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Executive Summary

Since 2006, Albania has restructured its research and innovation system and introduced new strategies for research and innovation and higher education, as well as various programmes for funding. The traditional system dominated by the [Academy of Sciences of Albania](#) (ASA) was reorganised, with the ASA's institutes incorporated into the universities and public research institutions. Recent structures, including the [Albanian Agency of Research, Technology and Innovation](#) (ARTI), [National Agency for Information Society](#) (NAIS), and the [Business Relay and Innovation Centre](#) (BRIC), now play active roles in their respective sectors, also managing programme funding. Recently available UNESCO estimates indicate that GERD in 2008 was 0.15% of GDP and totalled \$40.2 million (around €27.34 million¹) in terms of PPP\$, while the amount in local currency was reported as 1,665,5m ALL (around €13,651 million²). GERD per capita was indicated as \$12.6 in PPP\$ (€8.56), which represents only 1.8% of the EU-27 GERD per capita of €481.60 recorded in 2008. The lion's share of R&D funding (80.8%) came from the state budget, 8.6% from higher education, with only 3.3% from business enterprises. Around 7.4% of GERD was funded from abroad in 2008. The data within the [National Strategy of Science, Technology and Innovation](#)³ (NSSTI) 2009-2015 suggest that annual Gross Expenditure on R&D (GERD) was close to €15 million in 2009.⁴ As such, spending on scientific research was estimated at less than 0.2% of GDP in 2009.⁵ According to the Strategy, GERD is to increase to 0.6% of GDP by 2015. R&D performance is concentrated in public sector centres and institutes, higher education institutions, line ministries, and the government sector: UNESCO statistics indicate that in 2008, 52.1% of R&D was performed by the public sector and 47.9% by higher education. UNESCO⁶ also reports that GERD funded by business enterprises totalled 13.1m ALL in 2007 and 54.3m ALL in 2008 (\$0.308m and \$1,311m in current PPP\$, respectively, or approximately €0.225m in 2007⁷ and €0.891m 2008⁸). This is the first standardised *indicator of the size of BERD* in the country—other estimates suggest that the ratio of gross business enterprise expenditure on RTD to GDP is around 0.0025%.⁹

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¹ Source: European Central Bank, ECB reference exchange rate, US dollar/Euro equal to \$1,4708/€1, 2008 data.

² Source: Bank of Albania, Euro/ALL exchange rate for 2008 is 1 Euro = 122 ALL (average estimation).

³ The National Strategy for Science, Technology and Innovation reports all main figures in Euros.

⁴ Council of Ministers, Department of Strategy and Donor Co-ordination, National Strategy of Science, Technology and Innovation 2009 - 2015, June 2009, Source: http://www.dsdc.gov.al/dsdc/pub/national_strategy_of_science_technology_and_innovation_final_draft_381_1.pdf

⁵ 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

⁶ [Beyond 20/20 WDS - Table View](#)

⁷ Source: European Central Bank, ECB reference exchange rate, US dollar/Euro equal to \$1,3705/€1, 2007 data.

⁸ Source: European Central Bank, ECB reference exchange rate, US dollar/Euro equal to \$1.4708/€1, 2008 data.

⁹ Estimates from discussions with MES officials, 2011

The main trends in R&I funding:

The NSSTI foresees that total cumulative funding for research activities during the period 2009-2015 will amount to €151.95m. Around 40% of investment in R&D is targeted to come from abroad. In addition, funding for innovation initiatives under the [Business Innovation and Technology Strategy \(BITS\)](#) 2011-2016 is planned to reach €10.3m.

By the end of 2011 it became evident that there is a growing gap between planned funding and actual funding allocated and disbursed to the Agencies that are supposed to implement foreseen programmes. This creates a difficult situation for the Albanian R&I system. Most R&D funding comes from the public sector, but public sector funding is experiencing delays in funding and bottlenecks in programme implementation, while the private sector still only contributes marginally to overall research and innovation.

Structural challenges of the system:

The following can be identified as the main structural challenges for Albania's research and innovation system.

- **Low level of innovation and performance in the national research and innovation system:** Research performance statistics lag behind the EU-27 average and most Balkan countries. Private sector R&D remains minimal, with a low level of innovation in private firms.
- **Lack of reliable and comparable statistics on R&D and innovation:** UNESCO publishes partial data regarding R&D funding and performance for 2007 and 2008, while Eurostat statistics are not available. Albania is not covered in the Innovation Union Competitiveness (IUC)¹⁰ report or Innovation Union (IU) scoreboard, making it difficult to track progress or compare developments in Albania with EU and neighbouring countries. Limited availability of data also makes it difficult to estimate the extent of innovation activity or outputs in the enterprise sector.
- **Limited cooperation between universities and public research institutions with the private sector.** Albania's innovation system lacks synergies and cross-fertilisation between research and business, impeding commercialisation of research.
- **Delays and inefficiencies in implementing strategies and programmes** to be managed by new structures make it difficult to *translate strategy objectives into concrete results*.
- Remaining **weaknesses in human resources development** are reinforced by slowness in achieving "brain circulation" and educating new researchers and PhDs in S&T fields.

National research and innovation priorities

Albania's **national research priorities** (2010-2012) are reflected in seven national research programmes managed by ARTI: ICT; agriculture (veterinary, zoo-technical), food and biotechnology; social sciences and Albanology; biodiversity and environment; water and energy; health; and materials. ICT is considered a major driver for modernisation and innovation. Innovation priorities are outlined in the

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¹⁰ Nor in the Global Creativity Index, which focuses not only on education, S&T capacity, but also arts, music and design and openness to immigrants, minorities, and the gay, lesbian and trans gender communities.

[Business Innovation and Technology Strategy \(BITS\)](#) which, through the BRIC, assists SMEs in adopting new technologies, innovations and market strategies.

Assessment of the match between national priorities and structural challenges

National priorities focus on sectors that are considered important in ensuring sustainable development and addressing societal challenges while stimulating growth and productivity to counteract high unemployment. Yet bottlenecks and delays in implementing programmes and strategies have led to slow progress in improving levels of performance and R&D output. While the innovation system is still weak in terms of viable partnerships between public research performers and the private sector, the new non-profit ICT Training and Resource Centre (PROTIK) is expected to encourage such partnerships in the priority ICT field.

Evolution and analysis of policy mix section

The Albanian policy mix has generated mixed results in facing the structural challenges identified. It still has substantial progress to make in transitioning from an “efficiency-driven” economy to an “innovation-driven” economy. While national research and innovation strategies, agencies and programmes have been developed and launched, major weaknesses remain in framework conditions for private investment in R&D and private-public cooperation and knowledge transfer. These are compounded by unattractive employment conditions for researchers, lack of effective mechanisms for monitoring and evaluation in order 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. International partnerships remain limited or in initial stages of development. Albania still relies heavily on bilateral and international donor support rather than endogenous dynamics and partnership cooperation in key sectors, though recent initiatives involving cross-border and bilateral S&T cooperation that have been launched in agriculture and renewable energy are highly promising.

Possible directions for policy mix evolution

In order to implement the policy mix adopted, over the short term the Albanian government will need to ensure that the key agencies (ARTI, BRIC, NAIS) have access to promised funding and sufficient institutional capacity to allow translating strategies into concrete results. This will need to be reinforced by implementation of a regularly functioning performance system to evaluate policies, especially as regards to ERA pillars and objectives.

Policy measures point in the direction of improving innovation not only in the public sector, but also within SMEs operating in the priority sectors. However there needs to be greater emphasis on programmes linking public research to market demand. Market needs are largely addressed by imports rather than domestic R&D and production activities, unless these can be stimulated by additional funds or fiscal policies such as introducing tax credits for R&D. As a complementary measure over the medium term, there is a need to train an increasing number of knowledge workers for promising fields (energy, environment, agricultural biotechnology, ICT, etc.), necessitating revising university programmes to teach relevant and up-to-date courses as well as engaging guest professors from abroad.

Finally, Albanian researchers and research infrastructures need to accelerate the process to become true partners in international efforts rather than remain as recipients of support, and be able to produce knowledge results and fully collaborate in knowledge production (scientific publications) and circulation (guest professorships, visiting researcher, etc).

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1 Introduction

Albania has an area of 28,748 km² and is located on the Balkan Peninsula, wedged between Montenegro, Kosovo, FYROM, and Greece. With a long coast on the Adriatic and Ionian seas, around 70% of the country is mountainous and often inaccessible. In 2010, Albania had close to 3.2 million inhabitants, around 0.6% of the EU population. Less affected by the global economic and financial crisis than others in the Balkan region, the country's GDP growth slowed from 7.5% in 2008 to 3.3% in 2009, with a rate of 3.5%¹¹ estimated for 2010. GDP reached €8,716b (1,151,020m ALL) in 2009, 0.07% of EU-27 GDP. Albania is considered a middle income country--its GDP per capita in terms of Purchasing Power Standards (PPS) of €6,500 represented only 28% of the EU-27 average.¹²

R&D and innovation statistics only recently started to be collected according to UNESCO standards.¹³ The lack of comparable statistics has made it difficult to both assess progress and make comparisons between Albania and EU and Balkan countries. UNESCO estimates indicate that Gross Expenditure on R&D (GERD) in 2008 was 0.15% of GDP and totalled \$40.2 million (around €27.34m¹⁴) in terms of PPP\$, while the amount in local currency was 1,665.5m ALL (around €13,651m¹⁵). GERD per capita was indicated as \$12.6 (€8.56) in PPP\$, only 1.8% of the EU-27 GERD per capita of €481.60 recorded in 2008. Another estimate comes from the [National Strategy of Science, Technology and Innovation](#)¹⁶ 2009-2015, stating that GERD was close to €15m in 2009.¹⁷ Spending on scientific research in 2009 was estimated at less than 0.2% of GDP,¹⁸ the lowest rate in Europe and far below the EU-27 average of 2.01% in 2009¹⁹ and the Lisbon target of 3%. The Strategy seeks to increase GERD to 0.6% of GDP by 2015.

UNESCO's data for 2008 show that 80.8% of R&D funding came from the state budget, 8.6% from higher education and 3.3% from business enterprises. Around 7.4% of GERD was funded from abroad. GERD funded by business enterprises was estimated²⁰ as

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¹¹ IMF Public Information Notice (PIN) No. 11/129, Oct. 21, 2011, reported a growth rate of 3.5% for 2010, whereas the Albania 2011 Progress Report presented a higher estimate of 3.9%

¹² Albania 2011: Progress Report

¹³ A first survey of public and academic institutes was launched in 2011 and a business R&D and innovation survey is currently under way, both supported by UNESCO. Data is not available yet.

¹⁴ Source: European Central Bank, ECB reference exchange rate, US dollar/Euro equal to \$1,4708/€1, 2008 data.

¹⁵ Source: Bank of Albania, Euro/ALL exchange rate for 2008 is 1 Euro = 122 ALL (average estimation).

¹⁶ The National Strategy for Science, Technology and Innovation reports all main figures in Euros.

¹⁷ Figures in Strategy published in €—with 2009 average exchange rate of €1 / 135.6 ALL, €15m is approximately 2,034m ALL. Council of Ministers, Department of Strategy and Donor Coordination, National Strategy of Science, Technology and Innovation 2009-2015, June 2009, Source: http://www.dsdc.gov.al/dsdc/pub/national_strategy_of_science_technology_and_innovation_final_draft_381_1.pdf

¹⁸ European Commission, Stabilisation and Association Albania 2009 Progress Report, Nov. 2010, Source: http://ec.europa.eu/delegations/albania/documents/eu_albania/2009_progress_report_en.pdf

¹⁹ Eurostat, R&D statistics explained http://epp.eurostat.ec.europa.eu/statistics_explained/index.php/R_%26_D_expenditure.

²⁰ [Beyond 20/20 WDS - Table View](#)

totalling 13.1m ALL in 2007 and 54.3m ALL in 2008 (\$0.308m and \$1,311m in current PPP\$, respectively, approximately €0.225m in 2007²¹ and €0.891m 2008²²). Other estimates suggest that the ratio of gross business enterprise expenditure on RTD to GDP is around 0.0025%.²³

In 2008, 52.1% of R&D was performed by the public sector and 47.9% by higher education. The research infrastructure comprises public research institutions, public and private universities and other higher education institutions, as well as research-study institutes operating under the responsibility of various Ministries. As of yet, Albania has no *public-private research and technology organisations*.

UNESCO statistics indicate that in 2008 Albania had 147 researchers per million inhabitants in terms of full-time equivalents (FTE) and 541 per million inhabitants in terms of headcount (HC), with a total 1721 researchers (44.3% women). INSTAT reports that in 2009, there were 87 researchers at public institutions and 1693 at private and public HEIs, while there are no reliable data on researchers employed by private companies. 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 10.4%. Over 60% of students in public universities study education, humanities or social sciences, while only 10% focus on sciences, mathematics and computing, and another 8% on engineering or related fields. No Albanian universities have been listed in any rankings of world universities following ARWU,²⁴ THES²⁵ or Leiden²⁶ methodologies.

In 2007 the number of Albanian applications for invention patents reached 352 for European Patent Office (EPO) patents, 10 for national patents and four for Patent Cooperation Treaty (PCT) patents.²⁷ 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).²⁸

The scientific, technological and economic specialisation of the country derives from its heritage as a highly agricultural society and producer of primary resources. The *National Programmes for Research and Development* cover seven research fields: ICT; health; agriculture, nutrition and biotechnology; biodiversity and environment; water and energy; material sciences; and social sciences and Albanology. .

The national research and innovation system involves actors at political, operational and research performer levels (see Figure 1). Policy-making and priority setting are undertaken by the Parliament and Council of Ministers. The Parliament is advised by the *Committee on Education and Public Information*. The Council of Ministers is advised by

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²¹ Source: European Central Bank, ECB reference exchange rate, US dollar/Euro equal to \$1,3705/€1, 2007 data.

²² Source: European Central Bank, ECB reference exchange rate, US dollar/Euro equal to \$1,4708/€1, 2008 data.

²³ Estimates from discussions with MES officials, 2011

²⁴ Academic Ranking of World Universities <http://www.arwu.org/>

²⁵ Times Higher Education Survey <http://www.timeshighereducation.co.uk/world-university-rankings/>

²⁶ University of Leiden <http://www.socialsciences.leiden.edu/cwts/products-services/leiden-ranking-2010-cwts.html#europe>

²⁷ <http://seesciencepolicy.org/sitegenius/topic.php?id=352>

²⁸ <http://www.scimagojr.com/countryrank.php>

the *National Council for Science and Innovation* and the [Academy of Sciences of Albania](#) (ASA).

The [Ministry of Education and Science](#) (MES) is responsible for formulating education, science and R&D policy, and is supported by the [Academy of Sciences of Albania](#) (ASA) and the [Albanian Agency of Research, Technology and Innovation](#) (ARTI), set up to improve policy implementation and integration between different research actors, including public and private sector entities, in the fields of R&D, S&T and Innovation.

The [Ministry for Innovation and Information Communication Technology](#) focuses on the development of ICT and Information Society, and is supported by the [National Agency for Information Society](#) (NAIS) and the National Authority for Electronic Certification (AKCE). It also oversees the Authority of Electronic and Postal Communications (AKEP).

The [Ministry of Economy, Trade and Energy](#) (METE) is responsible for promoting innovation and technology dissemination among Albanian SMEs. It oversees the activities of the [Albanian Investment and Development Agency](#)²⁹ (AIDA) and the [Business Relay and Innovation Centre](#)³⁰ (BRIC), established in June 2011 as a special department within AIDA that provides services related to innovation and technology transfer to enterprises.

Further government bodies with a role in overseeing or promoting innovation in their respective sectors include the [Ministry of Agriculture, Food and Consumer Protection](#) (MAFCP), the [Ministry of Environment, Forests and Water Administration](#), the Ministry of Health, and the Ministry of Defence.

So far business enterprises play only a marginal role in the research and innovation system, though various programmes managed by ARTI are aimed at changing this situation.

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²⁹ Law no. 10303, dated 15.07.2010 “On creation and organisation and functioning of the Albanian Investment Development Agency” that entered into force on 26 August 2010.

³⁰ Decision of the Council of Ministers (DCM) no. 104, dated 09.02.2011, entered into force on June 2011.

Figure 1: National Innovation System (ACER 2011)

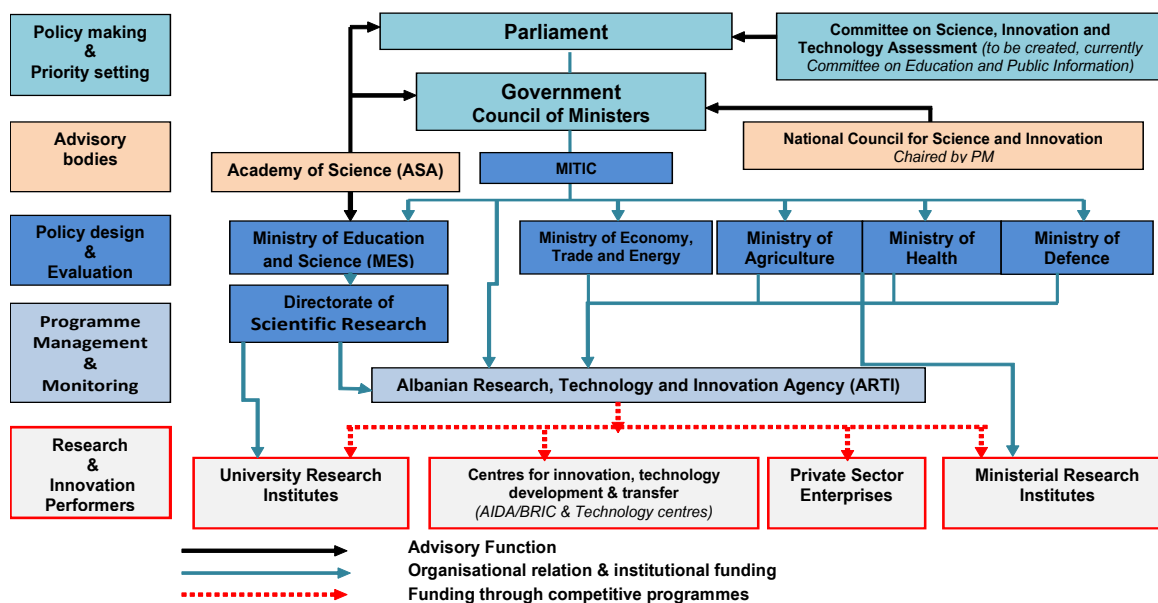


Figure 2: Innovation Support Organisations within the National Innovation System (METE, 2011)

ARTI

- Science and research promotion
- Funding of National & International R&D Programmes
- R&D international cooperation
- Technological development

BRIC

- Awareness raising and promotion
- Technology transfer and diffusion
- Managerial innovation techniques & services
- Provision of information
- Financial resources
- Entrepreneurship
- Supporting key sectors

NSE

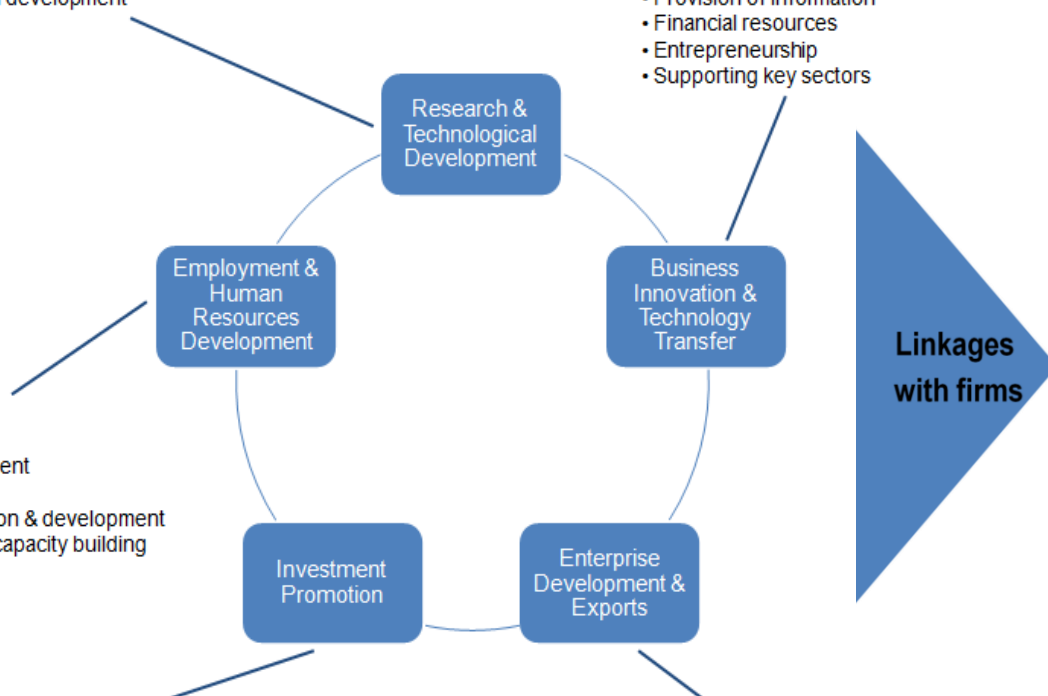
- Job creation
- Self employment
- Employability
- HR qualification & development
- Training and capacity building

AIDA (previous ALBINVEST)

- Promotion of Albania's external image
- Promotion of FDI
- Business-related infrastructures

AIDA (previous ALBINVEST)

- SME development
- Facilitation of business financing
- Business assistance
- Promotion of exports & business internationalisation



2 Structural challenges faced by the national system

Overall, the main challenges³¹ for Albania's national research and innovation system are to address (i) weak administrative and research capacity; (ii) poor definition of responsibilities and of funds allocation, hindering implementation of the Law on Scientific Research that merged most scientific institutions with universities. The following can be identified as the main structural challenges for the Albanian research and innovation system:

- low level of innovation and performance in the national research and innovation system:** Despite very good performance in attracting FDI and generating high economic growth over the past decade, Albania lags behind in innovation performance. This is evidenced by very low levels of GERD (estimated at 0.15-0.2% of GDP), low technology and innovation levels of firms and limited private enterprise R&D. UNESCO estimates that in 2008 only 3.3% of GERD was funded by business enterprises (compared to 80.8% by the government sector). FDI tends to have been concentrated in low technology areas of manufacturing and services. Albanian firms have preferred to purchase technologies (mainly imported) on the market rather than developing own solutions through R&D or process innovation--partly due to cost, partly due to lack of qualified personnel. In the *Global Competitiveness Report 2011-2012* (World Economic Forum (2011) which ranks 142 countries in terms of a variety of competitiveness indicators (both statistics and survey opinion results), Albania ranks 78 out of 142 and is categorised as an **"efficiency-driven" economy, which has not yet made the transition to an "innovation-driven" economy**. Albania's country ranking for "business sophistication" (78) is far higher than that for overall "innovation" (123). Its ranking for the subcategory "capacity for innovation" is 119, far below that of Croatia (64) and Macedonia (86) and somewhat below Serbia (110), though ahead of Bosnia and Herzegovina, and it ranks even lower in "quality of scientific research institutions" (134 - practically at the bottom of the list!), compared to Croatia (48), Serbia (61), Macedonia (86), and Bosnia and Herzegovina (98). In terms of USPTO patents grants, Albania is in the last category, with 0.0 patents per million of population.
- Lack of reliable and comparable statistics on R&D and innovation:** Until recently any assessments of Albania's research and innovation system have been frustrated by a **lack of internationally comparative statistics**. Such data are now becoming available due to the efforts of UNESCO and other international organisations in cooperation with the Albanian government. UNESCO recently published partial data regarding R&D funding and performance for 2007 and 2008, while Eurostat statistics are not yet available for Albania. Albania is not covered in the Innovation Union Competitiveness (IUC)³² Report or the Innovation Union Scoreboard (IUS). Several non-EU Balkan neighbours, including Croatia, FYROM and Serbia were evaluated in these studies, though not assigned to any of the four performance groups. Albania's National Strategy for STI provides an estimate of GERD in 2009, but there is as of yet no mechanism for the collection of R&D and innovation statistics in the private sector (beyond UNESCO data for 2007 and 2008).

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³¹ European Commission, Stabilisation and Association Albania 2009 Progress Report, November 2010.

³² Nor in the Global Creativity Index, which focuses not only on education, S&T capacity, but also arts, music and design and openness to immigrants, minorities, and the gay, lesbian and trans gender communities.

This makes it difficult to track progress or compare developments in Albania with EU and neighbouring countries. The *Global Competitiveness Report 2011-2012* covers Albania; though it is important to underline that some indicators are *best available data* such as official statistics reported by UNESCO, ITU, World Bank and IMF, while others are results of surveys and reflect the opinion of those participating in the World Economic Forum's Executive Opinion Survey. This is the case for Albania's high rank of 51 out of 142 (value of 3.2 - weighted average) for "company spending on R&D," putting the country well ahead of its neighbours in this particular survey.

- **Limited cooperation between universities and public research institutions with the private sector.** So far, Albania's innovation system has shown serious weaknesses in the lack of synergies and cross-fertilisation between research and business, which has impeded commercialisation of research results. In fact, in the *Global Competitiveness Report*, for the indicator "*university-industry collaboration in R&D*," Albania is among the lowest ranked in the world - 139 of 142 - and far behind its neighbours, Croatia (77), Serbia (81), Bosnia (84) and FYR Macedonia (92). There is a pressing need to link public research to market demand - such needs are largely addressed by imports rather than domestic R&D and production activities. Reliance on technology imports only marginally improves the prospects for increasing competitiveness and innovation in the economy. Initiatives such as the National Technology Programme and Albanian Centres of Excellence in Science (ACES), announced in the National STI Strategy, are aimed at promoting public-private research cooperation, and the intellectual property protection framework has been improved. Yet the two promotion initiatives have experienced delays in implementation, and there has as of yet been only limited intellectual property produced that requires protection. Furthermore, there is a lack of subsidies and tax incentives that might stimulate companies to engage in R&D, and 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. These could be promising areas for public-private research and innovation cooperation, given that they also coincide with two of the national research priorities.
- **Delays and inefficiencies in implementing strategies and programmes:** delays in the release of funding for support measures and insufficient staff capacity to effectively manage funds and programmes in new structures like ARTI, NAIS, and BRIC present major obstacles to the translation of strategy objectives into concrete results. These are among the most serious challenges being faced by the national research and innovation system and are hampering the realisation of the country's national strategy. Certainly, research and innovation could eventually come from the private sector, but in Albania, where the public sector (including public universities and research institute) continues to play the key role in funding and producing R&D, such implementation problems take on an even greater significance. The systemic problems of the public sector are also undermining Albania's credibility as an international partner, for example ARTI's role as an effective interlocutor in bilateral initiatives. *Public Administration Reform* is cited as one of the most important areas where Albania needs to improve, according to the Opinion

on Albania's application (November 2010) - this particularly regards absorption capacity of authorities and timely planning.

- Remaining **weaknesses in human resources development** are reinforced by slowness in achieving "brain circulation" and educating new researchers and PhDs in S&T fields. This is compounded by the need to educate and train an increasing number of knowledge workers in promising fields of the economy (energy, environment, agricultural biotechnology, ICT, etc). In the area of human resources, 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 to improve education and reward excellence, more needs to be done to attract students to S&T and engineering fields as well as to improve the employment prospects for graduates by specifically linking academic curricula to the needs of the real economy. University curricula need to be better oriented to training students to perform research that could be of interest to the private sector. Furthermore, there also needs to be improvement in the monitoring and evaluation of the university system in order to better understand the progress Albania has been making toward achieving international standard – a process that began with the adoption of the Bologna process. Again in the Global Competitiveness Report, while Albania is ranked a fairly high 45 for "quality of the educational system" and 42 for "quality of math and science education", it ranks only 100 out of 142 for "local availability of specialised research and training services."

The above-mentioned structural weaknesses all contribute to the fact that **international partnerships remain limited or in initial stages of development**. Due to weaknesses in system performance and limited qualified resources, Albania is still heavily reliant on foreign and international donor support rather than endogenous dynamics and partnership cooperation in development of key sectors. Albanian researchers need to accelerate the process to become true partners in international efforts rather than just recipients of support, and become able to produce and collaborate in knowledge production (scientific publications) and circulation (guest professorships, visiting researcher, etc). FP7 results have been improving slowly, but Albanian researchers could play much larger and more active roles by providing expertise in fields where they have particular expertise and competence; for example, Mediterranean agriculture and biotechnology; large hydropower, etc. The new IPA programmes (2011-2013) focusing on Environment and Climate Change and Agriculture and Rural Development also provide good potentials for developing Albania's research partnership capacities in these sectors. Given the lack of a full set of data for Albania to compare to the Innovation Union Scoreboard Indicators, it is difficult to make a meaningful assessment based on the IUS methodology at this point in time. However, even without such an assessment, it can be concluded that Albania would fall into the category of **modest innovators** (which includes Bulgaria, Latvia, Lithuania and Romania). Regarding the enablers used in the IUS assessment, there have been improvements in the supply of higher education with the establishment of new private institutions and in the efforts to improve the curriculum as well as encourage students to study in ST&E fields. However, in the *Global Competitiveness Report 2011-2012*, Albania ranks only 100 out of 142 in the world in terms of *efficiency enhancers* like secondary level education and 89 out of 142 in terms of tertiary education. In terms of the percentage of individuals using the Internet, Albania (45%) ranks above

Serbia (40.9%) and Romania (39.9%), but still below the levels of Bosnia and Herzegovina, Montenegro and Macedonia FYR. It would appear that in the areas of Internet and mobile telephony, Albania has made its most significant progress. This is also reflected in a high level of public sector innovation and procurement of high-technology products by different organs of the Albanian public administration. In fact, Albania ranks 58 in terms of “government procurement of advanced technology products” and is well ahead of neighbours including Serbia (92), FYR Macedonia (110) and Croatia (122), though well behind Montenegro (33).

3 Assessment of the national innovation strategy

3.1 National research and innovation priorities

Albania has adopted several key multi-annual strategies supporting the development of the research and innovation system and set up structures to implement them. These strategies are implemented against the overall context of the [National Strategy for Development and Integration \(NSDI\) 2007-2013](#),³³ which spells out the country’s development goals in a cross-sectoral approach. The strategies were formulated to address specific weaknesses as well as to develop certain perceived strengths enjoyed by the country.

The main priorities and policy developments of the past three years are outlined below:

- The multi-annual [National Strategy for Science, Technology and Innovation](#)³⁴ 2009-2015 adopted in **July 2009** is the main policy document outlining Albania’s research and innovation strategy. It was developed by the MES with support from UNESCO, in response to an assessment of Albania’s strengths and weaknesses, in particular its lagging position in Europe and the Balkan region. It spells out specific priorities and allocates public funding not only to research undertaken by public institutions, but also by private firms. It highlights **the importance of foreign funding in developing Albania’s innovation and research system**. The responsibility for managing funding programmes is to be transferred in large part from the MES to **ARTI**, which will act as an important interlocutor between the government, universities and private firms operating in priority sectors. The NSSTI introduced programmes and funds focused on improving the research infrastructure, expanding graduate and post-graduate programmes, and creating sustainable linkages between academia and the private sector. The Strategy **introduced competitive-based funding criteria** (competitive calls for projects or grant applications) into the main policy instruments. The NSSTI outlined specific targets for R&D (GERD reaching 0.6% of GDP by 2015), innovation (in 100 companies) and foreign cooperation funding (40% of GERD). While monitoring and evaluation mechanisms are foreseen for the funding programmes, most programmes have only just started or are about to begin, so that there are no concrete results yet.

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³³ A strategic document which combines country’s medium and long-term economic and social development objectives in accordance with EU integration and NATO agendas, as well as with Millennium Development Goals, approved by CoM Decision No. 342 dated 12.03.2008.

³⁴ The National Strategy for Science, Technology and Innovation reports all main figures in Euros.

- METE launched the [Business Innovation and Technology Strategy \(BITS\)](#) in 2010 and its respective Action Plan to implement the [Strategic Programme for Innovation and Technology Development of SMEs for 2011–2016](#) (approved February 2011) in 2011. Supported by a EuropeAid project,³⁵ it was recognised that Albanian firms' "technological capacity" to upgrade by absorbing existing advanced technologies is weak and that innovation is a firm-based process; however Albania did not have a specific and targeted strategic approach to business innovation and technological development, as this is only implied in the NSSTI. The BITS and its Action Plan are being implemented by the Business Relay and Innovation Centre (BRIC) that was set up within AIDA and became operational in June 2011. The BITS and its Action plan will be implemented by BRIC in cooperation with other stakeholders. Its main objectives are to develop innovation in key sectors; to initiate, import, modify and diffuse new technologies in enterprises; to increase the capacity of business-support organisations to assist in the innovation of enterprises; to assist directly with technical information; to assist enterprises to gain external funding for innovation activities; and to enable the creation and survival of new innovative firms. For this purpose, four main programmes / projects will be implemented in the period 2011-2016: 1) Innovation Fund; 2) Business Innovation Services; 3) Business Incubator Programme; and 4) Albanian Cluster Programme.

Several other currently active Strategies that complete the framework of the national innovation strategy, complementing the NSSTI, include:

- The [National Strategy for Higher Education](#) 2008-2013 increases university autonomy, seeks to strengthen links between research and higher education, increase international S&T cooperation, improve quality of teaching at university and masters levels, including doctoral/post-university studies; increasing students in science, mathematics and engineering (19% vs. approximately 25% in many countries in the region); and bringing PhD standards in line with those of the European Higher Education Area.
- The [Cross-cutting Strategy of Information Society](#) (2008-2013) emphasises the role of ICT as a driver of innovation in driving the modernisation of the economy, the public administration and improving access of citizens to information and public services. Since 2010 NAIS has engaged in an ambitious Information Society programme, starting with public administration informatisation and installing a modern high-speed telecommunications infrastructure. It is hoped that experience and knowledge gained in working with ICTs will stimulate endogenous innovation within the entities that use them and lead to a new generation of ICT innovators in both public and private sectors, as well as companies in other sectors that will be able to successfully exploit the capacity of these new systems in their business dealings. ICT has become a main driver of public sector innovation. The establishment of the PROTIK in October 2011 is a right step in the direction of promoting ICT innovation in public-private partnership.
- The [Sectoral Strategy on Employment and Vocational Training 2007 – 2013](#),³⁶ promoted by the Ministry of Labour and Social Affairs, supports instruments that

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³⁵ Supporting SMEs to become more competitive in the EU Market, Republic of Albania, EuropeAid/127727/C/SER/AL.

³⁶ Approved by the Council of Ministers, Decree Nr. 751, 7 November 2007

contribute to the enhancement of *social innovation*. Although the specific term “*innovation*” has not been used in the Strategy, 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.

Albania’s national research priorities for 2010-2012 are reflected in seven national research programmes managed by ARTI: Information Systems and Technologies (ICT); Agriculture (veterinary, zoo-technical), Food and Biotechnology; Social Sciences and Albanology; Biodiversity and the Environment; Water and Energy; Health; and Materials. The programmes address sectors considered important in ensuring sustainable development of the economy and society and addressing societal challenges such as access to food and energy, protecting the environment, demographic change (aging society, preservation of Albanian culture and identity) and stimulating growth and productivity to counteract high unemployment.

Finally, in the area of defence/security, an intensification of R&D activities is foreseen as part of the long-term Plan for the Development of Military Forces 2020 and Albania’s involvement in NATO’s Science for Peace Programme. National priorities in the NATO Programme include Environmental Security, Information Technology, Forecasting/Prevention of Catastrophes, Food Security, Biotechnology/Bioscience and Human and Societal Dynamics.

Matching of priorities with actual problems

Regarding the matching of national priorities with actual problems, in the case of Albania, it can be stated that in general the necessary strategies, implementing agencies and programmes/measures have been introduced. The problems affecting Albanian society and the weaknesses in the research and innovation system, including the human resources dimension, have been identified and dedicated policies have been presented. In some cases, for example business innovation, the strategy and agency have only been launched in 2011. As will be discussed in section 3.3, the main problems are not a lack of identification of problems or the absence of strategies, programmes and agencies, rather their implementation in order to bring about the desired results. Below is an overview of how the Albanian policies seek to address the structural challenges identified in chapter 2.

- **low level of innovation and performance in the national research and innovation system:** The NSSTI designates competitive funding for research and related initiatives, aimed at raising GERD from 0.2% of GDP in 2009 to 0.6% of GDP in 2015, promoting innovation in 100 companies and raising foreign funding of R&D to 40%. A series of reforms of research and education structures have been made and new agencies (ARTI, NAIS, BRIC) set up to promote better research and innovation performance. ARTI was set up to improve the capacity to engage in international cooperation. The new IPA programmes (2011-2013) focusing on Environment and Climate Change and Agriculture and Rural Development also provide good potentials for developing research cooperation in these sectors with international partners.
- **Lack of reliable and comparable statistics on R&D and innovation:** The NSSTI recognises the weaknesses of the system for collection of statistics and **introduces evaluation and monitoring procedures** that are to be used by MES and ARTI as well as other relevant ministries. INSTAT, the national statistical institute has undertaken various capacity building measures. A first survey of public and

academic institutes was launched in 2011 and a business R&D and innovation survey is under way, both supported by UNESCO. Some new data for 2007 and 2008 have already been reported.

- **Limited cooperation between universities and public research institutions with the private sector.** The National Technology Programme and Albanian Centres of Excellence in Science (ACES), managed by ARTI, are aimed at promoting public-private research cooperation. The intellectual property protection framework has been improved and an organisation (ALPTO) set up. However, the fiscal system still does not comprise subsidies and tax incentives to stimulate companies to engage in R&D, and there is no legislation requiring foreign investors to perform R&D in Albania. In the ICT sector, the new PPP PROTIK³⁷ aims at improving cooperation between private companies, the public sector and academia through networking and awareness-raising events and workshops.
- **Delays and inefficiencies in implementing strategies and programmes:** while the new agencies were set up to facilitate implementation of the Strategies, substantial investments need to be made to improve the absorption capacity of authorities and timely planning. IPA Assistance supports Public Administration Reform which should cover the new agencies that will implement the strategies supporting innovation. The monitoring systems of the NSSTI and BITS also need to be activated in order better understand where improvements in implementation can be made.
- **Weaknesses in human resources development** are addressed in the Higher Education Strategy and programmes such as Brain Grain and Excellence Fund. Further “brain circulation” will build capacities of Albanian researchers to act as effective partners. Further application of the Bologna Process in universities should improve harmonisation with European standards. The Strategy on Employment and Vocational Training 2007-2013 focuses on orienting training to company needs.

3.2 Trends in R&D funding

UNESCO estimates indicate that Albania’s GERD in 2008 was 0.15% of GDP and totalled \$40.2 million (around €27.34m³⁸) in terms of PPP\$, while the amount in local currency was reported as 1,665,5m ALL (around €13,651m³⁹). GERD per capita was \$12.6 in PPP\$ (€8.56), representing 1.8% of the EU-27 GERD per capita of €481.60 recorded in 2008. The lion’s share of R&D funding (80.8%) came from the state budget, 8.6% from higher education, with only 3.3% from business enterprises. Around 7.4% of GERD was funded from abroad. The [*National Strategy of Science, Technology and Innovation*](#)⁴⁰ 2009-2015

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³⁷ A public-private partnership between the Albanian-American Development Foundation (AADF), the Government of Albania, USAID, Microsoft Albania, Hewlett-Packard, Cisco and Albtelecom sets up Albania’s first ICT training and resource centre to support development and use of ICT innovations for SMEs, support entrepreneurship and partnership, including with academia and the public sector.

³⁸ Source: European Central Bank, ECB reference exchange rate, US dollar/Euro equal to \$1,4708/€1, 2008 data.

³⁹ Source: Bank of Albania, Euro/ALL exchange rate for 2008 is 1 Euro = 122 ALL (average estimation).

⁴⁰ The National Strategy for Science, Technology and Innovation reports all main figures in Euros.

states that GERD was close to €15 million in 2009,⁴¹ accounting for less than 0.2% of GDP.⁴² Under the Strategy, GERD is to increase to 0.6% of GDP by 2015.

UNESCO⁴³ also reports that GERD funded by business enterprises totalled 13.1m ALL in 2007 and 54.3m ALL in 2008 (\$0.308m and \$1.311m in current PPP\$, respectively, or approximately €0.225m in 2007⁴⁴ and €0.891m 2008⁴⁵). This is the first standardised *indicator of the size of BERD* in the country—other estimates suggest that the ratio of gross business enterprise expenditure on RTD to GDP is around 0.0025%.⁴⁶

The table below reflects the limited data available on the funding and performance of Albanian R&D. Eurostat does not yet report the respective data on Albania.

Table 1: Basic indicators for R&D investments in Albania

| | 2008 | 2009 | 2010 | EU average 2010 |
|---|---|-------|-------|-------------------|
| GDP growth rate | 7.5% | 3.3%p | 3.9%p | 2,0 |
| GERD as % of GDP | 0.15 | 0.2 | 0.2 | 2.0 |
| GERD per capita | \$12.6 ⁴⁷ (€8.56) ⁴⁸ | N/A | N/A | 490.2 |
| GBAORD (€ million) | N/A | N/A | N/A | 92,729.05 |
| GBAORD as % of GDP | N/A | N/A | N/A | 0.76 |
| BERD (€ million) | 54.3m ALL / \$1.3m current PPP\$ (ca. €0.891m ⁴⁹) | N/A | N/A | 151,125.56 |
| BERD as % of GDP | | N/A | N/A | 1.23 |
| GERD financed by abroad as % of total GERD | 7.4 | N/A | N/A | N/A ⁵⁰ |

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⁴¹ Council of Ministers, Department of Strategy and Donor Co-ordination, National Strategy of Science, Technology and Innovation 2009 - 2015, June 2009, Source: http://www.dsdc.gov.al/dsdc/pub/national_strategy_of_science_technology_and_innovation_final_draft_381_1.pdf

⁴² 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

⁴³ [Beyond 20/20 WDS - Table View](#)

⁴⁴ Source: European Central Bank, ECB reference exchange rate, US dollar/Euro equal to \$1,3705/€1, 2007 data.

⁴⁵ Source: European Central Bank, ECB reference exchange rate, US dollar/Euro equal to \$1,4708/€1, 2008 data.

⁴⁶ Estimates from discussions with MES officials, 2011

⁴⁷ UNESCO Institute for Statistics reports \$12.6 GERD per capita in PPP\$.

⁴⁸ Source: European Central Bank, ECB reference exchange rate, US dollar/Euro equal to \$1,4708/€1, 2008 data.

⁴⁹ Source: European Central Bank, ECB reference exchange rate, US dollar/Euro equal to \$1,4708/€1, 2008 data.

⁵⁰ 8.4 (2009), 9.04 (2005)

| | 2008 | 2009 | 2010 | EU average 2010 |
|---|------|------|------|--------------------|
| R&D performed by HEIs (% of GERD) | 47.9 | N/A | N/A | 24.2 |
| R&D performed by PROs (% of GERD) | 52.1 | N/A | N/A | 13.2 |
| R&D performed by Business Enterprise sector (as % of GERD) | N/A | N/A | N/A | 61.5 |

Sources: 2011 Albania Progress Report, UNESCO

<http://stats.uis.unesco.org/unesco/ReportFolders/ReportFolders.aspx>, Eurostat

The NSSTI foresees that total cumulative funding for research activities during 2009-2015 will amount to €151.95m, including funding to HEI research institutes (€69.45m), MES research project funding (€30m), World Bank Research Infrastructure funding (€3.3m) and funding for the operation of ARTI (€3.25). The largest share (46%) is to be allocated to higher education research institutes—with the actual final share being much higher, given that universities can participate in National Technology Programmes and will benefit from the Research Infrastructure Fund. The budget shares take into account bilateral and multilateral donor support (including future IPA funds), but not contributions gained via participation of Albanian researchers or institutes in the EU's FP7 or other EU level research funding programmes.

Albania's public sector R&D activities are financed directly⁵¹ by the state budget, national programme financing through the MES, programme funding under bilateral programmes, and international collaboration. Since 2010, the main public research programmes are coordinated by 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)." There was a change in the system for implementing research funding with the *introduction of national programmes with three-year cycles and reduction of the number of priority fields* to seven-funds allocated for the sectorally-oriented national programmes total €2,762,987.50 for 2010-2012. The budget and priorities for the next phase of national research programmes are being developed in the process linked to the definition of the **National Strategy for Development and Integration 2013-2020**, which plays a role in defining new priorities for research.

While not specifically aimed at R&D, funding for innovation initiatives under the [Business Innovation and Technology Strategy \(BITS\)](#) 2011-2016 totals €10.31m, of which €4.8m is dedicated to the *Innovation Fund* which awards grants to SMEs for *product development and process improvement* through technology adoption, among other types of support. BITS is to be mainly funded by foreign donors (€7,893m or 76.5% is expected from the EU and other donors).

Other financial instruments supporting R&D in Albania include 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 levels. However, there are as of yet there are no specific budgetary data published on these modes of funding R&D in Albania. The NSSTI seeks to achieve 40% international funding of GERD by 2015—which can come from EU, other international donor or private investment sources. UNESCO reports the share of GERD funded from abroad as 12% in 2007 and 7.4% in 2008. The results from

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⁵¹ 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)

FP6/FP7 data suggest that European funding remains a marginal, if growing, contribution to the national research system. Albania is also participating in the Competitiveness and Innovation Framework Programme (CIP) in the period 2007 -2013. Albania is eligible for EIP, the first pillar of the CIP, but it is not yet participating in the Enterprise Europe Network or the EIP's financial instruments.⁵²

3.3 Evolution and analysis of the policy mixes

Beginning in 2006, Albania implemented a substantial restructuring of its R&D and innovation system and adopted a new policy mix, after emerging from a closed and centralised system where all research and academic activities were under public control. Within the framework of Albania's membership in the NATO and the EU Accession process, the required high rates of socio-economic development necessitated strengthening the role of science, technology and innovation.⁵³ Despite the adoption of the country's first research and innovation strategy nearly three years ago in July 2009 and the adoption of a National Strategy of Higher Education in 2008 as well as other multi-annual Strategies, Albanian society as a whole has only recently started to recognise the role of R&D and excellence in education and training in ensuring further economic growth. Businesses still tend to simply import better products from abroad and hire foreign staff for temporary jobs. Albanian companies have yet to fully appreciate the impact that increased research could have on their own business. While the brain drain has slowed down in recent years, thanks in part to initiatives like Brain Gain and the Excellence Fund and the impact of the economic crisis in the key emigration destinations (Greece, Italy), jobs outside Albania are often more attractive to researchers in terms of pay and advancement possibilities.

In this context, among the most important developments in recent years is the increasing emphasis on the role that must be played by the business sector, not only in generating output (i.e. GDP growth), but in driving innovation and competitiveness in the country. The government had effectively promoted pro-business and -investment policies, which were successful in attracting large amounts of FDI since 2006, though the technological level of such investments remains relatively low, constrained by the availability of adequately skilled workers and low levels of productivity. In the context of EU-Enlargement, it was recognised that Albania must increase its competitiveness and ability to respond to emerging national and international challenges by improving its research and innovation system, or remain a backwater on the periphery of Europe. While this was first recognised in the NSSTI in 2009, in 2011 the BITS was launched and the BRIC was established to improve SME innovation, though it is still too early to determine the effectiveness of the "business innovation" approach.

Among the most important recent policy developments was the 21 December 2011 meeting of the Strategic Planning Committee, an inter-ministerial group chaired by the Prime Minister and responsible for making decisions about policy and fiscal priorities of the Albanian Government and ministerial review plans for the implementation of such priorities. At this meeting, it was decided to launch the process of drafting **the new National Strategy for Development and Integration 2013-2020 (NSDI)**. At its core is

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⁵² WBC-INCO.NET "Innovation Infrastructures: Albania" (FINAL VERSION), 22 July 2011, pg. 26.

⁵³ 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/>

the idea that "everything is in function to complete the Albanian integration process into the European Union, and therefore the NSDI will address all the problems of the respective Action Plan and the strategic issues of the European Commission reports."⁵⁴ Some of the main priorities on which the new NSDI will focus are: **Albania – a developed country; an integrated country; Digital Albania, Open Government.** Knowledge has been stated as the main pillar of the country's development. The Strategy also seeks to reflect the fact that Albania seeks to build its ICT sector and support development of ICT skills among young entrepreneurs in order to increase the competitiveness of businesses.

Regarding the policy mix, it could be stated that **Albania has put its main strategies in place and identified the structural challenges and priorities for development of the R&I system.** The formulation of the strategies was supported by donor organisations working closely with relevant ministries and stakeholders to improve linkage between policy and real needs. On the other hand, as indicated in chapter 2, among the most important structural challenges in the realisation of the strategies have been the delays in funding of programmes and still inadequate staff capacities to effectively manage initiatives. Furthermore, while UNESCO statistics are now available for 2007 and 2008 and the NSSTI reports limited data for 2009, more recent data in order to track research and innovation developments over the last three years are not available in a standardised and comparable form—thus making it difficult to determine whether there has been any progress, where it has occurred and how Albania compares to other countries in the EU and the Balkan region. This also makes it difficult to understand if private sector R&D has indeed increased as a result of NSSTI programmes. Only when monitoring and evaluation feedback become available it will be possible to assess impact of the Strategy. Regarding the lack of university/public research institute cooperation with private firms, this is supposed to be addressed by ARTI and several NSSTI programmes, but again due to funding delays and problems in implementing programmes, there may need to be other measures such as tax incentives for private firms or subsidies for university researchers to more effectively overcome this structural weakness.

3.4 Assessment of the policy mix

The Albanian policy mix has generated mixed results in facing the structural challenges that were identified. It still has substantial progress to make in transitioning from an "efficiency-driven" economy to an "innovation-driven" economy, as indicated by higher levels of innovation and performance indicated by R&D levels, tertiary education in STE fields, HRST employment and the number of innovative SMEs and cooperation between public, higher education and private research performers as well as partnerships in international projects. As indicated in CR2010 and the TrendChart Integration report on Albania, major weaknesses remain in framework conditions for private investment in R&D and private-public cooperation and knowledge transfer. These are compounded by unattractive employment conditions for researchers, lack of effective mechanisms for monitoring and evaluation (though spelled out in the NSSTI) in order 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.

Improving level of innovation and R&D performance

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⁵⁴ CoM meeting, 21 December 2011, Prime Minister Declaration

Private sector innovation : The NSSTI objective to increase innovation in 100 private companies either through investment in own R&D or in partnership with academic research institutions or foreign partners is to be realised with the support of new structures (ARTI, BRIC, NAIS) that were set up to cooperate with the private sector in research and innovation initiatives. However, in order to effectively deliver results, the agencies need to closely collaborate with companies and focus on two types of innovation- *research and business driven*-linking potentially exploitable R&D results and innovative business opportunities. In order to gradually increase cooperation amongst the various elements of the “Innovation system,” it will be important to work with organisations representing specific sectors of the economy to enable them to motivate and raise awareness of their member firms about innovation.

BRIC is the main body for coordinating and delivering business innovation and technology services and initiatives for SMEs. It is also a representative organisation for Albania in the EU-funded competitiveness, innovation, and technology focussed programmes and initiatives, and functions as the executive body for the implementation of the BITS. However, it has only started operating in the summer of 2011. It remains to be seen how effective its innovation measures and structures will be in increasing private investment in R&D. Previous experiences with cluster initiatives (which are also now being promoted by the BRIC) were not successful.

There are some areas of the policy mix to promote private R&D that still need to be addressed. While there are no restrictions on private investments in R&D, the *policy framework still lacks incentives for such investments*. In addition, the business sector needs to be stimulated to upgrade its capacity to cooperate with research institutions and commercialise the results of research carried out nationally, as well as bringing its technologies up to international standards through purchase of advanced machinery, including related organisational change and training. In this respect, EU IPA funding should be mobilised wherever possible and access for Albania to the Competitiveness and Innovation Programme (CIP), including Enterprise Europe innovation in enterprises, will play an important role.

Promotion of innovation in the public sector, mainly in ICTs, has been a key priority in the policy mix. Over the past decade, the Albanian Government has focused on ICT as a main driver of economic, political and social development, evolving from a low-tech, inwardly looking state to a potential regional leader in e-Government, and connectivity, particularly as major infrastructural investments are being made. The establishment of PROTİK as a PPP between the Albanian Government, the Albanian-American Development Foundation (AADF) and various private ICT companies and Albacom represents an important step in the development of the potential for further public sector innovation and for development of innovations in the Albanian private sector.

However, while there have been significant efforts to introduce innovation in public sector services (i.e. procurement, taxes, e-government, etc), there appears to be a lack of consistency between supply and demand-side policy developments. The sophisticated services introduced may not always be the ones that are most urgently needed and large segments of the target group may be unable to use them (people in rural villages without broadband access, older people who have limited ICT skills, foreigners and linguistic minorities, etc).

Improving cooperation between universities and PROs with private sector

ARTI is the main structure aimed at such cooperation; however the funding for the programmes ACES, National Technology Programme has not been released yet, so these efforts are still on hold. BRIC might have more luck in developing such cooperation, given

that it is co-funded by the EU SME project and it has contacts with the relevant stakeholders in the Business Innovation and Technology Strategy Development Group (BITS DG) which includes representatives from METE, AIDA, ARTI, ASA, the RDA network and the Chamber of Commerce and Industry of Tirana.

Incentives to universities to set up science parks or develop spin-offs and technology transfer centres could help stimulate cooperation with private companies, as would setting up stage programmes for students.

Improvements in implementing strategy and programmes

Capacity building initiatives under the IPA programmes for Public Administration could play a key role in improving the capacity of agencies that are supposed to realise the strategies. However, delays in funding usually require solutions that are beyond the scope of this assessment (political stalemate, budget problems, etc) and cannot be resolved with the policy mix alone. The disconnection between policy mix and policy implementation is not necessarily a problem of the policy itself, but its environment.

Improving human resources capacity

Training and university education need to be more closely linked to the priorities within the NSSTI, in particular by building relevant basic skills and encouraging those enterprises with technological know-how or R&D capacity to work together with higher education institutes in defining both undergraduate curricula and post-graduate industrially relevant research. Furthermore, the establishment of stages for university students/graduates in STE in companies that are seeking to innovate could be mutually beneficial by building synergies between higher education and business needs.

Statistics to assess progress

Finally, the capacity to collect statistics and data in areas related to innovation from the private sector is being slowly developed, but it must be updated and expanded in order to have available data that will allow timely and relevant comparisons to be made with other countries. Given that some of the neighbouring countries are already covered by the Innovation Union Scoreboard assessments, it would be helpful if these IU assessments were also extended to Albania.

Table 2: Policy measures and assessments

| Challenges | Policy measures/actions ⁵⁵ | Assessment in terms of appropriateness, efficiency and effectiveness |
|--|---|--|
| Implementation of R&D and innovation strategy—translating policy into concrete action | NSSTI Cross-cutting Strategy for Information Society Strategy for Higher Education Reorganisation of research system Setting up of ARTI, NAIS, BRIC | NSSTI set goals for increasing R&D and introduced various funding programmes and measures with a budget for the period 2009-2015. Education system reforms undertaken, reorganisation of ASA, public research centres strengthened university research capacities. Structural weakness of institutions and actors which are supposed to implement policy due to inadequate staffing, slow transfer or non-availability of funding. Political stalemate Setting up of institutions such as ARTI, NAIS, and BRIC to coordinate research programmes and funding for research has led to an improvement of overall public research and coordination mechanism. |

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⁵⁵ Changes in the legislation and other initiatives not necessarily associated with funding are also included.

| Challenges | Policy measures/actions ⁵⁵ | Assessment in terms of appropriateness, efficiency and effectiveness |
|---|---|---|
| Increasing innovation of business sector | BITS Setting up of BRIC | Positive imitative to boost innovation in business sector and the development of a knowledge transfer. Low absorption capacities of the business sector and the dominance of the low tech sectors in the structure of economy |
| Developing human resources | Strategy for Higher Education Brain Gain | The Excellence Fund and Brain Gain programme were set up, respectively, to promote excellence in graduate studies and to support the return of Albanian researchers to the country. It has significantly improved circulation of youth, researchers, students and professors between Albania and the EU. In the current academic year (2011 - 2012) the open calls from the Excellence Fund have invited the participation not only of resident Albanians, but also ethnic Albanian researchers from Kosovo and FYR Macedonia, and the Albanian diaspora. There are 67 beneficiaries in 2011 – 2012 who are able to study in 15 of the best universities in the world. The goal of the programme for this year is not only to improve the quality of provided education, but to increase the number of Excellence Fund beneficiaries to 300 by 2013. In 2004-2005, the country had 12 students per one thousand inhabitants, and this year (2011 – 2012) Albanian has 49 students for a one thousand inhabitants, of 40 students which is the average of the European Union. ⁵⁶ |
| Improving cooperation between universities, research institutes and business | NSSTI/ Albanian Centres for Excellence (ACES) National Technology Programme | While the strategy identifies the weaknesses in the Albanian system in terms of cooperation between academia, research and businesses and sets up programmes to facilitate such linkages, there have been delays in launching and funding the programmes. So far none of the ACES have been formed and there have not yet been any competitive calls for the National Technology Programmes. |

4 National policy and the European perspective

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

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⁵⁶Prime Minister declaration during the ceremony of Excellence Fund diploma awards for 2012: Available at: <http://lajme.shqiperia.com/lajme/artikull/iden/1047162744/titulli/Kryeministri-Berisha-Fondi-i-Ekselences-dhe-programi-Brain-Gain-dy-mekanizma-te-fuqishme-per-konsolidimin-e-softit-perendimor-te-kombit-shqiptar>

research (targeted to increase from 0.2% to 0.6% of GDP), reorganising and strengthening research institutions, including those now integrated with the universities, and strengthening international co-operation 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.

Internationalisation and integration into ERA and the building of national competences are mutually reinforcing. Albania is committed to playing as full a part as possible in European level research programmes and initiatives, in line with its financial means and strategic interests, and promoting participation of Albanian researchers in the EU's Research Framework Programme and integration into other European research initiatives (COST, EUREKA, etc). In the National Strategy of Science Technology and Innovation, international and particularly EU cooperation programmes are planned to play a major role in the development of the country's R&D system. Yet in fact, there is **still a heavy reliance on foreign and international donor support** rather than on endogenous dynamics and cooperation in development of key sectors.

Overall, as stated in the 2011 Albania Progress Report (October 2011), Albania has made substantial positive progress in increasing research cooperation with the EU and other stakeholders. With the establishment of [ARTI](#), the necessary administrative capacity to participate in FP7 has been improved. On the other hand, there remains a need to strengthen the research capacity at the national level through efficient measures. Concerted efforts are required in order to facilitate Albania's integration into the European Research Area by, amongst others as mentioned, increasing public and private sector investment in research and strengthening human capital so that Albanian partners (public and private) are in a better position to engage in projects and in competing with the other countries in South Eastern Europe.

Table 3: Assessment of the national policies/measures supporting the strategic ERA objectives (derived from ERA 2020 Vision)

| | ERA dimension | Main challenges at national level | Recent policy changes |
|---|--------------------------------------|--|--|
| 1 | Labour Market for Researchers | --Limited qualified research 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. | Brain Gain programme continues, Programme to set up 4-5 Albanian Centres of Excellence in Science bringing together a minimum of 20 researchers each. PROTIK should improve conditions for ICT researchers |

| | ERA dimension | Main challenges at national level | Recent policy changes |
|---|---|---|--|
| 2 | Cross-border cooperation | <p>--Underestimation of need to involve foreigners in research and innovation --few or no measures to attract them.</p> <p>--Lack of international programmes support for foresight studies and process prioritisation</p> <p>---Need to internationalise RTD activities—increase participation in ERA</p> | <p>ARTI became a member of the Central and South-Eastern Europe Network for Research Innovation and Business</p> <p>ARTI also became a member of the European Association of Research Managers and Administrators (EARMT).</p> <p>As part of the European Research Infrastructure Consortium (ERIC), Albania is establishing the LIFE-WATCH national centre.</p> |
| 3 | World class research infrastructures | <p>--Lack of ongoing scientific activities (e.g. conferences, journal production etc.) in many sub-structures of research institutions and lagging development of private sector research infrastructure.</p> <p>--Gaps in knowledge base in technical disciplines and need to improve physical RTD infrastructure.</p> | Research Infrastructure Fund |
| 4 | Research institutions | <p>--Level of research in higher education institutions is not at international standards;</p> <p>--Imbalance between basic, interdisciplinary, and applied research,</p> | <p>Strategy of Higher Education</p> <p>Albanian Centres of Excellence in Sciences (ACES) programme</p> |
| 5 | Public-private partnerships | <p>-- Limited to ICT sector with little PPP diffusion in economy.</p> <p>--Difficulties in forming viable partnerships between public research performers and private sector made up mostly of SMEs operating in non-technical fields.</p> <p>-- Private sector weaknesses in absorbing or creating knowledge.</p> | Establishment of PROTIK (Oct. 2011) a PPP in the area of ICT |
| 6 | Knowledge circulation across Europe | <p>--Underestimation of need to involve foreigners in research and innovation --few or no measures to attract them.</p> | National Technology Programme can include foreign participation |

| | ERA dimension | Main challenges at national level | Recent policy changes |
|---|---------------------------|---|--|
| 7 | International Cooperation | <p>--Still low participation and success rate in FP7 projects.</p> <p>--Lack of international programmes' support for foresight studies and process prioritisation</p> <p>--The amount of investment in research continues to be difficult to monitor due to the lack of reliable statistics on science and technology.</p> | <p>NSSTI (2009) calls for 40% foreign funding of R&D</p> <p>Albania has nominated its observer delegates to all the ERA governance bodies.</p> |

Annex: Alignment of national policies with ERA pillars / objectives

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*

1.1 Supply of human resources for research

Recent studies indicate that Albania is considered to be at a crucial stage of development of its human capital. The past decade has been characterised by the increasing return of considerable numbers of people qualified abroad. This has increased the necessity to create an environment that adequately provides development opportunities to them, therefore requiring transparent recruitment mechanisms, adequate training, attractive employment packages and career prospects. Considering that since 2006-2007 there have been good initial experiences with the implementation of pilot programmes and new initiatives for the reintegration of qualified returnees, such as the Brain Gain Programme and Excellence Fund, many believe that it is time to invest in more comprehensive and long term policy in this regard. A recent policy paper⁵⁷ notes that “despite difficulties encountered, there is a strong desire to live and develop a professional career in Albania of high skilled Albanian returnees.” The vast majority of high skilled returnees consider “as good, very good and even excellent the decision to return (approx. 79%). Also, most of them see themselves in Albania in five years time”⁵⁸ (this survey refers to all disciplines of human resources, not only researchers). In this context, an increased confidence has been noticed in the Albanian market, where in some occasions, “companies are replacing expatriate staff with Albanian ones to cut costs, but also because now there is domestic professional staff fit to cover those positions.”⁵⁹

1.2 Ensure that researchers across the EU benefit from open recruitment, adequate training, attractive career prospects and working conditions and barriers to cross-border mobility are removed

International mobility seems to be conceived mainly as a one-way process (i.e. outward flow of resources from Albania), as long as few or no measures are foreseen to allow Albania to compete with other countries in the region and attract foreign researchers, recognising the support and best practice experiences they could provide. At present, knowledge resource inflows are mostly limited to consultancy services provided by researchers and international consultants working for the World Bank, EBRD and UN organisations in Albania. Therefore, there is a need to identify the right instruments to make Albanian universities and research institutes more attractive to foreign academics. So far, internationally funded programmes are providing some application opportunities for the SEE countries, including Albania, to develop “brain circulation” in the form of academic exchanges and fellowships for returning scholars.

1.3 Improve young people's scientific education and increase interest in research careers

In order to improve the opportunities for young people to gain access to scientific education and to promote research careers, the admissions quotas in Albanian public institutions of higher education have been increasing progressively from one year to another.

For the current academic year 2011 - 2012, the student quota for part-time second cycle “Masters studies” is 1370. Of the study places designated to specific fields of study, 900 are in the Social Sciences and 330 in the Economic Sciences. All of the Social Sciences study places are allocated to the Faculty of Teaching in two regional Universities (Elbasan and Korca), and 80 of these study places are designated for “Teaching of Literature and Albanian Language.”⁶⁰ Furthermore, it has been announced that excellent students from the

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⁵⁷ European Movement of Albania (EMA), Policy Paper ‘Is the Return Worth It? – On the reintegration of the high skilled returnees in Albania’, December 2011 (www.ema-al.org)

⁵⁸ European Movement of Albania (EMA), Policy Paper ‘Is the Return Worth It? – On the reintegration of the high skilled returnees in (Albania)’, December 2011 (www.ema-al.org)

⁵⁹ European Movement of Albania (EMA), Policy Paper ‘Is the Return Worth It? – On the reintegration of the high skilled returnees in Albania’, December 2011 (www.ema-al.org)

⁶⁰ http://www.qpz.gov.al/botime/fletore_zyrtare/2012/PDF-2012/2-2012.pdf

first year of study are exempted from paying school fees for the following academic year. Since “social sciences and Albanological studies” are among the national research priorities for 2010-2012, higher student quotas can build eventual research and teaching capacity in these fields.

Also, during the current academic year, the student quota within the study programmes of Master of Science and Master of Fine Arts has increased by around 300 new places. Thus, the previously approved level of 6676 study places has risen to a total of 6966 places. Of these, 50 places are available for foreign citizens (native Albanian speakers). The management of the quotas for native Albanian speaking students is undertaken on the basis of bilateral agreements between Albania and the respective countries and the policies of the Ministry of Education and Science of the Republic of Albania.

With regard to PhD study programmes for the academic year 2011 – 2012, the admissions quota has been increased to 1367 in public universities. Admission quotas are allocated to 1203 candidates from Albanian state territory and 164 candidates from other countries that have native Albanian speakers.⁶¹

1.4 Promote equal treatment for women and men in research

In terms of human resources in Albania in the field of academia and research, the latest assessment⁶² from 2011 shows that at research levels lower than professor, women play an important role (at least in numerical terms):

- Researchers with the title (Prof.) – 682 (152 women, 22%)
- Researchers with the title (Prof. Ass) – 544 (180 women, 33%)
- Researchers with the title (Dr) – 1326 (719 women, 54%)
- Doctor of Scientific Research – 269 (181 women, 67%)
- Master of Scientific Research – 61 (43 women, 70%)
- Assistant of Scientific Research – 12 (7 women, 58%)

It would appear that it is more difficult for the women to gain professor status, which cannot be explained by the lack of women with doctoral/PhD degrees. There are no particular incentives to boost female participation in research, but under Albanian law women have equal access opportunities to both education and public research positions. According to official statistics, there is a higher percentage of female than male students pursuing higher education in general. The total number of students who were enrolled in the higher education institutes in the country (both public and private) during the academic year 2009 – 2010 was 116,292. Of these, 64,130 were female students and 52,162 were male, showing about 10% higher female than male participation in the higher education system.⁶³

2. Facilitate cross-border cooperation, enhance merit-based competition and increase European coordination and integration of research funding⁶⁴

Albania’s international cooperation in research and development takes place mainly in the form of bilateral, as well as EU and UN programmes. The Ministry of Foreign Affairs is in charge of signing new intergovernmental agreements on science and technology.

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⁶¹ Albanian Council of Ministers, Available at: <http://www.keshilliministrave.al/index.php?fq=brenda&m=news&lid=15492>

⁶² WB-INCO-Net, ‘Albania Progress Report: On recent developments regarding science and technology cooperation in/with WBC’, May 2011 – December 2011.

⁶³ INSTAT (Albanian Institute of Statistics), Education Data, ‘Registered Students in Albanian Universities per Gender, 2009 – 2010, Available at <http://www.instat.gov.al/>

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- Promote more critical mass and more strategic, focussed, efficient and effective European research via improved cooperation and coordination between public research funding authorities across Europe, including joint programming, jointly funded activities and common foresight.
- Ensure the development of research systems and programmes across the Union in a more simple and coherent manner.
- Promote increased European-wide competition and access of cross-border projects to national projects funding.

Albania is participating in the work of the European Research Area Committee (ERAC) and has nominated a delegate observer to the Standing Committee for Agricultural Research (SCAR). It has also been invited to nominate delegate observers to the different ERA governance bodies. International cooperation, particularly with EU partners, is high on the national agenda. Albania is actively participating in several regional projects with the other Balkan countries and has recently concluded science and technology agreements with several neighbouring countries and other international partners. FP7 is EU's main instrument for funding research in Europe and it will run from 2007 to 2013. Albania became associated with FP7 in 2008. Two FP7 instruments are particularly important for SEE countries: INCO-NETS and ERA-NETS.

3. Develop world-class research infrastructures (including e-infrastructures) and ensure access to them

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 the development of communication networks and IT systems. Major projects are co-financed by the EIB, along with other international financial institutions, such as the World Bank, which has also funded the equipping of teaching laboratories. At present Albania is actively working on a reform of science and research statistics to comply with EU criteria. The establishment of a specific fund, known as the Research Infrastructure Fund, will help to improve the quality of the equipment and facilities available. Two programmes, 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. This goal is to be achieved through the financial support of the institutions with graduate/doctoral programmes as well as funding of individual researchers and projects.

4. Strengthen research institutions, including notably universities

Over the last couple of years, the amendments to the Law No. 9832 on the 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 a university. Each faculty has the right to coordinate its own teaching process and its research. The masters degree programmes established in each faculty offer first and second level master courses (according to the Bologna Chart). The second level master is considered a research programme, given that one of its key components is research. PhD programmes in Albanian universities are identified in the law as the third level of study, and are fully considered to be three-year academic research projects conducted under supervision. The initiative to progressively increase admissions quotas for Master and PhD students, now also extended to non-Albanian citizens, represents an important attempt to promote research in Albanian universities and strengthen their research capacities.

Universities and scientific research centres will be connected to the GEANT network, and all the universities of Tirana will use a high-speed fibre network, which will connect all faculties. The Italian Office for Development is currently coordinating a project with MES to establish a telematic network for public universities, which will allow inter-university information exchange in all areas as well as research collaboration. Another form of support to universities is in easing their fiscal obligations, as all private universities are exempted from paying VAT. This is the first specific attempt by the government to ease financial conditions for the institutions of higher education, allowing them not to pay VAT on professors' and researchers' salaries, thus functioning as an indirect incentive for research careers. Much work still needs to be done to promote R&D performed by higher education institutions, though this was announced as a priority by the government.

5. Facilitate partnerships and productive interactions between research institutions and the private sector

The establishment of ongoing cooperation between academia and the private sector is another important goal of the NSSTI. The two main elements of this are the creation and development of Albanian Centres of Excellence in Science (ACES) and setting up of the Business Relay and Innovation Centre (BRIC). The former will support the creation of four to five centres of excellence in order to 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 to channel the inflow of funds from the main donors and counterparts. They should also help in bringing together the academic research institutes with the private sector in order to develop a medium-term programme of applied research for mutual benefit. The ACES have not yet been established, although it was planned to set up two during the period 2011 – 2013, with a total of four ACES centres to be set up through 2014 (as per priority of the NSSTI).

6. Enhance knowledge circulation across Europe and beyond

There are no specific measures/policies aimed at making a career in science, technology and engineering more attractive in Albania, but there are efforts to improve the conditions for networking and knowledge exchange of researchers. Concrete examples are SEEREN and SEEREN2, which connect the national research networks in education in the Balkans with the pan-European network of research in education GEANT. The SEE_GRID and SEE_GRID2 projects are aimed at the transfer and development in the Southeast European region of project results in GRID technologies as an important component of the European Research Area (ERA). A new project funded by the Italian Government to establish a National Academic Network (Research in Education) in Albania is also expected to be of high importance.

Regarding inflows of knowledge resources into Albania, there are no particular reported barriers to accessing the labour market for EU researchers. On the other hand, there are also no particular incentives for EU and third country researchers to come to Albania (other than those aimed at Albanian émigrés and native Albanian speakers). Therefore, there is a need to develop instruments to make Albanian universities and research institutes more attractive to foreign academics. So far, internationally funded programmes are providing some application opportunities for the SEE countries, including Albania, to develop brain circulation in forms of academic exchanges and providing fellowships for returning scholars.⁶⁵ Participation in international projects funded by the EU or NATO, joint publications and attendance in conferences are among the principal avenues for knowledge circulation. Over the past few years research cooperation and information exchange within the Western Balkan region has increased thanks to the WBC-INCO.NET, an FP7-funded project operating during 2008-2013 which seeks to enhance the integration of Western Balkan countries into the European Research Area (ERA).

7. Strengthen international cooperation in science and technology and the role and attractiveness of European research in the world

In terms of Albania's activity in science and technology projects, under the framework of FP7 programmes, the performance has shown steady progress, leading to increased mobilisation of local resources and know-how in community programmes.

SP Cooperation: 15 projects were awarded funding and are mainly in the Social Sciences, ICT and Environment themes.

Participation in SP People: seven Marie Curie fellowships were awarded to Albanian scholars to conduct their research in different EU countries.

Participation in SP Capacities: this is the programme in which Albania was most successful. Out of 60 proposals submitted, 11 had been retained for funding. Albania is part of three international cooperation projects of which the WBC.INCO.NET is the most important for S&T and research.

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⁶⁵ <http://www.soros.org/initiatives/hesp/focus/afp>

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List of Abbreviations

| | |
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| AADF | Albanian-American Development Foundation |
| ACES | Albanian Centres of Excellence in Science |
| AIDA | Albanian Investment and Development Agency |
| AKCE | National Authority for Electronic Certification |
| AKEP | Authority of Electronic and Postal Communications |
| ALL | Albanian Lek |
| ARTI | Agency for Research, Technology and Innovation |
| ARWU | Academic Ranking of World Universities |
| 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 |
| CIP | Competitiveness and Innovation Framework Programme |
| CoM | Council of Ministers |
| COST | European Cooperation in Science and Technology |
| CR2010 | Country Report 2010 |
| CTAT | Centres for Transferring Agricultural Technologies |
| DCM | Decision of the Council of Ministers |
| EARMIT | European Association of Research Managers and Administrators |
| ECB | European Central Bank |
| EIB | European Investment Bank |
| EPO | European Patent Organisation |
| ERA | European Research Area |
| ERAC | European Research Area Committee |
| 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 |
| EU-27 | European Union including 27 Member States |
| FDI | Foreign Direct Investment |
| FP | European Framework Programme for Research and Technology Development |
| FP7 | 7th Framework Programme |
| FTE | Full Time Equivalent |
| FYROM | Former Yugoslav Republic of Macedonia |
| 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 |
| HC | Head Count |
| HEI | Higher Education Institutions |
| HERD | Higher Education Expenditure on R&D |
| HES | Higher Education Sector |

| | |
|--------|--|
| HRST | Human Resources in Sciences nad Technology |
| ICT | Information and Communications Technology |
| IMF | International Monetary Fund |
| INSTAT | Albanian Institute of Statistics |
| IP | Intellectual Property |
| IT | Information Technology |
| IU | Innovation Union |
| IUC | Innovation Union Competitiveness |
| MAFCP | Ministry of Agriculture Food and Consumer Protection |
| MES | Ministry of Education and Science |
| METE | Ministry of Economy, Trade and Energy |
| NAIS | National Agency for Information Society |
| NATO | North Atlantic Treaty Organisation |
| NSDI | National Strategy for Development and Integration |
| NSSTI | National Strategy of Science, Technology and Innovation |
| OECD | Organisation for Economic Cooperation and Development |
| PCT | Patent Cooperation Treaty |
| PPP | Purchase Power Parity |
| PPS | Power Purchasing Standards |
| PRO | Public Research Organisations |
| PROTIK | ICT Training and Resource Centre |
| R&D | Research and development |
| R&D | Research and Innovation |
| RI | Research Infrastructures |
| RTDI | Research Technological Development and Innovation |
| S&T | Science and Technology |
| SCAR | Standing Committee for Agricultural Research |
| SEE | South Eastern Europe |
| SF | Structural Funds |
| SME | Small and Medium-Sized Enterprise |
| ST&E | Science Technology and Engineering |
| STI | Science Technology and Innovation |
| UNESCO | United Nations Educational, Scientific and Cultural Organisation |
| VC | Venture Capital |
| WBC | West Balkan Countries |

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Abstract

The main objective of the ERAWATCH Annual Country Reports is to characterise and assess the performance of national research systems and related policies in a structured manner that is comparable across countries. EW Country Reports 2011 identify the structural challenges faced by national innovation systems. They further analyse and assess the ability of the policy mix in place to consistently and efficiently tackle these challenges. The annex of the reports gives an overview of the latest national policy efforts towards the enhancement of European Research Area and further assess their efficiency to achieve the targets.

These reports were originally produced in November - December 2011, focusing on policy developments over the previous twelve months. The reports were produced by the ERAWATCH Network under contract to JRC-IPTS. The analytical framework and the structure of the reports have been developed by the Institute for Prospective Technological Studies of the Joint Research Centre (JRC-IPTS) and Directorate General for Research and Innovation with contributions from ERAWATCH Network Asbl.

As the Commission's in-house science service, the Joint Research Centre's mission is to provide EU policies with independent, evidence-based scientific and technical support throughout the whole policy cycle.

Working in close cooperation with policy Directorates-General, the JRC addresses key societal challenges while stimulating innovation through developing new standards, methods and tools, and sharing and transferring its know-how to the Member States and international community.

Key policy areas include: environment and climate change; energy and transport; agriculture and food security; health and consumer protection; information society and digital agenda; safety and security including nuclear; all supported through a cross-cutting and multi-disciplinary approach.



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