay, lack of social status, limited incentives and poor employment opportunities and infrastructure and equipment for research positions are often inadequate.

While the recent education system reforms, the National STI strategy and reorganisation of the [Albanian Science Academy](#) (ASA) have helped strengthen university research capacities and improved public research structures, there need to be substantial improvements made in framework conditions for private investment in R&D, promoting public-private cooperation and knowledge transfer and overall transformation of Albania into a knowledge-intensive economy. Also improvements are needed in physical RTD infrastructure, including high-speed Internet connections, and in addressing imbalances between basic, interdisciplinary, and applied research, strengthening the knowledge base in technical disciplines. Among the major societal challenges that will be the focus of innovation and European research activities are the environment and energy provision. Given budget constraints, foreign development support and international cooperation programmes will play an increasingly important role in building Albania's research capacity in the near future, even though at present the shares of resources and rates of success are quite low. During 2007-2010, FP7 proposals with Albanian participants had a success rate of 16% and Albania benefited from only a €0.22 per capita EC contribution in signed grant agreements vs. contributions as a percentage of GERD in SEE funding, the lowest rate in the region.

Assessment of the national policies/measures supporting the strategic ERA objectives (derived from ERA 2020 Vision)

	ERA objectives	Main national policy changes	Assessment of strengths and weaknesses
1	Ensure an adequate supply of human resources for research and an open, attractive and competitive single European labour market for male and female researchers	<ul style="list-style-type: none"> • Law No.8834, dated 22.11.2001 on Ratification of Lisbon Recognition Convention Decision No.467, dated 18.7.2007 'Determining of criteria and procedures for scientific and pedagogical qualification of academic staff'. • Decision No. 1100, dated 30.7.2008, 'For approval of medium term action plan of "Brain Gain" programme for period 2008-2009 (programme established in 2006). • Decision no. 864, dated 05.12.2007 'For opening of Doctoral study programmes in public higher education institutes and define criteria for student to get a diploma ranked as science "Doctorate".' • Decision no 255, dated 27.4.2007 'For establishing the Excellence Fund for financial support to young excellent scientists'. • Research Eagles Grants Programme and Science Promotion and Education Programme aim to increase Master and Doctoral graduates in science and engineering fields. • Law No.8401 dated 9.9.1998 on some changes in law nr.7893 dated 22.12.1994 "For Science and Technological Development". 	<ul style="list-style-type: none"> • + Strong diaspora, potentially capable of supporting ICT-based development and emergence of knowledge economy. • + Fairly sound human capital basis with absorptive capacity necessary for learning, assimilating and using knowledge developed elsewhere. • -- Limited qualified IT personnel. • -- Unattractive working conditions for researchers: low salaries, inadequate infrastructures, difficult to gain a permanent position, etc. • -- Large share of qualified staff co-operates outside Institutional structures.

	ERA objectives	Main national policy changes	Assessment of strengths and weaknesses
2	Increase public support for research	<ul style="list-style-type: none"> • National Strategy of STI (2009) calls for increasing public support of research. Nominal value of public R&D budget €15m or 0.2% of GDP in 2009--target 0.6% of GDP during 2009--2015. 2009 budget for higher education and scientific research 2.2 times higher than for 2005. • Long Term plan for Development of Military Forces 2020 envisages intensified R&D activities for security and defence, also in context of Science for Peace Programme. 	<ul style="list-style-type: none"> • + Small increase in R&D expenditure planned through national R&D programmes. • -- GBAORD decreased from €2.1m in 2008 to €1.7m in 2009, though higher than in 2006 (€0.6m) and 2007 (€0.8m). • -- Defence-oriented research might only benefit limited community of researchers without greater positive effects on economy and employment.
3	Increase European coordination and integration of research funding	<ul style="list-style-type: none"> • Decision no.559 dated 22.08.2007 'For the merger of several institutes of the Academy of Sciences'. • Law no.9866, dated 31.1.2008 ratification of "Memorandum of understanding between the Republic of Albania and the European Community on Association of the Republic of Albania to the Seventh Framework Programme of the European Community for research, technological development and demonstration of activities (2007 - 2013). • "Decision no. 903, dated on 26.8.2009 to Establish Albanian Agency for Research, Technology and Innovation (ARTI). 	<ul style="list-style-type: none"> • + Accelerated internal integration efforts: MES adopted concept of working in mixed scientific research groups within the National Programmes and international research to eliminate the risk of parallel development and duplicated efforts, while at the same time stimulating cooperation between different institutions and groups. • - Still low participation in FP7. • - ARTI only operational as of 2010.
4	Enhance research capacity across Europe	<ul style="list-style-type: none"> • Programme of Excellence Funds to create five Centres with at least 20 researchers each aiming at integrating national research activities and technological development in regional and European scientific and technological activities. 	<ul style="list-style-type: none"> • + Framework integrating national research activities and technological development is good basis for future activities. • -- Lack of RTD statistics as basis for effective policy monitoring. • -- Need to internationalise RTD activities - increase participation in ERA.

	ERA objectives	Main national policy changes	Assessment of strengths and weaknesses
5	Develop world-class research infrastructures (including e-infrastructures) and ensure access to them	<ul style="list-style-type: none"> • Fund for Research Infrastructure (€0.15m in 2009, to reach €27.5m by 2015) will improve quality of equipment and facilities. • National Agency for Information Society (NAIS) set up as co-ordinating body for e-government services benefiting businesses and citizens. System safeguards private data while maximising ease of sharing public information across government agencies. • ‘Cross-Cutting Strategy of Information Society 2008 – 2013’, CoM Decision No. 59, dated 22.1.2009 equips all schools with Internet connected PC-labs. • National fund to be established for “Digital Albania” programme to ensure that every youth has a PC. 	<ul style="list-style-type: none"> • + Procedure for national programmes adopted according to EU standards. • + Improved infrastructure, modern computer networks in universities, new modern laboratories, etc; high-speed Internet network between government institutions. • + Introduced online services to main services under initiatives for E-governance, E-procurement, Tax Office. • + Internet use increased from 2.1% in 2005 to 45% in 2010, according to National Agency on Information Society.³ +Increased network of public Internet access also in rural areas of Albania. • -- Still low level of broadband connections: 0.1% in 2005 and only 3.5% in 2010. • -- Lack of ongoing scientific activities (conferences, journal production etc.) in sub-structures of research institutions and lagging development of private sector research infrastructure.
6	Strengthen research institutions, including notably universities	<ul style="list-style-type: none"> • Decision no. 903, dated 26.8.2009 to Establish Albanian Agency for Research, Technology and Innovation (ARTI). • ‘National Strategy for Science, Technology and Innovation 2009 – 2015’, 29 June 2009. • Law No. 9741, dated 21.5.2007, ‘On Higher Education in the Republic of Albania’ (updated with law N0.9832, dated 12.11.2007 & No. 10 307, dated 07.22.2010). • National Strategy For Higher Education (HE Strategy) 2008-2013. 	<ul style="list-style-type: none"> • + Established institutional organisation with programmes and projects of wide interest; competitive system used to allocate financial support. • -- Level of research in higher education institutions is not at the proper level. • -- Imbalance between basic, interdisciplinary, and applied research. • -- Gaps in knowledge base in technical disciplines and need to improve physical RTD infrastructure.

³ Ibid.

	ERA objectives	Main national policy changes	Assessment of strengths and weaknesses
7	Improve framework conditions for private investment in R&D	<ul style="list-style-type: none"> • 'National Strategy for Science, Technology and Innovation 2009 – 2015', 29 June 2009. • Good bandwidth, countrywide connectivity and data transmission are being provided by 3G cell phone licenses and the Broadband Backbone. 	<ul style="list-style-type: none"> • + Improved access to modern mobile phone and Internet services with aim to cover entire territory. • + Dynamic economic growth and FDI investments. • -- Low private investment in R&D; need to increase demand for RTD in industry.
8	Promote public-private cooperation and knowledge transfer	<ul style="list-style-type: none"> • National Broadband Network Infrastructure set up through innovative PPPs, as stated in Albanian Electronic Communication policy of 2010: to improve probability that private investors invest in ICTs (especially in order to offer services) and actions by the state to increase use of ICTs by state institutions. • National Technology Programme seeks to create consortia of academic research institutes with private sector or other public sector institutions to develop programme of applied research with social or economic impact. 	<ul style="list-style-type: none"> • + Increased co-operative initiatives concerning applications of scientific technological products in private sector. • -- Limited to ICT sector with little PPP diffusion in economy. • -- Difficulties in forming viable partnerships between public research performers and private sector comprised of mostly SMEs operating in non-technical fields. • -- Private sector weaknesses in absorbing knowledge—prefers purchasing technologies on market.
9	Enhance knowledge circulation across Europe and beyond	<ul style="list-style-type: none"> • Brain Gain Programme: In March 2009, 61 Albanian nationals studying and/or working abroad were recruited to work in universities. • Albanian scientists have had leading roles in 47 NATO science activities, and Albanian experts, researchers and trainees have participated in many more. • Foreign professors recruited to teach in Albanian public and private universities. 	<ul style="list-style-type: none"> • + Increased active participation in international programmes through projects of scientific community. • + MES active in regional initiatives and bilateral scientific relations expanded in SEE region and beyond. • + Acknowledgment of importance of international mobility for small developing country with modest research and innovation infrastructure. • -- Underestimation of need to involve foreigners in research and innovation -- few or no measures to attract them.

	ERA objectives	Main national policy changes	Assessment of strengths and weaknesses
10	Strengthen international cooperation in science and technology and the role and attractiveness of European research in the world	<ul style="list-style-type: none"> • International cooperation high on national agenda, (Tempus Higher Education, Erasmus Mundus, NATO Science, FP7, SEE ERA.NET, CARDS: UNDP). • Bilateral agreements with Austria, France, Croatia, Turkey, Montenegro and Poland. • Participation in European Research Area Committee (ERAC), nominated delegate observer to Standing Committee for Agricultural Research (SCAR). • Invited to nominate delegate observers to the different ERA governance bodies. 	<ul style="list-style-type: none"> • + Balanced bilateral & financial agreements based on international criteria of evaluation; • + Good performance in FP6 projects and FP7 programme. • -- Lack of international programmes support for foresight studies and process prioritisation.
11	Jointly design and coordinate policies across policy levels and policy areas, notably within the knowledge triangle	<ul style="list-style-type: none"> • Establishment of Agency for Research, Technology and Innovation (ARTI) to co-ordinate and guide ministries and other public bodies in field of S&T and play leading role in creation of S&T culture. 	<ul style="list-style-type: none"> • + ARTI represents important co-ordinating structure and is responsible for allocating R&D funding. • -- Only started operating in March 2010 so it is difficult to judge its effectiveness.
12	Develop and sustain excellence and overall quality of European research	<ul style="list-style-type: none"> • SEEREN and SEEREN2 connect national research networks in Education in Balkans with pan-European network of research in Education GEANT. SEE_GRID and SEE_GRID2 projects aim at transfer and development in Southeast Europe of project results in GRID technologies as important component of European Research Area (ERA). • Project funded by Italian Government to establish National Academic Network (research in education) expected to be of high importance. 	<ul style="list-style-type: none"> • + Pilot and experimental projects (and technologies) based on best practices in neighbouring countries. • + Quality assurance mechanisms being put into place in the universities. • -- Still low participation and success rate in FP7 projects.
13	Promote structural change and specialisation towards a more knowledge - intensive economy	<ul style="list-style-type: none"> • Seven National Programmes of Research and Development (2010-2012): Social Sciences and Albanology; Information Systems and Technologies (ICT); Biodiversity and Environment; Agriculture, Food & Biotechnology; Health; Water & Energy; Materials. 	<ul style="list-style-type: none"> • + Systematic change in science funding adopted through introduction of national programmes with three-year cycles and reduction in the number of priority fields. +Some success in ICT fields. • - Still high focus on low-technology sectors (i.e. agriculture and social sciences).
14	Mobilise research to address major societal challenges and contribute to sustainable development	<ul style="list-style-type: none"> • National Programmes of Research and Development aimed at societal challenges & sustainable development: Biodiversity & Environment; Agriculture, Food & Biotechnology; Health: Water & Energy. 	<ul style="list-style-type: none"> • -- So far only limited results achieved, since new National Programmes only started in 2010.

	ERA objectives	Main national policy changes	Assessment of strengths and weaknesses
15	Build mutual trust between science and society and strengthen scientific evidence for policy making	<ul style="list-style-type: none"> • National Strategy for Science Technology and Innovation proposes science, technology and innovation awareness and promotion activities—funding activities to foster interest in and improved understanding of STI for the Albania economy and society. 	<ul style="list-style-type: none"> • + Strategy introduced and activities recently initiated. • - Low priority of STI in general (only 10% of students enrolled in sciences, mathematics & computing courses, 8% in engineering or related fields. • -- Low level of participation in EU RTD.

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1 Introduction

The main objective of the ERAWATCH Analytical Country Reports 2010 is to characterise and assess the evolution of the national policy mixes in the perspective of the Lisbon goals and of the 2020 post-Lisbon Strategy. The assessment will focus on the national R&D investment targets, the efficiency and effectiveness of national policies and investments in R&D, the articulation between research, education and innovation, and on the realisation and better governance of ERA. In doing this, the 15 objectives of the ERA 2020 are articulated.

The report is being drafted for the first time in Albania and builds on the policy assessment in the domains of human resource mobilisation, knowledge demand, knowledge production and science-industry knowledge circulation. The collection of information related to the ERA pillars is also being undertaken for the first time in order to cover all six ERA pillars and address the corresponding objectives derived from the ERA 2020 Vision.

Given the latest developments, the 2010 Country Report has a stronger focus on the linkage between research and innovation, reflecting the increased focus on innovation in the Albanian policy agenda. The report is not aimed at covering innovation per se, but rather the '**interlinkage**' between research and innovation, in terms of their wider governance and policy mix.

2 Performance of the national research and innovation system and assessment of recent policy changes

The aim of this chapter is to assess the performance of the national research system, the '**interlinkages**' between research and innovation systems, in terms of their wider governance and policy and the changes that have occurred in 2009 and 2010 in national policy mixes in the perspective of the Lisbon goals. The analysis is carried out in the domains of resource mobilisation, knowledge demand, knowledge production and science-industry knowledge circulation. Each section identifies the main societal challenges addressed by the national research and innovation system and assesses the policy measures that address these challenges. The relevant objectives derived from ERA 2020 Vision are articulated in the assessment.

2.1 Structure of the national research and innovation system and its governance

This section gives the main characteristics of the structure of the national research and innovation systems, in terms of their wider governance.

Albania has an area of 28,748 km² and is located on the Balkan Peninsula, wedged between Montenegro, Kosovo, FYROM, and Greece. While it has a long coast on the Adriatic and Ionian seas, around 70% of the country is mountainous and often inaccessible from the outside--which helped contribute to the country's long political

and economic isolation from the rest of Europe. In 2010, the country had a total of 3,195,000⁴ inhabitants, equal to around 0.6% of the EU27 population.

Albania experienced tremendous structural change since the early 1990s, resulting in initially high economic growth rates, with real GDP growth averaging more than 6% in 2000-2008. While the country was less affected by the economic and financial crisis of 2008 than others in the Balkan region, its GDP growth slowed to 3.3% in 2009.⁵ Gross domestic product reached around €8.5b (ALL1,122,566m) in 2009, or 0.07% of EU27 GDP.⁶ While Albania is considered a middle income country, its GDP per capita in PPS of €6,400 represents only 27.1% of the EU27 average. GDP per sector was composed of agriculture (21.5%), industry (19.5%), and services (59%).⁷

R&D and innovation statistics are as yet not collected in Albania according to OECD, Eurostat or UNESCO standards.⁸ This has made it difficult to both assess progress and make precise comparisons between Albania and other countries in the EU and the Balkan region. However, the estimates corroborated in discussions held during the preparation of the National Strategy of Science, Technology and Innovation suggest that the annual Gross Expenditure on R&D (GERD) was close to €15m in 2009.⁹ As such, spending on scientific research remains low, estimated at less than 0.2% of GDP in 2009.¹⁰ This is the lowest rate in Europe and far below the EU27 average of 1.90% in 2008.¹¹ While a slight increase in financial support, especially institutional funding, was achieved since 2006, R&D remains a low priority, as illustrated by the very low GERD.

Around 80% of R&D funding comes from the state budget, and R&D performance is concentrated in public sector research centres and institutes, higher education institutions, line ministries, and the government sector, which together account for about 97% of R&D output. In contrast, private sector R&D is marginal. Due to lack of statistics and systems to collect data from the private sector, there are no means to monitor the targets set in Albania. The ratio of gross business enterprise expenditure on RTD to GDP is estimated to be around 0.0025%. Albanian private companies have tended to buy innovations on the market rather than invest in internal R&D, and there is minimal cooperation between public research performers and businesses.

Main actors and institutions in research governance

The research system in Albania involves actors at political, operational and research performer levels. The science system includes higher education institutions, scientific research, development, knowledge and technology (innovation) institutions. Beginning in 2006, the research system started undergoing a process of reorganisation, following amendments to the Law on Higher Education, and continuing in 2009 with the establishment of the Agency of Research, Technology and Innovation (ARTI) and the adoption of the **National Strategy for Science,**

⁴ [Albanian Institute of Statistics \(INSTAT\)](#), Population 1 Jan. 2010

⁵ [International Monetary Fund, World Economic Outlook](#), Oct. 2010

⁶ Commission Opinion on Albania's application for membership of the European Union, 09 Nov. 2010 SEC(2010) 133.

⁷ [Global Finance, Albania Country Report Data](#), Updated November 2010

⁸ A first survey of public and academic institutes was launched earlier this year and a business R&D and innovation survey is currently under way, both supported by UNESCO. Data is not available yet.

⁹ [Figures in Strategy](#) published in € - with 2009 average exchange rate of €1 / ALL135.6, €15m is approximately ALL2.034m. Council of Ministers, Department of Strategy and Donor Coordination, National Strategy of Science, Technology and Innovation 2009 - 2015, June 2009

¹⁰ European Commission, [Stabilisation and Association Albania 2009 Progress Report](#), Nov. 2010

¹¹ [Eurostat, R&D statistics explained](#)

Technology and Innovation 2009-2015. This Strategy led to the establishment of necessary mechanisms for the effective functioning of the scientific research system in Albania. The Ministry of Education and Science (MES) defined a set of specific goals that this National Strategy should achieve by 2015, including those regarding scientific research and innovation and their funding mechanisms. A new governing structure was put in place to design and implement research and innovation policies and define broad policy orientations on a multi-annual basis; however, this structure is not yet fully effective in so far as the research is not supported properly by networks involving industry, regional and local authorities. While the need to define thematic S&T disciplines and fields has been recognised, Albania must still develop competences and capacities to properly evaluate and monitor scientific projects to improve their output and further develop national interests—thus guaranteeing the effectiveness of funding of research in the country. Also the statistical system for tracking the progress of such efforts and the overall scientific output of the country is still being put into place.

The main government responsibility for R&D activities in Albania remains with the [Ministry of Education and Science \(MES\)](#), which provides support for different activities and programmes through its Directorate of Scientific Research and acts as the main interlocutor with the scientific community. The MES is supported in this role by various existing and new actors that emerged following restructuring, including.

- The [Academy of Sciences of Albania \(ASA\)](#) operates through a selected community of scientists structured into sections. It no longer administers the (former) Research Institutes of the Academy (Law on the Academy of Sciences of the year 2004, revised in 2006), which were detached from it and integrated into the higher education system. ASA provides overall strategic guidance to the scientific system.
- **Research Institutes** belonging to the line ministries were reorganised and merged into higher education and 12 **Technology Transfer Centres and Agencies** were created, having as their main mission the transfer of technologies and knowledge with technical support.
- The Ministry for Innovation and Information Communication Technology was set up in April 2010 and runs its activities through two main agencies that had been set up previously:
 - [Albanian Agency of Research, Technology and Innovation \(ARTI\)](#), a public institution established in August 2009/operational in March 2010 to improve policy implementation and integration between different research actors, including public and private sector entities.
 - [National Agency for Information Society \(NAIS\)](#) established in 2007 to co-ordinate government activities in information technology and communication.

At present, the main actors in research governance and policymaking institutions of the scientific research system include the following:

A. Political Level

- Albanian Assembly: Committee on Education and Public Information
- Council of Ministers

B. Advisory Institutions

- National Council for Science and Innovation (two committees: one on Business Innovation advising the Minister of Economy, Trade and Energy, the other on Higher Education and Science advising the Minister of Education and Science)
- Albanian Academy of Science¹²
- Rectors' Conference

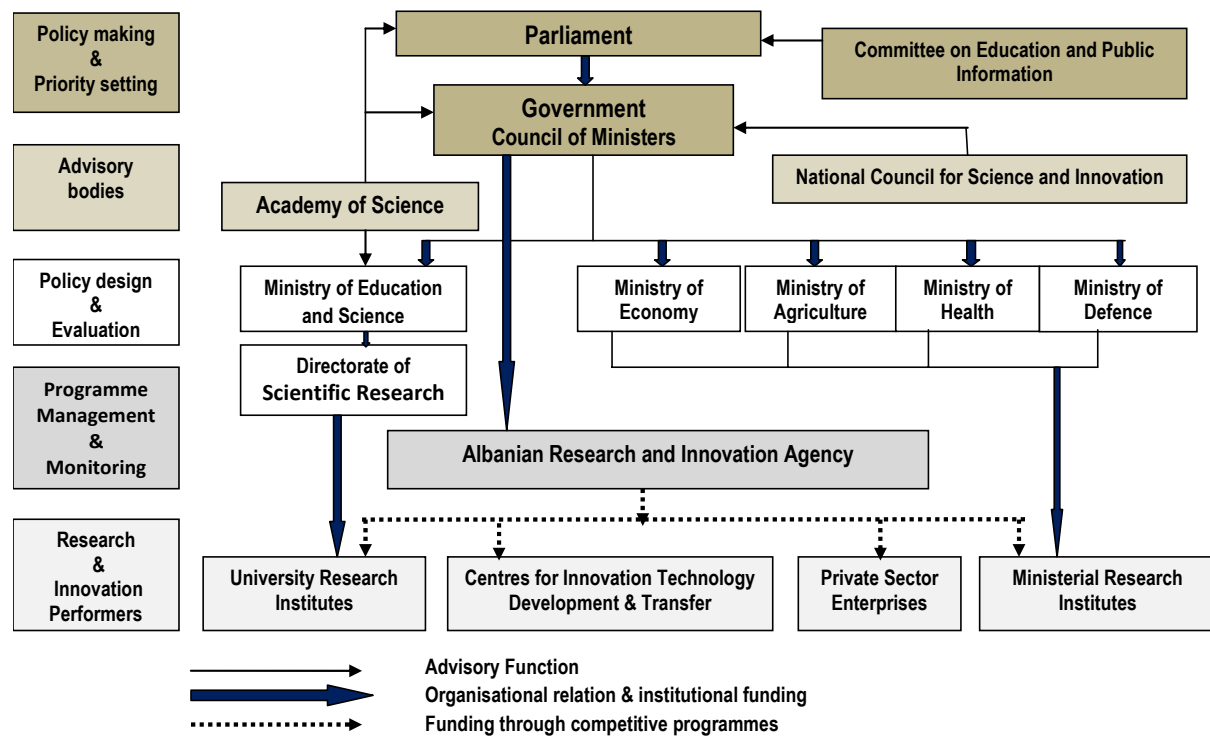
C. Operational Level

- Ministry of Education and Science (MES)
- Department of Scientific Research
- Agency for Research, Technology and Innovation (ARTI)
- National Agency for Information Society (NAIS)

D. Research Performers

- Higher Education Institutions
- Ministerial Research Institutes/Agencies of development and technology
- Industry-based governmental and privately owned R&D institutes/centres/foundations
- Other private enterprises

Figure 1: Overview of Albania's research system governance structure



Source: ERAWATCH Research Inventory

¹² According to Albanian Constitution, the President of the Republic nominates the Chairman of the Academy of Sciences and the rectors of universities pursuant to law.

The higher education institutions play a critical role in the research system. [The National Education Strategy 2004-2015](#) provided a roadmap to help strengthen the HEI sector's performance and serves as a basis for concerted efforts to achieve better learning outcomes in a more equitable and efficient manner. This was reinforced by the revised [Law on Higher Education](#),¹³ which introduced greater flexibility and objectivity to university funding, while the *Strategy of Higher Education* set ambitious goals for improving performance of the university system. The higher education system was strengthened substantially through the integration of research institutes detached from the Academy of Sciences of Albania and the line Ministries.

A further key policy affecting the research system is the *Action plan for the implementation of European Partnership Priorities* (2004), which discusses legislative and institutional measures for scientific cooperation, focusing mainly on agricultural research and its restructuring, which is an important sector in Albania.

Regions in research

Albania is a unitary state. After decades of highly centralised governance, the Government and donors have been promoting decentralisation and handing governance responsibilities over to Local Government Units (LGU) in recent years. The Regional Council, comprised of delegates from municipalities and communes from different regions, participates in formulating, implementing and harmonising regional policies with national policies.¹⁴ The law defines the duties and responsibilities of communes and municipalities in a very general fashion, which include preparation and approval of local budgets; ensuring appropriate conditions for the functioning of local institutions of primary and secondary education, basic health care, culture, etc; however these do not include higher education or research. While there are various universities located in different regions of the country, the establishment and operation of public universities and the licensing of private ones and possible research funding continue to be functions vested solely with the national government. The regional authorities have no formal connection with the institutions of higher learning for the moment. According to the law, the Ministry of Education and Science is responsible for budget allocations to the institutions of higher learning.¹⁵

The [National Strategy for Higher Education \(September \(2008-2013\)\)](#) has identified one of the challenges for regional universities as their policy reorientation toward becoming regional development centres with an active role in promoting the development of the community and the local economy. Each regional university would be invited to apply for project financing to engage in applied research or training programmes for local businesses. Another objective could be to develop new programmes and directions that are of national interest. Funds for this purpose will be available to all public and non-public universities. The government seeks to encourage universities to co-operate with local communities; such projects will have a priority in selection and funding in order to promote research activities with a perspective toward regional development. Given the fact that the leading universities and major research institutions are located in the capital, Tirana, most of the R&D activities are also concentrated in and around this city.

¹³ Law No. 9741, dated 21. 5.2007, On Higher Education.

¹⁴ Idem. Article 110

¹⁵ [http://www.mash.gov.al/arsimi_larte/Ligji%209741.%20per%20arsimin%20e%20larte%20\(i%20azhornuar\).pdf](http://www.mash.gov.al/arsimi_larte/Ligji%209741.%20per%20arsimin%20e%20larte%20(i%20azhornuar).pdf)

2.2 Resource mobilisation

Since 2000, Europe has made evident progress towards ERA but at the same time it is clear that Europe's overall position in research has not improved, especially regarding R&D intensity, which remains too low. The lower R&D spending in the EU is mainly a result of lower levels of private investment. Europe needs to focus on the impact and composition of research spending and to improve the conditions for private sector R&D investments.

This section assesses the progress towards national R&D targets, with particular focus on private R&D and of recent policy measures and governance changes and the status of key existing measures, taking into account recent government budget data. The need for adequate human resources for R&D has been identified as a key challenge since the launch of the Lisbon Strategy in 2000. Hence, the assessment includes also the human resources for R&D. Main assessment criteria are the degree of compliance with national targets and the coherence of policy objectives and policy instruments.

2.2.1 Resource provision for research activities

Albania has pursued a rather traditional model in which expenditure on research is almost exclusively funded by the public sector. The *National Strategy of Science, Technology and Innovation for 2009-2015* provides little specific information on progress made towards R&D investment targets over the past few years, though some information is available from a UNESCO Study,¹⁶ which showed that between 2000 and 2005, GERD has hovered around 0.17%-0.19% of GDP. As mentioned, while the public budget for R&D has been slightly increased, with the 2009 budget reaching €15m in terms of nominal value, the GERD accounted for only 0.2% of GDP. The target under the Strategy is for GERD to reach 0.6% of GDP during 2009 – 2015, thus signalling the intention to substantially increase public support for research (ERA objective 2). According to the MES, Government Budget Appropriations or Outlays on R&D (GBAORD) increased from €0.6m in 2006 and €0.8m in 2007 to €2.1m in 2008, though decreasing to €1.7m in 2009. While such expenditure more than tripled between 2006 and 2008, the total amount and share of national output remain extremely low compared to the rest of Europe, including other Balkan countries. Until around 2006, R&D was not considered a high priority for economic and social development in Albania.

In the past, R&D in Albania was supported almost exclusively by state funding to public sector research institutions, government agencies and public universities. The concept of competitive funding was first introduced when Albania began participating in European research programmes such as FP7 and then embraced in the National Strategy for Science, Technology and Innovation in 2009. While on the one hand the new strategy proposes grants (incentives) for qualified researchers, on the other hand, subsidies and tax incentives for private sector R&D are still very limited, though efforts are being made to stimulate university-private sector cooperation.

In the **National Strategy for Science, Technology and Innovation 2009-2015**, the Ministry of Education and Science (MES) endorsed the establishment of different programmes and funds focused primarily on improving the research infrastructure,

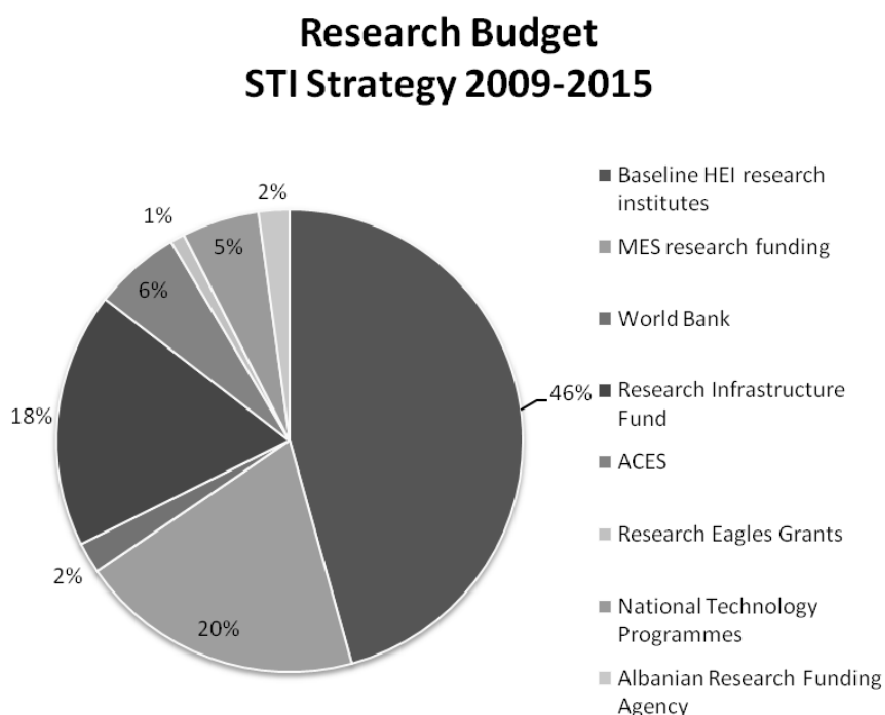
¹⁶ Agolli, E., 2007, Science, Technology and Innovation Indicators: Trends and Challenges in SouthEastern Europe, as cited in SEE-Science: Science and Technology Country Report Albania, compiled by Maruška Bračić and Elke Dall. WBC-INCO.

expanding graduate and post-graduate programmes, and creating sustainable linkages between academia and the private sector. As in other countries in the region, Albania’s S&T and Innovation Strategy introduced competitive-based funding criteria (competitive calls for projects or grant applications) into the main policy instruments. The National Strategy has five strategic goals:

1. increasing public spending on research to 0.6% of GDP by 2015;
2. increasing the share of GERD from foreign sources to 40% of all research spending in 2010-2015;
3. setting up 4-5 Albanian Centres of Excellence in Science (ACES);
4. doubling the number of researchers; and
5. increasing innovation activity in 100 companies.

The Strategy foresees that total cumulative funding for research activities during the period 2009-2015 will amount to €151.95m, including €3.3m from World Bank Research Infrastructure Funding and €69.45m related to HEI research institutes. The largest share (46%) is to be allocated to higher education research institutes—with the actual share to HEI being much higher, given that universities can also participate in National Technology Programmes and will benefit from the Research Infrastructure Fund. The Research Infrastructure Fund and World Bank Research infrastructures funding will provide much needed investment in Albania’s research infrastructure. The budget shares in Figure 2 take into account bilateral and multilateral donor support (including future IPA funds), but do not include contributions gained via participation of Albanian researchers or institutes in the EU’s FP7 or other EU level research funding programmes.

Figure 2: Planned Research Budget - National Strategy for Science, Technology and Innovation



Source: Nomisma elaboration of budget data in Strategy

Albania's public sector R&D activities are financed directly¹⁷ by the state budget, national programme financing through the MES, programme funding under bilateral programmes, and international collaboration, as outlined below for the period 2009-2015. Since 2010, the main public research programmes are co-ordinated by the Agency for Research, Innovation and Technology (ARTI). These funds are awarded to different types of institutions or individuals in the form of *competitive grants* from the budget line "Funds for science, technology and innovation (STI)." The following represents a general breakdown, considering that actual expenditures are likely to change as programmes and priorities evolve over the 2009-2015 period:

- **Research Infrastructure Fund** – estimated fund 2009 - 2015 €27.15m;¹⁸ (actual funding of €0.15m in 2009, estimated €4m in 2010);¹⁹
- **Albanian Centres of Excellence in Science (ACES)** – estimated fund 2009 - 2015 €9.15m; (actual funding €0.15m in 2009, estimated €1.5m in 2010);²⁰
- **Research Eagles Grants** – estimated fund 2009 - 2015 €1.5m;²¹
- **National Technology Programme(s)** – estimated fund 2009 - 2015 €8.15m;
- **Science Promotion and Education** – estimated fund 2009 - 2015 €30m.²²

In addition to these funding programmes, the total National Strategy budget for research activities takes into account the baseline funding for HEI research institutes (€69.45m), MES research project funding (€30m), World Bank Research Infrastructure funding (€3.3m) and the funding for the operation of ARTI itself (€3.25) as noted in Figure 2 above.

Despite budgetary constraints, a systematic change in science funding was implemented through the introduction of national programmes with three-year cycles and a considerable reduction in the number of priority fields (currently seven) -- funds for seven national programmes total €2,762,987.50 for 2010 - 2012.

Regarding university research, for the first time in 2009, the higher education budget reached €73,320,848.39 (US\$100m), of which €4,399,250.90 (US\$6m) was allocated to 'institutional funding' of scientific research (compared to only €586,567.69 (US\$800,000 in 2005)).²³ The public universities are mostly financed by the state budget, in addition to income from registration and other fees that they collect from students. Private universities were established only after 2000 and are self-financed by charging student fees set by the institutions themselves or funded by other donations.

Other financial instruments supporting R&D in Albania include the following: third party funding focused on STI; donations from physical and judicial subjects at national and international levels; and the private sector at national and international

¹⁷ Based on information from MES concerning the current 132 projects being funded in the amount of US\$5m over a 2–3 year period, Source: National Strategy of Science, Technology and Innovation (2009-2015).

¹⁸ Within the National Strategy, all amounts were presented in Euros.

¹⁹ Budgetary items are not detailed. In subsequent updated versions of Country Fiches, additional budget data will be provided.

²⁰ Idem.

²¹ Idem.

²² Idem.

²³ Press Statement of the Advisor to the Prime Minister on Educational Matters, Prof. Myqerem Tafaj, 6 Dec. 2008.

levels. However, there are as of yet there are no specific budgetary data published on these modes of funding R&D in Albania.

The National Strategy for Science Technology and Innovation seeks achieve 40% international funding of GERD by 2015—which can come from EU, other international donor or private investment sources. The results from FP6/FP7 data suggest that European funding remains a marginal, if growing, contribution to most national research systems in Albania. However, the remaining non-EU countries in the Western Balkans, such as Albania, are likely to find it even more difficult to compete for such funding over time.

Societal challenges. Among the main societal challenges facing Albania are scarce energy resources, protecting the environment and ensuring sustainable growth. New security threats have to be addressed and adequate supplies of food guaranteed. The changing needs of an ageing society also have to be met as Albania's demographic profile continues to evolve, and society has to be continually on its guard against both new and old threats to the health of its citizens. Most, if not all, of these challenges pose threats that can have dire economic implications if they are not addressed. On the other hand, many of them also offer new market opportunities. Yet, up until now, the Albanian resource allocations for science, technology and innovation activities have not paid much attention to main societal or global challenges (such as climate change), though this is changing under the new National Strategy, as National Programmes of Research and Development provide funding for initiatives aimed at societal challenges & sustainable development under the Programmes for Biodiversity & Environment; Agriculture, Food & Biotechnology; Health; and Water & Energy.

Regarding climate change and energy, it is necessary to mention that around 98% of Albania's electricity is supplied by carbon-neutral hydropower plants (HECs). There has been discussion of building another major HEC in the north of the country near Skavica which would become the largest such facility built in Albania, and the reservoir created would serve as the water basin for the other major HECs that supply electrical energy to the country. The project would cost around half a billion Euros. The previous large HECs were built by Albanian engineers during the Communist period and are considered to be among the major achievements of Albanian researchers, academics, institutes, and intellectual capital in general. The hope is that another major HEC can have the same impact on research activities in Albania. However, there are concerns about potential environmental impact on neighbouring countries and these countries will need to be involved if the project is to succeed. If the project is implemented, it will likely become the largest international cooperation project involving research and development in which Albania has been engaged.

2.2.2 Evolution of national policy mix geared towards the national R&D investment targets

Emerging from a closed and centralised system where all research and academic activities were under public control, Albania has implemented a substantial restructuring of its R&D and innovation system and adopted a new policy mix. Within the framework of Albania's membership in the NATO and the EU Accession process, the required high rates of socio-economic development necessitate strengthening the

role of science, technology and innovation.²⁴ But as was indicated in the recent progress report of the European Commission, preparations of Albania in the area of education and research are only moderately advanced.²⁵ The *Acquis Communautaire* in the field of science and research does not in principle require transposition of EU rules into Albania's national legal framework. Successful implementation of the *Acquis Communautaire* in this domain therefore involves mainly fulfilling the necessary conditions for participating effectively in the EU Research Framework Programmes and contributing to the creation of the European Research Area. This requires:

- good administrative capacity (adequate staffing and knowledge of research cooperation);
- scientific excellence in order to be successful in carrying out research and innovation projects together with scientific partners from EU Member States;
- creating growth and jobs in an economically sustainable way.

According to the most recent European Commission Stabilisation and Association Progress Report, the main challenges²⁶ for development of R&D in Albania remain weak administrative and research capacity and poor definition of responsibilities and of fund allocation, hindering implementation of the Law on Scientific Research that merged most scientific institutions with universities.

While the recently adopted *National Strategy of Science, Technology and Innovation 2009–2015* is considered fully in line with ERA objectives, serious efforts will be necessary to achieve the targets set. Furthermore, a lack of exact data on investment in research and the number of researchers in the country or the diaspora is a serious weakness in being able to monitor and evaluate the innovation resources available to the country.

Most of the Albanian R&D performance is concentrated in the centres and institutes under the auspices of the MES, the Albanian Agency for Research, Technology and Innovation (ARTI), the Academy of Sciences (ASA), higher education institutions, line ministries, and the government sector, which together account for about 97% of R&D performance. In contrast, private sector R&D is marginal. This includes R&D undertaken by private institutions of higher education and basic research, and also companies operating in the field of research, development and innovation. Albanian private companies have tended to buy innovations on the market rather than investing in internal R&D, and there is minimal cooperation between public research performers and businesses. Due to lack of statistics and systems to collect data from the private sector, there are still no means to monitor the targets set in Albania—thus, there are *no reliable data or estimates on the size of BERD* in the country—though the ratio of gross business enterprise expenditure on RTD to GDP has been estimated to be around 0.0025%.²⁷ It is expected that with increasing foreign

²⁴ UNESCO, Science Policy for Sustainable Development, Minister of Innovation and Technology, Mr. Genc Pollo, Presentation of the Cross-Cutting Strategy of Science, Technology and Innovation, Source:

<http://www.unesco.org/new/en/natural-sciences/science-technology/sti-policy/south-east-europe/albania/>

²⁵ Idem. European Commission, Stabilisation and Association Albania 2009 Progress Report, Nov. 2010.

²⁶ Idem. European Commission, Stabilisation and Association Albania 2009 Progress Report, Nov. 2010.

²⁷ Estimates from discussions with MES officials, 2011.

investment (especially in sectors such as mining, mineral and hydrocarbons extraction and agri-food) and further development of the Albanian private sector, BERD will increase. The National Strategy for STI seeks to increase innovation in 100 private companies either through investment in own R&D or in partnership with academic research institutions or foreign partners.

As noted, public support for research is to be increased under the National Strategy for STI, but the Strategy remains weak with regards specific measures aimed at stimulating private support to research. Since GERD was only around 0.2% of GDP in 2009 and the goal is to reach 0.6% of GDP by 2015, it is clear that BERD in Albania is highly unlikely to reach the 2% target in the short to medium term. Increasing the BERD depends on the growth of the private sector in directions that require a high level of domestically based R&D as well as incentives that would lead companies to invest in such activities, rather than simply purchasing innovations on the market. In this respect, much work needs to be done to develop fiscal policies and incentives to stimulate private sector investment in R&D and innovation activities (i.e. improving framework conditions for private investment in R&D).

The reforms undertaken in the field of higher education and basic research, first and foremost, are targeted at integrating the public and private R&D systems, which so far had been entirely separate from one another, and which should be innovative and efficient, given that Albania is a small country with limited financial resources. Given public budget constraints, privately funded R&D can become an important contributor to the level of innovation in the country; however, it will be difficult to promote private R&D without incentives, targeted fiscal policy or specific legislation in this direction,

The recent reforms led to the establishment of necessary mechanisms for the effective functioning of the scientific research system in Albania. Yet only a few components of an innovation policy and innovation support mechanisms are actually in place and functioning effectively. Establishment of the ARTI and the new **Business Relay Innovation Centre (BRIC)** being set up under the EU SME Project in Albania are positive steps in the direction of increasing private involvement in R&D. These institutions will need to be effectively strengthened, provided with capable staff and adequate resources to fulfil their missions. In order to effectively deliver results, the two agencies need to collaborate and focus on two types of innovation (Research and Business driven)²⁸: linking potentially exploitable R&D results and innovative business opportunities; matching SMEs' strategic development needs with technological development potential; synergising funding opportunities and schemes for Research and Technological Development and SME Innovation and Competitive Development.

Another positive development is growing cooperation between the Minister of Innovation, Information Technology and Communication with the line Ministries to promote e-Government since 2010 (initiatives such as electronic public procurement; on-line tax payment services, on line Customs services and, E-Health – undergoing are a positive example of inter-ministerial cooperation), which has facilitated communication and interaction between public institutions and private sector.

The National Strategy specifically promotes and allocates funding to the *establishment of long-term cooperation between academia and the private sector* through the **Albanian Centres of Excellence in Science (ACES)** and the **National Technology Programme(s)**. The former supports setting up centres of excellence

²⁸ http://www.eu-sme.al/doc/BITS_final_draft_EN.pdf

that bring together a substantial number of researchers. These centres will be critical in improving the credibility and visibility of Albanian research and in exchanging information, as well as acting as an interlocutor for the inflow of funds from the main donors and counterparts. The ACES should also help in bringing together academic research institutes with the private sector in order to develop a medium-term programme of applied research for mutual benefit. The National Technology Programme and is aimed at bringing together consortia of academic research institutes with the private sector or other public sector organisations (for example, water or energy utilities) in order to develop a medium-term programme of applied research with a social or economic impact. The aim is to launch at least one such programme in the period 2010–2015 and two or three more by 2020. For this reason it is important that government set up a special fund in order to stimulate companies in the fields of research and innovation.

National Strategy funding also supports *achieving international standards* in carrying out research projects in different public and university research institutes. The establishment of the **Research Infrastructure Fund** is to help improve the quality of equipment and facilities available, while the **Research Eagles Grants Programme** and the **Science Promotion and Education Programme** aim to increase the number of Master and Doctoral graduates in the science and engineering fields by providing financial support to the institutions with graduate/doctoral programmes as well as to individual researchers and projects. These programmes will improve the research and human resource capacities as well as laboratory conditions for R&D performed in the country by making Albanian public research structures more attractive as partners in international research projects or as facilities from which private companies may commission scientific work.

According to Doing Business 2011,²⁹ Albania's business environment has improved substantially since 2006 in the sense that doing business has become much easier, particularly setting up and registering a business (ranking 45 worldwide) through a one-stop shop, ease of getting credit (15) and protection of investors (15). In terms of overall global risk, Albania ranks 82 out of 183 economies, better than Croatia (84), Greece (109) and Bosnia-Herzegovina (110), but lower than Macedonia (38), Hungary (46) and Montenegro (66). The NRC Law established the National Registration Centre as a new central public institutions which functions as a one-stop shop where an entrepreneur can complete company registration, social insurance, health insurance and labour directorate registration using a single application procedure.³⁰ The high ranking in investor protection is due to the fact that Albania has set up the Office for Protection of Intellectual Rights and an effective legal framework for intellectual property, based on best practices of developed countries. However, specific incentives or fiscal provisions for investment in R&D are lacking, and there are other conditions (difficulty in paying taxes, getting construction permits) that make the business environment less attractive than in some neighbouring countries—indicating that further reforms need to be made.

In the area of public procurement of innovative goods and services, probably the most important move is the plan to develop the National Broadband Network Infrastructure through innovative Public-Private Partnerships, as stated in the Albanian Electronic Communication policy of 2010 – *“broadly speaking, our initiatives can be divided into measures taken by the state to improve the probability that*

²⁹ World Bank and IFC, Doing Business 2011—Albania, Making a Difference for Entrepreneurs, 2010.

³⁰ Article 59 of the law no. 9723 “On National Registration Centre: NRC”

private investors will invest in ICTs (especially in order to offer services) and actions by the state to increase the use of ICTs by state institutions.”³¹ The adoption of the Electronic Communications Policy Paper is a step further in defining the mid-term vision for the sector.

2.2.3 Providing qualified human resources

Albania was the most closed economy in Europe and the first university was established only in 1957. As a country that has gone through rapid changes over a 20 year period, Albania has suffered particularly from the decrease in human resources working in sciences and technology. Various surveys show that during 1990-1999 “approximately 40% of the professors and research scientists of the universities and science institutions in the country have emigrated.”³² Furthermore, the country has a low level of population having completed tertiary education. According to [Albanian Institute of Statistics](#) (INSTAT) statistics, 10.4% of the population aged 30-34 had completed higher education studies in 2008. In 2007 around 22% of total employment was in knowledge-intensive activities (manufacturing and services). Yet it must also be stated that some of the data available has not been standardised for comparison with other countries in the region and with EU countries. These differences between Albania and most other European countries continue to be important in relation to S&T sectors.

The country is trying to address its human resource needs on two main fronts: improving access to higher education and return of qualified human capital:

- Albania is improving university standards (following Bologna requirements) and expanding access to a university education. This has included the liberalisation of conditions for setting up private universities resulting in the establishment of various new universities, mainly in Tirana. The goal is to provide increased opportunities for Albanians to get a university degree, given the constraints facing the public sector institutions. There was a sharp increase in the number of graduating students from 2007 (8676 graduates) to 2009 (13,311 graduates), particularly from private universities, which accounted for 3833 or nearly 29% of the new graduates in 2009. Recently courses in business studies and communications skills have been introduced in Albanian universities, often taught by foreign visiting professors.
- Over 60% of students in public universities are studying education, humanities or social sciences, while only 10% are studying sciences, mathematics and computing, and another 8% are focusing on engineering or related fields. The government has recognised the importance of changing the patterns of graduates to be closer to the needs of the labour market. In September 2010 the Council of Ministers approved the new policy framework³³ on university student enrolment in academic fields prepared by the MES in collaboration with public universities. This proposes a considerable reduction in the number of students in areas with low labour market demand (such as social sciences) and

³¹ Minister of Innovation and Technology, Mr. Genc Pollo, Source: http://www.itu.int/ITU-D/conferences/wtcd/2010/policystatements/speeches/Pollo_%20Albania_vf_en.pdf

³² Eduart Sulstarova, General Scientific Secretary, Albanian Academy of Sciences International Conference, Why Invest in Science in South Eastern Europe (Albanian Case), 28-29 Sept. 2006, Ljubljana, Slovenia. Source: www.investscienceseee.info/Sulstarova.ppt

³³ CoM Decision no. 786, dated on 29.09.2010 “For Admission Quotas and Fees in Public Institutions of Higher Education for the Second Cycle of Studies, Master of Science for the Academic Year 2010 – 2011,” amended. Source: <http://www.keshilliministrave.al/index.php?fq=brenda&m=news&lid=14294>

a rapid increase in numbers of students in mathematics, science and tourism, with particular focus on ICT programmes. Similarly, the MES is encouraging private higher education institutions to open new study programmes in science and ICT. The MES has also shown a particular interest in developing interdisciplinary study programmes, and has stated the priority of developing two-year higher professional studies, particularly in the regional universities. This has been evidenced in the Memorandum of Economic Cooperation, a report prepared by World Bank experts. So far, only the University of Durres offers this type of study programme within some of the recently established departments that have received support from the Albanian Government. There is no information available on life-long learning programmes.

- Rather than focusing on immigration, the Albanian government's *Strategy for Migration* has aimed at the return of qualified emigrants (diaspora) in order to counteract two parallel processes directly related to human resources and R&D potential: a massive and continuing brain drain of experts who have left to seek new employment opportunities abroad; and a brain 'waste' of scientists leaving R&D for better paid jobs in the private or informal sector. The currently ongoing UNDP-led [Brain Gain Programme](#)³⁴ seeks to attract, integrate and retain the intellectual labour resources that return from abroad (from the diaspora and graduating students studying abroad).
- The easing of travel restrictions and visa requirements of EU countries is expected to increase the mobility of Albanian academics and researchers within the international scientific community for participation in joint projects, temporary employment in universities and research institutions abroad, attendance at conferences and seminars, exchange of information, and joint publications, from a base within Albania. Increasing international scientific and academic cooperation represents an important opportunity for improving the knowledge and capacity of Albanian human resources, even though it may partially contribute to the brain drain in some cases.

As mentioned previously, MES introduced a number of programmes and funds in order to improve human resources availability for S&T and innovation-related activities in universities and public research institutes:

- The government allocated a *Fund of Excellence* in 2008 to support PhD candidates in completing their doctoral studies abroad. The Fund does not have any restricting criteria regarding the field of studies; thus, the MES has not generated any data specifying the field of focus of the PhD studies supported by this programme.³⁵
- The establishment and development of the *Albanian Centres of Excellence in Science (ACES)* is aimed at developing four or five centres of excellence, bringing together a minimum of 20 researchers (principal researchers, post-graduate researchers and PhD candidates) from at least two separately affiliated research institutes.
- *Research Eagles Grants* seek to increase the number of Master and Doctoral graduates in science and engineering fields who carry out post-graduate

³⁴ The Brain Gain programme's timeframe is April 2006-December 2011, with an allocated budget estimated to total US\$1,000,000 (with US\$384,000 to be spent in 2010).

³⁵ South East Europe Science Policy Portal, Albania Socio-Economic Context, Updated Dec. 2009. Source: <http://seesciencepolicy.org/sitegenius/topic.php?id=352>

research or projects in Albania. This measure is to be linked to the development of doctoral programmes (schools) under the HE Strategy. The programme funds both young researchers pursuing PhDs in Albania (as soon as doctoral programmes reach international standards) and mobility to participate in PhD studies in the EU27, as well as providing grants for returning researchers from any foreign country (including stipend and relocation support).

- The *National Technology* programme seeks to bring together consortia of academic research institutes with the private sector or other public sector organisations in order to develop a medium-term programme of applied research with a social or economic impact, thus stimulating public-private cooperation as well as networking and knowledge exchange between different types of actors—thus contributing to the development of the knowledge triangle.
- Finally, the *Science Promotion and Education* programme seeks to make science more attractive to young people and funds a limited number of graduate schools to boost PhD numbers. Various science mentoring and ambassador schemes or ‘innovation awareness’ initiatives in the EU27 could serve as models for this. The Albanian Science Academy, according to its new mandate, is to be involved in this programme.
- Subsidies for S&T personnel are not available in Albania.
- While some new private universities teach business management and entrepreneurship courses, the scientific and engineering curriculum tends to focus mainly on technical subjects with little or no attention to creativity, critical thinking, problem-solving, teamwork and communication skills. Whether such subjects are covered in the coursework depends on the individual professors.

2.3 Knowledge demand

This section focuses on structure of knowledge demand drivers and analysis of recent policy changes. Knowledge demand in Albania is constrained by a number of features of the economy. Agriculture still remains very important—21.5% of GDP—higher than in other countries in the region, and the economy remains dominated by many SMEs in addition to a few large companies operating in strategic sectors (energy, telecoms, mining). In general, the enterprise sector remains underdeveloped, though dynamic. Investment is low, though growing. According to the World Bank, FDI reached 8% of GDP in 2008, while domestic private investment increased from 19% of GDP in 2005 to an estimated 21% in 2009, mostly in construction. As measured by Doing Business indicators, Albania moved from rank 136 in 2007 to rank 82 in 2010 and achieved the second-highest rank among the top 10 reformers worldwide in 2009.

The public sector remains the main market for research undertaken in Albania; thus the main knowledge demands are identified through consultation and cooperation with one or more public research institutions or groups of experts. The National Council for Science and Innovation advises the Government on how to prioritise research strategies and National Programmes, support policies, and their funding and has identified the following as priority sectors:

- *Agriculture*: Main research needs in agriculture involve applied research and technology transfer in specific areas corresponding to the needs of the sizeable farming community. These activities are carried out by five *Centres for*

Transferring Agricultural Technologies (CTAT) operating under Ministry of Agriculture supervision. Further agricultural research is undertaken by the Agricultural University of Tirana (funded by MES) within the Department of Plant Protection, the national research authority on plant protection.

- *Defence/Security:* An intensification of R&D activities for security and defence is envisaged as part of a long-term plan for the Development of Military Forces 2020. Furthermore, NATO membership implies involvement in the Science for Peace Programme. National priorities in this Programme include Environmental Security, Information Technology, Forecasting/Prevention of Catastrophes, Food Security, Biotechnology/Bioscience and Human and Societal Dynamics.
- *Health:* There is a need to improve the research infrastructure in the health system; equipping the public health programme with computers, electrical and technological equipment; maintaining public health service laboratories; setting up a health information system for the secondary care services programme and an information system for the primary care services of the Institute of Public Health, Regional Health Authority, Regional Health Directories and data gathering for the Ministry of Health. The University Hospital Centre "Mother Teresa" in Tirana conducts scientific research, provides specialised medical assistance and operates as a teaching hospital for medical students.
- *Environment:* this sector has become more important with growing concerns over environmental issues, particularly in the context of European integration. Concern over environmental impact (for example, of a road project) necessitates studies and research. The introduction of recycling technologies and practices also represents innovation and could become the focus of further R&D. Foreign companies investing in Albania may also have internal corporate social responsibility (CSR) requirements that include respecting environmental standards. It is expected that R&D focused on environmental issues will be a growing area for certain types of businesses. But most importantly it is critical to train local staff and develop a specialised workforce that is highly qualified in dealing with these technological improvements.

2.4 Knowledge production

The production of scientific and technological knowledge is the core function that a research system must fulfil. While different aspects may be included in the analysis of this function, the assessment provided in this section focuses on the following dimensions: quality of the knowledge production, the exploitability of the knowledge creation and policy measures aiming to improve the knowledge creation.

2.4.1 Quality and excellence of knowledge production

Albania's resources dedicated to research and development are not extensive. Therefore, the quality of knowledge production process is low in many areas. While Albania had invested relatively extensive resources into technical development and research prior to the collapse of Communism, many of those assets were lost in subsequent years. Albania has suffered from a serious "brain drain" problem, with the most important researchers in technical fields leaving the country and physical assets (like laboratories) falling into disrepair or missing necessary equipment. So far, only 9.7% of highly qualified migrants of the past two decades have returned to Albania. A third of them work at the same academic/research institution they did prior to migration and the rest mostly work in the private sector. In 2008, the University of

Tirana admitted, by means of a competition, 400 new lecturers, but less than 5% of them had completed a PhD abroad.³⁶ The country's research and knowledge production in technical fields has suffered significantly, with very little publishable or practical research being produced. However, this is expected to change as Albanian universities and research institutions have increased their foreign contacts and cooperation and general activity in EU and other international initiatives such as FP7, WB-INCO, TEMPUS, etc.

Social science research fares somewhat better in comparison. Because the costs of conducting it are lower, it has been easier for various institutions, mostly public, to develop their programmes. While Albanian academic journals are still not up to the levels required by European standards, many Albanian social science researchers have tried to publish abroad. Also, private institutions or NGOs conduct research focused on specific issues, ranging from environment to gender issues. While all of this research is not always presented in formal academic journals, it is often much more practical in its approach.

As of yet, no Albanian universities have been listed in any of the recent rankings of world universities following either ARWU,³⁷ THES³⁸ or Leiden³⁹ methodologies, the latter focusing on citations in publications. Yet according to the SCImago Journal and Country Ranking of 234 countries based on citations in scientific journals (1996-2009), Albania ranked 136, compared to Croatia (46), Macedonia (97) and Bosnia-Herzegovina (109).⁴⁰

2.4.2 Policy aiming at improving the quality and excellence of knowledge production

Albania has adopted a number of policies and associated measures to support knowledge production, including attracting migrants. As a joint Albanian Government/UNDP initiative, the Brain Gain Programme is developing policies and measures to encourage skilled people to remain in Albania, to return after university, or to come to the country on a short-term basis to engage in specific projects. The programme supports the Albanian government in proposing laws and setting up institutional structures that will enable talented scholars to return to Albania. Currently, there are 82 qualified professors and assistants who have completed Master or Doctoral programmes and hold positions at public and private universities in Albania, according to the Programme's statistics. However, R&D jobs continue to be unattractive because of low pay, lack of social status, limited incentives and poor employment opportunities.

Due to the lack of statistics and systems to collect data on research and development, especially in the private sector, there are significant challenges in monitoring the targets set. Universities are expected to introduce evaluations in the context of the adoption of the Bologna process.⁴¹ Public support of research activities in HEI is to be based on per-student funding schemes. The government also aims to determine the financing of research institutes on the basis of performance indicators

³⁶ http://www-wds.worldbank.org/external/default/WDSContentServer/WDS/IB/2010/11/21/000333037_20101121235513/Rendered/PDF/535990ESW0gray1e0only1910BOX353785B.pdf

³⁷ [Academic Ranking of World Universities](#)

³⁸ [Times Higher Education Survey](#)

³⁹ [University of Leiden](#)

⁴⁰ <http://www.scimagojr.com/countryrank.php>

⁴¹ Evaluation Reports on Quality Assurance are not yet available: <http://www.aal.edu.al/AL/raporte.htm>

of their research (i.e. publications). The set of assessment indicators for research institutes is being discussed and opinions on this issue are being welcomed, as this is an ongoing process.⁴²

Since adoption of this process is imminent, the National Strategy of Science, Innovation and Technology has recommended incorporating into the evaluation process several important elements that will help gain a better overview of the quality of research performance in not only universities, but also non-university institutions:

- all universities and institutes should make an assessment of their research infrastructure to gain a better overview of their capacity for research performance;
- timing and exact process need to be agreed upon in the context of advancement of the Bologna process;
- Non-university research centres also need to be evaluated. It is suggested to use international templates, but to postpone evaluation to a later stage, as other evaluations need to be given priority;
- The Centres of Excellence will be carefully monitored throughout the period in which they receive preferential support, using performance indicators applied to the top performing European countries. Thus, the Centres (with a budget larger than €1,000,000) will have to undergo mid-term reviews and final evaluations after preferential support is completed.

These evaluations are to be commissioned by the MES or other line ministries funding the programmes and will be based on monitoring data and ongoing reviews of projects to be managed by ARTI. The latter is entitled to develop not only application procedures, but perform the initial assessment, as well as monitoring and evaluation of programmes and projects of STI in the country. The first ARTI evaluation report is still in the process of drafting. However, to ensure independence of reporting and provide a basis for revision of programmes in the post-2015 period, an *external Expert Team* is to be commissioned to carry out the final programme evaluation for MES with a Steering Committee of representatives of other Ministries, etc.

2.5 Knowledge circulation

Tackling the challenges that European society faces in the 21st century will require a multi-disciplinary approach and coordinated efforts. Many debates and conferences, e.g. the Lund Declaration recognise that such complex issues cannot be solved by single institutions, technology sectors or MS acting alone. Hence strong interactions within the "knowledge triangle" (education, research and innovation) should be promoted at all levels. Moreover, in the context of increasing globalisation, cross-border flows of knowledge are becoming increasingly important. This section provides an assessment of the actions at national level aiming to allow an efficient flow of knowledge between different R&D actors and across borders.

2.5.1 Knowledge circulation between the universities, PROs and business sectors

Public-private partnership is considered to be important, but until now it has been very infrequently used as a model for increasing research and development in

⁴² http://mash.gov.al/arsimi_larte/Draft_Green_paper_per_univ.pdf

Albania. The country is lagging behind in designing and implementing suitable incentives for this model to flourish. In its *Green Paper for Education and Research*, the Government does not focus much on private-public partnerships, and it is clear that Albania is still far from reaching the levels of other developed countries. The National Strategy seeks to create sustainable linkages between academia and the private sector through the Albanian Centres of Excellence in Science, through the coordination role of ARTI and through the National Technology programme, though results still remain to be seen.

The concept of Science Parks as a locus for development of public-private partnerships between universities and companies is limited to a few small initiatives in Albania. The University of Vlorë had been pursuing plans to build a new campus at the outskirts of the city, including a science park near the university. The project was being financed by private entrepreneurs as well as by public funds, making it a first in Albanian university history. However, as of January 2011 the project has stalled, without a clear idea of when or if it will go ahead. Therefore, at present, the plan for the first Albanian university-associated business park continues to be a distant dream rather than a reality.

Currently, other public-private partnerships are being made on an individual basis. They are mostly focused on business initiatives, and involve researchers from public institutions when their help is needed by businesses. Unfortunately, R&D is still not valued highly enough, even by large Albanian enterprises, in order to justify devoting resources to creating research plans or investing in research staff.

It is clear that the lack of public-private partnership is a major weakness of the current R&D setting in Albania, and future strategies need to focus strongly on it. Given the limited public funds, stronger links and ties to the business community are considered vital for further development of knowledge in Albanian society. As mentioned previously, there is no reliable data on the amount of private investment in R&D nor any information on the total value of public-private partnerships in the country.

2.5.2 Cross-border knowledge circulation

The Albanian Government supports cross-border knowledge circulation in different ways.

- 1) *Research collaboration between national and foreign research organisations* has been supported by Bilateral Agreements with various European countries in the field of Research and Higher Education and by new intergovernmental agreements on Science and Technology. For example, ARTI and the Institute of Information Science in Maribor, Slovenia signed an agreement on cooperation in setting up the current research information system for Albania, E-CRIS.AL.

Individual Departments/Faculties (schools) within public universities have set up partnerships with foreign institutions. These partnerships tend not to be university-wide, but are focused only on specific areas of study. The School of Economics at the University of Tirana has set up one of the most important partnerships with the University of Bamberg in Germany. This partnership has allowed for visiting professors, increased research output and also increased quality of teaching at the School, making economics one of the most popular courses for students.

Albania's association with the FP7 programme has contributed to increasing cross-border research collaboration, as seen in section 3.5.1. It currently participates as a non-member in COST and EUREKA, and has recently applied to become a member. Participation in SEE-ERA.NET PLUS also contributes to cross-border knowledge circulation.

- 2) *Participation of national teams in projects involving intra-governmental research infrastructures* (RI). Albanian scientists have had leading roles in 47 NATO science activities, and Albanian experts, researchers and trainees have participated in many more.⁴³ Through its International Hydrological Programme (IHP), UNESCO has been working to assist the Albanian Government in managing its water resources. The Albanian IHP National Committee has been actively involved in various cooperation projects focusing on water, energy and environment that are implemented within the framework of the IHP Danube Cooperation.⁴⁴
- 3) *Individual mobility of researchers* has been promoted by the Brain Gain Programme (to bring knowledge resources back to Albania), the *Excellence Fund*, which allows PhD candidates to pursue their studies abroad, and the *Research Eagles Grants* which support mobility in the EU27. The MES also has made an amendment to the Education Law, requiring PhD candidates from public universities to have had experience in teaching/researching at a foreign university. This has created a powerful incentive for young researchers to look for opportunities to spend time abroad. It has also brought together universities from the region, more specifically the countries bordering on Albania such as Macedonia and Kosovo. Government support of initiatives such as TEMPUS and ERASMUS also contributes to mobility.

2.5.3 Main societal challenges

Among the main societal challenges facing Albania are scarce energy resources, protecting the environment and ensuring sustainable growth, as well as addressing new security threats and guaranteeing adequate supplies of food. The changing needs of an ageing society and the capacity to deal with health threats also have to be met. Albania's capacity to deal with these challenges is constrained by the fact that it is at a stage that economists often label as "catch up" development—it is trying to reach the economic and technological levels of the more developed countries. Most of the technological innovations and research that are inputs for the physical manifestations of development are already available for purchase on the market. Therefore, small countries like Albania focus on importing the technological innovations that they need, and most of the efforts go into learning how to use these technologies.

The problem with this approach is that endogenously performed innovation and research have become less important as a means to resolve societal issues in the

⁴³ NATO Science for Peace and Security (SPS) Programme Update of Co-operative Activities, Update: 12 Feb. 2009.

⁴⁴ "Water Balance of the Danube River Basin" (Vienna, December 2004); "Assessment of Climate Change Effects on the Hydrological Cycle in SEE"; "Assessment and Management of Transboundary Water-Related Risks in the Balkans - TRANSRISKBA" supported by the UNESCO-ROSTE; Seismo-hydrogeological vulnerability of the environment and society in the Balkan region" project, with the contribution of Albanian experts; "Development and first implementation with the Ministry of Environment, Forestry and Water Management of a DSS7 for the assessment of water and energy strategies/policies and projects" implemented in 2009-2010.

country. In addition, subsidies for S&T personnel are not available in Albania, at a time when there is a need for qualified people to return to the country, as well as for foreign researchers to provide expertise. Albanian society as a whole has only lately started to recognise the role of R&D in ensuring further economic growth. Unfortunately, this is not yet the case for businesses. Often relying on simply importing better products from abroad as well as hiring foreign staff for temporary jobs, Albanian companies have yet to fully appreciate the impact that increased research could have on their own business. Increasing public-private partnerships is probably the best way to address this problem; thus, in the near future the Albanian Government will have to develop a detailed policy to stimulate such cooperation.

2.6 Overall assessment

Albania has introduced important reforms to its research system in terms of new strategies, policies, institutions and an increase in public resources as well as greater autonomy for the universities. Efforts have been made both to counteract the Brain Drain and to attract foreign professors or researchers. Private universities are playing a bigger role in developing human resources, but the level of quality tends to be low. While some new funds and programmes have been adopted, more needs to be done to attract students to S&T and engineering fields as well as improve employment prospects for graduates by specifically linking academic curriculum to the needs of the real economy (see Table 1).

Table 1: Summary of main policy-related opportunities and risks

Domain	Main policy opportunities	Main policy-related risks
Resource mobilisation	<ul style="list-style-type: none"> • New programmes and funds to improve human resources availability for S&T/innovation-related activities in universities and public research institutes • Liberalisation of conditions for setting up private universities • Development of interdisciplinary study programmes and two-year higher professional studies, particularly in regional universities. • Eased travel restrictions & visa requirements of EU countries increase mobility of academics and researchers 	<ul style="list-style-type: none"> • Lack of incentives for companies to invest in worker training, leaving low technical level of work force • Private universities mainly opened faculties in social sciences, law, economics, and medicine, rather than engineering, mathematics and ICT. • Quality of teaching and research in most private institutions still considered as below standard. • Curricula do not always reflect real needs. • Brain Drain needs to be managed to become Brain Circulation
Knowledge demand	<ul style="list-style-type: none"> • NATO membership implies intensified R&D activities for security and defence. • Environmental impact concerns and interest in recycling lead to studies and research that could become focus of further R&D. 	<ul style="list-style-type: none"> • Gaps in capacity of local technical staff and specialised workforce to deal with new technological requirements. • Foreign investors do not all have internal corporate social responsibility (CSR) requirements that include respecting environmental standards

Domain	Main policy opportunities	Main policy-related risks
Knowledge production	<ul style="list-style-type: none"> Brain Gain programme attracted new lecturers, but less than 5% completed a PhD abroad. Private organisations and businesses imported new technologies for own use. NGOs have competencies in certain areas of research, particularly in socio-economic risk analysis serving as a basis for policy making. In fields such as energy, agriculture, molecular biology, biotechnology, natural resources and other areas, there have been limited NGO research initiatives. Development of private entrepreneurship involved in development and transfer of technology and research has been faster than that of public institutions. 	<ul style="list-style-type: none"> qualified researchers are reluctant to return due to low payments, lack of infrastructure, and market demand. No sustainable strategy, such as tax incentives, etc. for private R&D Importing technologies limits developing own capacities research is not always presented in formal academic journals NGO research not necessarily of the highest standards and limited to certain fields. Knowledge production weakened by absence of stimulating financial mechanisms for researchers and the lack of genuine reform of public science institutions
Knowledge circulation	<ul style="list-style-type: none"> A new campus at Vlora includes a science park near the university public-private partnerships are being made on an individual basis. 	<ul style="list-style-type: none"> As of January 2011 the science park plan has stalled, with unclear future PPP mostly focuses on business initiatives, involving researchers from public institutions on an ad hoc basis

Improvements have been made in the policy framework promoting private investments in R&D, but Albanian companies prefer to import technologies and innovations rather than investing in their own R&D efforts. While initiatives such as the National Technology Programme and ACES promote public-private research cooperation and the intellectual property protection framework has been improved, there is a lack of subsidies and tax incentives that might stimulate companies to engage in R&D. Furthermore, there is no legislation requiring foreign investors to perform R&D in Albania, even though they often introduce new technologies and techniques (i.e. offshore oil drilling, mining, recycling). New opportunities for private companies are foreseen in environmental protection and energy production; however, university curricula need to be better oriented to these needs to train human resources as well as perform research that could be of interest to the private sector (see Table 2). There also needs to be improvement in the monitoring and evaluation of the university system.

Table 2: Main barriers to R&D investments and respective policy opportunities and risks

Barriers to R&D investment	Opportunities and Risks generated by the policy mix
Outdated research, development and innovation system	Restructuring of system ongoing, budget constraints may limit results
	Restructuring of research system led to further integration of higher education system and scientific research, incorporating research institutes within university academic units
	Setting up of Research Centres within faculties or universities and making them operational is positive step in strengthening research capacity, but it remains to be seen how well research in these structures is able to address real issues facing society.

Barriers to R&D investment	Opportunities and Risks generated by the policy mix
	Stimulating scientific workers of this system to teach and undertake scientific research requires incentives, higher pay and better equipment and resources, thus requiring investment
Inadequate role of the private sector in research, development and innovation	Linking public R&D efforts with industry needs, so that results are likely to translate into economic benefits. Limited by very low level of cooperation between research institutions/higher education with private companies.
	Enforcement of intellectual property rights regime needs to be strengthened, requiring investment and capacity building
	Number of researchers involved in R&D needs to be increased and science enrolment needs to be expanded. Need improved economic conditions and career prospects for researchers and science graduates in the private sector.

3 Interactions between national policies and the European Research Area

3.1 Towards a European labour market for researchers

The [Communication Better careers and more mobility: A European Partnership for Researchers](#) proposed by the EC in May 2008 aims to accelerate progress in four key areas:

- Open recruitment and portability of grants;
- Meeting the social security and supplementary pension needs of mobile researchers;
- Providing attractive employment and working conditions;
- Enhancing the training, skills and experience of researchers

The Commission has also launched concrete initiatives, such as dedicated information services for researchers, in particular through the activities grouped under the name of [EURAXESS – Researchers in Motion](#). Albania is not yet participating in EURAXESS.

Based on the assessment of the national situation in the four key dimensions detailed above, this section will conclude if national policy efforts are supporting a balanced mobility, brain circulation rather than ‘brain drain.’ In Albania there are high levels of outward mobility coupled with low levels of inward mobility, which is often a signal of an unattractive national labour market for researchers and unsuitable research infrastructures, despite policy efforts to improve the mobility situation.

3.1.1 Stocks and mobility flows of researchers

Albania has a resident population of 3,239,453 habitants with a population growth rate of 0.546% and a median age of 30 years (2010 est.). The national unemployment rate is 12.8% (2009 est.).⁴⁵ The share of young people (aged 15-29 years) in the population is very high (62.1%), whereas their share in the labour force is around 41.6%. Employment data indicate that nearly 45% of the labour force is employed in agriculture, fishery and forestry (typically low-technology activities),

⁴⁵ Albanian Institute of Statistics (INSTAT data)

11.7% in the service sector, 7.1% in industry and 8.4% in construction. One of the key features of the Albanian labour market is the large share of discouraged jobseekers, which in 2008 amounted to 16.1% of the total of the passive persons. Nearly 73.2% of the entire discouraged unemployed is female. The recent financial-economic had much less impact on employment in Albania than in other countries in the region, but it did lead to a reduction of remittances from workers employed in nearby Italy and Greece.

With regard to employment in research, it is estimated that just under 1800 researchers are active in public and higher education research institutes: 87 researchers at the public institutions (Centre of Albanological Studies in 2010), and 1693 at the private and public HEI (2009, INSTAT). There are no reliable data on the number of researchers employed by private companies. INSTAT estimates that in 2007 around 22% of employment was in knowledge intensive activities in manufacturing and services. The share of Albanians in their early 30s having completed tertiary education in 2008 was only 10.4%, indicating a need to further promote higher education in Albanian society—which the Government is addressing in its Higher Education Strategy.

Table 3: Education and HRST Indicators

Indicators	2006	2007	2008
Percentage of population aged 30-34 having completed tertiary education	10%	10.2%	10.4%
Employment in Knowledge-Intensive Activities (manufacturing and services) as % of total employment	18%	22%	N/A

Source: INSTAT

The mobility of Albanian academics and researchers has increased in recent years due to increasing international cooperation, liberalised visa conditions and rising participation in programmes such as Tempus and university exchanges. The MES has no precise data on the number of Albanian researchers/professors currently employed abroad. However, there are indications that the number is rising, and employment in universities within the bordering countries is driving the phenomenon. There is no mechanism or regulation that the MES can use to force Albanian researchers to register their activities outside of the country. Under the Brain Gain Programme, 82 qualified professors and assistants who have completed Master or Doctoral programmes abroad now hold positions at public and private universities in Albania.

Similarly, there are no precise data on foreign researchers working in Albania, though there are also clear indications that the number is rising due to the partnerships created by individual Departments in the private as well as public universities. About 100 professors who currently teach in Western universities also teach in Albanian universities, mainly at the University of Tirana. At the University of Tirana, the Faculty of History and Philology alone hosts 25 foreign professors who teach courses on Language and Literature, History, Geography and other fields. Also, this year the Faculty of Economics will host about 30 foreign professors, some of whom give lectures and seminars for Albanian students, others who engage in research projects.⁴⁶

⁴⁶ <http://www.gazeta-shqip.com/sociale/351fb1a68161853ae8e3d393c3b1f69e.html>

When the budget was approved for universities, it also approved payments to foreign professors. Compared to salaries in the places where they normally work, the earnings gained from working in Albania are merely symbolic. Most of these professors teach in the university system, but some foreign professors also participate in evaluating Albanian students engaged in the final examinations for graduation in one of the faculties of the University of Tirana (European Studies).

3.1.2 Providing attractive employment and working conditions

The positive impact of brain gain on the development of the country is challenged by a combination⁴⁷ of issues: i) the comparatively low number of persons benefiting from these programmes; ii) failure to address the gap between modest infrastructure and management capacities of national research institutions and the top-level preparation that researchers receive abroad; iii) underestimation of the need to involve foreigners in the country's research and innovation environment, resulting in few or no measures to attract them; and iv) missing links between results in academic research and progress in different sectors of the economy/industry of the country. In this context, there is a fairly good understanding among academics in the country that the target of policies should be brain circulation rather than brain gain, acknowledging the importance of the role of international mobility in a small developing country with modest research and innovation infrastructure.

Hence, international mobility seems to be conceived mainly as a one-way process, as long as few or no measures are foreseen to allow Albania to compete with other countries in the region and attract foreign researchers, acknowledging the assistance and best practices they could provide. The foreign researcher inputs are mostly limited to consultancy services provided by researchers and international consultants working for the World Bank and UN organisations in Albania. Therefore, there is a need to identify suitable instruments to make Albanian universities and research institutes more attractive to foreign academics. Several internationally funded programmes, such as the Open Society Foundation's Academic Fellowship Programme, are providing opportunities for the SEE countries, including Albania, to develop brain circulation in the form of academic exchanges and fellowships for returning scholars.⁴⁸

While foreigners are welcome to work in Albania, there are no particular incentives aimed at attracting them, such as the salary increases for Albanian university professors and public administration officials who completed recognised Master and PhD degrees abroad.

No Albanian research organisations have signed the Charter for Researchers.

The local market determines researchers' salaries, though EU researchers working in Albania tend to be paid more than Albanians. However, those Albanian researchers who were highly educated abroad and have international research backgrounds can have salaries that approach EU levels, especially those who provide consultancy services. This is due to the fact that they are contracted as local partners in international projects. However, it is estimated that Albanian researchers who are considered to be at the senior level are paid at junior EU level rates. Gender balance in HEI and research centres has become an important criteria in recent years, since

⁴⁷ <http://www.em-al.org/skedaret/1-Which%20role%20for%20Albanian%20Universities%20in%20brain%20circulation.pdf>

⁴⁸ <http://www.soros.org/initiatives/hesp/focus/afp>

women play a key role in the new generation of researchers. Yet no discrimination based on gender is observed in terms of wages and career paths in research.

3.1.3 Open recruitment and portability of grants

For budget-funded grants, foreign experts participating in the competition face no differences compared with Albanian applicants; however, in some cases the MES and other publicly funded institutions (ARTI, Universities, and Research Centres) apply the criteria in the specific call that the expert must be a foreign citizen. Recognition of academic credentials depends on the documentation required in the application for the respective competition. In donor-funded grants, the respective conditions related to foreign researchers are spelled out in the relevant agreements that the Albanian government has signed with international financial institutions.

The recruitment of academic and research staff in the research and higher education institutions is the exclusive competence of these institutions, based on open competition. Regarding inter-sectoral and interdisciplinary mobility, there are no obstacles to the mobility of researchers and professors between universities, faculties, departments, and research institutions.

Vacancies and calls for grants or project proposals are publicised by the respective Albanian Institutions which are launching the call, or the international organisations which support the GoA in different programmes (e.g. UN organisations, etc). Their openness to foreign researchers or academic staff varies according to the project field of interest. The calls for project proposals in the National Programmes for Research and Development, etc are launched by the national agencies, such as the Agency for Research, Technology and Innovation (ARTI), the National Agency on Information Society, Academy of Sciences, Ministry of Education and Science, Higher Education Institutions (HEI), etc. However, there are some international portals where Albanian research institutions have been advertising, such as those of regional networks of researchers: www.wbc-inco.net; <http://www.score-project.eu/>; <http://oneworldsee.org/Albania>.

3.1.4 Meeting the social security and supplementary pension needs of mobile researchers

International mobility is encouraged through the different international conventions signed: bilateral or multi-lateral agreements between countries; inter-ministerial agreements; inter-university agreements; participation in academic and research programmes, such as FP7, ERASMUS MUNDUS, TEMPUS, NATO, as well as through the exchange of individual invitations for teaching and research. Foreign scientific employees come to Albania based on specific bilateral and multilateral scientific and technological cooperation agreements. The MES and relevant HEIs have entered into specific cooperation agreements with their counterparts in several countries, but there are no generalised agreements regarding EU or Balkan countries as a group.

Regarding social contributions, there are inter-governmental agreements with the State of Origin of the foreign researcher/academic which define the responsibilities of the parties in ensuring provision of social security to the foreigner.⁴⁹ So far, Albania has only signed Memoranda of Collaboration with Italy and Greece to mutually

⁴⁹ Pursuant to Article 100 of the Albanian Constitution and point 2 of Article 48 of Law nr.9959 dated 17.7.2008 "Foreigners" on the proposal of the Minister of Labour, Social Affairs and Equal Opportunities, the Council of Ministers.

recognise social insurance contributions (whereas those with other EU countries and non-EU countries are still in draft versions).

Compulsory social security covers all citizens of the Republic of Albania permanently residing in the country, as well as foreign employees insured in Albania.⁵⁰ However, health protection and social security insurance is not compulsory⁵¹ for those foreign nationals who:

- are working for subjects which, according to an agreement, have no obligation to register with the Albanian tax authorities;
- are members of foreign entities that have no obligation to register with Albanian tax authorities, who come to Albania to work in a job or service under a service contract, related to a subject enrolled with the tax authorities, which is not a branch of the subject or unit contractor.
- have permanent residence outside Albanian territory, who have recorded activity in their name in both countries, and are subject to mandatory health protection and social security in the country of residence, unless their country has an agreement on social security provision with the Albanian state;
- are exempted from paying social security contributions in Albania, according to an agreement signed with the Albanian state.

In order to work in Albania, a foreign researcher needs to submit a request and documentation for work permits to: the relevant employment office in the territory in which the employer carries out economic activities; to the General Directorate of the National Employment Service, if the employer of the person to be hired conducts economic activity in more than one geographical region, if he is legally residing in the territory of the Republic of Albania; and to the diplomatic representation of the Republic of Albania in the researcher's country of origin.

The Ministry of Labour, Social Affairs and Equal Opportunities is responsible for issuing the work permit. The necessary documents⁵² to be submitted include: the request of the foreigner, including personal data, according to a specific format; a copy of the individual contract of employment; copies of previous work permits; copy of residence permit; proof of bank account status; certificate of payment of social security and health insurance for the researcher and dependent family members; and the contract of ownership or rental of residential premises.

3.1.5 Enhancing the training, skills and experience of European researchers

International cooperation leading to improved training, skills and experience in universities and research institutes has grown substantially since 1992. Some universities have hired foreign professors to lecture or to participate in degree completion evaluations, thus raising the standards of education. Two national programmes - the *Excellence Fund*, allowing PhD candidates to study abroad and *Research Eagles Grants*, supporting mobility in the EU27 - as well as the Tempus and Erasmus Mundus initiatives contribute to human capital building, while the Brain

⁵⁰ Decision, No. 1114, 'On Social Security In the Republic of Albania, As Amended', Point 4, dated 30.7.2008,

⁵¹ Decision, No. 1114, 'On Social Security In the Republic of Albania, As Amended', Point 5, dated 30.7.2008

⁵² <http://www.mpcs.gov.al/migracioni/lejet-e-punes/386-leje-pune-te-tipit-c-per-raste-te-vecanta>

Gain programme seeks to ensure the return of this capital. The new amendment to the education law, requiring PhD candidates from public universities to have experience in teaching/researching at a foreign university also supports this goal.

- *Tempus Higher Education*: All Albanian public universities and some private universities participate in Tempus. From 1992 to 2010, Tempus played a vital role in bringing the academic community into the European network of higher education institutions, mainly by supporting retraining and upgrading for academic staff (70%-80% of academic staff have retrained abroad through Tempus).⁵³ Tempus has also been instrumental in supporting reforms linked to the Bologna process and developing the capacity of universities to upgrade institutional management. Tempus contributed to harmonisation of higher education by introducing three cycles of studies in all Albanian HE institutions and the development of unified curricula. All Tempus projects have led to partnership agreements and, as a follow-up to cooperation within Tempus, joint degrees are being organised between Albanian universities and EU institutions. Some Tempus projects focused on Master and Doctoral degrees as well. Under IPA, Tempus is focusing mainly on regional projects in different fields such as curricular reform, university governance and university and society.
- *Erasmus Mundus (2009-2013)* promotes cooperation and mobility in the field of higher education with a strong international focus: *Action 1 – Erasmus Mundus Joint Programmes (Master Courses and Joint Doctorates)* are operated by consortia of HEIs from the EU and (since 2009) elsewhere in the world. There are 17 students participating in the programme for 2010/2011. *Action 2 – Erasmus Mundus Partnerships (former External Cooperation Window)* bring together HEIs from Europe on the one hand and from a particular region in the world on the other. Together the partnerships manage mobility flows between the two regions for a range of academic levels – Bachelor, Master, Doctorate, post-doctorate – and for academic staff. There were 30 individuals participating in the programme for 2009, six of whom were academic staff.⁵⁴

3.2 Research infrastructures

Research infrastructures (RIs) are a key instrument in the creation of new knowledge and, by implication, innovation, in bringing together a wide diversity of stakeholders, helping to create a new research environment in which researchers have shared access to scientific facilities. Recently, most EU countries have begun to identify their future national RI needs, budgets and priorities in the so called National Roadmaps for Research Infrastructures. These strategic documents also set out a strategic view on how to guarantee and maintain access to research facilities. Although some countries invest heavily in RIs, none can provide all the required state-of-the-art facilities on a national basis. Several large RIs have already been created in Europe. While optimising the use and development of existing RIs remains important, new infrastructures are needed to respond to the latest research needs and challenges. European Strategic Forum for Research Infrastructures ([ESFRI](#)) was established in April 2002 to support a coherent approach to policy-making on RIs in Europe and to act as an incubator for international negotiations on concrete

⁵³ http://eacea.ec.europa.eu/tempus/participating_countries/reviews/albania_review_of_higher_education.pdf

⁵⁴ http://eacea.ec.europa.eu/tempus/participating_countries/reviews/albania_review_of_higher_education.pdf

initiatives. This section assesses the research infrastructures national landscape, focusing on the national RI roadmap and national participation in ESFRI.

3.2.1 National Research Infrastructures roadmap

Albania is suffering from a lack of modern research infrastructure and state-of-the-art equipment, but efforts are under way to improve infrastructure, starting with support for development of communication networks and IT systems. Major projects are being co-financed by the EIB with other international financial institutions, such as the World Bank, which has also funded the equipping of teaching laboratories.

Since most research actors are public bodies, public spending will be the primary source of funding for research infrastructures. The National Strategy specifically provides funding to improve equipment and facilities in public and university research institutes under the Research Infrastructure Fund with a total planned budget of €27.15m, while setting up the **ACES** (€9.15m) represents new elements of the research infrastructure, as does the establishment of **ARTI**. The *Research Infrastructure Fund* is aimed at improving the equipment and facilities available in the public and university research institutes to levels permitting research projects to be executed at international standards. This programme is open to bids submitted by either an individual research institute or by a university as whole.

Albania's research infrastructure includes Higher Education Institutions (HEI). HEI engage in research, studies, development projects and other innovative activities according to their statutes and specific institutional objectives. The research activities seek to ensure integration of teaching and research processes. The objectives, themes and deadlines of research are defined by the HE institutions themselves, based on the country's development needs and the programmes for scientific collaboration and financial resources available. The HE institutions also carry out research activities with external stakeholders. Such activities may represent an additional source of income for the institutions concerned. The institutions are required to produce an annual report for research activity. Research activities can also be linked to academic programmes in the third or even second cycles. Public universities receive a separate budget for research activities from the MES. Currently there are 13 public higher education institutions and 18 licensed private Universities.⁵⁵

Albania has 14 **Research Institutes** that were part of the ASA until April 2007, and most have now been absorbed into the universities. These include seven institutes under the Section of Social and Albanological Sciences (Institute of History, Institute of Linguistics and Literatures, Institute of Popular Culture, Institute of Archaeology, Institute of Economy, Centre of Arts Studies and Centre of Albania Encyclopaedia of Inter-disciplinary studies) and seven institutes under the Section of Natural and Technical Sciences (Institute of Nuclear Physics, Institute of Informatics and Applied Mathematics, Institute of Hydrometeorology, Institute of Seismology, Institute of Biological Research, Centre for Geographical Studies and Centre for Hydraulic Research). Furthermore, there are **24 research-study institutes that operate under the responsibility of various Ministries**.

As of yet Albania has **no public-private research and technology organisations**. It is hoped that the completion of the new campus of the University of Vlora and the neighbouring science park will open a new chapter in cooperation between both

⁵⁵ http://www.mash.gov.al/arsimi_larte/home.html

types of organisations, so that Albanian universities can begin performing applied research for business needs like foreign universities do.

3.2.2 National participation in the ESFRI roadmap

Albania does not have an ESFRI Roadmap, as the country only recently became associated to the process; however, the National Strategy of Science, Technology and Innovation functions as a roadmap for medium-term development of the research infrastructure in the country.

3.3 Strengthening research institutions

The ERA green paper highlights the importance of excellent research institutions engaged in effective public-private cooperation and partnerships, forming the core of research and innovation 'clusters', mostly specialised in interdisciplinary areas and attracting a critical mass of human and financial resources. The Universities/research institutions should be embedded in the social and economic life where they are based, while competing and cooperating across Europe and beyond. This section gives an overview of the main features of the national higher education system, assessing its research performance, the level of academic autonomy achieved so far, dominant governing and funding models.

3.3.1 Quality of National Higher Education System

Albania is seeking to raise university standards and to expand student access to a university education. The revised Law on Higher Education⁵⁶ introduced greater flexibility and objectivity to university funding, while the Strategy of Higher Education set out a number of ambitious goals for improving the performance of the university system. As mentioned above, the MES in collaboration with public universities drafted a new policy framework to increase university student enrolment in academic fields related to S&T, especially mathematics and science, with a particular emphasis on ICT programmes, as well as tourism. The MES proposed to the Council of Ministers an amendment of the decision on admission quotas and fees in public HEI for the second cycle of studies, "*Master of Science*," for the academic year 2010 – 2011. Accordingly, the CoM approved an admissions quota of 6525 for Master of Science studies, of which 652 places are available for Albanian applicants living abroad.⁵⁷ At the same time, the MES is encouraging private higher education institutions to set up programmes in science and ICT. The MES also seeks to develop interdisciplinary study programmes and introduce two-year higher professional studies, particularly in the regional universities.

Albania has 13 public higher education institutions (including various universities, academies of Arts and of Physical Education and Sports, a Nursing Institute, the Military University, and Academy of Police) and 17 private universities. The data below show a sharp increase in the number of graduating students, particularly from new private universities. There is a concentration of HEI, both public and private, in Tirana. The regional universities with the largest number of graduates are those in Vlorë and Elbasan, while the private university Kristal had more graduates in 2009 than the University of Tirana.

⁵⁶ Law No. 9741, dated 21. 5. 2007, On Higher Education.

⁵⁷ CoM Decision no. 786, dated on 29.09.2010 "For Admission Quotas and Fees in Public Institutions of Higher Education for the Second Cycle of Studies, Master of Science for the Academic Year 2010 – 2011," amended. Source: <http://www.keshilliministrave.al/index.php?fq=brenda&m=news&lid=14294>

Table 4: Higher Education Institutions and Data on Graduating Students per HEI (2007-2009)

Universities	2007	2008	2009
Total	8,676	9,425	13,311
<i>Graduating from Public Universities</i>	8,420	7,689	9,478
1. University of Tirana	2,892	3,303	2,806
2. Politechnic University	406	239	368
3. Agriculture University	469	909	1,073
4. University of Elbasan	1,214	701	1,344
5. University of Shkodër	813	347	735
6. University of Gjirokaster	795	633	1,015
7. University of Korçë	481	116	285
8. University of Vlorë	1,067	1,262	1,546
9. Academy of Arts	166	179	179
10. Academy of Physical Education and Sports, Tirana	117	0	127
11. Nursing Institute	0	0	0
12. Military University Tirana	N/A	N/A	N/A
13. Academy of Police, Tirana	N/A	N/A	N/A
<i>Graduating from Private Universities</i>	256	1736	3833
1. University of" Nju Jork"	81	53	54
2. Luarasi University	153	150	162
3. University 'UFO Dental'			517
4. University 'Zoja e Këshillit të Mirë'		42	41
5. Academy of Film and Multimedia 'Marubi'	8	8	9
6. University "Marin Barleti"		8	38
7. University 'Kristal'		1,412	2,837
8. European University of Tirana			101
9. University 'Aldent'	14	43	36
10. University 'Medikadent'		20	38
11. "Justiniani i Parë" University	N/A	N/A	N/A
12. "Sevasti dhe Parashqevi Qiriazi" University	N/A	N/A	N/A
13. "Justicia" University	N/A	N/A	N/A
14. "Wisdom" University	N/A	N/A	N/A
15. "Polis" University	N/A	N/A	N/A
16. Epoka" University	N/A	N/A	N/A
17. American University of Tirana	N/A	N/A	N/A

Source: Ministry of Education and Science

The total number of tertiary students during the academic year 2007 – 2008 was 90,202 (including 50,919 women, 51%), with students in public universities totalling 80,696.⁵⁸ This shows an increase from the 2006–2007 level of 86,178 students, with 80,099 students in public universities.

Albania has suffered from a sharp decrease in human resources working in sciences and technology. In the 1990s, it is estimated that "approximately 40% of the professors and research scientists of the universities and science institutions in the

⁵⁸ INSTAT (for public universities, only students enrolled full time)

country have emigrated.”⁵⁹ This is compounded by the fact that the country has a low level of population having completed tertiary education. INSTAT statistics show that only 10.4% of the population aged 30-34 had completed higher education studies in 2008, whereas in 2007 only 22% of total employment was in knowledge-intensive activities (manufacturing and services).

The mission of HEI, as identified by law No 9741 is, their role in education, to conduct applied scientific research, prepare reports and develop projects, as well as perform other productive activities defined in the statute of the individual HEI and in accordance with the specific objectives of the institution.⁶⁰ The research⁶¹ and development activities performed these institutions also serve to improve the quality of education, to equip students with methodological skills for research, provide ongoing opportunities to supplement the study programme with advanced scientific and practical comprehension, improve the qualifications of the academic staff, and generate concrete applications/implementations of development and research in these institutions. Research activities are carried out based on plans, programmes and projects, approved in compliance with the procedures defined by the Higher Education Law or other bylaws.⁶²

According to Law no. 9741, dated 21.05.2007 "On Higher Education in the Republic of Albania," it was decided that a number of research institutes were to be merged with the respective universities, and now there is a planned project to assess how research institutions can be better integrated with their new "host" universities. The academic staff of these research institutes are expected to devote about 30% of their time teaching at the university.

Some data are available on the research personnel at the Higher Education and Research Institutions, showing an increase in recent years, as seen in Table 5 below. Between 2000 and 2009, the number of researchers has more than doubled, indicating a substantial increase in the numbers of professors and PhDs engaged in research functions.

Table 5: Research Personnel at the Higher Education and Research Institutions

	2000		2001		2002		2003		2004		2005		2006		2007		2008		2009	
	Prof	Dr	Prof	Dr	Prof	Dr	Prof	Dr	Prof	Dr	Prof	Dr	Prof	Dr	Prof	Dr	Prof	Dr	Prof	Dr
Title/degree	479	277	531	262	572	233	553	234	613	241	654	259	677	333	733	355	853	431	899	794
Total	756		793		805		787		854		913		1010		1088		1284		1693	

Source: Office of Statistics at MES

HE institutions are accredited by the Public HE Accreditation Agency, which is a part of the MES. Accreditation is public recognition that an Albanian HE institution or programme meets the standards of quality set forth by the accrediting agency. In achieving recognition by the accrediting agency, the HE institution or programme commits to a process of self assessment and external peer review not just to meet

⁵⁹ Eduart Sulstarova, General Scientific Secretary, Albanian Academy of Sciences International Conference, Why Invest in Science in South Eastern Europe (Albanian Case), 28-29 Sept. 2006, Ljubljana, Slovenia. Source: www.investsciencesee.info/Sulstarova.ppt

⁶⁰ Article 69, law No. 9741, dated 21. 5. 2007, On Higher Education.

⁶¹ Article 70, law No. 9741, dated 21. 5. 2007, On Higher Education

⁶² Article 71, Law No. 9741, dated 21. 5. 2007, On Higher Education.

standards, but to continuously seek ways in which to enhance the quality of education and training provided.

The purpose of the accreditation system of Albanian HE institutions is to:

- Use standards of evaluation to ensure quality education;
- Encourage institutions to improve the quality of education;
- Ensure the accountability of educational institutions;
- Provide public confidence in educational institutions.

A university or other institution seeking accreditation status must complete several primary steps in the accreditation process. The university or other institution must first prepare materials that demonstrate the institution's accomplishments and exhibit the level of quality of the areas of operation that are under scrutiny. Next, the institution undergoes a peer review of the prepared materials. Finally, action is taken by the accreditation organisation to determine whether the accreditation will be granted to the institution.⁶³

3.3.2 Academic autonomy

State-funded higher education institutions are autonomous. Autonomy might be described as freedom for higher education institutions to run their own affairs, in particular in relation to staff, students, curricula (teaching and examining), governance, finance and administration. Academic autonomy is established by the current education law. There are two main aspects to this autonomy. First, the public universities have a right to elect their own directors. Every four years public universities organise elections for every position of command, starting with Heads of Departments up to the University Rector (President). Therefore, political interference in the day-to-day management of the universities is minimised. Department organisation and activities are all covered by the statutes of the individual universities. Under IPA, Tempus is supporting regional projects in different fields focused higher education such as: curriculum reform, university governance and university and society relations. Such initiatives should also bring improvements to the governance systems of Albanian universities in the larger context of European integration.

Over the last couple of years, the amendments to the Law No. 9832 on Higher Education sought to focus special attention on scientific research. In the law, the Department of Research and Technology has been identified as a very important unit within the universities. Each faculty has the right to co-ordinate its own teaching process and research. The Masters degree programmes established in each faculty offer two levels of masters: first level master and second level master (according to the Bologna Chart). The second level master is considered a research programme, given that one of its key components is research. Every PhD programme in Albanian universities is identified in the law as the third level of study. The PhD programme is fully considered academic research under three-year supervision.

The new legislation creates optimal conditions for developing and strengthening university autonomy, reforming the higher education system based on the positive experiences of other European countries and approximating Albanian standards to European standards within the framework of the Bologna process. This is based on

⁶³ http://eacea.ec.europa.eu/tempus/participating_countries/reviews/albania_review_of_higher_education.pdf

the premise that quality education is critical for developing the creativity and innovation of young people who embark on the path of science. The former scientific research system has been restructured, transferring research institutes to research centres inside the universities, thus allowing universities to have a greater role in shaping the research agenda of the country.

3.3.3 Academic funding

The planned budget of the Ministry of Education and Science for 2011 is €292.7m (ALL40,394,457,000) or 3.03% of GDP, whereas the allocated budget for science is **€4,776,810**. The total budget has increased by about 1.01% over the revised budget of 2010, while the allocated budget for science has increased by 3.4%. A basic assumption is made that the Albanian Government will progressively increase national public funding for both the existing baseline funding provided under the higher education budget and the 'small' research projects managed by ARTI. If the target of 0.6% of GDP is to be reached, this increase will need to be sustained and progressive. These funds will mainly serve to achieve the following objectives:

- Increase and expand scientific research in Albania based on OECD indicators, under which the share of public expenditure on research in 2011 is to reach 0.3% of GDP.
- Improve teaching quality to reach OECD standards measured in terms of the enrolment ratio in higher education and student / teacher ratios by setting up about 30 new professional / scientific Master curricula and 15 doctoral programmes, improving teaching methods through training 30% of staff and increasing the number of professors by 1000. Doubling the number of students in the Information Technology branches (30 new curricula).⁶⁴
- Provide funding for Brain Gain programme.

Table 6: Ministry of Education and Science budgets

Year	Institution / Programme	Total of Budget Expenditure
2011	MES	ALL40,394,457,000 €292,713,450
	Science funds	ALL659,200,000 €4,776,810
2010	MES	ALL38,179,660,000 €276,664,200
	Science funds	ALL195,000,000 €1,413,040

Under the medium-term plan (2008–2009) of the Brain Gain Programme (co-financed by UNDP), for the first time the Albanian Government mobilised funds from the State Budget to hire university and research staff and opened up 550 vacancies in higher education and scientific research institutions.⁶⁵ To date, 82 assistants and lecturers with a MA or PhD degree have been qualified and appointed, on the basis of open competition, in the public and private universities.

Another Government-funded initiative, the Excellence Fund was established in 2007 and supported the best PhD candidates in completing their studies abroad, partially

⁶⁴ Budget Programme 2011 - <http://www.minfin.gov.al/>

⁶⁵ Brain Gain Programme

or fully. The Excellence Fund does not have any restricting criteria regarding the field of studies for the PhD programme; thus the MES has not generated any data specifying the fields of focus supported by this programme. A total of 45 PhD students were supported by this fund during the academic year 2006-2007.

The public universities are mostly financed by the state budget, in addition to funds from registration and other fees collected from students. For the first time, in 2009, the higher education budget reached €73,320,848.39 (US\$100m), of which €4,399,250.90 (US\$6m) are for 'institutional funding' of scientific research (compared to only €586,567.69 (US\$800,000 in 2005)).⁶⁶ Private universities, on the other hand, are self-financed by charging student fees that were established by the institutions themselves, or are financed by donations.

With the growing role played by the new private universities in Albania, public institutions have asked for increased financial autonomy. Public universities generate earnings from various small fees that students must pay. There has been a push in the public arena by the Rectors of the public universities to allow them to manage the fee revenues independently, instead of applying to the Ministry of Education for any additional funds. This move would allow for better management of the universities, whether in day-to-day operations or in targeting specific long-term goals. While the Government has yet to take a stance on the issue, there are signs that it is moving towards this direction. It is already allowing universities to keep and manage as they see fit the earnings from part-time courses, and will probably allow them to do so for all earnings derived from various fees.

While public higher education tuition fees are set by the government, universities may decide how they use the incoming tuition fees, which constitute a significant (15% or more) element of the funding of higher education institutions. Public universities are able to carry forward unused funding from one year to the next and can make investments with this surplus.

Universities are also encouraged to seek private funding, but are required to report on the amount and use of this private funding.

The following characterise the allocation of funding to higher education institutions in Albania:

- Negotiation on the basis of an estimate from the institution;
- Fixed allocation on the basis of past costs;
- Formula funding;
- Performance contract;
- Funding for research projects on a competitive basis;
- Performance indicators play a role in funding allocations;
- Research is funded separately.

3.4 Knowledge transfer

The importance of knowledge dissemination and exploitation in boosting competitiveness and contributing to the effectiveness of public research has been

⁶⁶ Press Statement of the Advisor to the Prime Minister on Educational Matters, Prof. Myqerem Tafaj, 6 Dec. 2008.

increasingly recognised by EC and EU Member States. Following the publication of the [ERA Green Paper](#) in April 2007, the EC Communication "[Improving knowledge transfer between research institutions and industry across Europe](#)" was issued, highlighting the importance of the effective knowledge transfer between those who do research, particularly HEIs and PROs, and those who transform it into products and services, namely the industry/SMEs.

Several Member States have taken initiatives to promote and facilitate knowledge transfer (for instance new laws, IPR regimes, guidelines or model contracts) and many others are planning to intensify their efforts in this direction. However, these initiatives are often designed with a national perspective, and fail to address the trans-national dimension of knowledge transfer. This section will assess the national policy efforts aimed to promote the national and trans-national public-private knowledge transfer.

Limited data on scientific publications and patent indicators confirm the low level of output of the research system. There are no data or studies available that allow any estimation of the extent of innovation activity (innovation expenditure, etc.) or outputs in the enterprise sector (e.g. sales from new products or services, etc.). This situation also applies to Albania, with most enterprises requiring first and foremost advice on best-available technologies and related organisational change in production processes and training of staff.

A limited number of medium-sized-to-larger firms, (e.g. in the agro-food sector) may potentially become actors in terms of investment in product development R&D. Until the university sector develops the required capacities and infrastructure to carry out more advanced research, there will be few opportunities to develop high-tech spin-off/start-ups and investment in high-tech incubators, etc.

3.4.1 Intellectual Property Policies

Albania has established a Patents and Trademarks Office (ALPTO) for intellectual protection rights.⁶⁷ This is a public institution under the Ministry of Economy, Trade and Energy through which the Albanian state grants and administers the property rights of inventions, utility models, commercial trademarks and service marks, industrial designs and geographical indications. It is as yet unclear how successful this Office will be in stimulating further R&D in universities or private enterprises. The Law is defined to provide an efficient and effective system of industrial property protection, a system which will encourage technological progress through technology transfer, enabling the development of local industries and encouraging the creation and strengthening of institutions of research and development, creating an innovative environment.⁶⁸ This mission is realised through the protection of industrial property rights through awarding of patents, trademarks and registered designs as well as dissemination of information on these items.

In 2007 the number of Albanian applications for invention patents reached 352 for EPO patents, 10 for national patents and four for Patent Cooperation Treaty (PCT)

⁶⁷ Decision No. 135, dated 22.03.1993 "On establishment of the Patent Office"

⁶⁸ Law "On Industrial Property", No.7819, dated 27.4.1994 amended by nr.8477, dated 22.4.1999 "On some amendments to the Law "On Industrial Property". Source: <http://www.pad.gov.al/content/dap/instvaresiKM/DPM.htm>

patents. For the first time since 1997, there was an increase in the number of national patent applications, rising from three in 2006 to 10 in 2007.⁶⁹

In 2007, the Albanian Copyright Office (ACO) was established within the Ministry of Culture, Tourism, Youth and Sports. It has initiated and signed memoranda of understanding with the National Council of Radio and Television, General Directorate of Taxes and General Directorate of Customs to fight the widespread piracy in the country, but concrete actions have still not been undertaken. The Law defines the rights and obligations of the entity participating in creative activities, manufacturing, trading or any other assessment, exploitation, use or disposal of literary, artistic or scientific activities.⁷⁰

At the Albanian Office for Copyright,⁷¹ a total of 1135 applications were deposited for registration - certification of activities, transfer of copyright contracts and copyright in the period January 2007-November 2009. Among the applicants registered and certified, 154 subjects conduct their activities in publishing, creative cinematography and other audiovisual products, and in the field of broadcast television and radio retransmissions. There were 812 subjects registered and certified for the transfer of property rights to musical works, cinematographic and audiovisual works. Furthermore, 75 works that were registered and certified belonged to defined categories which are most prominent in literature, journalism, scientific creations, projects, musical compositions, cinematographic and other audiovisual products. Currently 106 applications are being processed.

Currently there are no incentives or reward systems for inventors, as the practical aspects of managing the IPO system are still being worked out. As of yet, no knowledge-transfer offices have been set up in the Albanian universities, though a recent initiative at the University of Vlorë might eventually bear fruit.

3.4.2 Other policy measures aiming to promote public-private knowledge transfer

Start-up companies, especially research or university spin-off companies, are rather rare in Albania. Furthermore, there are no studies that could provide reliable data on such activities. However, a few small initiatives have been implemented. Until recently, the University of Vlorë had been pursuing plans to build a new campus at the outskirts of the city, including a science park to be located close to the university.

In Albania, entrepreneurship education takes place in the context of training programmes for business start-ups. Indeed, the attention devoted to entrepreneurship education in Albania was scant until the Albanian government adopted the EU Charter for SMEs in September 2003. The Charter reflected the EU agenda on the need for SME owners to acquire entrepreneurial attitudes and skills, and training to set up a business. This was emphasised in the 2004 Enterprise Policy Performance Assessment (EPPA) report on SME development⁷² in Albania, which recognised the role and importance of education and vocational training.

The **Business Relay and Innovation Centre (BRIC)** is considered to be the main initiative for the coordination and delivery of business innovation and technology

⁶⁹ <http://seesciencepolicy.org/sitegenius/topic.php?id=352>

⁷⁰ Law "On Copyright and Other Rights Related to it," No. 9380, dated 28.4.2005. Source: [http://www.zshda.gov.al/docs/776936171927LIGJ%20\(1\).pdf](http://www.zshda.gov.al/docs/776936171927LIGJ%20(1).pdf)

⁷¹ <http://www.zshda.gov.al/docs/306067Buletin%20Autoret.pdf>

⁷² OECD and EBRD, 2005.

services and initiatives for SMEs. The BRIC is a representative organisation for Albania in the EU-funded competitiveness, innovation, and technology focussed programmes and initiatives and it functions as the executive body for the implementation of the *Albanian Business Innovation and Technology Strategy (BITS)*, whose purpose will be to help increase innovation in Albanian firms, particularly SMEs, filling the existing gaps in the National Innovation System.

Inter-sectoral mobility

The mobility of professors from public universities to private ones has become quite common in Albania. This is mostly due to the licensing requirements set for private universities, which must have a minimum number of branches within departments and qualified staff with academic degrees. A major incentive is that the payment per unit of work (academic classes) is much higher in private universities than in public institutions. Also, the recruitment of professors in private universities is driven by the need to attract students, as the academic staff plays an important role in affecting students' choice of a college for enrolment. While reverse mobility from private to public universities is sporadic and very rare, it occurs when a prominent personality in the relevant field is a visiting lecturer and / or simply to fill a shortage in a specific department or in the teaching of new subjects. It should be noted that the MES and especially the University of Tirana have made efforts to limit the possibility of professors' mobility towards private universities, and have signed agreements regarding academic exchanges to invite foreign professors from the best European and foreign Universities to teach only in those universities selected by the rectorate and MES.

As such, the University of Tirana's Rectorate recently concluded contracting for 100 foreign professors, mainly from EU countries, Italy, Germany, France, UK, Spain and Belgium, as well as from USA and Switzerland. When the university budget was approved, it also allowed for payments to foreign professors. Compared to the payments they receive in their home countries, the earnings from teaching in Albania are merely symbolic, but despite this, foreign professors have accepted these invitations. Following a Decision of the Council of Ministers, foreign professors are able to conclude contracts with the Albanian universities to receive payments higher than those that Albanian professors receive. According to the government decision, foreign professors' teaching hours are paid ALL4,000-5,000 (€30–35).

Many researchers have left Albania to work in the private sector in other countries (Brain Drain). This has also occurred inside the country as university and public research institute researchers have abandoned research to work in companies, but no reliable statistics are available on this phenomenon. As mentioned, public sector R&D positions have low pay, inadequate laboratories and equipment, and lack of status and opportunities for advancement.

Promoting research institutions - SME interactions

The EU is supporting the Albanian Government in its efforts to strengthen the competitiveness of SMEs, thus also contributing to the knowledge triangle. The "EU SME Project in Albania" is strengthening the capacity of the Ministry of Economy, Trade and Energy (METE) and Albinvest to develop, implement and monitor Albanian SME policy in order to promote entrepreneurship and innovation programmes for SMEs. The activities also involve other relevant stakeholders, such as Regional Development Agencies, Chambers of Commerce and Industry, other Ministries, universities and the Academy of Science. As mentioned above, the BRIC is considered to be a focal point for the coordination and delivery of business

innovation and technology services and initiatives for SMEs. BRIC is to provide funding (Innovation Fund) for SME projects and the renewal of SME technological equipment.

The Strategy on Employment and Vocational Training promoted by the Ministry of Labour and Social Affairs supports instruments that contribute to the enhancement of innovation. The job creation target is focused on SMEs and on encouraging direct foreign investment. Although the term innovation has not been used, the "development and strengthening of competition in the market through production of more competitive goods, transfer of new technologies and know-how" is one of the principal aims in supporting SMEs.

EU cohesion policy does not yet play a role in Albania.

Involvement of private sector in the governance bodies of HEIs and PROs

Only recently has cooperation commenced between universities and enterprises and this will be encouraged through the ACES and National Technology Programme. Many universities co-operate with businesses in order to organise student stages, especially for students of engineering, medicine and agriculture. Some universities organise training courses to update the knowledge of employees through teacher training, nursing training, economics training etc. Some of this training is organised within a Tempus JP. However, there is potential to consider including employer representatives/business people on the boards or advisory councils of universities/research institutions within Programme Advisory Committees. Currently, this does not apply to public universities. While in the private universities/research institutions entrepreneurs are involved as owners of such institutions (e.g. shareholders of private universities), but their contributions in programming or advisory boards have been rather disappointing, since the private sector is providing little guidance to help universities better orient curricula to the demands of the labour market. A few private Universities have succeeded in facilitating employment of the best graduating students with major businesses in Albania and in organising job fairs (University of New York in Tirana). There is a very great need for strengthening such initiatives for student in fields such as engineering, engineering technology, business or medicine.

3.5 Cooperation, coordination and opening up national research programmes within ERA

The articulation between the R&D Framework Programmes, the Structural Funds and the Competitiveness and Innovation Programme is still underdeveloped in terms of coordination, synergies, efficiency and simplification. The policy fragmentation at EU and national level, and between EU and national policies can hinder the build of critical masses of research excellence, leads to the duplication of efforts, sub-optimal impacts of the different instruments and unnecessary administrative overheads. Differences between research selection procedures and criteria can also be an obstacle to the overall spread of excellence. This section assesses the effectiveness of national policy efforts aiming to improve the coordination of policies and policy instruments across the EU, all part of the drive to create an integrated ERA.

3.5.1 National participation in intergovernmental organisations and schemes

In 2008 Albania became associated with FP7 programme for the period 2007-2013. The FP7 instruments that are particularly important for the SEE countries: INCO-NETS and ERA-NETS (see section 3.5.3.). Albania is gradually becoming more familiar with cooperation under the EU research framework programme, though so far, Albanian applicants have had an overall success rate of only 16% in FP7 (2007-2010). The themes in which Albanians have had most success were: Research Infrastructures, Regions of Knowledge, Support for Research Policies and ICT Policy Support Programme. In terms of specific sectors, Albania has participated in research projects with European partners in the areas of transport, infrastructure, health and international cooperation.

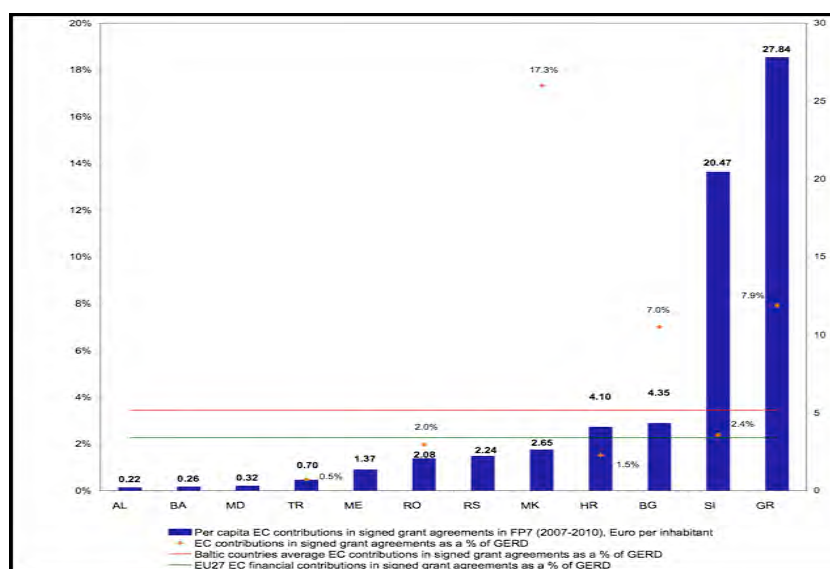
In the initial years, the number of Albanian researchers/institutions participating in the FP7 programme in terms of eligible proposals presented has been decreasing, reaching only 10 eligible projects in 2010, with only four of them retained for funding. This represents a sharp decrease from 2009 (nine proposals funded) and the lowest in four years of implementing FP7. These figures are significantly lower than those registered in the SEE region, where Albania accounts for only 1.4% of the share. On the other hand, Albania has increased its success rates over the period 2007-2010, from 8% in 2007 to 40% in 2010. These trends might be a reflection of evolving scientific capacities of the country.

Table 7: Albanian participation in FP7

	Number of eligible proposals with at least one applicant in country					Number of proposals retained for funding (Mainlisted) in calls with closure in reference year					Success rates				
	All FP7	2007	2008	2009	2010	All FP7	2007	2008	2009	2010	All FP7	2007	2008	2009	2010
Albania	148	77	29	32	10	24	6	5	9	4	16%	8%	17%	28%	40%
All SEE countries	19,416	8,006	4,965	5,374	1,035	3,238	1,190	742	1,012	290	17%	15%	15%	19%	28%
All EU27 countries	45,544	14,632	14,680	14,377	1,855	9,470	2,931	2,581	3,407	551	21%	20%	18%	24%	30%

Source: eCORDA, 8 June 2010

Figure 3: Per capita EC contributions in signed grant agreements vs. contributions as a percentage of GERD in SEE



Source: eCORDA, 8 June 2010; Eurostat 2010; the World Factbook, 2010

Assessments of the financial volumes of FP7 grants received by the Candidate or pre-accession WBC countries range from €766k for Albania to €18m for Croatia, in contrast with Slovenia, which appears to perform relatively well with over €41m from FP7, exceeding or performing almost as well as significantly larger SEE EU Member States such as Bulgaria (€33m) and Romania.

Albania will have to undertake additional efforts to increase its effective participation in research framework programmes and further integration in the European Research Area. This also requires strengthening administrative capacity and increasing the currently very low level of investment in research capacities.⁷³

There were a number of new developments that furthered the development of Albanian involvement in the European research system. In November 2010, Albania expressed interest in becoming a COST member, highlighting greater opportunities and potential benefits for the country, which is currently participating in this programme as a non-COST member. This was followed in December 2010 by Albania's expression of interest in becoming a member of EUREKA, which provides opportunities for businesses and the scientific community to participate in EUREKA tenders.

3.5.2 Bi- and multilateral agreements with other ERA countries

Albania's international cooperation in research and development takes place mainly within bilateral, EU and UN programmes. International cooperation, particularly with EU partners, is a high priority on the national agenda (also to achieve the strategic goal of 40% international funding of R&D efforts). Albania actively participates in several regional projects with other Balkan countries and has recently concluded science and technology agreements with neighbouring countries and other international partners.

The Republic of Albania has four currently active Bilateral Agreements in the field of Research and Higher Education with Austria, Germany, Italy and Poland. During the period 2005 to 2007 Albania engaged in 25 joint research projects and 40 mobility projects with Italy. Albania received a grant from the Italian Government to set up a telematic network between Albanian Universities. This initiative seeks to set European standards for Albanian university education and research through fulfilling the objectives of the Stability Pact for the socio-economic and cultural development of the country.

Bilateral research cooperation agreements are important symbolically, but not financially, in creating the basis for exchange and partnerships. Bilateral projects are focused on environmental, agro-food and biology research, etc. Since 2006, the Slovenian Centre for Social Sciences has been funding a project at Ismail Qemali University in Vlorë which focuses on the impact of the socio-cultural environment on tourism development in the south of Albania. ARTI and the Institute of Information Science in Maribor, Slovenia, signed an agreement on cooperation in setting up a research information system for Albania, E-CRIS.AL. The National E-CRIS system includes interconnected databases on research organisations, researchers and

⁷³ European Commission, Stabilisation and Association Albania 2009 Progress Report, November 2010.

Source: http://ec.europa.eu/delegations/albania/documents/eu_albania/2009_progress_report_en.pdf

research projects and is managed by ARTI, functioning as the Albanian National E-CRIS Centre.

Specific STI cooperation is as yet limited. The Ministry of Foreign Affairs is in charge of signing new intergovernmental agreements on science and technology, while the MES is responsible for their implementation. Such agreements were signed with Austria, Turkey and Poland. In the near future, there are plans to expand bilateral agreements to Montenegro, Croatia, Kosovo and France.

Actions financed in the framework of bilateral agreements include:

- Joint Research Projects (JRP) in priority areas include mobility grants, aim at permitting individual young researchers from both countries to stay for up to three months to be trained or participate in research activities at institutes, laboratories and enterprises of the other country.
- Technical Assistance Projects (TAP) aimed at providing assistance by exchanging equipment, scientific material, documentation, publications and various S&T information, visits of specialists and mutual demonstration of new technologies.
- Networking Projects (NP) aimed at the establishment of S&T networks between the institutions and companies of both countries. This may also include contacts between scientists and engineers, facilitating the exchange of S&T information and supporting the organisation of and the participation in conferences, workshops and training seminars of mutual interest.

In addition, many regional initiatives aimed at promoting regional cooperation within South Eastern Europe have been launched. Albania engages in regional scientific cooperation⁷⁴ in the Central European Initiative (CEI); Adriatic-Ionian Initiative; Stability Pact for South Eastern Europe; and Black-Sea Economic Cooperation (BSEC). Such initiatives promote joint publications of research results and presentations of results at international conferences in the involved countries. .

Albania has critical mass and strong research experience in the thematic sub areas "Earth and related environmental sciences" and "Agriculture, forestry, fisheries and allied sciences." The priorities of most international agreements in which Albania is involved are: cultural heritage, environment, health sciences, seismology, transport networks, telecommunications, public health, economy, technological innovation, agronomy and biotechnology.

3.5.3 Other instruments of cooperation and coordination between national R&D programmes

Albania participates in various instruments of cooperation between national R&D programmes, including:

- SEE ERA-NET and SEE ERA-NET Plus (2009-2013), aimed at integrating the Western Balkan region into the ERA, supports projects involving R&D activities- -regional and bilateral projects are open to all research institutions.
- WBC.INCO-NET is supported by FP7 and has represented an important forum for Albania to be involved in the research priorities of the Western Balkan region.

⁷⁴ http://cordis.europa.eu/fp7/home_en.html

- NATO Science cooperation: Albanian scientists had leading roles in 47 NATO science activities, while Albanian experts, researchers and trainees have participated in many NATO projects.⁷⁵
- IPA has become a key instrument in supporting multilateral cooperation, including research and innovation. The Joint Monitoring Committee of the “*IPA Adriatic CBC Programme*” (2007-2013) approved the first 32 ordinary projects with total funding of €75m, €25m for each of the three priorities. It aims at strengthening research and innovation to facilitate development of the Adriatic area through economic, social and institutional cooperation.

3.5.4 Opening up of national R&D programmes

In order to apply to participate in national R&D programmes in Albania, foreign researchers may apply if specified in the respective call, in which case they have equal access. Most foreign researchers working in the country are contracted for consultancy services, in which the call specifically states the criteria that the experts must be foreign citizens. In donor-funded grants the respective definitions related to foreign researchers are covered in the relevant agreements that the Albanian government has with international financial institutions. Under these agreements, competition is open to both domestic and foreign researchers.

3.6 International science and technology cooperation

In 2008, the European Commission proposed the [Strategic European Framework for International Science and Technology Cooperation](#) to strengthen science and technology cooperation with non-EU countries. The strategy identifies general principles which should underpin European cooperation with the rest of the world and proposed specific orientations for action to: 1) strengthen the international dimension of ERA through FPs and to foster strategic cooperation with key third countries through geographic and thematic targeting; 2) improve the framework conditions for international cooperation in S&T and for the promotion of European technologies worldwide. Having in view these aspects, the following section analyses how national policy measures reflect the need to strengthen the international cooperation in S&T.

3.6.1 International cooperation

Albania's international cooperation in research and development takes place mainly in the form of bilateral, EU and UN programmes. Albanian scientists have also had leading roles in NATO science activities, and Albanian experts, researchers and trainees have participated in various NATO projects involving third countries such as the United States and Canada.⁷⁶

3.6.2 Mobility schemes for researchers from third countries

There are no specific mobility schemes for researchers from third countries. Cooperation with third countries (Japan, USA, Korea, China, etc) is not regulated by specific inter-governmental cooperation agreements, but rather based on possibilities of scholarships for eligible researchers from SEE, including Albania. While researchers from third countries are present in Albania, they tend offer their research

⁷⁵ NATO Science for Peace and Security (SPS) Programme Update of Co-operative Activities, Update: 12 February 2009

⁷⁶ NATO Science for Peace and Security (SPS) Programme Update of Cooperative Activities, Update: 12 February 2009

capacities within consultancy contracts supported by international organisations/financial institutions (such as WB, IMF, etc). Furthermore, there are a number of professors from the United States who teach in Albanian universities and may provide some research inputs.

4 Conclusions

4.1 Effectiveness of the knowledge triangle

Increasing the level of awareness of the public and politicians on the relevance of RTD and the need for dialogue between the economy, academia and administration will provide a stronger basis for developing science policy that is in line with economic policies and priorities of the country, in order to promote an effective knowledge triangle. The Albanian Government has adopted new Strategies and legislation as well as reorganised the research and innovation system and established new actors such as ARTI, NAIS, ACES and BRIC, which will play important roles in strengthening the linkages between the elements of the knowledge triangle. Participation in FP7, NATO science, Tempus and Erasmus Mundus initiatives as well as WBC-INCO.NET stimulates the circulation of knowledge resources and the building of synergies with the international community. While the overall policy and institutional framework are in place, important weaknesses persist in government budget constraints, lack of a business culture focused on R&D and innovation, weak links between business and Higher Education as well as between business and research institutions, and inadequate orientation of research to real societal and economic needs. Furthermore, there is a need to introduce competitiveness criteria into the science and education system, to improve quality and adopt international standards, as well as build capacity for monitoring and evaluation.

Table 8: Effectiveness of knowledge triangle policies

	Recent policy changes	Assessment of strengths and weaknesses
Research policy	<ul style="list-style-type: none"> • Adoption of National Strategy for Science, Technology and Innovation 2009 – 2015', 29 June 2009, set goals for increasing R&D. • Education system reforms, National STI strategy and reorganisation of ASA strengthen university research capacities and improve public research structures. 	<ul style="list-style-type: none"> • + Substantial progress in institutional and strategy development. • + Despite budget constraints, slight increase in financial support to research achieved. • - Lack of research orientation toward economic and social needs; lack of transparency of recruitment policies and non-competitive payment systems; low scientific output.
Innovation policy	<ul style="list-style-type: none"> • National Strategy for Science, Technology and Innovation 2009 – 2015', 29 June 2009. • 'Cross-Cutting Strategy of Information Society 2008 – 2013', CoM Decision No. 59, dated on 22.1.2009. 	<ul style="list-style-type: none"> • + Substantial progress in institutional and strategy development. • - Lack of capacities to evaluate & monitor scientific projects and introduce statistical standards. • - Budgetary constraints. • - Strategy objectives too broad; goal-oriented interventions difficult to identify, unlikely to generate expected benefits.

	Recent policy changes	Assessment of strengths and weaknesses
Education policy	<ul style="list-style-type: none"> • Law N. 9741, dated 21.5.2007, 'On Higher Education in the Republic of Albania', (updated with law N.9832, dated 12.11.2007 & N. 10 307, dated 07.22.2010). • National Strategy for Higher Education (HE Strategy) 2008-2013. 	<ul style="list-style-type: none"> • + University autonomy to be increased for external and internal accountability and better management. • + Efforts to link research and higher education, and strengthen international S&T cooperation. • -- Lack of homogeneity of system. • -- Weak link of education to real societal needs and requirements of private sector.
Other policies	<ul style="list-style-type: none"> • Business Innovation and Technology Strategy (BITS) drafted, dated 19 July 2010. • Strategic Programme for Innovation and Technology Development of SMEs for 2011–2016 approved (<i>Addition to Strategy "for Business Development and Investment", adopted by Decision no. 795, dated 11.7.2007 of the Council of Ministers</i>). 	<ul style="list-style-type: none"> • + Rapid increase in registered businesses, high level of entrepreneurship. • - Lags behind other countries in innovation, putting at risk competitiveness and sustainability <i>Clusters initiatives</i> did not establish sustained cluster structures and activities. • -- BITS still in process of being adopted and BRIC not yet fully operational. • - Low technological level of SMEs and staff competencies.

4.2 ERA 2020 objectives - a summary

It is important to take into account that Albania has only recently begun to go down the path of participating in the ERA, while other countries in the Balkans (especially new Member States and Candidate Countries) have already made substantial progress in realising the 15 objectives. This is also hampered by the fact that the country has not yet completed and standardised its R&D statistics system; which however should be put into place soon. Among the main efforts of the Albanian government to support the strategic ERA objectives have been an active human resources policy, increasing public support for research (from 0.2% to 0.6% of GDP), reorganising and strengthening research institutions, including those now integrated with the universities, and strengthening international cooperation in science and technology initiatives. Major weaknesses remain in framework conditions for private investment in R&D and private-public cooperation and knowledge transfer, unattractive employment conditions for researchers, lack of mechanisms for monitoring and evaluation to develop and sustain overall quality and competitiveness, weak linkages between research and societal challenges as well as the low societal valuation of R&D and scientific activity.

Table 9: Assessment of the national policies/measures supporting the strategic ERA objectives (derived from ERA 2020 Vision)

	ERA objectives	Main national policy changes	Assessment of national strengths and weaknesses with regard the specific ERA objective
1	Ensure an adequate supply of human resources for research and an open, attractive and competitive single European labour market for male and female researchers	<ul style="list-style-type: none"> • Law No.8834, dated 22.11.2001 on Ratification of Lisbon Recognition Convention Decision No.467, dated 18.7.2007 'Determining of criteria and procedures for scientific and pedagogical qualification of academic staff'. • Decision No. 1100, dated 30.7.2008, 'For approval of medium term action plan of "Brain Gain" programme for period 2008-2009 (programme established in 2006). • Decision no. 864, dated 05.12.2007 'For opening of Doctoral study programmes in public higher education institutes and define criteria for student to get a diploma ranked as science "Doctorate"'. • Decision no 255, dated 27.4.2007 'For establishing the Excellence Fund for financial support to young excellent scientists'. • Research Eagles Grants Programme and Science Promotion and Education Programme aim to increase Master and Doctoral graduates in science and engineering fields. • Law No.8401 dated 9.9.1998 on some changes in law nr.7893 dated 22.12.1994 "For Science and Technological Development". 	<ul style="list-style-type: none"> • + Strong diaspora, potentially capable of supporting ICT-based development and emergence of knowledge economy. • + Fairly sound human capital basis with absorptive capacity necessary for learning, assimilating and using knowledge developed elsewhere. • -- Limited qualified IT personnel. • -- Unattractive working conditions for researchers: low salaries, inadequate infrastructures, difficult to gain a permanent position, etc. • -- Large share of qualified staff co-operates outside Institutional structures.
2	Increase public support for research	<ul style="list-style-type: none"> • National Strategy of STI (2009) calls for increasing public support of research. Nominal value of public R&D budget €15m or 0.2% of GDP in 2009--target 0.6% of GDP during 2009--2015. 2009 budget for higher education and scientific research 2.2 times higher than for 2005. • Long Term plan for Development of Military Forces 2020 envisages intensified R&D activities for security and defence, also in context of Science for Peace Programme. 	<ul style="list-style-type: none"> • + Small increase in R&D expenditure planned through national R&D programmes. • -- GBAORD decreased from €2.1m in 2008 to €1.7m in 2009, though higher than in 2006 (€0.6m) and 2007 (€0.8m). • -- Defence-oriented research might only benefit limited community of researchers without greater positive effects on economy and employment.

	ERA objectives	Main national policy changes	Assessment of national strengths and weaknesses with regard the specific ERA objective
3	Increase European coordination and integration of research funding	<ul style="list-style-type: none"> • Decision no.559 dated 22.08.2007 'For the merger of several institutes of the Academy of Sciences'. • Law no.9866, dated 31.1.2008 ratification of "Memorandum of understanding between the Republic of Albania and the European Community on Association of the Republic of Albania to the Seventh Framework Programme of the European Community for research, technological development and demonstration of activities (2007 - 2013). • "Decision no. 903, dated on 26.8.2009 to Establish Albanian Agency for Research, Technology and Innovation (ARTI). 	<ul style="list-style-type: none"> • + Accelerated internal integration efforts: MES adopted concept of working in mixed scientific research groups within the National Programmes and international research to eliminate the risk of parallel development and duplicated efforts, while at the same time stimulating cooperation between different institutions and groups. • - Still low participation in FP7. • - ARTI only operational as of 2010.
4	Enhance research capacity across Europe	<ul style="list-style-type: none"> • Programme of Excellence Funds to create five Centres with at least 20 researchers each aiming at integrating national research activities and technological development in regional and European scientific and technological activities. 	<ul style="list-style-type: none"> • + Framework integrating national research activities and technological development is good basis for future activities. • -- Lack of RTD statistics as basis for effective policy monitoring. • -- Need to internationalise RTD activities - increase participation in ERA.

	ERA objectives	Main national policy changes	Assessment of national strengths and weaknesses with regard the specific ERA objective
5	Develop world-class research infrastructures (including e-infrastructures) and ensure access to them	<ul style="list-style-type: none"> • Fund for Research Infrastructure (€0.15m in 2009, to reach €27.5m by 2015) will improve quality of equipment and facilities. • National Agency for Information Society (NAIS) set up as co-ordinating body for e-government services benefiting businesses and citizens. System safeguards private data while maximising ease of sharing public information across government agencies. • ‘Cross-Cutting Strategy of Information Society 2008 – 2013’, CoM Decision No. 59, dated 22.1.2009 equips all schools with Internet connected PC-labs. • National fund to be established for “Digital Albania” programme to ensure that every youth has a PC. 	<ul style="list-style-type: none"> • + Procedure for national programmes adopted according to EU standards. • + Improved infrastructure, modern computer networks in universities, new modern laboratories, etc; high-speed Internet network between government institutions. • + Introduced online services to main services under initiatives for E-governance, E-procurement, Tax Office. • + Internet use increased from 2.1% in 2005 to 45% in 2010, according to National Agency on Information Society.⁷⁷ +Increased network of public Internet access also in rural areas of Albania. • -- Still low level of broadband connections: 0.1% in 2005 and only 3.5% in 2010. • -- Lack of ongoing scientific activities (conferences, journal production etc.) in sub-structures of research institutions and lagging development of private sector research infrastructure.
6	Strengthen research institutions, including notably universities	<ul style="list-style-type: none"> • Decision no. 903, dated 26.8.2009 to Establish Albanian Agency for Research, Technology and Innovation (ARTI). • ‘National Strategy for Science, Technology and Innovation 2009 – 2015’, 29 June 2009. • Law No. 9741, dated 21.5.2007, ‘On Higher Education in the Republic of Albania’ (updated with law N0.9832, dated 12.11.2007 & No. 10 307, dated 07.22.2010). • National Strategy For Higher Education (HE Strategy) 2008-2013. 	<ul style="list-style-type: none"> • + Established institutional organisation with programmes and projects of wide interest; competitive system used to allocate financial support. • -- Level of research in higher education institutions is not at the proper level. • -- Imbalance between basic, interdisciplinary, and applied research. • -- Gaps in knowledge base in technical disciplines and need to improve physical RTD infrastructure.

⁷⁷ Ibid.

	ERA objectives	Main national policy changes	Assessment of national strengths and weaknesses with regard the specific ERA objective
7	Improve framework conditions for private investment in R&D	<ul style="list-style-type: none"> • 'National Strategy for Science, Technology and Innovation 2009 – 2015', 29 June 2009. • Good bandwidth, countrywide connectivity and data transmission are being provided by 3G cell phone licenses and the Broadband Backbone. 	<ul style="list-style-type: none"> • + Improved access to modern mobile phone and Internet services with aim to cover entire territory. • + Dynamic economic growth and FDI investments. • -- Low private investment in R&D; need to increase demand for RTD in industry.
8	Promote public-private cooperation and knowledge transfer	<ul style="list-style-type: none"> • National Broadband Network Infrastructure set up through innovative PPPs, as stated in Albanian Electronic Communication policy of 2010: to improve probability that private investors invest in ICTs (especially in order to offer services) and actions by the state to increase use of ICTs by state institutions. • National Technology Programme seeks to create consortia of academic research institutes with private sector or other public sector institutions to develop programme of applied research with social or economic impact. 	<ul style="list-style-type: none"> • + Increased co-operative initiatives concerning applications of scientific technological products in private sector. • -- Limited to ICT sector with little PPP diffusion in economy. • -- Difficulties in forming viable partnerships between public research performers and private sector comprised of mostly SMEs operating in non-technical fields. • -- Private sector weaknesses in absorbing knowledge—prefers purchasing technologies on market.
9	Enhance knowledge circulation across Europe and beyond	<ul style="list-style-type: none"> • Brain Gain Programme: In March 2009, 61 Albanian nationals studying and/or working abroad were recruited to work in universities. • Albanian scientists have had leading roles in 47 NATO science activities, and Albanian experts, researchers and trainees have participated in many more. • Foreign professors recruited to teach in Albanian public and private universities. 	<ul style="list-style-type: none"> • + Increased active participation in international programmes through projects of scientific community. • + MES active in regional initiatives and bilateral scientific relations expanded in SEE region and beyond. • + Acknowledgment of importance of international mobility for small developing country with modest research and innovation infrastructure. • -- Underestimation of need to involve foreigners in research and innovation -- few or no measures to attract them.

	ERA objectives	Main national policy changes	Assessment of national strengths and weaknesses with regard the specific ERA objective
10	Strengthen international cooperation in science and technology and the role and attractiveness of European research in the world	<ul style="list-style-type: none"> • International cooperation high on national agenda, (Tempus Higher Education, Erasmus Mundus, NATO Science, FP7, SEE ERA.NET, CARDS: UNDP). • Bilateral agreements with Austria, France, Croatia, Turkey, Montenegro and Poland. • Participation in European Research Area Committee (ERAC), nominated delegate observer to Standing Committee for Agricultural Research (SCAR). • Invited to nominate delegate observers to the different ERA governance bodies. 	<ul style="list-style-type: none"> • + Balanced bilateral & financial agreements based on international criteria of evaluation; • + Good performance in FP6 projects and FP7 programme. • -- Lack of international programmes support for foresight studies and process prioritisation.
11	Jointly design and coordinate policies across policy levels and policy areas, notably within the knowledge triangle	<ul style="list-style-type: none"> • Establishment of Agency for Research, Technology and Innovation (ARTI) to co-ordinate and guide ministries and other public bodies in field of S&T and play leading role in creation of S&T culture. 	<ul style="list-style-type: none"> • + ARTI represents important co-ordinating structure and is responsible for allocating R&D funding. • -- Only started operating in March 2010 so it is difficult to judge its effectiveness.
12	Develop and sustain excellence and overall quality of European research	<ul style="list-style-type: none"> • SEEREN and SEEREN2 connect national research networks in Balkans with pan-European network of research in Education GEANT. SEE_GRID and SEE_GRID2 projects aim at transfer and development in Southeast Europe of project results in GRID technologies as important component of European Research Area (ERA). • Project funded by Italian Government to establish National Academic Network (research in education) expected to be of high importance. 	<ul style="list-style-type: none"> • + Pilot and experimental projects (and technologies) based on best practices in neighbouring countries. • + Quality assurance mechanisms being put into place in the universities. • -- Still low participation and success rate in FP7 projects.
13	Promote structural change and specialisation towards a more knowledge - intensive economy	<ul style="list-style-type: none"> • Seven National Programmes of Research and Development (2010-2012): Social Sciences and Albanology; Information Systems and Technologies (ICT); Biodiversity and Environment; Agriculture, Food & Biotechnology; Health; Water & Energy; Materials. 	<ul style="list-style-type: none"> • + Systematic change in science funding adopted through introduction of national programmes with three-year cycles and reduction in the number of priority fields. +Some success in ICT fields. • - Still high focus on low-technology sectors (i.e. agriculture and social sciences).

	ERA objectives	Main national policy changes	Assessment of national strengths and weaknesses with regard the specific ERA objective
14	Mobilise research to address major societal challenges and contribute to sustainable development	<ul style="list-style-type: none"> • National Programmes of Research and Development aimed at societal challenges & sustainable development: Biodiversity & Environment; Agriculture, Food & Biotechnology; Health: Water & Energy. 	<ul style="list-style-type: none"> • -- So far only limited results achieved, since new National Programmes only started in 2010.
15	Build mutual trust between science and society and strengthen scientific evidence for policy making	<ul style="list-style-type: none"> • National Strategy for Science Technology and Innovation proposes science, technology and innovation awareness and promotion activities—funding activities to foster interest in and improved understanding of STI for the Albania economy and society. 	<ul style="list-style-type: none"> • + Strategy introduced and activities recently initiated. • - Low priority of STI in general (only 10% of students enrolled in sciences, mathematics & computing courses, 8% in engineering or related fields. • -- Low level of participation in EU RTD.

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List of Abbreviations

ACES	Albanian Centres of Excellence in Science
AIDA	Albanian Investment and Development Agency
ARTI	Agency for Research, Technology and Innovation
ASA	Albanian Science Academy
BERD	Business Expenditures for Research and Development
BITS	Business Innovation and Technology Strategy
BRIC	Business Relay and Innovation Centre
CERN	European Organisation for Nuclear Research
CHES	Council of Higher Education and Science
CoM	Council of Ministers
COST	European Cooperation in Science and Technology
CTAT	Centres for Transferring Agricultural Technologies
ERA	European Research Area
ERA-NET	European Research Area Network
ERP Fund	European Recovery Programme Fund
ESA	European Space Agency
ESFRI	European Strategy Forum on Research Infrastructures
EU	European Union
EU27	European Union including 27 Member States
FDI	Foreign Direct Investment

FP	European Framework Programme for Research and Technology Development
FP7	7th Framework Programme
GBAORD	Government Budget Appropriations or Outlays on R&D
GDP	Gross Domestic Product
GERD	Gross Domestic Expenditure on R&D
GOVERD	Government Intramural Expenditure on R&D
GUF	General University Funds
HEI	Higher Education Institutions
HERD	Higher Education Expenditure on R&D
HES	Higher Education Sector
INSTAT	Albanian Institute of Statistics
IP	Intellectual Property
MES	Ministry of Education and Science
METE	Ministry of Economy, Trade and Energy
NAIS	National Agency for Information Society
OECD	Organisation for Economic Cooperation and Development
PRO	Public Research Organisations
R&D	Research and development
RI	Research Infrastructures
RTDI	Research Technological Development and Innovation
S&T	Science and Technology
SF	Structural Funds
SME	Small and Medium-Sized Enterprise
UNESCO	United Nations Educational, Scientific and Cultural Organisation
VC	Venture Capital