

DATA COLLECTION MONTENEGRO

Prepared by University Donja Gorica, Faculty for information system and technologies

I General information about Montenegro

Table 1: Basic information about Montenegro

Number of citizens, Public census 2011	620 029
Surface of Montenegro, km ²	13 812
Capital city	Podgorica
Old royal	Cetinje
Number of municipalities	21
Number of settlements	1 307

Source: MONSTAT

Table 2: Public Census 1993-2011

	1993	2003	2011
Montenegro	615 035	620 145	620 029

Source: MONSTAT

Table 3: The average age of the population

	1971	1981	1991	2003	2011
Men	27,4	29,6	31,4	34,8	36,0
Women	29,8	32,0	33,7	37,0	38,4

Source: MONSTAT

Graph 1: Population by age group and sex, Census 2011

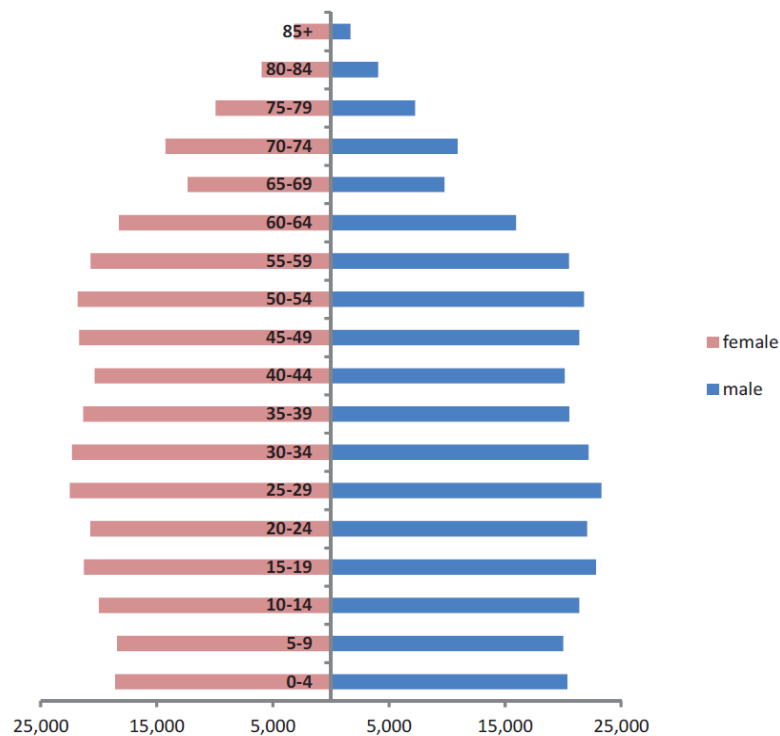


Table 4: Macroeconomic data for Montenegro for the period 2007-2011

	2007	2008	2009	2010	2011
GDP at current prices, EUR million	2.680	3.086	2.981	3.104	3.234
Population in thousands ¹	626,2	628.8	631,5	619,4	620,6
GDP per capita, EUR million	4.280	4.908	4.720	5.011	5.211
GDP at constant prices, million EUR	n/a	2.866	2.911	n/a	3.204
Real GDP growth (%)	10,7	6,9	-5,7	n/a	3,2
Nominal GDP growth (%)	n/a	15,1	-3,4	4,1	4,2

Source: Ministry of Finance, Government of Montenegro

Table 5: Forecasting of GDP and its real growth in Montenegro for the period 2012-2015

	2012	2013	2014	2015
GDP	2.338,1	3.493	3.687	3.912
Real GDP growth (%)	0,5	2,5	3,0	3,5

Source: Ministry of Finance, Government of Montenegro

Table 6: Principal characteristics of the population by activity and sex, Montenegro 2012

	Montenegro	Coastal region	Central region		Northern region
			Total	of which Podgorica	
<i>Total</i>					
1000					
Total population	619.7	148.6	293.2	185.6	177.8
Labor force	250.6	61.8	128.5	86.6	60.3
Persons in employment	201.6	55.1	108.3	76.5	38.2
Inactive persons	250.3	60.4	107.8	61.3	82.1
Working age population	504.3	123.0	237.6	148.7	143.6
Persons less than 15 years	118.8	26.4	56.9	37.8	35.4
%					
Activity rate	49.7	50.2	54.1	58.2	42.0
Employment rate	40.0	44.8	45.6	51.4	26.6
Unemployment rate	19.6	10.8	15.6	11.5	36.7

Source: MONSTAT

¹ Population projections, MONSTAT

Table 7: Activity, employment and unemployment rates by school attainment and sex, Montenegro 2012

Population aged 15-64									
	Total			Men			Women		
	Activity rate	Employment rate	Unemployment rate	Activity rate	Employment rate	Unemployment rate	Activity rate	Employment rate	Unemployment rate
Total	59.0	47.4	19.6	65.8	53.3	19.0	52.1	41.5	20.4
Less than primary education	27.7	16.7	(39.8)	47.8	31.0	((35.1))	16.8	(8.9)	(46.9)
Primary education	26.3	16.9	35.9	32.6	21.4	34.1	21.6	(13.4)	38.0
Vocational education after primary school	56.3	42.8	24.1	65.6	49.9	24.0	44.5	33.7	24.4
Secondary general education	48.2	40.1	(16.8)	48.8	40.5	(16.9)	47.8	39.8	(16.8)
Secondary vocational education	66.4	52.7	20.7	72.7	58.5	19.6	59.5	46.2	22.3
Tertiary education of which:	84.1	75.4	10.4	85.2	76.8	(9.9)	82.9	73.9	10.9
First stage of tertiary education	62.6	56.0	(10.5)	61.9	55.7	.	63.7	56.5	((11.4))
Second stage of tertiary education: bachelors', masters, or doctors' degree	79.3	71.1	10.3	77.5	69.8	(9.9)	81.1	72.4	10.8

Source: MONSTAT

Table 8: Average net wage in euros

	2009	2010	2011	2012
Montenegro	463	479	487	484

Source: MONSTAT

Table 9: Average wages per sectors, January 2013

Name of the sector	WAGES without taxes and contributions(net)			
	I	XII	Ø	I
	2013	2012	2012	2012
TOTAL	490	497	487	505
Agriculture, forestry and fishing	747	550	599	869
Mining and quarrying	706	694	707	724
Manufacturing	502	537	519	523
Electrify, gas, steam and air conditioning supply	881	839	878	889
Water supply, sewerage, waste management and remediation activities	447	469	464	466
Construction	402	422	398	373
Wholesale and retail trade, repair of motor vehicles and motor recycles	313	362	331	360
Transportation and storage	508	591	560	552
Accommodation and food service activities	385	383	383	365

Information and communication	825	832	755	774
Financial and insurance activities	851	886	868	835
Real estate activities	550	647	790	776
Professional, scientific and technical activities	456	460	430	467
Administrative and support service activities	292	406	351	412
Public administration and defense, compulsory social security	488	482	492	505
Education	450	453	451	445
Human health and social work activities	500	488	485	478
Arts, entertainment and recreation	392	384	380	386
Other service activities	453	469	455	433

Source: MONSTAT

II Research and innovation structure

Montenegro has three universities: University of Donja Gorica, University of Montenegro and University of Mediteran as well as 8 other higher education institutions with 25 000 students in Montenegro.

University of Donja Gorica has followed departments:

1. Faculty of International Economics, Finance and Business
2. Faculty of Information Systems and Technology
3. Polytechnic
4. Faculty of Law
5. Humanities: Diplomacy, Security and Communication Science and Media
6. Faculty of Arts
7. Faculty of Food Technology, Food Safety and Ecology
8. Faculty of Sports Management
9. Faculty of Design and Multimedia

Institutes:

1. UDG Centre for Foreign Languages

University of Montenegro has followed departments:

1. Electrical Engineering
2. Mechanical Engineering
3. Faculty of Metallurgy and Technology
4. Faculty of Science
5. Civil Engineering
6. Faculty of Architecture
7. Faculty of Economics
8. Faculty of Law
9. Department of Political Science
10. School of Medicine

11. Faculty of Arts
12. Faculty of Maritime Studies
13. Faculty of Tourism and Hotel Management
14. Academy of Music
15. Faculty of Dramatic Arts
16. Faculty of Fine Arts
17. Faculty of Applied Physiotherapy
18. Faculty of Biotechnology
19. Faculty of Sports and Physical Education
20. School of Pharmacy

INDEPENDENT STUDY PROGRAMMES

1. Geodesy
2. Teacher education in the Albanian language

INSTITUTES

1. Institute of Foreign Languages
2. Institute of Marine Biology
3. Institute of History

University Mediterranean has followed departments:

1. Montenegro Tourism School
2. Montenegro Business School
3. Faculty for information technologies
4. Faculty of visual art
5. Law faculty
6. Faculty for foreign language

Table 10: Persons engaged in R&D, 2011

Working hours and Sector of realization	Total		Researchers		Technical and equivalent staff		Other Supporting staff	
	all	female	all	female	all	female	all	female
Full time	2 134	1 162	1 546	771	270	172	318	219
Business enterprise sector	196	81	125	47	33	14	38	20
Government sector	661	404	494	281	122	86	45	37
Higher education sector	1 268	672	918	438	115	72	235	162
Private non-profit sector	9	5	9	5	-	-	-	-
Part time	169	94	153	81	11	9	5	4
Business enterprise sector	1	0	1	-	-	-	-	-
Government sector	33	25	22	17	6	4	5	4
Higher education sector	128	63	123	58	5	5	-	-

Private non-profit sector	7	6	7	6	-	-	-	-
Full time and part time	2 303	1 256	1 699	852	281	181	323	223
Business enterprise sector	197	81	126	47	33	14	38	20
Government sector	694	429	516	298	128	90	50	41
Higher education sector	1 396	735	1 041	496	120	77	235	162
Private non-profit sector	16	11	16	11	-	-	-	-

Source: MONSTAT

Table 11: Expenditures for R&D, 2011 in EUR

Sector of realization	No of R&D units	Total	By type of cost		By source of funding			
			Current costs	Capital Costs	Public budget	Abroad	Business	Private non-profit
Total	65	13 215 660	12 423 674	791 986	7 700 976	2 020 497	3 494 187	-
Business enterprise sector	15	2 945 085	2 806 027	139 058	1 000	-	2 944 085	-
Government sector	10	6 564 627	6 367 501	197 126	5 887 985	676 642	-	-
Higher education sector	38	3 460 561	3 007 759	452 802	1 811 991	1 098 468	550 102	-
Private non-profit sector	2	245 387	242 387	3 000	-	245 387	-	-

Source: MONSTAT

Table 12: Published scientific works and monographs, 2011

Field science	Scientific papers published in scientific periodicals			Scientific papers in publications from the Web of Science list	Published scientific monographs		
	Total	In Montenegro	Abroad		Total	In Montenegro	Abroad
TOTAL	1 051	547	504	173	131	98	33
Natural sciences	215	164	51	36	7	3	4
Engineering and technology	286	121	165	74	17	10	7
Medical sciences	60	10	50	28	9	6	3
Agricultural sciences	51	12	39	9	4	4	-
Social sciences	340	154	186	24	70	51	19
Humanities	99	86	13	2	24	24	-

Source: MONSTAT

Table 13: Specialists, masters and doctors science until 2012

Higher schools education	Total	Female	Male
UNIVERSITY CRNE GORE			
Specialist studies	1 258	822	436
Master studies	238	155	83
Doctoral studies	8	8	-
Total:	1 504	985	519
UNIVERSITY MEDITERAN			
Specialist studies	178	115	63
Master studies	17	8	9
Total:	195	123	72
UNIVERSITY DONJA GORICA			
Specialist studies	56	32	24
Master studies	24	14	10
Total:	80	46	34
Other higher education institutions			
Specialist studies	100	43	57
Master studies	3	2	1
Total:	103	45	58
MONTENEGRO			
Specialist studies	1 592	1 012	580
Master studies	282	179	103
Doctoral studies	8	8	-
Total:	1 882	1 199	683

Source: MONSTAT

The number of patents registered in the 2011th year and the number of patents whose heads are citizens of Montenegro, based on the data the Intellectual Property Office:

- the number of granted patents in the 2011th year was 423, of which are:
- foreign natural and legal persons, holders of 411 patents;
- Domestic natural and legal persons, holders of 12 patents.

The data of the year 2012:

- The total number of patents registered in the 2012th the year 219, of which;
- The total number of patents whose heads are citizens of Montenegro 35.

III Innovation strategy

*“Strategies of scientific research activities in Montenegro (2008-2016)”*² recognize competitiveness as one of its main objectives. The common starting point of fundamental mechanisms for implementation of the development strategy of Montenegro is the concept of complex competitiveness of the state and the national economy. This competitiveness is assessed as a measurable capability to produce internationally competitive products and services in a manner which ensures sustainable development. The basic mechanisms for increasing complex competitiveness and technological development are: harmonization of transition to orientation of a knowledge based society which supports the policy of development of human resources, work force and labor market, development of information society, strengthening of economic competitiveness and regional development which would reduce regional development differences.

With regard to the scope of investments into research and technological development, as well as the degree of company’s innovatively, Montenegro maintains the existing state which, from the view of dynamic changes in the world, does not allow for stimulation of development. An obvious deficiency is also the weak link between the scientific-research, educational and economic sphere, which negatively affects the human resources development, technological development as well as export competitiveness.

One of the weak points related to research in Montenegro is also the bad transfer of research data to the market. Industrial management principles, which imply confidential and complete disposal of scientific data, can be one of the indicators on how to motivate financing by the industrial sector.

Montenegro belongs to the group of countries which began creating the legal and institutional frameworks in the area of innovations, as well as for motivating small and medium size enterprises (SMEs), but it still has a long way to go to implement the legal norms and create the national program for stimulating innovations.

Conclusions and recommendations of strategy

- Stimulate financing of research and innovation, by private and economic sector, through state participation of up to 50 % in applied and development projects;
- Stimulate research-development cooperation between scientific-research institutions and companies, by instigating connecting of research groups;
- Support investments into development of technological networks and new technologies in those areas where there is already critical mass of knowledge and public interest for use of that knowledge for general purposes. Long-term development should be directed to all the other areas that can become competitive in the future, and it shall be determined by short-term action plans of development;
- Increase the porousness of our economy for world technologies and innovations, which requires preparedness, both in terms of staff and technological infrastructure. For the realization of this objective, system reorganization measures are necessary and modernization of existing technologies by means of adequate credit and transfer lines, tax exemptions in development activity etc. The existing institutions should be adapted to innovative operation such as technological parks and incubators, which should be established at universities and financed as infrastructure centers;

² *“Strategies of scientific research activities in Montenegro (2008-2016)”*, Ministry of education and science, Government of Montenegro, May 2008

- Introduce incentive measures for crediting the scientific-research work. Efficient and guaranteed crediting mechanism can be an attractive means for investment into scientific-research work;
- Stimulate strengthening of research-development departments in companies and development of public research institutions;
- Ensure marketing support and consulting service for all the stakeholders in research and innovations;
- Establish relevant bodies and ensure technical support for training of staff, development of procedures and informing of research community on intellectual property issues.