

**INTERREG IPA CROSS-BORDER PROGRAMME CROATIA – BOSNIA AND
HERZEGOVINA – MONTENEGRO 2014 - 2020
ANNEX 7: SITUATION ANALYSIS**

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0. Overall description

0.1 Description of the programme area

Interreg IPA Cross-border Cooperation Programme Croatia - Bosnia and Herzegovina - Montenegro 2014-2020 covers the territory of borders areas between Croatia and Bosnia and Herzegovina, Croatia and Montenegro and between Montenegro and Bosnia and Herzegovina. In other words, programme area covers 12 counties on the Croatian side, Brčko District and 109 municipalities on the side of Bosnia and Herzegovina and 10 municipalities on the side of Montenegrin border. This amounts to total of 87,453.95 km² of programme area with 5,587,836 inhabitants.

On the Croatian side the programme territory covers 38,405.00 km² and includes following counties: Zagrebačka county, Sisačko-moslavačka county, Karlovac County, Bjelovar-Bilogora County, Lika-Senj County, Požega-Slavonia County, Brod-Posavina County, Zadar County, Šibenik-Knin County, Vukovar-Srijem County, Split-Dalmatia County, Dubrovnik-Neretva County.

On the side of Bosnia and Herzegovina, the programme territory covers 42,540.95 km² and includes Brčko District and following 47 municipalities from the Republika Srpska and 62 municipalities from Federation of Bosnia and Herzegovina: Bijeljina, Teočak, Ugljevik, Lopare, Tuzla, Lukavac, Čelić, Srebrenik, Petrovo, Gračanica, Doboj Istok, Gradačac, Pelagićevo, Donji Žabar, Orašje, Domaljevac-Šamac, Šamac, Modriča, Vukosavlje, Odžak, Bosanski Brod, Srebrenica, Bratunac, Milići, Han-Pijesak, Vlasenica, Kladanj, Šekovići, Kalesija, Osmaci, Zvornik, Banovići, Živinice, Sapna, Prnjavor, Srbac, Laktaši, Čelinac, Kotor Varoš, Kneževo, Dobretići, Šipovo, Jajce, Jezero, Mrkonjić Grad, Banja Luka, Gradiška, Kozarska Dubica, Prijedor, Oštra Luka, Sanski Most, Ključ, Ribnik, Glamoč, Bosansko Grahovo, Drvar, Istočni Drvar, Petrovac, Bosanski Petrovac, Bosanska Krupa, Krupa na Uni, Novi Grad, Kostajnica, Bužim, Velika Kladuša, Cazin, Bihać, Doboj, Derventa, Prozor/Rama, Konjic, Nevesinje, Gacko, Bileća, Trebinje, Ravno, Ljubinje, Berkovići, Mostar, Jablanica, Kupres, Kupres (RS), Tomislavgrad, Posušje, Široki Brijeg, Čitluk, Stolac, Neum, Čapljina, Ljubuški, Grude, Livno, Istočni Mostar, Doboj Jug, Kakanj, Maglaj, Tešanj, Usora, Zavidovići, Zenica, Žepče, Bugojno, Busovača, Donji Vakuf, Gornji Vakuf-Uskoplje, Novi Travnik, Travnik, Vitez and Teslić.

On the side of Montenegrin border the programme territory covers 13,812.00 km² and includes municipalities as follows: Herceg Novi, Kotor, Tivat, Budva, Bar, Ulcinj, Cetinje, Nikšić, Podgorica, Danilovgrad.

0.2 Geographical description

The programme area could be divided into northern part and southern part where northern part is characterized with continental climate while the southern part enjoys a more Adriatic climate with hot, dry summers and autumns and cold winters.

Accordingly, the natural regions of the programme area could be divided in three main zones from the north to the south: 1) lowland with possibilities for agricultural activity and significant energy resources; 2) mountainous with wood potential and recreational value; 3) maritime with tourism potential based on the Adriatic Sea.

The length of border between Croatia and Bosnia and Herzegovina is 1,001.00 km with 52 border crossings for all types of traffic including 1 river border (Slavonski Brod – Sava) and 1 sea border (Ploče). The border predominantly follows River Sava and Una but also mountain Dinara while on the south, along with the land border, Croatia and Bosnia and Herzegovina are bordering on the Adriatic Sea as well.

The length of Croatian – Montenegrin border is 25 km with 2 border crossings for all types of traffic inland with 27 km of sea border (Ploče) and 3 international airports/border: Dubrovnik, Podgorica and Tivat.

The border of Croatia and Montenegro is small in territory in comparison to other Croatian and Montenegrin borders. The relief of the area is predominantly mountainous areas. The most specific feature of this relief is the joint Adriatic Sea and elements of its natural surrounding such as rocky and dry hinterland with Mediterranean vegetation.

The length of border between Bosnia and Herzegovina and Montenegro is 225 km and is mainly mountainous and relatively inaccessible, with economic centers located in larger towns, at some distance from the border. The rivers in the area flow into either the Adriatic Sea or the Black Sea basin. In the mountains, the rivers flow along deep canyons such as the Tara River Canyon which is the deepest canyon in Montenegro and in Europe, at 78 km in length and 1,300 meters at its deepest point. There are around forty natural and seven artificial lakes in the area. This region is rich with water and forests that cover 32 % of the territory.

There are number of border crossings for all types of traffic between three countries.

Table 1: Number and type of inland border crossings

Number and type of inland border crossings			
Type of border crossing	Croatia – Bosnia and Herzegovina	Croatia - Montenegro	Montenegro – Bosnia and Herzegovina
Road traffic	45	2	8
Rail traffic	5	0	0

Source: Ministry of Interior, Croatia 2012; Ministry of Interior, Montenegro

0.3 Demography

The number of population in the programme area exceeds 5.5 million heads, 36.9 % of that lives in Croatia, 55.17 % in Bosnia and Herzegovina and 7.9% in Montenegro.

The population density is 63.89 inhabitants/km² amounting to 54.6% of EU average (117 inhabitants/km²).

When looking into specific numbers of 12 Croatian counties there is a difference in numbers where only 5 counties are close to the average while Zagreb County has significantly higher number than rest of territories. Lika- Senj County is being significantly below the average with 9,5 inhabitant/km². *On the Montenegrin and Bosnian and Herzegovinian part of the programme area data is not presented on NUTS 3 but only on the cities level.

Table 2: Population and density in the programme area

NUTS 3*	¹ No. of inhabitants	² Surface area, km ²	³ Density, inhabitant/km ²
Croatian programme area	2062523	38405.00	53.70
Zagreb County	317606	3060.00	103.80
Sisak-Moslavina County	172439	4468.00	38.60
Karlovac County	128899	3626.00	35.50
Bjelovar-Bilogora County	119764	2640.00	45.40
Lika-Senj County	50927	5353.00	9.50
Požegao-Slavonia County	78034	1823.00	42.80
Brod-Posavina County	158575	2030.00	78.10
Zadar County	170017	3646.00	46.60
Šibenik-Knin County	109375	2984.00	36.70
Vukovar-Srijem County	179521	2454.00	73.20
Split-Dalmatia County	454798	4540.00	100.20
Dubrovnik-Neretva County	122568	1781.00	68.80
TOTAL CROATIA	4284889	56594.00	75.70
Bosnian and Herzegovinian programme area	3083121	42540.95	72.47
Bijeljina	114663	733.85	156.25
Teočak	7607	29.00	262.31
Ugljevik	16538	165.17	100.13
Lopare	16568	292.70	56.60
Tuzla	120441	294.00	409.66
Lukavac	46731	337.00	138.67
Čelić	12083	140.00	86.31
Brčko District	93028	402.00	231.41
Srebrenik	42762	248.00	172.43
Petrovo	7010	143.90	48.71
Gračanica	48395	216.00	224.05
Doboj Istok	10866	41.00	265.02
Gradačac	41836	218.00	191.91
Pelagićevo	7332	122.49	59.86
Donji Žabar	4043	46.76	86.46

Orašje	21584	121.80	177.21
Domaljevac-Šamac	5216	44.40	117.48
Šamac	19041	177.54	107.25
Modriča	27799	319.80	86.93
Vukosavlje	5426	94.90	57.18
Odžak	21289	158.40	134.40
Srebrenica	15242	526.83	28.93
Bratunac	21619	293.49	73.66
Milići	12272	279.13	43.97
Han-Pijesak	3844	322.90	11.90
Vlasenica	12349	225.32	54.81
Kladanj	13041	331.00	39.4
Šekovići	7771	237.20	32.8
Kalesija	36748	201.00	182.8
Osmaci	6172	78.10	79.0
Zvornik	63686	376.14	169.3
Banovići	23431	185.00	126.7
Živinice	61201	291.00	210.3
Sapna	12136	118.00	102.8
Prnjavor	38399	629.95	60.96
Srbac	19001	452.51	41.99
Laktaši	36848	388.37	94.88
Čelinac	16874	361.81	46.64
Kotor Varoš	22001	564.26	38.99
Kneževo	10428	332.90	31.32
Dobretići	2041	59.00	34.59
Šipovo	10820	553.41	19.55
Jajce	30758	339.00	90.73
Jezero	1341	55.60	24.12
Mrkonjić Grad	18136	677.43	26.77
Banja Luka	199191	1,238.91	160.78
Gradiška	56727	761.74	74.47
Kozarska Dubica	23074	499.01	46.24
Prijedor	97588	834.06	117.00
Oštra Luka	2997	204.91	14.63
Sanski Most	47359	781.0	60.64
Ključ	18714	358.0	52.27
Ribnik	6517	511.10	12.75
Glamoč	4038	1,033.60	3.91
Bosansko Grahovo	3091	780.00	3.96
Drvar	7506	589.30	12.74
Istočni Drvar	109	75.30	1.45

Petrovac	367	154.90	2.37
Bosanski Petrovac	7946	709.00	11.21
Bosanska Krupa	29659	561.00	52.87
Krupa na Uni	1687	84.33	20.00
Novi Grad	28799	472.72	60.92
Kostajnica	6308	85.12	74.11
Bužim	20298	129.00	157.35
Velika Kladuša	44770	331.00	135.26
Cazin	69411	356.00	194.97
Bihać	61186	900.00	67.98
Doboj	77223	772.09	100.02
Derventa	30177	516.84	58.39
Prozor/Rama	16297	477.00	34.17
Konjic	26381	1169.00	22.57
Nevesinje	13758	877.08	15.69
Gacko	9734	735.88	13.23
Bileća	11536	632.33	18.24
Trebinje	31433	854.50	36.79
Ravno	3328	286.00	11.64
Ljubinje	3756	319.07	11.77
Berkovići	2272	249.69	9.10
Mostar	113169	1175.00	96.31
Jablanica	10580	301.00	35.15
Kupres	5573	569.80	9.78
Kupres (RS)	320	47.80	6.69
Tomislavgrad	33032	967.40	34.15
Posušje	20698	461.10	44.89
Široki Brijeg	29809	387.60	76.91
Čitluk	18552	181.00	102.50
Stolac	14889	331.00	44.98
Neum	4960	225.00	22.04
Čapljina	28122	256.00	109.85
Ljubuški	29521	292.70	100.86
Grude	17865	220.80	80.91
Livno	37487	994.00	37.71
Istočni Mostar	280	85.24	3.28
Doboj Jug	4409	10.20	432.25
Kakanj	38937	377.00	103.28
Maglaj	24980	252.00	99.13
Tešanj	46135	155.90	295.93
Usora	7568	49.80	151.97
Zavidovići	40272	556.00	72.43

Zenica	115134	558.50	206.15
Žepče	31582	282.30	111.87
Bugojno	34559	361.00	95.73
Busovača	18488	158.00	117.01
Donji Vakuf	14739	320.00	46.06
Gornji Vakuf-Uskoplje	22304	402.00	55.48
Novi Travnik	25107	242.00	103.75
Travnik	57543	529.00	108.78
Vitez	27006	159.00	169.85
Teslić	41904	837.97	50.01
TOTAL BOSNIA AND HERZEGOVINA	3,791,622	51209.20	74.04
Montenegrin programme area	442192	6508.00	67.95
Herceg Novi	30864	235.00	131.34
Kotor	22601	335.00	67.47
Tivat	14031	46.00	305.02
Budva	19218	122.00	157.52
Bar	42048	598.00	70.31
Ulcinj	19921	255.00	78.12
Cetinje	16657	910.00	18.30
Nikšić	72443	2065.00	35.08
Podgorica	185937	1441.00	129.03
Danilovgrad	18472	501.00	36.87
TOTAL MONTENEGRO	620029	13812.00	44.89
TOTAL PROGRAMME AREA	5,587,836	87453.95	63.89

¹Source: Croatia: Central Bureau of Statistics, Census 2011; Montenegro: Statistical Office of Montenegro, Census 2011; Bosnia and Herzegovina: Agency for Statistics of Bosnia and Herzegovina, Preliminary results of Census 2013

²Source: Croatia: Central Bureau of Statistics, Statistical Yearbook 2012; Montenegro: Statistical Office of Montenegro, Statistical Yearbook 2012; Bosnia and Herzegovina: FOR FBiH territory - Institute for Statistics of FBiH, Statistical Yearbook 2012; For Republic of Srpska and Brčko District: Preliminary results of Population, dwellings and households Census in Bosnia and Herzegovina in 2013

³ Source: Author's calculation

The Croatian part of the programme area has 73 towns and 237 municipalities. Main urban areas are towns of Split (178,102 inhabitants), Zadar (75,062 inhabitants), Slavonski Brod (59,141 inhabitants), Karlovac (55,705 inhabitants), Sisak (47,768 inhabitants), Šibenik (46,332 inhabitants) and Dubrovnik (42,615 inhabitants). Bosnian and Herzegovinian part of the programme area has 109 municipalities and Brčko District. Main urban areas are Banja Luka (199,191 inhabitants), Tuzla (120,441 inhabitants), Zenica (115,134 inhabitants), Mostar (113,169 inhabitants) and Bihać (61,186 inhabitants). Montenegrin part of the programme area has 10 towns (municipalities) with Podgorica, Bar and Herceg Novi as main urban areas (185,937 inhabitants, 42,048 inhabitants and 30,864 inhabitants respectively).

Population change in the programme area is significant in last 20 years. There is a decrease in number of inhabitants in Croatia and Bosnia and Herzegovina while Montenegro has increase in population. Table below shows situation in Croatia and Montenegro:

Table 3: Population change in the last 20 years in the programme area

Croatian programme area - NUTS 3	Census 1991	Census 2001	Census 2011	Inter-census change 2001/1991	Inter-census change 2011/2001	Inter-census change 2011/1991
Zagreb County	270794	309696	317606	14.37%	2.55%	17.29%
Sisak-Moslavina County	235142	185387	172439	-21.16%	-6.98%	-26.67%
Karlovac County	168908	141787	128899	-16.06%	-9.09%	-23.69%
Bjelovar-Bilogora County	134802	133084	119764	-1.27%	-10.01%	-11.16%
Lika-Senj County	76567	53677	50927	-29.90%	-5.12%	-33.49%
Požega-Slavonia County	91472	85831	78034	-6.17%	-9.08%	-14.69%
Brod-Posavina County	162498	176765	158575	8.78%	-10.29%	-2.41%
Zadar County	189286	162045	170017	-14.39%	4.92%	-10.18%
Šibenik-Knin County	142910	112891	109375	-21.01%	-3.11%	-23.47%
Vukovar-Srijem County	213427	204768	179521	-4.06%	-12.33%	-15.89%
Splitsko-Dalmatia County	442492	463676	454798	4.79%	-1.91%	2.78%
Dubrovnik-Neretva County	119804	122870	122568	2.56%	-0.25%	2.31%
CROATIAN PROGRAMME AREA	2248102	2152477	2062523	-4.25%	-4.18%	-8.25%
TOTAL CROATIA	4784265	4437460	4284889	-7.25%	-3.44%	-10.44%
Montenegrin programme area - Municipalities						
Herceg Novi	27006	33034	30864	22.3%	-6.6%	14.3%
Kotor	22112	22947	22601	3.8%	-1.5%	2.2%
Tivat	11146	13630	14031	22.3%	2.9%	25.9%
Budva	11538	15909	19218	37.9%	20.8%	66.6%
Bar	34282	40037	42048	16.8%	5.0%	22.7%
Ulcinj	19667	20290	19921	3.2%	-1.8%	1.3%
Cetinje	20139	18482	16657	-8.2%	-9.9%	-17.3%
Nikšić	73878	75282	72443	1.9%	-3.8%	-1.9%
Podgorica	145696	169132	185937	16.1%	9.9%	27.6%
Danilovgrad	14573	16523	18472	13.4%	11.8%	26.8%
MONTENEGRIN PROGRAMME AREA	380037	425266	442192	11.9%	4.0%	16.4%
TOTAL MONTENEGRO	591260	620145	620029	4.9%	0.0%	4.9%

Source: Croatia: Central Bureau of Statistics, Census 1991, 2001, 2011; Montenegro: Statistical Office of Montenegro, Census 1991, 2003, 2011

In Bosnia and Herzegovina, data are available for census 1991 and preliminary results of the census 2013 for the whole country. In 1991, total population was 4.377.033 while according to the preliminary results of census 2013, total population was 3.791.622. (Source: Agency for Statistics of BiH)

One of the favourable conditions of the programme area is large number of different ethnicities living in cohabitation and enriching public cultural and lingual life of the cross-border territory.

The biggest minority in Croatian part of the programme area is the Serbian minority. The Bosniaks as a minority group is rather small (in Croatia) but most of them live in the programme area.

In Bosnia and Hercegovina, Bosniaks, Croats and Serbs are constituent people (along with others). The biggest national minority in Bosnia and Herzegovina is the Roma minority.

In terms of ethnic belonging on Croatian and Montenegrin cross-border area, there is a difference in both countries. While in Croatian counties high degree of ethnic homogeneity is visible, in Montenegrin municipalities heterogeneity is present. In Croatian part of the programme area the main ethnic minorities are Serbs and Bosniaks and in Montenegrin part these are Serbs (28,77%), Bosniaks (8,65%), Albanians (4,91%), Croats (0,97%) and Moslems (3,31%).

General conclusions:

- Large programme area with more than 5,5 million inhabitants seeks many interventions through programme priorities and measures.
- Most of the population of the programme area lives in smaller municipalities and towns.
- Population change shows depopulation in Croatian and Bosnian and Herzegovinian part of the programme area and reverse process in Montenegro.
- Rich natural resources and attractive landscape offer many opportunities for future interventions and investments.

1. Employment, labour mobility, social inclusion, health and social care

1.1 General overview

In regards to the economic performance in the programme area there is a significant difference between three countries and difference between regions/municipalities within the programme area of each country. Data on annual growth of GDP shows very poor results. Croatia is in worse position among three countries while Montenegro is suffering less significant decline in standard and economy in general. This data shows that despite general recovery from financial crisis worldwide, three countries are still facing problems with revitalizing production and trade sectors but also economy in general.

GDP per capita is being officially measured on regional/county level only in Croatia, whereas in Bosnia and Herzegovina and Montenegro relevant regional/local data are not available. Therefore, GDP per capita is presented only on national level. Taking into consideration that

the programme area includes large territory of each of all three countries, situation on national level could reflect the situation of the programme area.

Table 4: GDP in 2010-2012 and rate of growth

GDP and growth				
Country	2010 per capita/EUR	2011 per capita/EUR	2012 per capita/EUR	% growth ¹
Croatia	10,057.00	10,205.00	10,295.00	-2.0
Bosnia and Herzegovina	3,310.000	3,432.000	3,430.000	-1.2
Montenegro	5,011.00	5,211.00	5,083.00	-0.5

Source: Croatia: Croatian Bureau of Statistics, 2013; www.dzs.hr, Eurostat; Montenegro: Monstat 2013, Bosnia and Herzegovina: Agency for Statistics of BiH-National accounts bulletin, February 2014; World Bank Data: <http://data.worldbank.org/indicator/NY.GDP.MKTP.KD.ZG>

Industry and services

Table 5: Distribution of gross value added by main groups of economy, 2010

	Total	A	B	C	D +E	
Croatia	37,900,762	1,792,391	303,866	6,260,253	1,281,913	
%	100.0%	4.7%	0.8%	16.5%	3.4%	
Montenegro	2,704,668	256,726	35,725	162,535	132,654	
%	100.0%	9.5%	1.3%	6.0%	4.9%	
Federation BiH	7,145,580	425,911	204,974	1,061,610	330,681	
%	100.0%	8.05%	2.9%	14.9%	4.6%	
Republika Srpska	3,742,287	451,282	93,283	393,138	235,885	
%	100.0%	12.1%	2.5%	10.5%	6.3%	
*Brčko District						
	Total	F	G	H+J	I	
Croatia	37,900,762	2,311,209	4,219,685	3,582,226	1,636,759	
%	100.0%	6.1%	11.1%	9.5%	4.3%	
Montenegro	2,704,668	158,081	391,686	315,837	207,176	
%	100.0%	5.8%	14.5%	11.7%	7.7%	
Federation BiH	7,145,580	324,331	1,142,218	590,796	191,328	
%	100.0%	4.5%	16.0%	8.3%	2.7%	

¹ Annual percentage growth rate of GDP at market prices based on constant local currency

Republika Srpska	3.742.287	200.092	537.008	337.253	64.242	
%	100.0%	5.4%	14.4%	9.0%	1.7%	
*Brčko District						
	Total	K	L	M	N	
Croatia	37,900,762	2,728,066	4,126,064	1,964,030	753,275	
%	100.0%	7.2%	10.9%	5.2%	2.0%	
Montenegro	2,704,668	131,838	219,875	88,175	26,755	
%	100.0%	4.9%	8.1%	3.3%	1.0%	
Federation BiH	7,145,580	382,404	758,611	n/a	n/a	
%	100.0%	5.4%	10.6%	n/a	n/a	
Republika Srpska	3.742.287	124.859	215.074	133.076	16.817	
%	100.0%	3.3%	5.7%	3.6%	0.4%	
* Brčko District						
		O	P	Q	R	S+T
Croatia	Total	2,383,577	1,749,212	1,810,954	561,324	435,958
%	37,900,762	6.3%	4.6%	4.8%	1.5%	1.2%
Montenegro	100.0%	256,930	139,272	121,959	39,807	19,637
%	2,704,668	9.5%	5.1%	4.5%	1.5%	0.7%
Federation BiH	100.0%	739,488	419,147	390,585	n/a	183,496
%	7,145,580	10.3%	5.9%	5.5%	n/a	2.6%
Republika Srpska	3.742.287	446.653	206.892	214.471	39.548	32.713
%	100.0%	11.9%	5.5%	5.7%	1.1%	0.9%
*Brčko District						

Source: Croatia: Statistical report Annual gross domestic product in 2011, Croatia Bureau of Statistics, www.dzs.hr, Montenegro: Questioner "STUPAC Bruto dodata vrijednost 2011, tekuće cijene, u 000 EUR", Bosnia and Herzegovina: Federation of Bosnia and Herzegovina (FBiH): Statistical Yearbook 2012, Institute for Statistics of FBiH (data on gross value added 2011) <http://www.fzs.ba/god.htm>, Republika Srpska (RS): Institute for Statistics, National Accounts 6, Statistical Bulletin 2013.

REMARK: There may be differences in the methodology of calculation gross value added in each country. Division of activities in Bosnia and Herzegovina is somewhat adjusted in order to enable the comparison between countries could be possible.

Currency: 1 EUR=7.434204 HRK, Croatian National Bank, Midpoint exchange rate for 2011, <http://www.hnb.hr/tecajn/etecajn.htm> 1EUR=1.955830 BAM, Central Bank of Bosnia and

Herzegovina, Midpoint exchange rate for 2011,
<http://www.cbbh.ba/index.php?id=4&year=2011>

Legend

A - Agriculture, forestry and fishing,
B - Mining and quarrying,
C - Manufacturing,
D - Electricity, gas, steam and air conditioning supply,
E - Water supply; sewerage, waste management and remediation activities,
F - Construction,
G - Wholesale and retail trade; repair of motor vehicles and motorcycles,
H - Transportation and storage,
I - Accommodation and food service activities,
J - Information and communication,
K - Financial and insurance activities,
L - Real estate activities,
M - Professional, scientific and technical activities,
N - Administrative and support service activities,
O - Public administration and defence; compulsory social security,
P - Education,
Q - Human health and social work activities,
R - Arts, entertainment and recreation,
S - Other service activities

*A specific characteristics of Brčko District is that within its territory there are many affiliates (units of a homogenous activity) seated in one of the entities (transport and financial intermediation, post offices, railways, banks, insurance companies and certain number of subjects in other business activities) with the share of gross added value in total value of these activities over 50 i.e. 60 %. These business subject affiliates are covered by other statistical surveys. Therefore, data specific for Brčko District are not available.

Source: http://www.bhas.ba/publikacije/bd/BRC_2013_001_GDP.pdf

Export and import

In Croatia industrial sector exports over EUR 1 billion annually dominated by shipbuilding which accounts for over 10% of exported goods. Food processing and chemical industry also account for significant portions of industrial output and exports. Croatian agricultural sector exports blue water fish as well as organic products, especially wine, olive oil and lavender. Tourism is one of the most important sectors of economy in Croatia with significant creation of income. With over 10 million foreign tourists annually, tourism generates revenue in excess of EUR 7 billion.

Croatian main trading partners are EU member states (more than 50% of total foreign trade). The most important Croatian foreign trade partners are Italy, Germany, Slovenia, Austria and Bosnia and Herzegovina (with Bosnia and Herzegovina in total share in 2012 of 12.7 %).

In Bosnia and Herzegovina in 2013 export was dominated by metal industry with share of 21,6%. It was followed by wood sector within which export of furniture increased in comparison to 2012. In the first half of 2014, the ranking changed as export in wood sector was slightly higher than in metal sector while total export remained at the level of the same period in 2013.

Main export partners of Bosnia and Herzegovina are Slovenia, Croatia, Italy, Germany and Austria with 16.5% in total share in 2012.

Montenegro mostly exports metals (in 2012, in total EUR 154 million). Food and wine, as well as wood, are also among top exported products. Furthermore, electrical energy has significant share in total exports of Montenegro. Montenegro mostly imports food, oil, machines and chemicals.

Montenegrin main trading partners are EU member states (in 2012, around 52% of total export and 44% of total import). Main trading partners in exports for Montenegro in 2012 were Croatia and Serbia, with 23% in total share, followed by Slovenia, Bosnia and Herzegovina and Hungary. In imports, Montenegro mostly traded with Serbia (29% in total share), followed by Greece, China, Italy and Germany.

Table 6: Export of goods and services (% of GDP)

Country	Exports of goods and services (% of GDP)
Croatia	43 %
Bosnia and Herzegovina	31%
Montenegro	42%

Source: WorldBank

http://data.worldbank.org/indicator/NE.EXP.GNFS.ZS?order=wbapi_data_value_2012+wbapi_data_value+wbapi_data_value-last&sort=desc

1.2 Agriculture

The programme area in Croatia and Bosnia and Herzegovina has predominantly agricultural land, while at the same time agricultural sector does not employ high number of population as it is shown in the tables below. In Montenegrin part of the programme area employment in agriculture is also very low.

Agricultural land covers 52.2% of the total Croatian land area. About 80 % of this agricultural land is privately owned, and about 20% is state owned. The total area of state owned agricultural land is decreasing due to on-going privatization process. The significant part of the agricultural land is not used for growing crops which presents good potential for increase in agricultural production, both for the food and for non-food chain. Out of 29,557 km² of agricultural land, 21,491 km² is potentially arable land whereas 8,066 km² is permanently non-arable land due to unfavorable physical and chemical characteristics. Currently, only 10,920 km² is being processed and 1,100 km² are used as pastures. Available agricultural land is poorly used, in addition to the low level of agricultural production. The consequences of this situation are well known: lack of sufficient agricultural products, large imports and high prices of food. Increasing agricultural production in Croatia can be achieved by using existing potentially arable area of 9,471 km² as well as the application of modern technologies for sustainable agriculture on arable land.

Approximately 2,3 million ha (46%) in Bosnia and Herzegovina is suitable for agriculture, of which only 0.65% is irrigated. Arable land covers 1,009,000 ha, or 20.0% of the total area of Bosnia and Herzegovina while 478,000 ha (47%) of arable land is not cultivated at present. There is approximately 0.56 ha of farmland land per capita, of which 0.36 ha is arable land and vegetable gardens.

About 53,821.20 ha in Montenegrin part of the programme area is utilized agricultural land, which represents 57% of available agricultural land. About 96% of this land is owned by family agricultural holdings, while the rest is owned by business entities. Big share of total agricultural holdings in the programme area deals with mixed crops and livestock production, while the rest is specialized either in crops or livestock production. Out of total utilized agricultural land in Montenegro, around 95% are permanent meadows and pastures, 1.85% is arable land, 1.15% is vineyards and the rest is kitchen gardens, orchards and nurseries.

Table 7: Agricultural land

Croatian programme area	Agricultural land, ha, in 2014
Zagreb County	66,129
Sisak-Moslavina County	56,610
Karlovac County	22,252
Bjelovar-Bilogora County	88,841
Lika-Senj County	24,256
Požega-Slavonia County	40,079
Brod-Posavina County	59,626
Zadar County	16,299
Šibenik-Knin County	5,751
Vukovar-Srijem County	125,685
Split-Dalmatia County	1,5185
Dubrovnik-Neretva County	8,861
TOTAL CROATIA	529,574
TOTAL CROATIAN PROGRAMME AREA	1,009,974

Source: DATA_ ARKOD

Table 8: Agricultural land

Country	Agricultural land, ha	Share in total area	Cultivated land, ha	Share in total area
Croatia	1,009,974	n/a	n/a	n/a
Bosnia and Herzegovina	1,110,994	n/a	631,994	n/a
Montenegro	516,500	37.40%	189,900	13.75%

Source: DATA_ ARKOD

Table 9: Employment in agriculture, forestry and fishing

Area	Employment in agriculture, forestry and fishing, comparison to national average		
	Total employment	Agriculture, forestry and fishing	% of employed in agriculture, forestry and fishing
Croatian programme area – NUTS 3			
Zagreb County	54,731	1,170	2.14 %
Sisak-Moslavina County	32,442	942	2.90 %
Karlovac County	27,596	863	3.13 %
Bjelovar-Bilogora County	22,378	1,264	5.65 %
Lika-Senj County	9,963	846	8.49 %
Požega-Slavonia County	13,558	1,026	7.57 %
Brod-Posavina County	24,947	954	3.82 %
Zadar County	32,413	1,065	3.29 %
Šibenik-Knin County	21,288	126	0.59 %
Vukovar-Srijem County	30,430	3,266	10.73 %
Split-Dalmatia County	98,931	1,151	1.16 %
Dubrovnik-Neretva County	27,835	334	1.20 %
TOTAL CROATIA	1,066,328	24,253	2.27%
TOTAL CROATIAN PROGRAMME AREA	396,512	13,007	3.28%
Bosnian and Herzegovinian programme area			
Federation BiH Cantons (8 of 10 relevant for CBC)	No. of employed, total	No. of employed in agriculture, 2012	% of employed in agriculture
Una-Sana Canton	31,683	1,047	3.30 %
Posavina Canton	5,739	151	2.63 %
Tuzla Canton	80,767	1,026	1.27 %
Zenica - Doboï Canton	68,649	1,278	1.86 %
Central Bosnia Canton	38,719	1,239	3.20 %
Herzegovina-Neretvai Canton	45,442	600	1.32 %
West Herzegovina Canton	16,462	135	0.82 %
Canton 10	9,569	803	8.39 %
Brčko District	16,272	70	0.43 %
TOTAL FEDERATION BiH CANTONS (8 of 10 relevant for CBC)	313,302	6,349	2.03 %
TOTAL FEDERATION BiH	437,331	7,444	1.70 %
Republika Srpska (municipalities in the programme area)	No. of employed total	No. of employed in agriculture in bussines entities, 2012	% of employed in agriculture
Banja Luka	60,320	507	0.84 %
Berkovići	227	7	3.08 %
Bijeljina	19,837	251	1.27 %
Bileća	1,475	2	0.14 %
Kostajnica	1,075	90	8.37 %

Brod	3,577	21	0.59 %
Bratunac	1,740	4	0.23 %
Vlasenica	1,315	106	8.06 %
Vukosavlje	227	1	0.44 %
Gacko	2,991	32	1.07 %
Gradiška	8,430	438	5.20 %
Derventa	6,502	93	1.43 %
Doboj	12,604	104	0.83 %
Donji Žabar	484	5	1.03 %
Zvornik	7,932	50	0.63 %
Istočni Drvar	95	77	81.05 %
Jezero	63	0	0.00 %
Kneževo	1,139	162	14.22 %
Kozarska Dubica	3,649	119	3.26 %
Kotor Varoš	3,503	263	7.51 %
Krupa na Uni	140	0	0.00 %
Kupres	22	5	22.73 %
Laktaši	9,557	295	3.09 %
Lopare	1,050	52	4.95 %
Ljubinje	579	58	10.02 %
Milići	1,587	33	2.08 %
Modriča	4,354	55	1.26 %
Mrkonjić Grad	3,268	167	5.11 %
Nevesinje	1,591	73	4.59 %
Novi Grad	3,842	59	1.54 %
Oštra Luka	363	35	9.64 %
Pelagićevo	372	41	11.02 %
Petrovac	394	250	63.45 %
Petrovo	835	26	3.11 %
Prijedor	12,955	217	1.68 %
Prnjavor	5,483	206	3.76 %
Ribnik	1,133	374	33.01 %
Srbac	2,366	139	5.87 %
Srebrenica	1,812	127	7.01 %
Teslić	6,083	220	3.62 %
Trebinje	7,415	92	1.24 %
Ugljevik	3,524	20	0.57 %
Han Pijesak	844	352	41.71 %
Čelinac	2,511	109	4.34 %
Šamac	2,100	86	4.10 %
Šekovići	810	54	6.67 %
Šipovo	1,729	264	15.27 %
Republika Srpska	213904	5741	2.68 %
TOTAL REPUBLIKA SRPSKA	238178	7816	3.5%
Montenegrin programme area	No. of employed total	No. of employed in agriculture, 2011	% of total employed in agriculture
Herceg Novi	10,763	43	0.40 %
Kotor	7,572	35	0.46 %
Tivat	4,710	18	0.38 %
Budva	7,630	29	0.38 %
Bar	12,842	145	1.13 %
Ulcinj	4,848	94	1.94 %
Cetinje	4,840	51	1.05 %

Nikšić	19,033	377	1.98 %
Podgorica	61,526	1,200	1.95 %
Danilovgrad	5,472	138	2.52 %
TOTAL MONTENEGRIN PROGRAMME AREA	139,236	2,130	1.53 %
TOTAL MONTENEGRO	175,171	4,454	2.54 %

Source: Croatia: Central Bureau of Statistics, 2012, www.dzs.hr, Author's calculation, Bosnia and Herzegovina: Institute for Statistics of FBiH, Statistical bulletin No.186, Employment, Unemployment and Wage in the Federation of Bosnia and Herzegovina 2012; For Brčko District: Agency for Statistics of FBiH, Statistical bulletin no.6/2012, http://www.bhas.ba/publikacije/bd/2012/BRC_2012_OO6_OPS.pdf, For Republica Srpska: Institute of Statistics Republic of Srpska, Statistical Yearbook of Republic of Srpska 2013, http://www.rzs.rs.ba/static/uploads/bilteni/godisnjak/2013/30ops_2013.pdf
Montenegro: Statistical Office of Montenegro, Census 2011, <http://www.monstat.org/userfiles/file/popis2011/Djelatnosti%20i%20zanimanja%20u%20Crnoj%20Gori%20PDF.pdf>

Another problem in the programme area is the irrigation system and insufficient quantity of water during the summer period. Resolving the problems of the irrigation could result with fighting with droughts, with increased production, greater competitiveness of agricultural production in the domestic and foreign markets, it could increase the value of the agricultural sector in the overall economy and the rational management of water resources by building infrastructure for the systematic application of irrigation in accordance with the needs and capabilities.

The economic importance of agriculture is relatively high in Croatia. Despite a declining trend in recent years, the agriculture sector accounts for 5.5% of GDP and 13.8% of total labour force. A high share of population depends on agriculture and related activities for their livelihood. Despite favourable agriculture and climate conditions, Croatia is still a net importer of food. A key challenge for Croatia is to make its agricultural sector more productive and more sustainable.

One of the reasons underlying the inefficiency of agricultural production is the current structure of agricultural holdings. Relatively high number of registered agricultural holdings is engaged in agricultural activities, but they utilise small part of agricultural land. About one half (52.5%) of all holdings in Croatia are less than 2 ha in size, with the vast majority (89.4%) being less than 10 ha.

According to Croatian Agriculture Agency figures for 2012, 1756 agricultural households with live stock or 60% of all agricultural households with livestock in the Republic of Croatia are located in the programme area. In Montenegro, there are 32,656 agricultural households with livestock, with 15,028 households in the programme area which is 46% of total households in the country.

In Bosnia and Herzegovina number of registered agricultural holdings (family farms) is 111,803 (46153 in FBiH, 63214 in RS and 2,436 in Brčko District). Preliminary data on last census (unofficial) states that there are 340,000 households working in agriculture, which shows again as similar as in Croatia high % of unregistered farming and agricultural activity in general. Data on livestock in Bosnia and Herzegovina shows decrease in all three main types: cattle, sheep and goats and swine.

In Montenegro, the agriculture sector accounts for 7.9% of GDP, but with only 2.54% of total labour force employed in the sector (in the programme area, 1.53% of total employed population). Among the total imported goods for Montenegro, food has the biggest share (in 2013, 24% of total imported goods). Therefore, similar to Croatia, Montenegro should invest further efforts in increasing attractiveness, productivity and long-term sustainability of agricultural sector.

In Montenegro, there are in total 48,870 agricultural households, out of which 48,824 as family households. Main characteristics of Montenegrin agriculture is the large number of small agricultural households, with different crops and types of cattle, which are prevailing in the family agricultural households. The biggest number (31.58%) of households is the size of 0.10 - 0.50 ha of total agricultural utilised land, while more than a half (54.07%) of agricultural utilised land is from 0.10 to 1.00 ha.

Breeding livestock is very important agricultural activity in Montenegro - 47.56% of total households are specialized in livestock breeding. The largest share in used agricultural land is meadows and pastures (96.1%), where vegetables and fruits are grown.

Tivat is the municipality with the smallest number of agricultural households (only 0.35%), while Podgorica has the 14.89% of total agricultural households.

Table 10: Share of GDP in agriculture

Country	Share of agriculture in GDP, %
Croatia	4,1
Bosnia and Herzegovina	6,24
Montenegro	7,9

Source: Croatia: Croatian Bureau of Statistics, Statistical Report Annual Gross Domestic Product for 2011; Montenegro: MONSTAT; Bosnia and Herzegovina: Ministry of foreign trade and economic relations Bosnia and Herzegovina, Agriculture Report for Bosnia and Herzegovina for 2012, http://www.mvteo.gov.ba/izvjestaji_publikacije/izvjestaji/default.aspx?Id=6129&langtag=bs-BA

Due to low level of pollution and lack of industry production in last 20 years all three countries have favorable conditions for organic/eco production.

Table 11: Organic agricultural land including in-conversion areas in 2012

Country	Organic agricultural land, ha	Organic agricultural land, ha
Croatia	2.41%	31,903.00
Bosnia and Herzegovina	0.02%	343
Montenegro	0.6%	3,068

Source: FiBL & IFOAM (2014): The World of Organic Agriculture 2014, Frick and Bonn

Table 12: Organic producers and other operator types

Country	Producers	Processors	Exporters	Importers
Croatia (2012)	1528	57	36	6
Bosnia and Herzegovina (2011)	25	12	No data	6
Montenegro (2010)	62	No data	No data	No data

Source: FiBL & IFOAM (2014): The World of Organic Agriculture 2014, Frick and Bonn

In Croatia and Montenegro there is a significant trend in this type of agriculture with increase per year in registered producers.

Table 13: Registered Eco producers

Croatian programme area	Eco producers registered in 2012
Zagreb County	100
Sisak-Moslavina County	155
Karlovac County	77
Bjelovar-Bilogora County	94
Lika-Senj County	15
Požega-Slavonia County	61
Brod-Posavina County	106
Zadar County	62
Šibenik-Knin County	25
Vukovar-Srijem County	54
Split-Dalmatia County	93
Dubrovnik-Neretva County	33
TOTAL CROATIAN PROGRAMME AREA	875
TOTAL CROATIA	1528
Montenegrin programme area	Organic producers registered (year n/a)
Herceg Novi	1
Kotor	0
Tivat	0
Budva	0
Bar	2
Ulcinj	0
Cetinje	0
Nikšić	5
Podgorica	7
Danilovgrad	4
TOTAL MONTENEGRIN PROGRAMME AREA	19
TOTAL MONTENEGRO	160

Source: Croatia: Ministry of agriculture, 2013; Montenegro: Ministry of Agriculture and Rural Development, 2013

Table 14: Eco production

Country	No. of registered eco/organic producers 2012	Agricultural land registered for eco/organic production in ha	Share of eco/organic production in agriculture sector
Croatia	1528 (eco)	31903 (eco)	2.45%
Bosnia and Herzegovina	n/a	n/a	n/a
Montenegro	160 (organic)	146386.27 (organic)	n/a

Source: Croatia: Ministry of agriculture, 2013; Montenegro: Ministry of Agriculture and Rural Development, 2013

In conclusion, in all three countries problems related to agriculture production are small farms and average size of parcels, ageing farm holders, the low education level of the farm population, the low productivity and value added, the high proportion of part-time farmers, the unorganized marketing of farm products and the low level of managerial knowledge among farmers. One of the problems in relation to small agricultural and food producers is their segmentation, small number of quality certified products and lack of joint presentation on bigger markets which causes their low competitiveness. There are some improvements and awareness rising in working on combining agricultural and food production with tourism sector services especially those targeting geographical origin of the products. In conclusion, if structural problems are adequately approached there will be significant economic development of the agriculture sector potential in the programme area.

The concept of development of sustainable agriculture is to multiple advantages of agriculture through the sustainable rural development, environmental protection and a function in securing sustainable resource management in the long term, economic function, function of support to the development of tourism, food security, protection of tradition and natural and cultural heritage in the countryside.

1.3 Labor Market

Programme area's labour market is reflected in low employment and high rates of unemployment especially long-term and youth unemployment.

In general, in Montenegro there is a decrease in unemployment rate (since 2005) from 30.3 % in 2005 to 19.2 % in 2013 while in Croatia unemployment rate was in stagnation from 2005, 17.8 % until the end of 2012 (17.6%). Although, in 2013 unemployment rate in all partner countries was still above EU-27 average of 11.0% . In Croatia was 21.9% (CBS), in Montenegro 19.2% (SOoM) and in Bosnia and Herzegovina situation is most difficult with unemployment rate of 27,6 % in 2011, 28 % in 2012 and 27,5 % in 2013 (*ILO methodology*).²

² http://www.bhas.ba/tematskibilteni/BHAS_Ars_BH_press.pdf

When looking into the numbers of the programme area, situation is similar to national averages.

Table 15: Employment and unemployment rate

Table 15.1: Croatia

Croatian programme area - NUTS 3	Employment rate, %	Unemployment rate, %
Zagreb County	60.7	13.1
Sisak-Moslavina County	50.3	21.2
Karlovac County	53.7	18.4
Bjelovar-Bilogora County	56.5	17.1
Lika-Senj County	50.1	16.7
Požega-Slavonia County	47.6	20.7
Brod-Posavina County	44.4	26.9
Zadar County	51.2	18.3
Šibenik-Knin County	49.3	19.3
Vukovar-Srijem County	45.1	25.1
Split-Dalmatia County	53.2	19.3
Dubrovnik-Neretva County	58.7	14.4
TOTAL CROATIAN PROGRAMME AREA	79.9	20.1

Source: Croatian Employment Service, Analytical Report No.4, 2013

Table 15.2: Bosnia and Herzegovina

Municipalities of the programme area for FBiH					
Municipalities	Employment rate, %	Unemployment rate, %	Municipalities	Employment rate, %	Unemployment rate, %
UNA-SANA CANTON	58.0%	13.6%	CENTRAL BOSNIA CANTON	50.7%	18.8%
Bihać	45.3%	23.8%	Bugojno	58.9%	12.8%
Bosanska Krupa	63.3%	12.7%	Busovača	65.6%	13.1%
Bosanski Petrovac	51.6%	17.6%	Dobretići	74.6%	6.7%
Bužim	74.3%	8.8%	Donji Vakuf	63.3%	14.8%
Cazin	65.6%	10.6%	Gornji Vakuf-Uskoplje	56.6%	16.0%
Ključ	61.8%	9.0%	Jajce	54.9%	14.6%
Sanski Most	54.6%	9.5%	Novi Travnik	55.0%	15.8%
Velika Kladuša	63.7%	11.7%	Travnik	41.7%	24.7%
			Vitez	42.1%	27.7%
POSAVINA CANTON	49.1%	17.1%	HERZEGOVINA-NERETVA CANTON	40.2%	

			N		
Domaljevac-Šamac	47.5%	12.3%	Čapljina	45.8%	17.9%
Odžak	51.9%	16.2%	Čitluk	32.9%	35.3%
Orašje	47.2%	19.0%	Jablanica	56.9%	16.1%
			Konjic	46.5%	19.2%
TUZLA CANTON	54.5%	19.5%	Grad Mostar	35.1%	30.2%
Banovići	51.8%	23.8%	Neum	27.7%	23.7%
Čelić	77.4%	6.4%	Prozor	58.2%	10.0%
Doboj Istok	68.7%	15.1%	Ravno	29.7%	5.2%
Gračanica	52.3%	19.5%	Stolac	68.6%	7.7%
Gradačac	54.5%	16.9%			
Kalesija	75.2%	11.0%			
Kladanj	60.3%	14.6%	WESTER N-HERZEGOVINA CANTON	36.5%	24.6%
Lukavac	57.2%	18.7%	Grude	34.6%	23.2%
Sapna	82.2%	5.4%	Ljubuški	35.5%	19.7%
Srebrenik	63.5%	13.9%	Posušje	38.8%	24.5%
Teočak	80.2%	7.8%	Široki Brijeg	36.8%	30.0%
Tuzla	38.1%	28.3%	n/a	n/a	n/a
Živinice	62.8%	18.4%	n/a	n/a	n/a
			n/a	n/a	n/a
ZENICA-DOBOJ CANTON	49.8%	20.9%	CANTON 10	47.9%	13.9%
Doboj Jug	50.4%	24.7%	Bosansko Grahovo	47.3%	17.2%
Kakanj	48.2%	19.1%	Drvar	53.4%	10.3%
Maglaj	64.0%	16.4%	Glamoč	51.2%	14.2%
Tešanj	46.9%	23.4%	Kupres	36.1%	26.0%
Usora	53.9%	14.1%	Livno	47.9%	15.4%
Zavidovići	67.2%	11.7%	Tomislavgrad	47.4%	12.0%
Zenica	46.4%	23.7%	n/a	n/a	n/a
Žepče	55.6%	15.8%	n/a	n/a	n/a
TOTAL FEDERATION BiH	46.4%	22.6%			
Area	Employment rate, %		Unemployment rate, %		
Brčko District	31.6%		43.2%		

Area	Employment rate, %	Unemployment rate, %
Republika Srpska*	35.3%	25.6%

Source: Institute for statistics of FBiH, Author's calculation based on the Labour force survey 2012; Source: Agency for Statistics of Bosnia and Herzegovina, Demography in Brcko District 2008-2012 http://www.bhas.ba/publikacije/Demografija%20za%202012%20bilten_BOS.pdf; *Data on employment and unemployment rates at the level of municipalities in the Republika Srpska are not available. Instead, data at the level of this Entity in 2012 are provided.

Table 15.3: Montenegro

Montenegrin programme area	Employment rate, %	Unemployment rate, %
Herceg Novi	50.7%	15.5%
Kotor	48.4%	15.6%
Tivat	48.2%	17.2%
Budva	55.5%	13.2%
Bar	44.7%	21.0%
Ulcinj	36.6%	21.9%
Cetinje	41.3%	27.6%
Nikšić	38.8%	26.2%
Podgorica	48.0%	18.4%
Danilovgrad	43.0%	22.5%
TOTAL MONTENEGRO	41.5%	24.5%

Source: MONSTAT, Population by age and municipalities, Census 2011, Active population by employment by municipalities, Census 2011

When looking in other employment issues, in Croatia in 2012, there were 1.52 million people in employment, out of whom the most dominant age group was the 25-49, which represents 56.53%. However, the same age group has been reduced by 18.71%, while the age group 50-64 increased by 18.65% in the period 2007-2012, reflecting the rapid ageing of the labour force in Croatia. The similar situation of population aging can be found in Montenegro where the average age of population is 37, according to the 2011 census. The data of previous censuses shows that the average age in 2003 was 35.9 years, while it equaled 32.7 years in 1991. In Bosnia and Herzegovina, over the period 2011-2013, the most dominant group within people in employment was the 25-49 age group (64.9% in 2011, 63.9% in 2012 and 63.5% in 2013). However, obvious decrease of share of this group while the 50-64 age group increased its share over the period, reflects continuous aging of labour force. In addition, out of the total of persons in employment in Bosnia and Herzegovina, 74.6% are persons in paid employment, 20.7% are selfemployed and 4.7% are unpaid family workers. The largest share of those employed are in the services sector 51.3%, 29.8 in industry and 18.9% in agriculture.

According to the 2010 data (MONSTAT, Labor Force Survey), 20% of the total number of employed persons in Montenegro work in the industry sector, 6.2% in the agriculture sector, while 73.9% are employed in the service sector, also including public sector.

The increase in the number of employees in the service sector is primarily a result of the development of tourism in coastal parts of Croatia and Montenegro, as well as the growth of economic activity in trade, real estate business and financial services in all programme area.

According to the CBS data for 2013, in Croatia there were 375,400 registered unemployed persons out of whom 42.1% (158,165) were long-term unemployed persons (source: CES). According to MONSTAT, Labor Force Survey, share of long-term unemployed persons in the total number of the unemployed in Montenegro in 2011 was 80.3%.

In Bosnia and Herzegovina, according to the Labor Force Survey (LFS) data for 2013 there were 311,000 unemployed persons out of whom 83% (259,000) were long-term unemployed persons (source: BHS). Unemployment rate of youth (15-24) in 2012 in Croatia was 43%, much above EU-27 average 22.8%. The unemployment among young persons continued to grow over the last years in Montenegro, and in 2011 the unemployment rate for this age group reached 37.3% (MONSTAT, 2011). In Bosnia and Herzegovina young people aged 15-24 are taking up to 59.1% in 2013 (source: Labour Market Surveys).

Therefore, the problems of long-term unemployment and youth unemployment are identified in all three countries. The most likely reasons for long-term unemployment are inadequate education background and skills for the labour market needs, lack of working experience and lack of motivation after long-term absence from the labour market, as well as lack of professional mobility and motivation to participate in training and life-long learning programmes. The long-term unemployed persons are often regarded as a work force without skills required for the fast-changing labour market demand. Long-term unemployment is higher among less educated and older unemployed persons.

Following long-term unemployed persons and youth, another disadvantage group among the unemployed persons are women. Even though historically, women have been more affected by unemployment than men (in 2000, the unemployment rate for women in the EU-27 was around 10 %, while the rate for men was below 8 %) by the end of 2002, this gender gap had narrowed to around 1.5 percentage points and between 2002 and mid-2007 this gap remained more or less constant. On the EU level these rates in 2012 were reaching 10.7 % for men and 10.8 % for women. The programme area is close to this EU average when it comes to gender gap and for example in Croatia, women represent 53% of total unemployed at the end of 2012, while data for Montenegro are showing that women represent 56% of total unemployed. In Bosnia and Herzegovina in 2012, women represented 30.7% of total unemployed.

The partnership approach and cooperation between public employment services, local authorities and other public bodies in the field of education should be established in order to identify local labour market needs. On the basis of identified labour needs, special attention must be given to the life-long learning programmes and adult education sector, with the scope of including the unemployed persons in flexible training programmes and to qualify them for active participation in the labour market. Local partnerships should promote as well incentives for integration of disadvantaged groups into the labour market by providing them with skills development programmes and individual support in job search processes in order to increase their employability.

1.4 Health care

Table 16: Health care capacities

Croatian programme area – NUTS 3	Medicine doctors			No. of inhabitants per doctor		Dentists			No. of inhabitants per dentist	
	2010	2011	2012	2010	2011	2010	2011	2012	2010	2011
Zagreb County	287	291	186	1,147,70	1,091,43	175	176	148	1,882,23	1,804,58
Sisak-Moslavina County	385	389	408	440,27	443,29	87	86	87	1,948,33	2,005,10
Karlovac County	337	340	344	387,48	379,11	74	76	76	1,764,61	1,696,04
Bjelovar-Bilogora County	234	241	238	528,27	496,95	62	60	61	1,993,78	1,996,07
Lika-Senj County	90	91	97	544,89	559,64	25	27	27	1,961,62	1,886,19
Požega-Slavonia County	211	211	210	384,00	369,83	37	36	38	2,189,84	2,167,61
Brod-Posavina County	415	426	433	413,45	372,24	77	76	79	2,228,35	2,086,51
Zadar County	417	414	423	423,32	410,67	118	108	119	1,495,97	1,574,23
Šibenik-Knin County	285	300	296	396,36	364,58	62	72	76	1,821,98	1,519,10
Vukovar-Srijem County	366	374	387	534,60	480,00	68	71	69	2,877,39	2,528,46
Split-Dalmatia County	1214	1234	1251	397,82	368,56	331	337	359	1,459,09	1,349,55
Dubrovnik-Neretva County	309	308	313	413,72	397,95	82	84	83	1,559,02	1,459,14
Total Croatian programme area	4550	4619	4586	6,011,89	5,734,25	1198	1209	1222	23,182,20	22,072,59

Source: Croatian Bureau for Statistics

Although the overall territorial distribution of hospitals in Croatia is good (90% of the total population live within 50 km from a hospital), problems related to the accessibility become more evident at county level where the lower quality and limited access to services, as well as the inappropriateness of local health care infrastructure tend to be more emphasized in particular at the level of primary care.

Availability of care is often limited and uneven across the country, namely due to distance but also to the lack of health care workers. The situation is the same with the number of nurses and with the number of medical doctors per 100,000 inhabitants, which in 2010 was 569 but is still below the EU average (782/100,000). In Croatia, out of the total number of healthcare workers, nurses make up almost half of them (46%).

On-going functional and territorial rationalization of the healthcare system, as envisaged in the National Healthcare Development Strategy 2012–2020, is expected to provide the framework for the modernization of the system and to systematically address the identified key problems making the healthcare in Croatia more efficient and responsive to contemporary and future health care needs of population by equally focusing on the implementation of efficient investments into health care infrastructure and related services, and development of human resources.

According to data from Statistics Department of the Public Health Institute of Federation of Bosnia and Herzegovina for 2005, there are total of 253 healthcare institutions for suppression, treatment and prevention, and diagnostics for human diseases on the territory of FBiH, in total there are 85 medical care centres, 23 hospitals, 125 pharmacies and 20 institutes.

In the line with data from Public Health Institute from the Republika Srpska (Analysis of Population's Health in the Republika Srpska in 2011, in 2010, and 2009.), in the Republika Srpska there are (in total) 53 health centres, 9 general hospitals, 1 special hospital, 6 institutes, 1 Public Health Institute and 1 clinical centre. By the end of 2013, Ministry of Health and Social Welfare of the Republika Srpska registered 379 pharmacies, as well as 499 pharmacists. Based on the Analysis of Population Health in the Republika Srpska in 2011, in 2010, and 2009, the distribution of the health staff within the Republika Srpska is, as it follows.

In Brčko District, since 2000 the health care system has been organized as a Department for Health of the Government of Brčko District of Bosnia and Herzegovina. Since 1 January 2013 'Health Center Brčko' has been established, as a Public Health Institute comprising Ambulance and Hospital.

In the Administrative Registry of Brčko District, 16 legal persons were registered as pharmacies. Pharmacies were not established as public institutes.

In Montenegro, the health care system is organised as a unique health care region and is based dominantly on the public sector. Public health care institutions are organized through a network of primary, secondary and tertiary health care consisting of 18 medical centres, 7 general hospitals, 3 special hospitals, the Clinical Centre of Montenegro, the Institute for Health and the Pharmaceutical Institute of Montenegro. The private sector, not yet integrated in the health care system, comprises a larger number of medical centres, dental centres, wholesale medicines and pharmacies.

The total number of public health care employees in 2001 was 7,123, of which 5,339 (74,95%) were health care workers and associates, and 1,784 (25,05%) were non-medical

workers. Of the 5,339 health care workers and associates 1,563 (29,27%) are highly qualified, of whom 1,127 (21,1%) are doctors, 269 (5,0%) dentists, 99 (1,9%) pharmacists and the other 68 (1,3%) are health care associates.

Health policy in the Republic of Montenegro until 2020 represents the foundation for legislative, platform and action programs, with the objective to make health care more efficient and better quality and to include health care in Montenegro in the European and World health development process.

In conclusion, the healthcare systems in all three countries of the programme area are in general characterized by inefficient and ineffective network of healthcare institutions, inappropriate distribution and mobilisation of capacities at different levels of care, underperforming system management including insufficient focus on quality standards, fragmentation, low level of ICT solutions in use, resulting in reduced financial sustainability of the system, inadequate communication and information connectivity between its different parts and finally in reduced access to services for the patients and unsatisfactory quality of healthcare provided.

1.5 Social care

All three countries of the programme area are among the EU countries with the highest risk of poverty or social exclusion rate. High unemployment and low labour market participation, coupled with raising costs of living, have increased the share of population living at risk of poverty or social exclusion.

Quality, scope and delivery mechanism of social services provided to users in vulnerable positions are not well adapted to their diversified needs and the changing environment, such as ageing of population, increased number of users, and different user profiles. The social care systems in all three countries are unequally developed at different levels where the services are provided, which leads to significant differences in access to services and reduces the effectiveness of service provision. They are often overloaded with requirements and do not dispose with sufficient capacity to provide personalized and integrated services especially for specific user groups (such as children without parental care, children and youth with behavioural disorders, and persons with disabilities), but also to offer them all the relevant information regarding their rights. Significant limitations in the social care systems are even more present in relation to availability of community-based services.

Table 17: Overview of social care capacities

Croatian programme area – NUTS 3	No. of social care centres	No. of social care beneficiaries	Share of the number of beneficiaries of social care per number of inhabitants, %
ZagrebCounty	8	3607	1,10

Sisak-Moslavina County	8	8622	5,00
Karlovac County	6	6210	4,80
Bjelovar-Bilogora County	5	4430	3,70
Lika-Senj County	4	1287	2,50
Požega-Slavonia County	2	2299	2,90
Brod-Posavina County	2	7198	2,20
Zadar County	6	3806	2,20
Šibenik-Knin County	3	8703	8,00
Vukovar-Srijem County	4	8240	4,60
Split-Dalmatia County	12	6543	1,40
Dubrovnik-Neretva County	4	957	0,80
TOTAL CROATIAN PROGRAMME AREA	64	61902	n/a

Source: Croatia Extract from annual statistical report on social care for 2012, Croatian Ministry of social policy and youth

Bosnia and Herzegovina has 117 Centers for social work. In 2012, overall number of beneficiaries was 707,421 (source: web site of Agency for Statistics of BiH – bulletin Social Welfare 2007-2013).

Social care services in Montenegro are mostly related to elderly people (21.9%), children with mental difficulties (20.3%), people with disabilities (17.2%), drug addicts and victims of domestic violence (17.2%). Social services for children, young people and women are not sufficiently developed.

Montenegro has 10 public centres for social work, 2 institutions for children and minors without parental care, 6 centres for children and minors with mental and physical disabilities, 1 institution for drug addicts and 4 institutions for adults and elderly people.

In 2012, there were in total 44,049 social care beneficiaries, out of which 855 people as beneficiaries of above mentioned centres and institutions for children, young and elderly people.

In Croatia, the share of population living at risk of poverty or social exclusion was 32.3% in 2012 (1,370,000). Older women are particularly vulnerable as 37.8% of women aged 65 or above were at risk of poverty or social exclusion in 2012 (compared with 26.9% of men of the same age); the figure rises to 43.2% for women aged 75 or above (31.8% for men). The pension system, in combination with the relatively short duration of working lives does not seem to ensure adequate protection in the old age and to address effectively the challenge of aging population.

These challenges are being addressed by the on-going reform of the social system, outlined in the Strategy for Social Care System Development 2011-2016 leading to the modernization and adequacy of the system, on the one hand by aiming to increase its transparency, effectiveness and to allow for better targeting of social benefits and on the other, by addressing existing regional disparities in terms of quality and availability of social services, and community based support for the active inclusion of vulnerable groups present at regional

and local level. The latter is also supported by the ongoing implementation of the Plan for the Deinstitutionalization and Transformation of Social Welfare Homes and Other Legal Entities Performing Social Welfare Activities in the Republic of Croatia 2011-2016 (2018) and local social planning, namely through development of Counties Social Plans, aiming to support the development of services that are lacking in the community and ensuring the sustainability of the deinstitutionalization process.

Social protection in Bosnia and Herzegovina is under the exclusive competence of the entities and Brčko District, and cantons in the FBiH, as well as at the level of municipalities which have certain responsibilities in some of the social protection programmes. In Bosnia and Herzegovina, among entities Federation BiH and Republika Srpska, Brčko District and cantons, there are obvious differences in preconditions required to be entitled for social protection, which are reflected in scope of coverage of beneficiaries, efficiency and focus of the protection programme, and finally in the amount of financial benefits given to an individual or to a family on different basis.

According to the World Bank data, in 2010 in Bosnia and Herzegovina about 60% of people were socially excluded on different basis and the fifth of total population is in an extreme social exclusion. In 2011, 177,277 of households (17.2%) or 566,025 people (17.9%) lived in relative poverty. Relative poverty rate in Republika Srpska in 2011 was 19.6%, in the Federation BiH 16.0%, and in the Brčko District 12.2%.

According to the Household Consumption Survey in Bosnia and Herzegovina in 2011, in regards to the household type, the highest poverty rate was among married couples with more children and other relatives (24.5%).

Some other surveys show poverty and vulnerability of other population categories, such as old people, people unable to work, disabled, farmers, returnees and displaced persons, long term unemployed, Roma population etc. Almost two third of total adults with disabilities live near or under the official poverty limit line.

In Bosnia and Herzegovina, 4.6% of GDP is allocated to servicing social protection rights, whereby nearly three quarters of this amount has been disbursed to so called war categories of beneficiaries, thus for the traditional social protection function, aimed at poor and socially excluded individuals and their families, only 1.2% of GDP has been allocated.

In the Federation of BiH, reform of the social sector under the slogan 'this can last no more' is ongoing, promoting the intention to adopt four new laws to substitute the existing Framework Law. The new laws would introduce uniform minimum standards for all the social protection categories, whereby multiple disparity and discrimination of social protection beneficiaries would be significantly reduced.

In Republika Srpska, Law on Social Protection was adopted in 2012, regulating social protection system, holders, beneficiaries and rights of social protection beneficiaries, procedure and eligibility to use rights, funding, supervision and access to social protection of

citizens. By adoption of the Law certain improvement of social status of the poorest and the most vulnerable population categories was accomplished.

In Montenegro, according to the MONSTAT data, the overall poverty rate for 2012 increased compared to the previous year, but it still is at a lower level than the one in 2007. In 2012, 11.3% of total population lived in poverty. Poverty rate in the central part of Montenegro (Podgorica, Danilovgrad, Cetinje and Nikšić) was the lowest – 7.9%, while the poverty rate in six coastal municipalities was slightly higher – 9%. The rural population is in higher risk of poverty than the urban population.

The reform of the social protection system in Montenegro is based on the following strategies: Strategy for development of social and child care system 2013-2017, Strategy for development of social protection for elderly people 2013-2017, National action plan for children 2013-2017, Strategy for integration of people with disabilities 2008-2016, Strategy for protection of victims of domestic violence 2011-2015, Strategy for development of foster care 2012-2016 and Strategy for long-term solution of problems of displaced persons 2011-2015.

The challenges addressed by the Strategy for development of social and child care system 2013-2017 are the following: complicated procedures and administrative proceedings, low number of people included in the system, improvement of services and social care centres' capacities, increasing knowledge and capacities of social care services providers, as well as the harmonization with international obligations and documents. Special attention is paid to providing adequate level of social care, non-discrimination and equal opportunities for all citizens, as well as protecting the most vulnerable groups.

Conclusions:

- Economies of all three countries cope with similar types of problems such as need for restructuring of agriculture, decline in industrial production, lack of SMEs, lack of R&D and innovation, etc.
- All three countries are traditionally good partners in foreign trade and have high share of this trade between the countries.
- Small farms and average size of parcels, ageing farm holders, the low education level of the farm population, the low productivity and value added, the high proportion of part-time farmers, the unorganized marketing of farm products and the low level of managerial knowledge among farmers, segmentation, small number of quality certified products and lack of joint presentation on bigger markets, all causes low competitiveness in agricultural industry.
- Good potential for organic/eco production due to low pollution level and quality of soil (lack of big industries and polluters in past 23 years) and growing trend in organic/eco agriculture in all 3 countries.
- Growing awareness in development of investments/interventions of combining agricultural and food production with tourism sector services especially those targeting geographical origin of the products.

- High rates of long-term unemployed persons and youth.
- Rapid ageing of the labour force in the programme area.
- Due to inadequate formal education programmes and skills for the labour market needs quality and efficiency of education and training need to be improved.
- Incentives regarding supporting access to employment by disadvantaged groups should be promoted and unemployed persons should be motivated to participate in training and life-long learning programmes.
- Health care systems in all three countries are in general characterized by inefficient and ineffective network of healthcare institutions, inappropriate distribution and mobilisation of capacities at different levels of care and underperforming system management including insufficient focus on quality standards.
- Social care systems in all three countries are often overloaded with requirements and do not dispose with sufficient capacity to provide personalized and integrated services especially for users in vulnerable positions.
- In Croatia, the share of population living at risk of poverty or social exclusion was 32.3% in 2012, in Bosnia and Herzegovina in 2011 relative poverty rate was 17.9% while in Montenegro in 2012 was 11.3%).
- Scope and delivery mechanism of social services provided to users in vulnerable positions are not well adapted.

2. Environment, biodiversity, risk prevention, sustainable energy and energy efficiency

2.1 Environmental protection

The natural environment in Croatia is considered to be one of the key elements of economic and social capital driving economic development in the country. On the other hand, the degree of environmental protection is still lower than in other developed EU countries. In most European countries, environmental protection investments and current expenditure made by the public sector accounted for between 0.25 % and 0.9 % of GDP in 2009, with its expenditure of 0.02 % of GDP in 2009 was below this range.

In its preparation for EU accession Croatia has detected a number of environmental hot spots in the programme area. This is largely due to the chemical, petrochemical, machinery manufacture, metallurgical, food and oil industries and increased pollution levels in certain parts.

In Croatian part of the programme area, there are 4 locations with plan for remediation by the state and 3 with process initiated by their owners. Sites with state plan for remediation are:

- 1) Factory Salonit d.d. (asbestos cement waste), Mravinačka kava
- 2) Red mud pool and the waste lye of the former alumina plant next to Obrovac
- 3) Unarranged depository with location large quantities of hazardous waste Lemić Brdo next to Karlovac

- 4) Site with slag and ashes-depository of slag in Kaštela Bay.

Waste Management Plan identified four more “hot-spot” created by long-term inappropriate management of industrial (technological) waste:

- 1) Location of the factory Borovo in Vukovar (remediation of first phase finished in 2010)
- 2) Fuel oil in the screw factory (former TVIK factory) in Knin (remediation plan prepared through Phare 2006 project)
- 3) Area of the closed factory of electrodes and ferroalloys in Šibenik (EPEEF provided loan for remediation)
- 4) Island of Biševo - tar on the Salbunara beach (remediation finished in 2008).

In Bosnia and Herzegovina, there are 6 hotspots in the programme area:

- 1) Mostar Refinery & Smelter
- 2) Jajce smelter
- 3) Jalovište Srebrenica
- 4) Modriča – gudronska jama
- 5) Brod – gudronska jama
- 6) Biračka regija – crveni mulj.

In Montenegro, four minerals-related operations (plants) were listed as potential hotspots (both national and/or transboundary), out of which 2 are in the programme area:

- 1) Niksic steel plant
- 2) Podgorica Alumina plant, Aluminum smelter and rolling mill(s)

A key feature of the environment in the northern part of the programme area is that for a large part of its length the border between Croatia and Bosnia and Herzegovina is constituted by the river Sava. The river is a defining and common feature and any environmental issues linked to the Sava clearly require joint action. In this respect one major common environmental challenge for Croatia and Bosnia and Herzegovina is the damage caused by flooding of the river. In addition, there is considerable scope for joint actions to prevent cross-border pollution given that pollutants generated in and beyond the programme region are carried by waterways that ultimately flow into Sava.

Forests and woodlands cover 47% of Croatian territory, or 26,083 km². The state owns 74.09% of the total forest area and 25.91% is privately owned. Natural forests make 95% of total Croatian forests. Out of the total forest area, 79% are deciduous, 16% evergreen forest, and 5% are degraded forests. In 2004, total burned area was 2,889 ha. Compared to European forests, forests in Croatia are in very good condition. In addition, in line with Forest Act, forests are classified according to their purpose in: economic, protective and special purpose forests. Economic forests are used for the production of forest products. Protective forests are primarily used for the protection of land, water, settlements, buildings and other assets. Special purpose forests are protected nature areas (nature reserves, national parks, special reserves, natural monuments, significant landscapes, forests used for scientific research). The

basic principles of the Croatian forestry are sustainable management to preserve the natural structure and diversity of forests and to permanently increase the stability and quality of economic and beneficial functions of the forests.

Out of the total area of Montenegro (1,381,000 ha), 743,609 ha or 54% are forests and woodlands, while forests cover 620,872 ha or 45% of the total territory. Forests are extremely important for the preservation of natural balance, biodiversity and quality of the environment, as well as for the economic development, especially in the northern, underdeveloped region.

Key feature of the southern part of the programme area is Adriatic Sea. Adriatic coast and islands are the most valuable, but also one of the most vulnerable natural systems of the programme area. Adriatic Sea is a unique and highly sensitive marine ecosystem which, by its hydrographic, oceanographic, biological, bio-geographical and other features differs from the rest of the Mediterranean Sea even though it is an integral part of Mediterranean Sea. The Adriatic Sea is characterized by biodiversity, purity, transparency and unique landscapes. Due to its specific characteristics, Adriatic Sea is considered as specific sub-region within Mediterranean Sea. Coastal areas are also characterized by a high degree of biodiversity, including numerous endemic species, sensitive habitats and ecosystems. Both, Adriatic Sea and coastal areas play significant role in the development of economy, cultural and social life of the programme area. In this sense, Adriatic Sea should be given special attention in terms of its use and conservation.

The pollution of the Adriatic Sea ecosystem is caused by individual pollutants (phosphorus and nitrogen, heavy metals, organic and fecal contamination), especially near major port cities and large river deltas. Similarly, the pollution is significant in smaller towns due to porous septic tanks and bad sewerage systems. As regards to the remaining area of the Adriatic, pollution is comparatively low and the overall condition of the Adriatic is more than satisfactory. The sanitary quality of bathing water at Croatian beaches is high (98.5 %). Therefore, Croatian part of the Adriatic is considered to be among the cleanest sea in the Mediterranean and Europe.

Lack of equipment for the purification of urban and industrial wastewater, accidental and operational pollution from marine objects, accidents in the transport of oil and oil products, the problem of introducing strange marine microorganisms and pathogens in marine environment, fishing and overfishing of fish stocks, excessive construction in the coastal zone are considered as the most important environmental problems, and thus the problems of sustainable development of the Adriatic Sea. In total, 123 fish species are on the Red List of endangered fish of the Adriatic Sea, five of them being critically endangered. The production in mariculture sector is increasing, therefore, its impact on the surrounding ecosystems is continuously monitored.

Another source of pollution of the Adriatic is solid waste. Drifting waste, occasionally relatively large quantities of material, especially waste plastic, is transported northwest by the sirocco.

Each of the problems indicated above represents serious environmental risks with irreversible consequences related to significant economic and social consequences. All three countries involved in this cross border programme, together with other member states of the Mediterranean Action Plan (MAP) adopted the Mediterranean Strategy for Sustainable Development thus giving special attention to the sustainable development of the Mediterranean, especially to sustainable management of the sea, coastal and marine resources. Together, they are determined to meet the challenges of environmental degradation in the sea, coastal areas and inland, and to link sustainable resource management with development, in order to protect the Mediterranean region and contribute to an improved Mediterranean quality of life.

2.2 Sustainable use of natural resources

Table 18: Protected areas

Protected areas in the programme area			
Croatian programme area		km2	Territory covered% ³
National parks			
Lika-Senj County	Plitvice lakes	295	0.5%
Zadar and Lika-Senj County	Paklenica	102	0.2%
Dubrovnik-Neretva County	Mljet	54	0.1%
Šibenik-Knin County	Kornati	234	0.4%
Šibenik-Knin County	Krka	110	0.2%
Lika-Senj County	Sjeverni Velebit	109	0.2%
Nature parks			
Dubrovnik-Neretva County	Lastovo islands	53land+143sea surface	0.1%
Split-Dalmatia County	Biokovo	196	0.3%
Sisak-Moslavina County	Lonjsko polje	506.5	0.9%
Partly in Zagreb county	Medvednica	225	0.4%
Partly Požega-Slavonia County	Papuk	336	0.6%
Zadar County	Telašćica	70.5	0.1%
Lika-Senj County	Velebit	2276	4.0%

³ Territory covered in relation to whole country surface

Šibenik-Knin County	Vransko lake	57	0.1%
Zagreb and Karlovac County	Žumberak	333	0.6%
Bosnian and Herzegovinian programme area			
Strict nature reserves (category Ia)			
Šipovo	Strict nature Reserve: Virgin forest Janj	2,95	0,01
Petrovac, Istočni Drvar	Virgin Forest Lom	2,98	0,01
Special nature reserves (category Ib)			
Bijeljina	Gromiželj	8,31	0,02
Mrkonjić Grad	Lisina	43,7	
National parks			
Prijedor, Gradiška, Kozarska Dubica	NP Kozara	3.494,5	0,07
Gacko, Foca, Kalinovik	NP Sutjeska	17,350	0,34
Bihać	Una	198	0,39
Nature parks			
Neum	Hutovo blato	74	0,14
Mostar	Blidinje	580	1,13
Srbac	Lake Bardača- Ramsar Site	38	0,07
Čapljina	Hutovo Blato – Ramsar site	110,93	0,22
Sarajevo	Bijambare	370	0.01
Livno	Livanjsko polje- Ramsar site	405	0,79
Monuments of nature			
Banja Luka	SP Pećina Ljubačevo	0,45	n/a
	SP Prokoško jezero	21,19	0,04
	SP Tajan	3.591,98	7,01
Ribnik	SP Jama Ledana	28,26	0,06
Šipovo	SP Vaganska pećina	12,00	0,02
Bileća, Gacko	SP Pećina Ćatlo	43,42	0,08
Trebinje	SP Pavlova pećina	13,40	0,03
Resoruces management areas			
Banja Luka	Univerzitetski grad Banja Luka	0, 27	n/a
Montenegrin programme area			
Cetinje and Budva	Lovćen	62,20	n/a
Podgorica, Bar, Cetinje	Lake Skadar	400	n/a

Source: [Croatia](#) Ministry of Enviroment and Nature Protection, 2014; [Bosnia and Herzegovinia](#) different web-sajts of relevant institutions

The main protected areas of Croatia are six national parks and nine nature parks. The total area of all national parks in the country is 904 km², of which 235 km² is sea surface. The most popular Croatian National Parks are Plitvice Lakes, followed by Krka, Brijuni and Paklenica.

Each of the national parks is maintained by a separate institution, overseen and funded by the government ministry of nature conservation and spatial development.

Croatian part of the programme area has a number of ecoregions because of its climate and geomorphology, and the country is consequently among the most biodiverse in Europe. There are four types of bio-geographic regions in Croatia: Mediterranean along the coast and in its immediate hinterland, Alpine in the elevated Lika, Pannonian along the Drava and Danube and Continental in the remaining areas. There are 444 protected natural areas in Croatia encompassing 8.5% of the country. There are about 37,000 known species in Croatia, and the total number of species is estimated to be between 50,000 and 100,000.

At the moment of compilation of this document, Croatia as a Member State is implementing NATURA 2000 Directive while Bosnia and Herzegovina and Montenegro are in preparation for implementation of the EU Birds and Habitats Directives. By the date of official accession to the EU all countries will have to have a network of nature conservation sites in place that will ensure preservation of habitats, plants, birds and other animals in order to contribute to the Europe-wide NATURA 2000 network. In addition, the EU requires its member states to report on the status of NATURA 2000 species and habitats every six years. The preparation of such reports relies on a robust system for monitoring the conservation status of habitats and species across the country.

Bosnia and Herzegovina still do not have roof institution or agency responsible for nature protection at the state level which would coordinate adjustment of existing laws and activities in the field of nature protection. At the state level, Ministry of Foreign Trade and Economic Relationships of Bosnia and Herzegovina is responsible for international conventions and agreements. Federal Ministry for Environment and Tourism (FBIH) is responsible for designation of national parks, while cantonal ministries are responsible for designation of nature monument and protected landscape. In Republika Srpska (RS) Ministry for Physical Planning, Building and Ecology is responsible for designation of protected areas at all levels.

The protection of nature and biodiversity in Montenegro is regulated by numerous regulations from the field of environmental protection, forestry, hunting, fishery, etc. The preservation of biological diversity was proclaimed, in the Law on Nature Protection, as one of elementary principles of environmental protection. The continuous monitoring of biodiversity as environmental parameter is obligatory and takes place under the program of monitoring of the Government.

In particular the Strategy of Biodiversity and Action Plan from the Montenegrin Ministry of Spatial Planning and Environmental Protection in collaboration and the Institute for the Protection of Nature of Montenegro is very important for biodiversity protection.

Montenegro is mostly mountainous but it covers both Submediterranean and Mediterranean regions. In addition, out of the total area of Montenegro (1,381,000 ha), 743,609 ha or 54% are forests and woodlands, whereas forests cover 620,872 ha or 45% of the total territory.

The national parks are managed by the Public Enterprise for National Parks of Montenegro, established in 1993.

Biodiversity and other natural and landscape values of Montenegro are mainly preserved, despite numerous pressures to which they are exposed. The most important pressures include

use of natural resources, intensive and non-balanced development of certain sectors (tourism, urban development, etc.) and conversion of natural habitats. The great challenge are the pressures in the area of Skadar Lake which need to be adequately approached through the sustainable development at the level of local communities that gravitate towards national park. Share of the nationally protected areas in the whole territory is 7.72% and it mainly refers to the four national parks.

In general, due to rich rainfall and relatively well-preserved water resources, the programme area has good quality and abundant underground and surface waters. Richness and quality of water resources represent one of the most important comparative advantages of the whole area. Significant challenges are related to the protection of biodiversity, nature and landscape of the sea and coastal zone and responses to these challenges should be sought through the protection of especially valuable habitats and through an integrated management of the whole area.

In addition, taking into consideration that large part of the programme area is covered by forests, especially in Montenegro, Bosnia and Herzegovina and Northern part of Croatian programme area, forests are particularly important for the preservation of natural balance, biodiversity and quality of the environment, as well as for the economic development, especially in the northern, underdeveloped region.

2.3 Resource efficiency, renewable energy sources

Croatian energy indicators show lack of available energy resources and production capacities. Growth in energy consumption by 19 % in the last decade occurred with little change in the structure of consumption, reducing the share of hydro power and increasing the share of coal and reduction of gas.

The highest consumers of gas (22.6 %) are the households. The second largest gas consumers are public heating plants (16 %), followed by industrial heating plants, construction material industry, etc. In the domestic production of energy in Croatia, the highest share refers to the natural gas (37 %), followed by hydropower (34 %) and oil (21 %).

Coal and hydropower are the main sources of energy generation and the main sources of emissions in Bosnia and Herzegovina. Close to 50% of electricity in Bosnia and Herzegovina is generated in thermal power plants using local coal with a relatively high specific emission factor (1.3 tCO₂/MWh). The remainder of electricity is produced mostly by large hydropower plants, and a fraction comes from small hydropower plants. Natural gas and oil imports are also an important source of energy⁴.

⁴ BiH Second National Communication to UNFCCC, 2013

In the last 15 years, the most important primary energy sources in Montenegro were brown coal, lignite and hydroenergy, depending on hydrological conditions. Firewood and industrial wood wastes were used, but there is no oil and natural gas production.

Industry, service sector and small producers represent the largest energy consumer in Montenegro and contribute to the great extent to the pollution of the environment as well. Households are one of the largest energy consumers after the industry sector.

The overall energy chain in Montenegro, starting from the use of primary sources, through plants for production, transmission and distribution of energy, to transformation and its utilization by end users, is characterized by numerous irrationalities that are the result of: absence of energy strategy in the past, orientation towards energy intensive technology and equipment, inadequate engagement and maintenance of capacities, insufficient technical culture of the energy users, insufficient knowledge and motives to rationally use energy and inadequate price policy of energy products. Economic/energy potential of the introduction of energy efficiency measures, with the decrease of specific energy consumption, is significant. However, time period for complete realization of these potentials should be considered, as well as required investments in relevant programs and projects. Considering the fact that there is no rational valorization of energy greater than the one achieved by decreasing technically unjustified losses, this problem is particularly appealing.

In terms of energy from renewable energy sources (RES), Croatia is above the EU average (overall share of 15.7% compared to 13% EU-27 average in 2011). In terms of sectors (as set by the Directive 2009/28/EC), in 2011 over 28% of the final electricity consumption was produced from renewables while According to Croatian National Action Plan for Renewable Sources of Energy for 2020, share of direct energy consumption from renewable sources of energy in Croatia was 12,8% and the aim is to increase it to 20% by 2020. However, even when it comes to the large share of RES in electricity production it must be noted that majority of that percentage is attributable to Croatia's large hydro power plants (26.3% out of 28%) while other sources of RES (SHPP, wind, solar, biomass, etc.) contributed only 1.7% . The increase in production of energy from renewable sources of energy relates to increasing capacities of power plants of biomass and biogas, wind power plants, sun power plants, geo-thermal power plants and of small and big hydropower plants.

In the Croatian part of the programme area, there is one company from Vukovar-Srijem County registered for production, trade and storage of biofuel made of rapeseed and one mini heating plant on biomass for household in Karlovac County. Heating plants on biomass represent important niche in renewable energy sector as the concept of sustainable development and management depends on a very large number of such projects, small and medium, which can produce effects of saving money and protecting the environment. In addition, there is a cogeneration plant on biomass in Lika-Senj County with installed power (capacity) of 950 kW.

Furthermore, there are 5 biogas plants (3 in Vukovarsko-srijemska, 1 in Sisačko-moslavačka and 1 in Zagreb County) in Croatian part of the programme area with total installed power (capacity) of 4135 kW.

In period 2000 to 2004, Montenegro was producing circa 59% of the primary energy from the renewable energy sources, out of which 55% from hydro-energy and 4% from firewood, what is far above EU average. However, Montenegro still has a lot of unexploited renewable energy sources, which can be exploited if reasonable investments are made.

In 2006, in the structure of total consumption of primary energy, major share was of petroleum products (32.3%), coal (30.1%), hydro-energy (19.6%) and wood and waste (5.3%), meaning that the share of renewable energy sources in the total consumption was 24.9% which is already higher than the EU objective by 2020. There is significant potential in biomass energy production. However, this potential still needs to be fully exploited, both in large scale projects (national, regional) as well as in the housing sector.

In Montenegro, the single most important renewable energy source was wood mass. Annual growth rate of wood mass is estimated at 2.6 m³/ha per year, while the current wood consumption is estimated at 1.03 m³/ha per year. Estimated growth rate of wood mass is in-between 850,000 m³/per year and 1,060,000 m³/per year. Data on available biomass for the energy use still need to be agreed upon. In direct cooperation with local authorities it is necessary to conduct additional researches for obtaining more reliable data. According to the Energy Development Strategy by 2025, the introduction of significant biogas facilities is not envisaged.

It is estimated that in Montenegro from 200,000 up to 250,000 tones of solid waste is being produced, meaning that there is a possibility to built 3 to 5 incinerators depending on chosen capacities. Potential locations for these facilities are in vicinity of bigger cities (Podgorica and Nikšić).

There are 14 wind farms in Croatia in total and all of them are situated in 5 counties (Dubrovnik-Neretva - 1 wind farm, Split-Dalmatia County - 4 wind farms, Šibenik-Knin - 3 wind farms, Zadar - 5 wind farms and Lika-Senj County - 1 wind farm). The measurements of specific wind characteristics (speed, direction, frequency) showed that Adriatic area is more suitable for the use of wind energy than continental part of Croatia. Installed power (capacity) of these 14 wind farms is 254.250 kW.

16 sites suitable for wind power turbines have been identified in Bosnia and Herzegovina, with the estimated total installed capacity amounting to 720 to 950 MW, and an estimated annual production of 1,440 to 1,950 GWh. Taking into consideration installed capacities, it can be stated that wind power facilities have adequate conditions to be connected to the power grid.

Regardless of these findings, other than a few test sites, there is not a single wind power turbine in Bosnia and Herzegovina that is connected to the existing high-voltage grid ⁵.

In Montenegro, there is a good potential for exploitation of wind energy on locations along the Adriatic sea, on the mountain Rumija area, between Bar and Skadar Lake, where the

⁵ BiH Second National Communication to UNFCCC, 2013

average wind speed reaches 6-7 m/s. Other areas are on the hills behind Petrovac and on the mountains between Herceg Novi and Orahovac. The second interesting area is located in the continental area around Nikšić (wind speed 5.5-6.5 m/s).

In total, there are 491 operations on solar energy with total installed power (capacity) of 12.663 kW. In Montenegro, this potential is very important and is comparable with potentials of Greece and Italy. Coastline and central area are the most attractive for exploitation of solar energy because of the large number of sunny hours (2,000-2,500 hours/per year).

In Croatian part of the programme area, geothermal energy from natural resources is used for medical and recreational purposes.

There are several spa baths in the programme area that use geothermal energy, for example, in Bjelovar-Bilogora County (Daruvar bath spa and Lipik bath spa), and Sisak-Moslavina County (Topusko bath spa).

Two sedimentary basins cover almost the entire Croatian territory: Pannonian Basin and Dinarides. Based on the geothermal gradient, Dinarides show low geothermal potential, whereas Panonian basin shows significant geothermal potential. In that respect, there is a potential for the discovery of new geothermal reservoirs in the area.

To conclude, the Croatian part of the programme area situated in the Pannonia basin has favorable conditions in terms of development of renewable energy production from geothermal energy. However, putting the potential into use requires large infrastructure investments.

In Bosnian and Herzegovinian part of the programme area, geothermal energy from natural resources is used for medical and recreational purposes and also as tourism potential (e.g. in Republika Srpska: Teslić- Vručica Bath Spa, Srebrenica- Guber Spa Center, Laktaši Spa Center, Banja Mlječanica Health Spa Center, Bijeljina-Spa Center Dvorovi).

In Croatian part of the programme area, there are 12 big hydroplants (above 10MW) with total installed power (capacity) of 1660MW that annually deliver approximately 4522 GWh. There are also 10 small hydroplants (below 10MW) with total installed power (capacity) of 24,604 MW that annually deliver approximately 86,8 GWh.

The economic hydropower potential of major waterways in Bosnia and Herzegovina is around 18,000 GWh/per year and for small streams it is 3,500 GWh/per year. Only 40% (7,182 GWh/year) of the total economic potential is currently realized. The degree of utilization of small hydropower plants is much smaller - 4.4 % of available power, or 5.7 % of available energy -- and the economic potential for hydropower is very low compared to other European countries⁶.

In energy balance of Bosnia and Herzegovina, production mainly includes domestic energy resources – coal and hydro energy. Coal is mainly transformed into electric energy and

⁶ BiH Second National Communication to UNFCCC, 2013

compared to water power in total production of energy in Federation BiH, its participation is somewhere near 2:1 (thermal plants: hydropower plants).

Energy from renewable sources, except for hydro energy, is still not present in energy balance of Federation BiH, since it is not significantly present in energy industry of Federation BiH. Regarding firewood, there are no reliable data so even if it is believed that its share in total production of primary energy in Federation BiH is significant (probably 5 to 8 %), this segment remains outside energy balance.

In the last few years, energy indicators in Republika Srpska indicate slow growth in energy consumption, about 2 % per year in average. In addition, firewood – about 34.4 %, liquid fuels – 33.4% and electricity - about 21.9% have the largest share in the total final energy consumption. According to the current calculation methodology, the target in terms of share of renewable energy sources is to achieve 48% of its share in gross final energy consumption in the Republika Srpska in 2020.

At the level of Bosnia and Herzegovina, share of renewable energy amounts to 34%.

In 2010 World Bank study estimated the energy savings potential in Bosnia and Herzegovina to be highest in the buildings sector (20-60 percent), followed by industry (10-30 percent) and the transport sector (8 percent).⁷

Bosnia and Herzegovina has recognized the importance of energy efficiency to support sustainable economic growth and move towards EU accession. As a member of the Energy Community Treaty, Bosnia and Herzegovina has developed a draft National Energy Efficiency Action Plan (NEEAP) which includes an indicative energy savings target of 9 percent by 2018. Efficiency improvements in buildings are expected to contribute the most to achieve this target with an annual reduction in energy consumption of 1,900 GWh. To this end, residential buildings are expected to reduce their energy consumption by around 6.5%, while commercial and service sector buildings, including public buildings, are required to reduce energy use by almost 17%.

Montenegro has a hydro potential, which is considered among world's top potentials (according to the Index of Strategic Priority - ISP), considering its economy and suitability for ecological and social environment. Out of its total hydro potential on the main water currents of 9,846 GWh, Montenegro is exploiting less than 1,800 GWh (HPP Perućica and HPP Piva), i.e. somewhat more than 17%. However, it should be considered that the limiting factor for the exploitation of water resources is the fact that a part of the river Tara flow is located in the national park Durmitor, which is on the list of the UNESCO World natural heritage, as well as the fact that the basin of river Tara is included in biosphere reserves of UNESCO programs.

Besides of the above mentioned hydro potential that can be used for construction of production plants of higher capacity on the territory of Montenegro, there is also hydro potential of small watercourses that provide excellent opportunity for energy exploitation through construction of small HPP power plants (up to 10 MW). Furthermore, significant hydro potential outside Montenegrin borders should be considered, as it represents hydro

⁷ World Bank, Status of Energy Efficiency in the Western Balkans: A Stocktaking Report, Report No. AAA49-7B, 2010.

potential established on the territory of Montenegro whose realization is possible partially or completely outside its borders.

Montenegro has significant potential to generate energy from hydroelectric dams, and alternative sources. In 2010, 237.5 (in thousands of tonnes of oil equivalent) were obtained from renewable energy sources. It made up 33.4% of total primary energy generation.

Montenegro has relatively large possibilities for electricity generation in thermal power plants, since the exploitable reserves of coal in Pljevlja and Maočki basins are estimated at approximately 150.1 million tonnes. Limitations for electricity generation in thermal power plants result from the requirement of rational exploitation of non-renewable resources and especially from the fact that combustion of fossil fuels is connected with significant local and global environmental problems. During the future operation of the existing thermal power plants, as well as in the case of possible construction of new units, all the relevant EU Directives on environmental protection and operation of such plants will have to be respected.

To conclude, energy indicators in the programme area are showing low share of production and consumption from renewable energy resources even though the programme area has potential in using wind, solar power, biomass and geothermal energy. Furthermore, the analysis has shown that there is a need to improve energy efficiency in public buildings. Therefore, joint cross-border initiatives need to be implemented in order to strengthen the use of sustainable energy, to improve the related planning and legal framework, to strengthen awareness rising and to increase energy efficiency, especially in public buildings and housing sector.

2.4 Promoting climate change adaptation and mitigation

The 2007/2008 UNDP Human Development Report states that stabilizing the greenhouse gas concentrations in the atmosphere at a level that prevents catastrophic climate change will require a 50% reduction of the GHG emissions by 2050 from 1990 levels. The UN, Kyoto Protocol and EU policy as such are encouraging all countries to continue their economic growth with the competitive distortions while at the same time decrease growth in emission and adapt to effects of the changing climate. All countries should prepare their low carbon development strategies in the context of sustainable development. The EU has made commitment to deliver long term low carbon development strategy and some MS have already made steps in this direction. Recently TH EC adopted a Roadmap for transforming the European Union into a competitive low carbon economy by 2050. This document describes cost effective pathway to reach the EU's objective of cutting greenhouse gas emissions by 80-90% of 1990 levels by 2050. Based on this there are recommendations and directions developed for sectorial policies, national and regional low carbon strategies and long term investments.

Table 19: Carbon intensity of transition countries in 2008 (kg CO₂ from energy use per US\$ of GDP)

Country	kg CO ₂ from energy use per US\$ of GDP
Croatia	0.31
Bosnia and Herzegovina	0.57
Montenegro	0.96

Source: EBRD

Croatia has signed Kyoto Protocol and as a country is committed to reduce its greenhouse emissions by 5% in the period 2008-2012 and submitted its pledge for emission reduction for the post 2012 period. Renewable energy sources still do not have an appropriate share in the energy structure. The current share of renewable energy sources is 14.6% (against the target of 20% by 2020). At the same time, Croatia is dependent on few energy sources, in particular on gas and oil import. Croatia is showing progress in its Kyoto commitments. Over the past decade, greenhouse gas (GHG) emissions had a slight increase towards 2007 and kept decreasing afterwards mostly due to a decreasing industrial output caused by the recession. Energy use (fuel combustion) is the main source of emissions in Croatia. Non-ETS (Emissions Trading System) sectors such as transport, agriculture, households and waste contribute to the emissions. Croatia is exceeding its existing ammonia (NH₃) 2010 emission ceiling in the Gothenburg Protocol by about 25%.

Effects of climate changes have already been observed in Bosnia and Herzegovina: number of summer (above 25oC) and tropical days (above 30oC) has increased; schedule and structure of precipitation has changed with increase in rainfall in the north, north-east, central mountain areas and around Dobož and decrease in the SW; snow cover has been reduced. All of the above resulted in increased variability in weather: since 2000 we have had 5 drought years (2000, 2003, 2007, 2011 and 2012) and floods in 2010 and 2014. The above weather disasters call for urgent adaptation measures especially in the agriculture and water management sector.

Bosnia and Herzegovina is a non-Annex 1 country with no obligations to reduce its GHG emissions, but the fact that 2010 emissions of 24, 12 Gg CO₂ eq in the energy sector have reached 1990 level, indicates that it is necessary to increase energy efficiency level, share of renewable energy (currently 34%) and improve energy and transport infrastructure and services. This will provide a high level of energy security, encourage international investment, job creation and business enterprise, and will contribute to higher living standards for the population, which in turn, will lead Bosnia and Herzegovina to be a sustainable and prosperous 'green economy'.

In conclusion, energy efficiency (EE) is the most cost-effective clean means that can be tapped to reduce current energy supply demands which are expected to further grow in the future. Energy efficiency is also one of the lowest-cost means of reducing carbon dioxide (CO₂) emissions—a major contributor to climate change.

In addition, agriculture and forestry are at risk from negative impacts related to a hotter and drier climate, such as droughts and wild fires. Based on the conclusions of the EC in the preparation of partnership agreement with Croatia, in general, Croatia's urban areas and

countryside are not sufficiently resilient to climate change and disasters. Due to the fact that forests cover about 47% of the land in Croatia they present major challenge. Additionally, preventive flood protection measures are not sufficiently developed. Finally, in view of constantly booming tourism special attention should be paid to preserving the unique sea and maritime eco-system of the Adriatic Sea, which might be at risk with increase in number of tourists.

According to the monitoring and analysis of the climate data, the climate in Montenegro is changing as the consequence of the global climate change and variations. The clearest indicators are: significant increase in the air temperature, increase of surface sea temperature, as well as the mid-level of the sea and the changes of extreme weather and climate occurrences. Climate changes and variations are reflecting on the frequency and strength of many types of extreme occurrences, like heat waves, droughts, storms and floods, as well as to the related weather hazards (i.e. landslides, forest fires).

Due to the effects of climate change there is a growing need worldwide for the transition towards a greener economy on labor markets which means creation of new green jobs, such as those related to renewable energy. This trend is both area of new job opportunities for workers, but also new risks. The challenge for labor market and skill policies is to maximize the benefits for workers and help assure a fair sharing of adjustment costs, while also supporting broader green growth policies (e.g. by minimizing skill bottlenecks).

2.5 Risk prevention and management

Programme area as the world in general is in growing trend of natural disasters in recent years due to its climatic and seismic conditions.

Overall, the programme area is a high risk area, mainly due to climate changes, snowmelt and rainfall. Signs that can be attributed to the climate change as seen in all three countries in steady increase of average air temperature within the last decade, steadily trend of reduction in annual precipitation level, trend of evaporation compared to the air temperature trend and increased occurrence rate of extreme weather events. All these effects require climate change adaptation and management measures addressing establishment or further improvement of risk prevention management systems.

In Croatia, in last 30 years the average damage was determined to be US\$ 247 million per year (1.3% of GDP per year) where about 80% of the total damage is caused by the direct impacts of natural hazards. They are also responsible for many untypical hazards such as wildfires, landslides, plant diseases and pests as well as for the intensity of technical and technological disasters.

The relationship between different natural hazards in particular year during the long-term period in Croatia is very variable concerning frequency of appearance and damage magnitude.

Table 20: Damages caused by natural hazards (1981-2010) in Croatia

Type of natural hazards	Share of damage caused
Drought	39%
Storm Hail	23%
Earthquake	9%
Flood	9%
Frost	7%
Wild Fire	6%
Other causes	5%
Combination	2%

Source: 2010; WG5 – Societal and economical impacts, TTO7 – Task Team for Observation, Monitoring vulnerability factors; DHMZ Croatia. [https://bib.irb.hr/datoteka/628352.Gajic-Capka et al-HyMex6-poster-A4.pdf](https://bib.irb.hr/datoteka/628352.Gajic-Capka_et_al-HyMex6-poster-A4.pdf)

Spacious mountainous areas with high precipitation, wide valleys of lowland watercourses, major cities and valuable assets in potentially threatened areas and insufficiently constructed and maintained protection systems make Croatia very vulnerable to floods. It is estimated that floods endanger over 15% of national inland territory. The existing protection systems in Croatia are extremely complex and comprise of a large number of regulative and protective water structures.

Previous estimates of the damage after the floods all over the world, including Croatia, have shown that they were always much higher than the costs of implementation of preventive measures.

Severe damage can be caused by flooding of the major rivers: Danube, Sava and Drava river in the mainland, which belong to the Black Sea catchment, and the Neretva river which flows into the Adriatic Sea. They have a source outside of the Croatian territory, and the rise of the rivers levels and potential flooding, is mainly due to hydrological events in neighboring countries (Slovenia, Hungary, Bosnia and Herzegovina or even in the upper part of the river catchment in Germany, Austria or Italy). There are the larger numbers of smaller watercourses, dry river bed, canals, lakes, karst springs and underground rivers that can also cause flooding. Causes of flooding are usually abundant rainfall (short- and long- term), and snow melting. In the case of abundant convective precipitation, a short-term and spatially limited flooding appears. In the event of prolonged rainfall, the flooding is caused by this precipitation itself. There are also swollen mountain streams, the river beds fill and pour. Floods in this case may affect the larger area. In the karst area, the springs and rivers can also be activated. River spills are usually caused by hydrological events in neighboring countries, and can be combined with hydrological events in Croatia. Such flooding can also affect larger areas. Snow melting, especially rapidly, can cause increased water levels of rivers, forming a torrential watercourse, lake level rise, and outbreaks of water from underground karstic spheres.

Most serious damages are related to floods, droughts and fires, with around 70% of damages being on agricultural land (in particular caused by droughts). North-east of Croatian and North of Bosnian and Herzegovinian part of the programme area as the south part of these

two countries along river Neretva are at risk of floods, while the functionality of the flood protection system is at around 75%.

In the 2005–2012 period on the Croatian side, 2,488 forest fires were reported in which almost 80,000 ha of forests were affected, with large parts located in the coastal counties (both in terms of number of fires and affected area). Currently, Disaster Risk Assessment is being developed (to be completed by end 2015), which will provide the basis for improvement of the overall disaster management system, specifically by prioritizing specific risks and measures that require mitigation.

According to some estimates, currently there are about 21,500 ha of land in the watershed of the Sava River at risk of major flooding (occurring once in 100 years). Also, in the area of the Adriatic Sea there is approximately 20,600 ha at risk of flooding.

Coastal part of the programme area is under influence of climate change as much as other parts. However, in relation to specific elements of this climate change high temperatures and long-lasting severe droughts, this area is more than ever susceptible to open air fires. Fires spread easily across borders, endangering the entire region. Their outcomes range from extensive damage to landscapes, real estate and other country's resources to endangering people's safety and causing casualties that immediately affect tourism sector.

In the time period 2005 – 2012 there were 2,488 forest fires out of which in Mediterranean area 72% (1,792). Total area affected by fire in coast and continental territory was 79,628 ha, with participation of coast 89%. One of the most difficult years for Croatia was dry 2012 with 953 fires devastating 24,804 ha of forests and other land out of which 569 in coast areas. Causes of fires can be both natural and human.

Rescuing in general is organized in Croatia through integrated system of National Protection and Rescue Service (112) as an independent, professional and administrative organization for preparation, planning and management of the activities of all participants in protection and rescue.

The Croatian Meteorological and Hydrological Service (Državni hidrometeorološki zavod or DHMZ) is the national agency for weather forecasts. As of 2010 the service has 440 full-time employees in 23 departments, in addition to around 3,000 part-time observers around the country. The agency produces operational weather forecasts using Unified Model EMEP software for Numerical Weather Prediction (as part of the ALADIN international cooperation project) assisted by human forecasters, and DHMZ regularly supplies forecasts used in news programs broadcast. DHMZ joined the WMO in 1992 and it represents the country in international organizations ECMWF and EUMETSAT. DHMZ also publishes various publications such as periodicals related to meteorology, annual national climate reports, as well as meteorology dictionaries and climate atlases. They also participate in various scientific projects and their members often publish articles in peer-reviewed journals. Because of this DHMZ has been officially designated as a research institution by the Croatian Ministry of Science, Education and Sports in 1996.

The Law of Fire-prevention, the Law of Fire-fighting and the Law of protection and safety as well as their sub-regulations and corresponding acts and orders of districts, cities and municipalities regulate all matters of fire-prevention and fire-fighting in Croatia. According to the Croatian constitution, fire-fighting is matter of local municipalities. Professional and volunteer fire-fighters are equal regarding the fulfilling their duties, but the professional fire-fighting units work on bases of the Law of Public Institutions, and the volunteer fire-fighting units on bases of the Law of Associations of Citizens. Additional 4 fire-fighting intervention-units work in 4 coastal counties in Dalmatia, and all fire-fighting units are commanded during the summer by the Center in Divulje near Split, all part of the National Directorate for protection and safety. Specific for Croatia is also the engagement of 1,000 season fire-fighters and additional fire-fighting units on islands to protect them from wildland fires in summer.

Especially important to the programme area is Mountain Rescue Service of Croatia due to daily migrations of tourists and adventure sportsman in rocky and inaccessible areas of the borders of all three countries.

The Croatian Mountain Rescue Service is a volunteer, not-for-profit and public organization. The Croatian Mountain Rescue Service has safeguarded citizens and visitors in Croatia since 1950, 24 hours a day, 365 days a year. It is organized through 22 territorial units, and it gathers over 700 members. They gather Croatian rock climbers, speleologists, mountaineers and skiers, specially trained in administering of first aid and in all mountain rescue techniques, including helicopter-aided rescuing and search parties in rugged terrain involving the use of rescue dogs. CMRS is a member of the international association of mountain rescue services IKAR-CISA. CMRS is specialized in rescuing in mountains, on rock faces, in caves, from rugged terrains and other unapproachable places in difficult weather conditions, where rescuing requires application of special mountain-rescue skills and equipment. This includes accidents in mountain regions, rocks, caves, steep and other rugged terrains, as well as accidents that occur in particularly bad weather conditions (snow, cold, ice, fog, etc.). Often, the areas of the CMRS's activity are urban communities and other non-mountain areas as well. This includes missions performed on high buildings, in tunnels and pipelines, in traffic accidents and at the sea, as well as related to various extreme sports (paragliding, mountain biking, rafting, etc.). Other important activities of the Croatian Mountain Rescue Service, besides rescuing and administering of first aid to people injured in rugged areas, are education and prevention, that is, preventing and avoiding of accidents in rugged areas, especially of mountaineering related accidents.

In Bosnia and Herzegovina, natural accidents and disasters that affect property and endanger human lives are: earthquakes, stormy weather with hail, severe winds with electricity discharge, snow storms, short heavy rains that cause raging floods, landslides, droughts, early and late frosts, and industrial and forest fire.

The major issue every year throughout Bosnia and Herzegovina is heavy snow as well. However local authorities throughout Bosnia and Herzegovina have managed to maintain snow clearance procedures. Lack of adequate equipment for snow clearance is one of the major obstacles and problems for local authorities.

Bosnia and Herzegovina's territory represents one of the most active parts of the Balkan Peninsula in terms of seismology, and it is a part of the Mediterranean-trans-Asian seismic belt. The last major earthquake in Bosnia and Herzegovina was in Banja Luka in 1969. However, there have been two significant earthquakes in the greater Sarajevo environs so far in 2009.

In Bosnia and Herzegovina there is no hydrometeorological services on national level therefore it is necessary for the hydrometeorological services of the two entities (FHMI, RHMS RS) to cooperate daily. It has been recognized by several stakeholders (WMO, UN, EC) that it is necessary to enhance investments in climate modeling and forecasting and analysis to support strategic and sectoral planning for at-risk sectors.

Floods are the most frequent major natural hazards related to weather and climate in Bosnia and Herzegovina, causing disasters by affecting large amount of the population and causing significant economic losses. Approximately 75% of the territory of Bosnia and Herzegovina is located in the transboundary Sava River Basin area and 25% of the country drain into the Adriatic Sea. In December 2010, Bosnia and Herzegovina experienced the largest amount of precipitation recorded in the last 100 years, which resulted in massive floods on the entire territory. According to national authorities, the hardest hit areas were on Drina River, in Central and Eastern Herzegovina. In these areas alone, more than 4,000 people were evacuated. In general, most of the floods in Bosnia and Herzegovina occur in the Northern and central parts of the country. Heavy rains can cause river floods in e.g. the Vrbas, Bosna, Krivaja, Sana, Neretva or Sava rivers. Last year engineering works continued to improve the river beds in the Sarajevo area. Some other municipalities have also requested similar works in their areas to prevent floods.

Although fire is listed as one of the top hazards in Bosnia and Herzegovina the collection of data has been minimal and as a result the risk is hard to quantify. Forest land covers approximately 50% of the territory of Bosnia and Herzegovina and is equally divided among the entities. In the Federation of Bosnia and Herzegovina and Republika Srpska, forest fires present a problem, burning anywhere from 1,000 to 3,000 ha per year.

Other major natural hazards causing significant consequences since 1992 have been drought, landslides, extreme temperature and storm. All these are caused directly or partially by extreme weather conditions. The occurrence of landslides in the mountainous areas of Bosnia and Herzegovina is very common due to the presence of underground water flows. The number of landslides has increased considerably over the last 15 years due to the uncontrolled exploitation of forests and minerals and because of an increase in illegal and/or unplanned construction. Bosnia and Herzegovina have also a number of environmental issues. These include air pollution from the country's metallurgical plants and other sources. There are also many other hazards related to weather, like harsh winter conditions. They may cause accidents, which are in some countries on annual level even more costly than the traditional

natural hazards. From Bosnia and Herzegovina no data of this type of weather related hazards was available.⁸

In respect to institutional capacities, Ministry of Security, the Department for the Protection and Rescue coordinates the field protection and rescue in Bosnia and Herzegovina. At the state level there is also the Coordinating body of Bosnia and Herzegovina, which coordinates the activities of protection and rescue in the entire territory of Bosnia and Herzegovina, while the entity and Brčko District levels are responsible for managing. Coordinating body is consisted of nine members of the Council of Ministers, five members representing the entity governments and two members, representatives of the Government of Brčko District. At the entity level there is Federal Civil Protection Authority and Civil Protection Authority of Republika Srpska and Department of Public Security of the Brčko District. In all 10 cantons there are Cantonal Authorities for Civil Protection established and, additionally, municipal civil protection services.

The consequences of mentioned disasters have the adverse impact to overall social and economic development because readiness to provide an adequate response to disaster is still unsatisfactory. High awareness level on risks and readiness for protection from disasters in Bosnia and Herzegovina is also unsatisfactory. The disaster consequences affect not only Bosnian and Herzegovinian territory, but rather reflect to a wider region.

As well as Croatia and Bosnia and Herzegovina, Montenegro is also vulnerable to both man-made and natural disasters. The Government of Montenegro established in 2006 a comprehensive strategic approach to manage the potential risks. Montenegro has a Mediterranean climate with hot dry summers and autumns and relatively cold winters with heavy snowfalls inland. The terrain is a highly indented coastline with a narrow coastal plain backed by rugged high limestone mountains and plateau. The elevation varies between 0 m on the coast to a highest point of 2 522 m above sea level at Bobotov Kuk. The main natural hazard in Montenegro is destructive earthquakes where around 40% of the country's territory is within active seismic zone (especially the Zeta-Skadar depression and the Berane basin) and small tremors are recorded throughout the year. Serious earthquakes are less frequent but do occur. This affects around 60 % of the country's population. There is a high probability that future earthquakes would activate large landslides and rockslides.

Meteorological hazards in Montenegro include floods and droughts. Floods are the most frequent natural hazard (there have been six destructive floods in the last 20 years). Pazicko polje and the Lim River valley are most prone to flooding. The biggest floods were recorded in the upper flow of the Tara and the Lim rivers in 1963, 1979, 1999 and 2000. Strong droughts and increased summer temperatures were recorded in the periods 1981–1990 and 2000–2009.

⁸ Source: *Strengthening Multi-Hazard Early Warning Systems and Risk Assessment in the Western Balkans and Turkey: Assessment of Capacities, Gaps and Needs*

According to available projections, temperatures will rise 0.60 degrees to 1.3°C by 2030, depending on the season and the area. Owing to changes in precipitation, there will be a sharp increase in variability of river flow, characterized by flooding and hydrological drought. Coastal flooding and storm surges will also significantly increase.

Montenegrin coast is the catchment area for about 70 torrential streams and canals, out of which about 40 are active. The area of torrential streams is approximately 350 km². These streams lead to long periods of low water level and the absence of flow/discharge, as well as short-term high fluxes/discharges, due to heavy rainfalls. Extreme rainfalls cause water spillovers, resulting in localized flooding. These floods fall into the category of sudden floods (flash floods) and are characterized by a rapid flood wave up to 6 hours from the start of intensive rainfall.

Given the lack of hydrological data, pressures on water resources and the absence of a unified database of the activities on streams, relevant authorities started analyzing the state of the watercourses and creating conditions for continued quality management of this resource. For this purpose, an analysis of 42 watercourses causing damages during extreme rainfall on the territory of six coastal municipalities was done. Most of these streams have flooded in the last ten years due to heavy rainfalls.

Climate-related hazards and a large number of illegal and irregular constructions have seriously affected Montenegro's vulnerability. Official sources believe that there are over 100,000 illegal and irregular constructions in Montenegro, which if evenly distributed in a country with an average household size of 3.4, suggests every other household owns this type of construction.

Furthermore, national authorities consider that a vast majority of these housing units, especially those built on the coast, carry a high level of seismic risk and, as the country recently found out, are highly vulnerable to floods (there is no disaggregate data on risk of either hazards). The communities are likely to experience severe negative externalities of unplanned and unregulated construction such as congestion, lack of access to many services and pollution – from a disaster risk perspective a possible domino effect of earthquakes and a host of other climate-related disasters, including floods, is likely. Montenegro represents a case where a rush for growth has triggered haphazard development including increased human settlements, investment in high-risk coastal areas and exposure of a greater number of people and assets in the path of floods. All of this generates vulnerability and increases the risk of large-scale damages and fatalities during a disaster.

The combination of the increase in frequency and intensity of climate-related hazards and the increase in haphazard development in Montenegro constitutes a higher risk to great economic and health impacts of these hazards.⁹

⁹Source:

UNDP: Disaster Risk Reduction Capacity Assessment Report For Montenegro, April 2011
Montenegro Ministry for Spatial Planning and Environment, 2010, *Initial National Communication on Climate Change of Montenegro to the United Nations Framework Convention on Climate Change (UNFCCC)*; UNISDR, 2008, *South Eastern Europe Disaster Risk Mitigation and Adaptation Initiative: Risk Assessment for South Eastern Europe, Desk Study Review*; UN ISDR, 2009, *The Structure, Role and Mandate of Civil Protection in Disaster Risk Reduction for South Eastern Europe*.

The Government of Montenegro has adopted the National Strategy for Emergency Situations. The strategy was developed by the Ministry of Interior, in consultation with over 30 organizations, including private sector and non-governmental organizations (NGOs). The Strategy was supported through the Law on Rescue and Protection and a number of legal regulations (for instance, covering transportation of dangerous goods).

Montenegro has Law on Protection and Rescue (2007), which defines the responsibility, rights and obligations of all participants in protection and rescue (citizens, legal entities, local self-government units and state administration bodies). It gives authority to the Ministry of Interior for handling emergency situations and civil security through the Sector for Emergency Management and specifies in which disaster cases municipalities are competent to act. Therefore it complements the Law on Local Governance, which foresees the creation of municipal rescue teams, their subsequent training and equipment, and delegates them certain authority for small and medium-scale emergencies. Issues not addressed by the Law on Protection and Rescue are the development of contingency plans and the specification of a risk identification methodology (only hazard identification methodology is mentioned). Pursuant to Article 34 of the Law on Protection and Rescue, the Ministry adopted two rulebooks that regulate the content, development, adoption, update and storage of assessment studies as well as protection and rescue plans in Montenegro. State administration bodies, local self-government units, companies, other legal persons and entrepreneurs are mandated to comply with their instructions in order to guarantee nationwide harmonization of all assessments and plans.¹⁰

There are specific laws on hydro meteorological services and hydrographical services, which define the scope of work, roles and responsibilities related to the area. There is also a Law on Environment and Air Quality – however, the by-laws accompanying these legislative acts are yet to be developed.

There is no legal basis on the role of the army in disaster response and disaster risk reduction. Montenegro, however, has adopted National Security Strategy and National Defense Strategy. The Ministry of Defense cooperates with the Ministry of Interior in the disaster management.

Red Cross has a dedicated legal act (Law on Red Cross), which describes the role of the Montenegro Red Cross in emergencies such as training, evacuation support, family unification, tracing and first aid. The Red Cross has its own strategy for the period 2010–2014 and its role is mentioned in the Law on Rescue and Protection.

The Ministry of Sustainable Development and Tourism hosts the Hydro-Meteorological Services, Agency for Eco-toxicological Research, Environmental Protection Agency, Institute for Nature Protection and the Coastal Management Unit. There are laws on environmental protection, national parks, eco-toxicology and air and water pollution. The Ministry is

¹⁰ Source: IPA Beneficiary Country Needs Assessment Montenegro, EC, UNDP, WMO

developing a strategy on prevention of pollution. Under the authority of the Ministry is also the Seismological Observatory, which is mandated to conduct seismic monitoring.

The Hydrometeorological Institute of Montenegro (HMZCG) has 112 staff, of which 59 are based in Podgorica. The institute is under the Ministry of Sustainable Development and Tourism and is responsible for monitoring the meteorological, hydrological and hydrographical situation, as well as air and water quality and pollution. The HMZCG, by using its network of monitoring stations (10 automatic stations, 20 climatological stations, 60 precipitation stations and 51 hydrological stations, out of which 23 are automatic) provides data on a regular basis to the Ministry of Interior and other government organizations.

The Emergency Management Coordination Team has been established, the team is headed by the Prime Minister and has as the members all ministers. Montenegro has signed a number of bilateral partnership agreements, mostly related to cooperation in emergency response, with countries such as Bosnia and Herzegovina, Slovenia, Croatia, Macedonia, Greece, Serbia and Russia. Montenegro also participates in regional and international frameworks in the area of disaster management such as Disaster Preparedness and Prevention Initiative, Programme for the Prevention Preparedness and Response to Natural and Man-Made Disasters (PPRD South), Civil-Military Emergency Preparedness and the Organization for the Prohibition of Chemical Weapons.

Furthermore, Montenegro has the Mountain Rescue Service, which has 54 staff which have completed the complex trainings for rescuing people in the mountains and were trained for all mountain rescue techniques. Mountain Rescue Service of Montenegro cooperates with all agencies and organizations in Montenegro (Department of Civil Security and Emergency Management of the Ministry of Interior, Emergency Service, Police, Army, Services for civil protection and rescue, Red Cross of Montenegro). Mountain Rescue Service has been recognized as Specialist unit in the Strategy for Emergency Situations of Montenegro.

Over the past 20 years there were many joint initiatives and projects combining joint efforts of different countries in fighting natural disasters mainly fires. One of the biggest and recent project all three countries are participating in is strategic project of IPA Adriatic 2007-2013 Programme: Holistic – Seismic and Wildfire Risks with the aim to reduce the number and the impact of forest fires, to protect people, natural environment and properties, and in particular to promote fire prevention among rural communities in fire prone areas of regions facing the Adriatic. Furthermore, the project provides actions related to earthquakes risk aimed at establishing a permanent instrument for preventing, controlling and managing strategic public buildings from earthquakes' damage risk. The project performs joint initiatives and pilot actions for direct and indirect long, medium and short-term preventive measures in wildfire and earthquake risks to enhance policies, regulations and coordination mechanisms.

Large part of the Croatian part of the programme area as well as in Bosnia and Herzegovina is still contaminated with mines from 1990-1997 that presents a security issue for population – primarily in usage of land suitable for agriculture.

Table 21: Counties with land mines (Croatian programme area)

Counties with land mines (Croatian programme area)	MSP m ²
Lika-Senj County	148,280,356
Sisak-Moslavina County	108,484,131
Karlovac County	61,552,916
Zadar County	51,839,006
Šibenik-Knin County	37,793,959
Požega-Slavonia County	37,761,560
Vukovaro-Srijem County	29,039,516
Split-Dalmatia County	26,705,890
Brod-Posavina County	19,623,343
Virovitica-Podravina County	9,841,736
Dubrovnik-Neretva County	4,549,064
Total Croatian programme area	535,471,477

Source: Croatian Demining Center, 2012

The current area of mines contaminated land in BiH is 1.218,50 km² or 2,4% of total BiH area, which directly affects safety of BiH citizens.

Montenegro had a mine problem in the border areas with Croatia (Debeli Brijeg and Ravni Brijeg) and Albania (Plav and Rožaje). However, Montenegro signed Mine Ban Treaty, based on which Montenegro is required to destroy all landmines in mined areas under its jurisdiction or control by 1 April 2017. Officially, Montenegro did not yet declare Mine free status. Even though there are no known or suspected areas with land mines, there is still a need to survey mountainous areas on Montenegro's borders with Croatia to check for possible mined areas. Montenegro also planned general and technical surveys of suspected land around the military airport at Golubovci and Bojana river, but has not yet conducted them due to lack of funding.

Conclusions:

- Existing environmental hot spots in the programme area are potential threat if plans for remediation are not in use.
- 22 national parks and parks of nature in the programme area are significant potential for tourism but also valuable richness contributing to further protection of the environment and good quality of air and water in the programme area.
- There is a need for regional low carbon development strategies due to the fact that all three countries are still at the beginning of this process.
- Low share of green jobs in total economy.
- Preservation of biodiversity as well as increase of joint capacity in managing sea, coastal and marine resources in the Adriatic.
- Due to the large areas of agriculture land (Croatia), there is a potential for the application of sustainable agricultural production and agricultural land use in accordance with the principles of sustainable soil management.
- Use of forest and forest land in accordance with the principles of sustainable forest management.

- The border region has a potential for increasing production of renewable energy – especially from agricultural waste and forest residues (biomass), geothermal, solar and wind energy (Mediterranean, Dinaric and Pannonia basin areas). However, putting the potential into use requires large infrastructure investments.
- Programme area is in growing trend of natural disasters in recent years due to its climatic and seismic conditions: fires, floods and droughts.
- Due to climate conditions in the Mediterranean part of the programme area with periods of drought during summer and specific Mediterranean vegetation, fires are very often during summer time. Since fire-fighting is not on the satisfactory level, fires cause major problems to people but also to vegetation and natural and cultural heritage.
- North-eastern part of Croatian part of the programme area and North of Bosnian and Herzegovinian part of the programme area as a southern part along river Neretva need a serious approach in flood prevention.

3. Sustainable transport and public infrastructures

3.1 Transport infrastructure

With Croatian accession to EU, border with Bosnia and Herzegovina and Montenegro became EU border. Total new EU border length in Croatia is 1,377 km which makes it the longest EU land border (Frontex). In its yearly risk analysis Frontex states that the border between Croatia and Bosnia and Herzegovina will be second longest in the EU and out of all, this border will be the one with the heaviest traffic.

The density of categorized road network in the programme area is 481,14 m/km² on Croatian side while on the Bosnian and Herzegovinian side of the programme area is 442,37m/ km² and Montenegrin 356.57 m/km².

The density of roads along the border between Croatia and Bosnia and Herzegovina is far under the national level. The existing roads are in a very poor condition and badly connected to national roads.

In Montenegrin part of the programme area transport infrastructure is not in very good condition, either mostly due to lack of investment but also unfavorable spatial structure. Roads and railways are in very bad condition while port equipment, airstrips dams are in slightly better condition. In 2004 a new transport study for the Balkans established further development of the South Eastern European Transport system: the Core REBIS network. The connection Bar-Podgorica-Belgrade was proposed as corridor line No4. At the moment, there are no motorways in Montenegro.

In addition, main problems in the sector of transport in the programme area can be found in the unfavorable geographic topography (e.g. requiring more bridges tunnels), which increases both maintenance costs due to difficult access conditions and high levels of investments required for new construction infrastructure.

Main transport corridors having an impact on the programme area are the following:

- Corridor Vb: Rijeka-Zagreb-Budapest
- Corridor Vc: Ploče-Sarajevo-Budapest
- Corridor VII: Rhine-Danube
- Corridor VIII: Durres-Tirana-Skopje-Sofia
- Corridor X: Ljubljana-Zagreb-Lipovac (border-crossing to Serbia).

The Croatian and Bosnian and Herzegovinian part of the programme area has 54 border crossings that cover crossings for international road, rail and waterway traffic:

Table 22: Border crossings Croatia – Bosnia and Herzegovina

Border crossing	Passengers	Cars	Trucks	Buses	Trains	Boats
1.Kamensko-Kamensko	1,175,403	397,855	50,709	9,615	n/a	n/a
2.Vinjani Gornji-Osoje	1,127,942	506,683	961	2,042	n/a	n/a
3.Vinjani Donji-Gorica	1,953,335	867,575	61,086	5,650	n/a	n/a
4.Orah-Orahovlje	1,176,185	40,762	16,169	8,266	n/a	n/a
5.Mali Prolog-Crveni Grm	1,017,525	353,995	12,095	8,781	n/a	n/a
6.Metković-Doljani	2,530,209	718,025	32,054	2,861	n/a	n/a
7.Klek-Neum 1	3,703,824	1,143,873	135,311	42,846	n/a	n/a
8.Zaton doli-Neum 2	3,332,837	1,194,548	114,264	46,545	n/a	n/a
9.Metković-Čapljina (rail)	1,2087	n/a	n/a	2	670	
10.Prud-Zvirići	491,315	245,887	3,911	1,389	n/a	n/a
11. Unka-Unka	192,271	104,171	22		n/a	n/a
12.Gabela polje-Gabela	420,380	202,910	3,101	492	2	n/a
13.Gabela II-Glibuša	33,633	19,173	n/a	n/a	n/a	n/a
14.Vukov Klanac-Radež	29,123	15,764	n/a	n/a	n/a	n/a
15.Imotica-Duži	42,628	22,011	232	n/a	n/a	n/a
16.Čepikuće-Trebimilja	50,723	26,106	219	2	n/a	n/a
17.Županja-Orašje	2,888,593	1,236,950	87,759	9,955	n/a	n/a
18.Strmica-Strmica	237,500	83,604	5,021	1,326	n/a	n/a
19.Hrvatska Dubica-Kozarska	243,137	113,114		115	n/a	n/a
20.Dubočica-Domaljevac	n/a	n/a	n/a	n/a	n/a	n/a
21.Svilaj-Donji	1,777	597	n/a	n/a	n/a	n/a

Svilaj						
22.Drenovci-Brčko (rail)	n/a	n/a	n/a	n/a	590	
23.Slavonski Šamac-Šamac	1,993,576	570,304	125,105	6,953	n/a	n/a
24.Slavonski brod – Brod	4,905,800	1,571,884	97,901	22,187	n/a	n/a
25.Stara Gradiška-gradiška	3,988,393	1,216,558	120,124	25,256	n/a	n/a
26.Jasenovac-Gradina	1,160,335	413,195	36,098	1,962	n/a	n/a
27.Dvor-Novigrad	779,710	338,602	10,318	871	n/a	n/a
28.Maljevac-Velika Kladuša	1,692,487	663,746	25,802	3,847	n/a	n/a
29.Ličko Petrovo selo-Izačići	1,331,772	430,247	61,638	6,500	n/a	n/a
30.Hrvatska Kostajnica- Kosta	1,084,306	325,434	n/a	445	n/a	n/a
31.Užljebić-Ripač	93,187	41,608	n/a	15	n/a	n/a
32.Lička Kaldma-Kaldma	2,668	1,576	n/a	n/a	n/a	n/a
33.Bili brig-Vaganj	15,707	6,938	81	2	n/a	n/a
34.Aržano-Prisika	374,906	133,489	14	500	n/a	n/a
35.Aržano Pazar-Vinica	19,080	11,172	4	n/a	n/a	n/a
36.Jovića most-Čitluk	36,452	24,614	46	n/a	n/a	n/a
37.Slano-Orahov-dol	13,514	6,911	40	n/a	n/a	n/a
38.Gornji Brgat-Ivanica	625,501	240,771	2,187	1,355	n/a	n/a
39.Gunja-Brčko	1,309,895	638,623	23,157	383	n/a	n/a
40.Slavonski Šamac-Šamac (railway)	360	n/a	n/a	n/a	762	n/a
41.Volinja-Dobrljin (rail)	28,620	n/a	n/a	n/a	1,869	n/a
42.Slivno-Drinovačko brdo	5,864	3,666	n/a	n/a	n/a	n/a
43.Veliki Prolog-Prolog	12,149	9,005	n/a	n/a	n/a	n/a
44.Dvorine-Subašići	12,686	6,146	n/a	n/a	n/a	n/a
45.Sebišina-Drinovci	34,135	22,171	111	n/a	n/a	n/a
46.Podprolog-Prolog	61,341	42,027	469	1	n/a	n/a
47.Pašin potok-Zagrad	60,794	34,921	n/a	n/a	n/a	n/a
48.Bogovolja Hadžin potok	32,903	15,455	n/a	n/a	n/a	n/a
49.Gejkovac-Plazikur	55		n/a	n/a	n/a	n/a
50.Davor-Srbac	2,211	182	n/a	n/a	n/a	n/a

51. Ričice-Podbila	76	41	n/a	n/a	n/a	n/a
52. Burumi-Tolisa (Topalovci)	186	41	173	n/a	n/a	n/a
53. Nova Sela-Bijača	124,486	39,106	22,158	616	n/a	n/a
54. Slavonski Brod		84			n/a	84

Source: Ministry of Interior of the Republic of Croatia 2013

The Croatian and Montenegrin part of the programme area has 2 border crossings:

Table 23: Border crossings Croatia – Montenegro

Border crossing	Passengers	Cars	Trucks	Buses
1. Vitaljina-Kobila	128148	49121	2	65
2. Karasovići-Debeli Brijeg	2438727	491770	22932	24856

Source: Ministry of Interior of the Republic of Croatia 2013

3.1.1 Road and Motorway transport

Adriatic Croatia, measured according to density of road network, is approximately on the average level in Croatia. The road infrastructure in Lika-Senj County is the most developed. Almost 80% of the investment in the construction and reconstruction of highways in the 2005-2008 period took place in Adriatic Croatia.

Croatia has 1,254 kilometres long motorway network, nevertheless additional sections are still under construction and/or in need of environmental modernisation. Of particular interest is connecting Dubrovnik to the rest of the country.

Road network in Montenegro includes 850 km of highways, 950 km of regional roads and very extensive network of country roads (5,300 km; while data on length of roads are not available per municipalities). In recent years road connection between Podgorica and the coastal towns have improved significantly with the completion of Sozina tunnel, which shortened the journey from Podgorica to Bar to less than half an hour and made the trip significantly safer.

In addition to the old age of the road network, the main problems in the sector can be found in the unfavourable geographic topography (requiring more than 300 bridges and 100 tunnels in the whole territory), which increases both maintenance costs due to difficult access conditions and high levels of investments required for new construction infrastructure. Seasonal frequency has also some consequences on road traffic. During the summer (June-September), traffic peak is more than 20 times higher than in other periods during the year. Particularly important are the problems detected in the coast due to the absence of motorway in the sections Herceg-Novi-Kamenari and Budva-Bar.

The great opportunity for the programme area is construction of Adriatic – Ionian corridor which would open road communication between South-Eastern Europe and Middle Europe and connect South-West and South-Eastern Europe. The major road link between Croatia and

Montenegro is E65/E80/Route 2.

Table 24: Overview of roads and their categorization

Croatian programme area - NUTS 3	All roads (km)	Motorways	State roads	Regional roads	Local roads
Vukovar-Srijem County	948	50	256	437	205
Požega-Slavonia County	688		219	201	268
Brod-Posavina County	903	124	136	448	195
Sisak-Moslavina County	1792	64		385	717
Zagreb County	1592	128	240	685	539
Lika-Senj County	1817	118	526	515	658
Karlovac County	1498	83	352	503	560
Virovitica-Podravina County	857		172	368	317
Zadar County	1792	74	510	528	680
Šibenik-Knin County	1139	43	325	442	329
Split-Dalmatia County	2603	124	747	830	902
Dubrovnik-Neretva County	990		386	273	331
Bosnia and Herzegovina	22648	84	3722	4842	14000

Source: Croatia Ministry of Interior 2014, Bosnian and Herzegovinian Ministry of Communication and Transport

Roads in Croatia are split in 5 categories: very good, good, acceptable, bad, and very bad. Only 18% of national roads are in good condition, 34% are in an acceptable condition 24% are in bad condition and 23% are in very bad condition

3.1.2 Railway transport

The railway network is composed of international, regional and local railway lines.

There are several major railway routes in the country:

- (via Ljubljana, Slovenia) from Dobova to Zagreb, Slavonski Brod, and Vinkovci to Tovarnik (and onwards to Belgrade, Serbia)
- Zagreb to Rijeka
- Zagreb to Split
- Zagreb to Sisak.

The railway line linking Dobova and Tovarnik, operating the length of Croatia east-west via Zagreb, is the country's most important railway line, and part of the Pan-European corridor X. It is also the most advanced and busiest, being completely electrified and consisting mostly of double tracks. It longitudinally crosses Croatia's continental regions Slavonia, Posavina and the Greater Zagreb Region, connecting the most economically developed towns in Croatia

with each other.

The Ogulin–Knin line, also known as the "Lička pruga" (en. "the Lika line") is part of the railway connection between Zagreb and Split. As of 2007, this line is being heavily upgraded with many sharp bends and grades removed in order to allow tilting trains to travel at nearly full speed on most parts of the track. Reducing travel time from Split to Zagreb by around a third, to 5–6 hours. This track was not intended as the shortest distance between Zagreb and Split. The line via Martin Brod which forms the border with Bosnia and Herzegovina has not been reopened to passenger traffic since the wars of the 1990s.

The route called Unska pruga (lit. the Una track) that connects Zagreb and Split along the Una river valley remains largely unused, since much of the route virtually runs over the border between Croatia and Bosnia and Herzegovina, crossing it multiple times, on the section between Knin and Bihać.

Dubrovnik is the only port that is not connected with the inland by rail.

Investment in railway lines of regional importance was modest so that the functional capacity of these lines continually reduced. The most critical and completely dilapidated sections of railway lines of local importance were only repaired, predominantly with re-used material. The level of investment was insufficient given the age and dilapidated state of railway infrastructure.

The railways are in urgent need of modernisation. Several important routes remain unelectrified and single-tracked, and feature steep gradients and lengthy meandering segments, which lead to lower average speeds.

In terms of railway transport, in the programme area there is only one railway line going through all three countries, which passes from Ploče through Metković towards Sarajevo and further to the Central Europe. It is a part of the Corridor Vc (Budapest–Osijek–Sarajevo–Mostar–Metković–Ploče) and as such of great importance as the nearest connection of the Central Europe and the Mediterranean Sea. Between Croatia and Bosnia and Herzegovina there is a railway line Zagreb – Sisak – Banja Luka – Sarajevo.

Important railway connections in Montenegrin part of the programme area are those which connect Bar with Podgorica and Podgorica with Nikšić. The railway Podgorica–Nikšić is used only for freight, while railway Bar–Podgorica is used for both transport of passengers and freight. There is no railway connection between Croatia and Montenegro or Bosnia and Herzegovina and Montenegro.

Length of all lines is 331km (open line and stations tracks), and is split in three routs:

- 1) Bar-Vrbnica (border with Serbia), length 167.4km, open for passenger and cargo transport
- 2) Podgorica- border with Albania, length 24.7 km. This line is only used for cargo transport and it is not electrificated; and
- 3) Podgorica-Nikšić, length 56.4km. Right now is used only for cargo transport, but after the finished electrification of this line, the passenger transport on this line will be also established.

Railway indicators both in terms of area or population are below average. No double tracks are inventoried and average speed is recorded at 50 km/h, seriously limiting competitive advantage of this transport mode. At the moment, more than 90% of the total railway network is electrified partly due to the rehabilitation of the Nikšić-Podgorica railway line, which is in

progress.

The company in charge of the railway transport in Montenegro is Željeznice Crne Gore.

The two companies operating services in railway transport in Bosnia and Herzegovina are:

- Željeznice Republike Srpske (ŽRS) operates in Republika Srpska
- Željeznice Federacije Bosne i Hercegovine (ŽFBH) operates in the Federation of Bosnia and Herzegovina.

Total length of railway lines in Federation BiH is 608,495 km and in Republika Srpska is 1,031 km. The main users of rail transport services are chemical industry in Tuzla, Ironworks and BH Steel Zenica, brown coal mines in Zenica and Tuzla, iron mine in Prijedor, aluminum combine in Mostar.

Two most important railway lines in the programme area are:

- Ploče-Mostar-Sarajevo-Zenica-Doboj-Bosanski Šamac-(Vinkovci)
- Bihać-Bosanski Novi-Prijedor-Banja Luka-Doboj-Tuzla-Zvornik.

3.1.3 Inland waterways and inland ports

Rivers in the programme area have been relatively underused as transport corridors. Once the navigational conditions are brought back to pre-war levels and upgraded, there is a potential for inland waterways to be used in combination with railway transport as an alternative to the currently dominant road transport network, as well as in other types of multimodal transport.

The total length of current inland waterways in Croatia is 805.2 kilometres, of which 601.2 kilometres is included in the European inland waterway network of international importance. According to the AGN agreements, the following waterways are included in the European inland waterway network:

Table 25: Croatia in the European inland waterway network of international importance

Waterway mark.	Waterway – route	Requested class according to AGN	Length km
E 80	Danube from Batina to Ilok	VI c	137.5
E 80-08	Drava to Osijek	IV	22
E 80-10	Future multi-functional Danube-Sava canal from Vukovar to Šamac	V b	61,5
E 80-12	Sava from Račinovci to Sisak	IV	380,2
Total length international waterway acc. AGN:			601,2

Source: AGN (European Agreement on main inland waterways of international importance)

Significant possibilities for utilization of river traffic in the system of the programme area are

related to the Sava River. The opportunities for integrating traffic (roads, rail and waterways) in the area were already identified in pre-war research but have not yet been seized. A great opportunity for the programme area in this concern presents the future multi-functional canal Danube-Sava which by combining multi-modal transportation (water-rail from Port of Vukovar till Šamac and onwards to Port of Ploče through Bosnia and Herzegovina, and to Sisak along the Sava River and onwards by rail to Port of Rijeka) shortcuts the transportation and links NW Europe with SEE - Danube region with the Adriatic-Ionian region. Currently, the most important international inland waterway ports are the Port of Vukovar on Corridor VII, and the Port of Slavonski Brod, which is located at the intersection of two Pan-European Corridors (X and Vc). The potential of those harbors is still not used even though there are some improvements in this area in relation to past programming period. It is still necessary to continue with investments in docking, warehouses and equipment in order to reach European standards. The transport of goods along inland waterways diminished over the years. In 2011 this mode of transport accounted for 0.4 % of total goods transport, which is considerably less than in 2005, when it amounted to 1.3 %. The transport of goods on the Danube has been on the increase, though. However, due to very poor safety conditions in the wake of the war, the transport of goods along the Sava has dropped dramatically. Before the 1990s, around 7.5 million tonnes of goods were being transported along the Sava annually. This figure has now dropped to as little as 268,000 tonnes.

On an individual port basis, an increase of traffic in the ports in the Danube basin and Drava corridor is evident (see Figure 4). The port of Osijek reported a continuous growth of tranship cargo between 2000 and 2008, although because of the lack of infrastructure it did not reach the pre-war levels. The ports of Slavonski Brod and Sisak solely depend on the transport of crude oil between Slavonski Brod and Sisak, which is the only cargo that is recorded in these ports.

3.1.4 Sea Transport

Sea transport system is the important one. The ports located in Dubrovnik-Neretva County, Zadar County and Split-Dalmatia County are of particular (international) importance for Croatia: Gruž, Ploče, Zadar and Split. All ports are classified as TEN-T ports. The Port of Ploče lies at the exit of Corridor branch Vc and is of particular importance for the economy of southern Dalmatia, Bosnia and Herzegovina, and also Hungary. The catchments areas of Dubrovnik are reduced to a narrow hinterland area, which makes them in regards to traffic only locally important. Dubrovnik Port will build a modern passenger terminal for scheduled passenger ships and cruise ships on the place of old cargo warehouses. Apart from that, there are a number of ports of county and local importance.

Montenegro has four sea ports open for international transport: Bar, Kotor, Budva and Tivat. However, the port of Bar accounts for more than 95% of all port-related activities in the country. Insufficient investments to develop infrastructure and equipment and delays in structural reform activities and privatization process have made Bar unable to gain competitive advantage over its main and close competitors. Bar is the major seaport in Montenegrin part of the programme area and in Montenegro as a whole (it accounts for 95% of the total transportation of passengers and freight). The port is equipped to handle over 5 million tons of cargo annually, though the breakup of the former Yugoslavia and the size of

the Montenegrin industrial sector has resulted in the port operating at a loss and well below capacity for several years. The reconstruction of the Belgrade-Bar railway and the proposed Belgrade-Bar motorway are expected to bring the port back up to capacity.

3.1.5 Air Transport System

There are 9 airports in the programme area based in Velika Gorica (Pleso), Split, Dubrovnik, Zadar, Banja Luka, Tuzla, Mostar, Podgorica and Tivat.

The Republic of Croatia has four international airports: Zagreb, Dubrovnik, Split, Zadar and two air fields (Brač and Mali Lošinj), through which public air transport, regular and chartered flights, takes place, both national and international. The four international airports are of 4E ICAO category and are classified as TEN-T airports. They are fitted with devices and equipment corresponding to current international safety and security standards. The airports are extremely important for transport development and, with the expected arrival of low cost airline companies, for tourism development in the programme area and beyond.

Montenegro has two international airports – Podgorica and Tivat. Airplane movements in Montenegro substantially increased from 2004 to 2009 with an increase of 66%. The air transport sector still presents some weaknesses regarding the capacity of their airports to accept larger aircrafts for international traffic, strong dependence on tourism peak demands and lack of effectiveness of business.

3.2 Public utility infrastructure (water supply and sewage system)

Based on data provided by Croatian Waters only 43% of the population is connected to the public sewage systems, and is purified only about 27% of the wastewater population. The coverage ratio (share of the population able to connect to the public water supply system) on the level of the Republic of Croatia is on the average 80-82%. The connection ratio (share of the population connected to the public water supply system) is somewhat lower and it is estimated at the average of 74%. There are significant differences in the level of coverage between regions. The differences are even larger between the counties and in particular between towns and municipalities.

According to available indicators about 741,400 inhabitants, or 46% compared to the estimated population of the Republika Srpska are connected to the water supply systems of municipal centers, 183,700 (11%) the population are connected to the water supply systems of local communities, and 685,100 (43%) of the population is supplied with water from individual wells or springs. Thus, there are 925.100 inhabitants or 57% that have organized water supply.

For supplying population of municipal centers, water is abstracted:

- 1 - through the water intake sources (1,234 l/s)
- 2 - through well water intake (1,791 l/s) and
- 3 - through water abstraction from rivers and lakes (915 l/s).

The current connection of water consumers on the sewer system is about 33% of the population of the Republika Srpska.

On the basis of available data, about 60% of the population in the Federation BiH is covered by public water supply systems (in urban regions the coverage is 94% of the total population; in rural regions it is considerably lower and amounts to 20%). Total abstracted water for water supply needs in the Federation BiH are about 261,542,143 m³/per year which for 1,39 million inhabitants covered by public water supply systems gives the gross specific consumption of 512 l/inhab./day.

The largest number of inhabited places in the Federation BiH is non-existence of a unified system of collection (and treatment) of waste waters and also the fact that waste waters and storm waters are most often collected by combined sewage systems and discharged to the closest recipient by the shortest possible way. It is estimated that only 3% of the population in the Federation BiH is covered by waste water treatment.

Montenegro has good-quality and abundant underground and surface waters, despite the fact that discharge of communal and industrial wastewater into natural recipients is done with almost no treatment (the exception are some industrial plants and part of the communal wastewater in Podgorica and Mojkovac). An additional problem is the lack of pre-treatment of industrial wastewater discharged into the public sewage systems and a low level of residential connection to the sewerage. The application of European Directives in the water sector will require an important effort in terms of investment and setting up the appropriate structures. Share of households connected to drinking water supply (2007) was 94% while share of households connected to urban wastewater collecting systems (2007) was 63.5%. Montenegro counts on relatively developed water supply systems, and relatively less well developed sewerage systems. To attain the level of sanitary and hygienic safety of water taken from the water source a complex and expensive treatment process is not necessary in order to be able to use it as drinking water, unlike in most EU countries, and consequently it is still relatively cheap. As there are only two wastewater treatment plants in operation (Podgorica and Mojkovac), the operating cost of providing water and collecting and treating wastewater is very low. Hence, tariffs are consequently low. An issue that should be taken into consideration is a huge percentage of losses, between 55 and 60% on average at the national level; this figure is a consequence of infrastructural weaknesses, and further efforts must be put in improving the water supply systems, particularly in the municipalities of northern Montenegro.

3.3 Solid waste management

In terms of (municipal) waste management Croatia recorded per capita municipal waste generation with quite a high collection coverage rate (96% in 2010). The average in terms of level of re-use of municipal waste is 12 kg/per/y vs. 121 kg/per/y and share of municipal waste being landfilled is 348 kg/per/y vs. 188 kg/per/y.

The situation is somewhat better with special categories of waste, which are subject to specific legally prescribed modes of separate collection and reuse (they are also financially subsidized), with a rate of collection and reuse varying from 35% (for electrical and electronical waste) up to 85% (for packaging waste). In terms of landfills, up until 2012 a total 107 municipal waste landfills were remediated and closed with 48 being in the process of remediation and 146 still being in use mainly for the purpose of land filling municipal waste. In addition to the official waste landfills, there are an estimated 3,000 of unregulated landfills (wild dumps).

Besides compliance-based obligations, improvements in the communal sector are necessary since the current institutional system for waste managements is fragmented and inefficient. Consolidation is needed in order to secure adequate availability of services across Croatia, provide basic prerequisites for a more balanced regional development and secure efficient management of resources, as well as the protection of the natural environment.

Croatia has total quantity of waste generated up to 1,645,295 tonnes and total quantity of waste collected up to 99% with 268,053 tonnes separately collected.

Table 26: Collected municipal waste and sent for disposal in the landfills in years 2007 and 2010 in Croatia

County	Data for 2007			Data for 2010		
	Collected municipal waste (t)	Municipal waste sent for disposal in the landfills (t)	Deposited out of collected (%)	Collected municipal waste (t)	Municipal waste sent for disposal in the landfills (t)	Deposited out of collected (%)
Zagreb County and City of Zagreb	445.391	423.502	95,0	388.048	363.163	93,6
Sisak – Moslavina County	55.887	55.301	99,0	72.286	71.629	99,1
Karlovac County	40.966	40.964	100,0	39.632	39.111	98,7
Bjelovaro -	35.874	35.762	99,7	35.346	35.169	99,5

Bilogora County						
Lika - Senj County	30.180	30.000	99,4	31.459	31.358	99,7
Požega - Slavonia County	13.769	13.769	100,0	14.525	14.495	99,8
Brod - Posavina County	50.432	50.198	99,5	48.274	47.623	98,7
Zadar County	76.957	75.251	97,8	83.605	82.928	99,2
Šibenik - Knin County	47.531	47.345	99,6	52.630	51.775	98,4
Vukovar - Srijem County	74.263	70.340	94,7	66.366	62.772	94,6
Split - Dalmatia County	202.338	201.688	99,7	223.369	222.655	99,7
Dubrovnik - Neretva County	80.262	74.068	92,3	75.515	72.266	95,7
TOTAL CROATIAN PROGRAMME AREA	1.153.850	1.118.188	98,05	1.131.055	1.094.944	98

Largest share of municipal waste is generated in the Zagreb County and City of Zagreb (23,8%), and Split-Dalmatia County (13,8%) which comes as no surprise since these are highly populated counties/areas. The smallest share of municipal waste is generated in Požega-Slavonia County (0,9%) as less populated county. A regional feature is the Adriatic Sea along with the coastal line as a tourist zone where the quantities of generated waste between summer and other months in the year greatly differ. In 2010, there were 146 active landfills. According to the submitted data, 84 of landfilled mixed municipal waste, while the other 62 landfilled production waste along with municipal waste. Waste is mostly disposed at the nearest landfill and in the county of its origin. There are 60 large landfills that account for landfilling of 85% of the total waste and have a catchment area with 72% of the total population. The volume of municipal waste arriving at landfills has gradually increased due to a larger proportion of the population with organised collection of waste and also due to greater volumes of waste produced per capita in previous decade.

In Bosnia and Herzegovina, low level of coverage with services of waste collection results in large number of illegal dumpsites. On the territory of Federation, there are 1,857 illegal dumpsites in various sizes. Municipal dumpsites are mainly of open-type, located in areas unprepared for such purpose, with no protection systems or preservation of soil, water and air.

There is no control of leachate and gases on almost all municipal dumpsites. Occasionally, waste is covered with inert material using small dredges. Dumpsites in Tesanj, Krupa (Krivodol) and Mostar (Uborak) are partially organised. These dumpsites partly use multi-barrier isolation system, system for collecting and drainage of leachate, dumpsites are fenced, and have a management. Only Sarajevo Canton and Zenica-Doboj Canton have constructed sanitary landfills. There are no reliable data on municipal waste generation in Federation BiH. Estimate of municipal waste generation is based on production per capita in rural and urban areas and according to it, average production of municipal waste in Federation BiH is 269 kg per capita per year. An estimated average production of municipal waste in Republika Srpska is 263 kg per capita. Total collected municipal waste amounted to 250,223 t, out of which 248,516 t were sent for disposal in the landfills (data for 2012).

Researches on achievements in application of regional waste disposal concept have shown that four locations in the programme area in Federation BiH for regional landfills (Zenica, Grude, Tuzla, Bihać) were suggested, and they are to be used by 41 municipalities, that is 51.25%. Locations in Grude, Tuzla and Bihać were not accepted because of a significant resistance from local population and administration in close vicinity of these locations. Four municipalities expressed willingness to join inter-municipal association and disposal at landfills located on the territory of Republika Srpska (one of them is Doboj). Initiative to resolve this issue has also started in municipalities Grahovo, Livno and Glamoč.

In both Bosnian and Herzegovinian entities, key public service providers including solid waste management are municipalities. However, very fast increase in quantity of solid waste overpasses the capacities of municipal waste management companies. Capacities for the waste collection and disposal are still insufficient to cope with the waste production in Bosnia and Herzegovina. Waste collected by municipalities is mostly disposed at landfills which are mostly open, not controlled landfills. Such waste disposal practices cause serious problems, which leads to deterioration underground waters quality, destruction of vegetation, uncontrolled insects and rodents breeding thereby causing diseases.

Montenegro has total quantity of waste generated up to 262,700 tonnes and total quantity of waste collected up to 216,700 tonnes.

Montenegro is facing considerable problems as regards waste management. In 2004 the Government of Montenegro adopted the Policy in the field of waste management in Montenegro and in 2005 it adopted the Strategic Master Plan for Waste Management. This planning document defined priorities in creation of preconditions for regulating relationships in this area in line with the European directives and standards. The National Waste Management Plan was adopted in early 2008, while the new Law on Waste Management was passed in December 2011. According to the mentioned documents, it was foreseen that seven regional centres for waste treatment will be constructed in Montenegro and that seven landfills will be constructed within those regional centres.

The current system of waste collection and disposal does not provide for waste separation and separate treatment of different types of waste, while in principle the disposal of non-hazardous industrial, municipal (with the exceptions of Podgorica, Danilovgrad and Cetinje, for which a regional centre and landfill were built in Podgorica according to the Strategic Master Plan, i.e. National Waste Management Plan) and hazardous wastes alike does not meet the minimum environmental standards.

As regards municipal waste, the percentage of the population covered by the organized system of waste collection is rather low and unsatisfactory. Although waste is generated on a daily basis in the entire Montenegrin part of the programme area, not all producers of waste have access to the services of waste collection and transport. Based on the data provided by all municipalities in Montenegro, it was established that waste collection services are provided mainly in the central areas (cities, i.e. urban areas), while the waste generated in rural areas, i.e. villages and small settlements, is not collected.

Table 27: Main producers of waste and quantity by municipalities in Montenegro

	Producers of waste	Quantity of waste by municipalities (t/year)				
Municipality	Population	Local population	Tourist overnights stay	Persons Work. Abroad	Persons Work. Abroad	Refugees
Podgorica	169.132	50.532	111	766	1.138	52.547
Niksic	75.282	22.211	54	113	228	22.606
Cetinje	18.482	5.410	60	18	13	5.501
Danilovgrad	16.523	4.899	0	9	73	4.981
Bar	40.037	13.652	1.083	458	654	15.847
Herceg Novi	33.034	11.220	2.259	95	364	13.938
Ulcinj	20.290	6.789	882	516	124	8.311
Kotor	22.947	7.613	521	63	74	8.271
Budva	15.909	5.411	3.479	34	182	9.106
Tivat	13.630	4.662	314	42	182	5.200
TOTAL MONTENEGRIN PROGRAMME AREA	620.145	176.301	8.904	3.671	4.271	193.147

Source: National Waste Management Plan (for the period 2008–2012)

A system of selective waste collection has still not been established in Montenegro, except for a pilot project under which a certain number of containers (600) was provided for the selection of particular types of waste. The cities of Herceg Novi and Podgorica, and recently Kotor and Budva as well, have taken a more serious approach to these obligations.

The collected municipal waste is immediately transported to the official local landfills where it is disposed with no prior treatment. The only exception was the waste collected in the territory of the municipalities Kotor, Budva and Tivat, which used to be disposed on the temporary sanitary landfill of Lovanja until the end of 2007 and the waste collected in the territory of Danilovgrad and Podgorica that is disposed on the sanitary landfill of Livade in Podgorica.

To conclude, in whole programme area the collection of municipal waste is carried out by public utility companies in accordance with the decisions on their establishment identifying the level and extent of provision of services in addition to the tariff methodology. Approximately 80% of the population is covered by an organized system of collection and disposal of municipal waste. Relatively small quantities of waste generated by the remaining

population, mainly living in villages and small settlements, is disposed on illegal dumpsites (hot spots).

Conclusions:

- Programme area is at the junction of the main rail and road traffic routes connecting western and central Europe with South-East Europe. It is crossed by major Pan-European corridors and is part of the TEN-T networks.
- Major investment into transport networks is necessary to ensure economic development.
- Connectivity of urban and rural transport networks of the programme area internally and to major highways can stimulate economic growth.
- Railway infrastructure is well developed but in serious need of restructuring and modernization.
- External border influences border crossing procedures.
- Inland waterways are insufficiently interconnected.
- Port infrastructure partially needs to be renovated and transformed into multimodal logistics centres.
- Intermodal transport combining air, rail, road and water networks represent a major opportunity for economic development.
- Approximately 80% of the population is covered by an organized system of collection and disposal of municipal waste. Relatively small quantities of waste generated by the remaining population, mainly living in villages and small settlements, is disposed on illegal dumpsites (hot spots).

4. Tourism and cultural and natural heritage

4.1 Tourism

Due to extremely rich natural and cultural heritage tourism is becoming increasingly important throughout the programme area. Tourism is one of the main economic activity in the southern part of the programme area but within the last 10 years the role of continental tourism has become important for other parts of the area as well. Although, continental part of programme area still remains insufficiently recognized and its great potential is yet to be developed. There are many towns which have a rich and interesting history and architecture - shrines, thermal water springs with healing properties, rivers, ski resorts with regional significance, old memorial and scenic roads, vineyard drives, national parks, and other protected areas. To provide for a more dynamic development of tourism in continental areas, it is necessary to put in place an adequate tourism infrastructure. National parks, and the other protected areas that have great attractiveness, are a huge potential for ecotourism development, sustainable hunting tourism, rural tourism, year-round mountain holidays, as well as excursion tourism. The significant obstacles to development lies in the fact that the areas which have a special natural value are not yet organized or equipped to accept and offer a quality stay to a large number of guests. Development of a trekking infrastructure, a system of signposts, rest areas, and an adequate transportation system, would significantly improve

the tourism potential of these areas. It is imperative to stress the preservation of nature, as well as the control of traffic through these protected areas.

Ecologically produced food is yet another component of tourism and ecology which has become an important factor in defining the tourism product and its differentiation in the market. Opportunities for the production of ecologically-grown food and its sale in catering facilities which offer their services to tourists must be further developed and used in light of the fact that the importance of this segment of the tourist supply is increasing.

Cultural tourism is more and more becoming a significant part of the supply. In the area of cultural tourism, it is necessary to identify market niches with special cultural interests. It is very often the case that during vacation the guests will visit an event or cultural monument. Whole programme area has enormous potential because of its cultural heritage and natural beauties which can be combined in a countless number of ways to tempt tourists seeking unique experiences. Adventure tourism has a great potential to be developed. There are many diverse aspects of adventure tourism, such as white water rafting, canoeing, kayaking, paragliding, hot air balloon flights, free climbing, off-road racing, and many other activities taking into the consideration that the programme area is very rich with rivers, mountains, sea, etc.

In Montenegro, the most developed adventure tourism sector is kanyoning, with the popular Tara kanyon and kanyon Nevidio. The potential is seen in the kitesurfing, which can be further developed in Ada Bojana region.

Religious tourism until now has been active in Međugorje, Sinj, Makarska, then in Ilača, Žitomislić, Zavala, Tvrdoš, Ajvatovica , etc.

Gastronomy and enology is a complex product consumed by almost all the tourists, although a relatively small number of international tourists travel exclusively for gastro-enological experience. Increase in demand is generated mainly by local population. The available researches indicate that approximately 160,000 Croatian citizens visit wine routes, out of whom 61% buy local wines, and 63% buy local food products. Furthermore, 53% of visitors consume local wine in restaurants. Although the gastronomy and enology is the most developed tourism product in Istria, Dalmatia and Slavonia, systematic approach to the development of the food and wine tourism offer is still insufficiently estimated, although for many years is an integral part of the tourism promotion of the country.

In Bosnia and Herzegovina, there are famous wine routs in Herzegovina with rural households which provide overnights and food (traditional homemade meals) and beverage for turist. Rural and mountain tourism – it is estimated that rural tourism, including mountainous areas, participates in the overall international travel with a share of around 3%, with an annual growth of about 6%. Faced with an underdeveloped domestic demand and unfairly unstimulated environment, Croatian rural tourism offer develops very slowly. The only exception is Istria, and to some extent the Osjek-Baranj County. As regards to mountain tourism, the existing mountain centers like Bjelolasica, Platak and Begovo Razdolje did not yet achieve notable progress or success in tourism during all-year season.

Ecotourism – it is estimated that about 3% of international leisure travel is motivated by ecotourism and supported by raised environmental awareness of customers. Ecotourism is in

strong growth, between 10% -20% annually. Despite the availability, attractiveness and conservation of natural resources, ecotourism in Croatia is still underdeveloped. Especially concerning is the fact that ecotourism has been neglected even in the protected natural sites. Bosnia and Herzegovina has great potential for eco tourism and fishing. Eco tourism is already developed in Bosnia and Herzegovina but there are still a lot of location for development of ecotourism are for example National Park Kozara, rainforest Janj-Šipovo, Lom Drinić, Gomiželj near Bijeljine, Tišina near Modriča, Bardača – Srbac etc.

Bosnia and Herzegovina has three national parks (Sutjeska, Kozara and Una) and three nature parks (Hutovo Blato, Bardača and Blidinje). It is mainly a mountain country with a division of fishing waters in mountains and lowland waters. Mountain rivers are especially interesting to lovers of this sport and are characterized by extremely clean, transparent water with temperatures, even in summer months, only a few degrees above zero, and are inhabited by rarest species of fish, like grayling, brown trout and graft. In lowland rivers there are fish nase, carp, pomfret, barbell fish, pike, catfish and other kinds, which, according to their size, represent capital examples. Flyfishing is developed on the river Una near Bihać, on the river Neretva near Mostar, on the Pliva Lake near Šipovo, on the rivers of Sana, Sanica, Ribnik near Ključ etc.

In Montenegro, recent touristic activity is the botanical tours, especially popular in the mountain areas.

The development of nautical tourism in certain coastal and island communities has a number of positive economic impacts: additional income for the local population, increased employment opportunities, the general increase of standard, decrease of emigration rate, revitalization of various specific activities, etc. However, with positive economic effects, nautical tourism also presents a great burden for the marine environment and coastal areas. The facilities required for development of nautical tourism e.g. nautical ports, are often built on the most beautiful and vulnerable parts of the coast, not excluding even the protected areas. The main disadvantages and consequences of such activities are violation of environmental quality (caused by construction of nautical ports and anchorages in inadequate locations) and pollution of the sea and coastal area (waste, sewage and bilge water). Therefore, in determining the location and planning the construction of new facilities it is considered desirable to opt for the locations in areas already affected by the former (intense) human activities and the areas with existing derelict objects and to determine the optimal capacity of the existing ports. There is no systematic monitoring of the effects of pollutants in nautical ports. Nautical tourism has been growing steadily, and port infrastructure does not match the increasing number of berths (wet and dry) in nautical ports as well as in the ports open to public traffic. Croatia and Montenegro have been lately promoted as a powerful and important tourist destination in the field of nautical tourism. The protection of the marine environment has to be a priority, because the preserved natural environment is a prerequisite for the future development of tourism.

In addition to the well-developed seaside tourism on the Adriatic coast, Croatian strategy for development of tourism 2020 recognizes potential for diversification of touristic offer in continental Croatia in the following areas: cultural tourism, rural tourism, cycle-tourism and

gastro-tourism. In addition, a lot of tourist resources (such as mineral waters, salt lakes or mud) create the possibility of different forms of health/wellness tourism. In Croatian part of the programme area, potential for development of tourism offer represent spa baths with geothermal water sources: Daruvar bath spa and Lipik bath spa in Bjelovar-Bilogora County and Topusko bath spa in Sisak-Moslavina County.

According to the state administrative system of Bosnia and Herzegovina there are 3 tourism strategies: the Tourism Development Strategy in the Federation of Bosnia and Herzegovina, the Tourism Development Strategy of Republika Srpska and the Tourism Development Strategy for Brčko District. These strategies define cultural, religious, spa, mountain, eco, ethno and rural tourism as a major force for development tourism sector in BiH.

In addition, in Montenegrin Tourism Development Strategy to 2020, the following tourism sectors are also mentioned:

- Building golf courses, aimed at small target groups of Central Europeans with high-income and high quality demands, with the aim to contribute to extending the bathing season.
- Wellness-fitness as an all-year product with 4 possible targets for Montenegro: curative mud in Igalo, olive oil, the wellness programmes and the wellness centres.
- MICE, the subsector of business tourism that is concerned with organizing and implementing agendas for meetings, incentives, conferences and events. MICE is seen as a growth market. Budva, Bečići, Tivat, Podgorica as the capital, are suitable for the development of congress tourism, as well as Cetinje, if the historical core is made up attractively.
- Agrotourism is seen as a development vehicle for rural areas, with the combination of board, lodging and agriculture in farming enterprises.
- Camping can be used as a development tool, as well. The combination of a camping site with wood cabins in the katun style is also conceivable for Montenegro, provided the huts are of adequate quality.

Throughout the programme area, as a great potential for development of tourist offer are nature parks as a partially cultivated area with important ecological features, in which certain economic activities are permitted. There are 9 nature parks in Croatia, 3 in Bosnia and Herzegovina and 2 in Montenegro.

Mountainous areas of the programme area possess comparative advantage for skiing, hiking, cycling, etc. Skiing, hiking and alpinism exist in Bosnia and Herzegovina for more than hundred years in the mountains. There are beside ski centres on Olympic Mountains near Sarajevo - Jahorina, Bjelašnica, Igman, Trebević and ski center on mountain Vlašić near Travnik, also recreation centres of Kupres (near Bugojno) and Risovac and ski resorts on Kozara, Busovača (near Travnik), Oštrelj (near Bosanski Brod), Vlasenica (near Zvornik), Vranica (near Uskoplje and Fojnica), Borje (near Teslić) etc.

Sutjeska national park is one of the first established in Europe and still holds the last remaining thousand year old rainforest Perućica. Kozara National park Kozara is a popular hunting ground, with a large 180 square kilometers area of the park. Walking, hiking, biking

and herb picking are among the many activities in Kozara. Una National park has an enormous significance because it has got rich archaeological sites and cultural and historical monuments. The biggest attraction of the National park is the river Una with clean and clear water. Blidinje Nature Park is a unique natural phenomenon, which includes many endemic species of flora and fauna with a lot of sources of clean, drinkable water. It is known as one of the largest habitats of endemic white bark pine. Hutovo Blato and Bardaca nature parks are natural reservations and bird habitats with international significance by Ramsar International Convention about swamps.

In addition, some mountainous areas on Croatian side of the programme are, such as National parks Paklenica and North Velebit with characteristic relief features, and many limestone rocks and deep canyons, with high meadows and extensive woods, home to many endemic species. Additionally, Croatian natural heritage as a great tourism potential are national and nature parks. In the Croatian part of the programme area, for example Krka National Park boast unique karst morphology and hydrology, with magnificent travertine waterfalls and lakes. Kornati and Mljet are island national parks with unique landscapes and abundant underwater worlds.

Two national parks in the Montenegrin part of the programme area are Lovćen and Skadar Lake. Of all national parks in Montenegro, Lovćen has registered the most visitors - 30,000, thanks to the rest homes on its territory. Earnings are nevertheless modest, because the park collects no admission fees from the home guests. It offers one of the most beautiful views of Montenegro from the Njegoš mausoleum, some hiking trails and picnic sites, as well as gastronomy.

The Skadar Lake National Park encompasses the entire shore on the Montenegrin side, up to Rijeka Crnojevica, including the fishing and farming villages and the fortresses and monasteries within its borders. The park offers its guests a well equipped visitor's centre with a lake restaurant.

Apart from the national parks, Kotor region is also registered by UNESCO as a world cultural and natural heritage site.

In Montenegro, huge potentials for increasing employment and revenues may be seen in linking tourism with other areas of the economy. Primarily food production, biofood in particular, for consumption in hotels, local restaurants, etc. is a good opportunity for improving and intensifying agricultural production and benefits of tourism seen in increased employment and revenues.

Another important potential lies in the combination of agriculture and tourism. The extended agrotourism product offers an optimistic option for farmers in rural areas, in the northern region in particular, to have additional source of income to the one from agriculture. They should be enabled to diversify their economic activities to be better prepared for the shocks and adversities that may occur. The organisation of display shows and sale events, particularly in the northern region, related and dedicated to certain agricultural products (typical fruits and vegetables, different kinds of cheese, medicinal herbs, honey), as well as local craft products (clothes, pottery, souvenirs). Use in particular the popularity of green

markets and enrich the range of products offered and their visual and aesthetic experience by standardising the stalls, clothes of sellers, the accompanying programmes and turn each “market day” in the places in the northern region into a tourist event (staging). At the same time, it encourages transboundary cooperation and trade in such goods in border places.

Montenegro as a destination can be subdivided in touristic terms into six clusters, whose scenic and cultural traits differ from each other. The Montenegrin part of the programme area is included in the following four clusters:

1. The steep rocky coastline from Lustica to Ulcinj with its many bathing bays, the centre of beach tourism, including well-known, largely modern bathing resorts such as Budva and Bečići.
2. Ulcinj, a place with an oriental flair and the most expansive sandy beach on the eastern Adriatic, with Ada Bojana and Valdanos. Velika Plaža affords the greatest development prospects in the Montenegrin tourism sector.
3. The Bay of Kotor, surrounded by steep rock faces rising sharply out of the sea and the heritage of Venetian culture, unique at the Mediterranean and eminently suited for developing a particularly high-yield and diversified product (nautical tourism, golf courses, etc.) in the Tivat Bay and Lustica peninsula, provided the infrastructure problems are solved
4. The capital Cetinje and Skadar Lake, also two unrivalled assets thanks to their historical significance, the diversity of local species and the breathtaking scenery at the lake.

Cultural tourism in whole programme area can be developed in some urban centres given the rich cultural heritage and the great variety of cultural events organized throughout the year. The monuments under UNESCO in the programme area are: Dubrovnik old town, Diocletian palace and Medieval Split, Historical core of Trogir, St. Jacob's Cathedral in Šibenik, National Park Plitvice Lakes, Starigrad Plain, Kotor old town, Old bridge in Mostar, Mehmed Paša Sokolović Bridge in Višegrad.

Table 28: Tourist arrivals and overnights in 2012

2012	Tourist arrivals				Tourist nights			
Croatian programme area – NUTS 3	Total	Share, in % ^a	Domestic	Foreign	Total	Share, in % ^a	Domestic	Foreign
Zagreb County	38,764	0.33%	18,706	20,058	67,703	0.11%	34,525	33,178
Sisak-Moslavina County	24,163	0.20%	14,486	9,677	82,303	0.13%	58,969	23,334
Karlovac County	186,517	1.58%	19,242	167,275	303,522	0.48%	43,364	260,158
Bjelovar-Bilogora County	14,383	0.12%	10,419	3,964	31,924	0.05%	23,450	8,474
Lika-Senj County	467,119	3.95%	31,593	435,526	1,824,036	2.91%	107,396	1,716,640
Požega-Slavonia County	8,801	0.07%	6,412	2,389	19,299	0.03%	13,948	5,351
Brod-Posavina	20,143	0.17%	9,627	10,516	35,585	0.06%	18,716	16,869

County								
Zadar County	1,074,192	9.08%	158,198	915,994	6,783,072	10.81%	834,921	5,948,151
Šibenik-Knin County	657,371	5.55%	96,406	560,965	4,139,536	6.60%	471,601	3,667,935
Vukovar-Srijem County	33,808	0.29%	21,019	12,789	60,538	0.10%	41,954	18,584
Split-Dalmatia County	1,834,876	15.50%	191,988	1,642,888	10,517,880	16.76%	774,305	9,743,575
Dubrovnik-Neretva County	1,122,420	9.48%	93,297	1,029,123	5,188,091	8.27%	322,040	4,866,051
TOTAL CROATIA	11,835,160	100.00%	1,465,934	10,369,226	62,743,463	100.00%	5,221,326	57,522,137
Montenegrin programme area - Municipalities	Total	Share, in %	Domes tic	Foreig n	Total	Share, in %	Domesti c	Foreig n
Herceg Novi	229,063	15.91%	41,517	187,546	1,817,434	19.86%	343,064	1,474,370
Kotor	56,051	3.89%	3,993	52,058	303,900	3.32%	18,999	284,901
Tivat	44,045	3.06%	6,012	38,033	389,812	4.26%	18,439	371,373
Budva	691,654	48.05%	57,630	634,024	4,198,773	45.88%	304,467	3,894,306
Bar	155,770	10.82%	12,609	143,161	1,226,010	13.40%	63,496	1,162,514
Ulcinj	124,562	8.65%	20,645	103,917	921,949	10.07%	164,930	757,019
Cetinje	10,937	0.76%	4,600	6,337	34,889	0.38%	24,707	10,182
Nikšić	8,139	0.57%	2,092	6,047	18,279	0.20%	4,392	13,887
Podgorica	52,889	3.67%	5,194	47,695	102,875	1.12%	13,336	89,539
Danilovgrad	1,927	0.13%	158	1,769	3,961	0.04%	216	3,745
TOTAL MONTENEGRO	1,439,500	100.00%	175,337	1,264,163	9,151,236	100.00%	1,008,229	8,143,007
Federation BiH	Total	Share, in %	Domes tic	Foreig n	Total	Share, in %	Domesti c	Foreig n
Una-Sana Canton	27,893	5.63%	19,173	8,720	56,177	5.63%	42,178	13,999
Posavina Canton	5,226	1.05%	3,406	1,820	7,799	0.78%	4,779	3,020
Tuzla Canton	24,117	4.87%	13,249	10,868	40,997	4.11%	20,451	20,546
Zenica-Doboj Canton	16,934	3.42%	8,391	8,543	31,070	3.11%	13,169	17,901
Central Bosnia Canton	27,038	5.46%	20,449	6,589	65,377	6.55%	50,057	15,320
Herzegovina-Neretva Canton	111,676	22.54%	34,565	77,111	260,291	26.08%	73,159	187,132
Western Herzegovina Canton	4,599	0.93%	1,576	3,023	6,900	0.69%	2,278	4,622
Canton 10	6,377	1.29%	3,091	3,286	9,951	1.00%	3,637	6,314

TOTAL Federation BiH	495,537	100.00%	163,624	331,913	998,199	100.00%	320,342	677,857
Republika Srpska	Total	Share, in %	Domestic	Foreign	Total	Share, in %	Domestic	Foreign
Banja Luka	62,812	26.04%	30,561	32,251	100,960	16.03%	46,357	54,603
Berkovići	no occurrence)	no occurrence)	no occurrence)	no occurrence)	no occurrence)	no occurrence)	no occurrence)	no occurrence)
Bijeljina	17,970	7.45%	10,254	7,716	40,327	6.40%	23,462	16,865
Bileća	no occurrence)	no occurrence)	no occurrence)	no occurrence)	no occurrence)	no occurrence)	no occurrence)	no occurrence)
Bratunac	568	0.24%	568		953	0.15%	953	
Brod	433	0.18%	173	260	2,406	0.38%	501	1,905
Višegrad	3,333	1.38%	2,324	1,009	23,315	3.70%	17,947	5,368
Vlasenica	343	0.14%	251	92	568	0.09%	352	216
Vukosavlje	no occurrence)	no occurrence)	no occurrence)	no occurrence)	no occurrence)	no occurrence)	no occurrence)	no occurrence)
Gacko	2,191	0.91%	959	1,232	11,298	1.79%	5,987	5,311
Gradiška	3,110	1.29%	1,881	1,229	4,331	0.69%	2,198	2,133
Derвента	2,600	1.08%	635	1,965	5,620	0.89%	925	4,695
Doboj	6,711	2.78%	3,400	3,311	10,964	1.74%	4,854	6,110
Donji Žabar	no occurrence)	no occurrence)	no occurrence)	no occurrence)	no occurrence)	no occurrence)	no occurrence)	no occurrence)
Zvornik	3,224	1.34%	2,088	1,136	5,052	0.80%	3,270	1,782
Istočni Drvar	no occurrence)	no occurrence)	no occurrence)	no occurrence)	no occurrence)	no occurrence)	no occurrence)	no occurrence)
Istočni Mostar	no occurrence)	no occurrence)	no occurrence)	no occurrence)	no occurrence)	no occurrence)	no occurrence)	no occurrence)
Jezero	no occurrence)	no occurrence)	no occurrence)	no occurrence)	no occurrence)	no occurrence)	no occurrence)	no occurrence)
Kozarska Dubica	4,358	1.81%	3,614	744	42,790	6.80%	41,201	1,589
Kostajnica	168	0.07%	87	81	214	0.03%	104	110
Kotor Varoš	no occurrence)	no occurrence)	no occurrence)	no occurrence)	no occurrence)	no occurrence)	no occurrence)	no occurrence)
Krupa na Uni	no occurrence)	no occurrence)	no occurrence)	no occurrence)	no occurrence)	no occurrence)	no occurrence)	no occurrence)
Kupres RS	no occurrence)	no occurrence)	no occurrence)	no occurrence)	no occurrence)	no occurrence)	no occurrence)	no occurrence)
Laktaši	14,804	6.14%	6,399	8,405	23,594	3.75%	9,035	14,559
Lopare	21	0.01%	21		263	0.04%	263	

Ljubinje	no occurrence)	no occurrence)	no occurrence)	no occurrence)	no occurrence)	no occurrence)	no occurrence)	no occurrence)
Milići	343	0.14%	205	138	485	0.08%	297	188
Modriča	2,099	0.87%	1,034	1,065	3,377	0.54%	1,390	1,987
Mrkonjić Grad	389	0.16%	256	133	687	0.11%	518	169
Nevesinje	257	0.11%	251	6	257	0.04%	251	6
Novi Grad	1,254	0.52%	601	653	1,821	0.29%	738	1,083
Novo Goražde	336	0.14%	276	60	343	0.05%	283	60
Osmaci	4	0.00%	4		10	0.00%	10	
Oštra Luka	no occurrence)	no occurrence)	no occurrence)	no occurrence)	no occurrence)	no occurrence)	no occurrence)	no occurrence)
Pelagićevo	no occurrence)	no occurrence)	no occurrence)	no occurrence)	no occurrence)	no occurrence)	no occurrence)	no occurrence)
Petrovac	396	0.16%	270	126	666	0.11%	476	190
Petrovo	67	0.03%	61	6	129	0.02%	61	68
Prijedor	8,346	3.46%	5,570	2,776	14,928	2.37%	9,205	5,723
Prnjavor	2,261	0.94%	1,135	1,126	9,675	1.54%	6,799	2,876
Srbac	364	0.15%	100	264	867	0.14%	141	726
Srebrenica	757	0.31%	302	455	1,308	0.21%	503	805
Teslić	33,381	13.84%	24,815	8,566	167,392	26.59%	121,879	45,513
Trebinje	16,020	6.64%	8,802	7,218	24,377	3.87%	12,635	11,742
Ugljevik	2,283	0.95%	1,078	1,205	4,955	0.79%	2,129	2,826
Han-Pijesak	no occurrence)	no occurrence)	no occurrence)	no occurrence)	no occurrence)	no occurrence)	no occurrence)	no occurrence)
Čelinac	294	0.12%	119	175	392	0.06%	140	252
Total Republika Srpska	241,214	100.00 %	139,239	101,975	629,648	100.00 %	384,862	244,786
Brčko District	11,076		6,379	4,697	17,674		9,236	8,438

Source: Croatia- Central Bureau of Statistics, 2012; Montenegro - Statistical Office of Montenegro, 2012

Bosnia and Herzegovina – Federation BiH- Federal Office of Statistics, Statistical Yearbook, 2012;

Republika Srpska - Institute of Statistics, 2012; Brčko District- Agency for Statistics, 2012;

^a Author's calculation

Red municipalities- no statistics nor capacities for overnights (hotels, motel etc.) no occurrence)

NUTS 3	Beds	Tourist arrivals	Tourist nights
Croatian programme area			
Zagreb County	1217	38,764	67,703
Sisak-Moslavina County	1,029	24,163	82,303
Karlovac County	6,580	186,517	303,522
Bjelovar-Bilogora County	824	14,383	31,924
Lika-Senj County	28,506	467,119	1,824,036
Požega-Slavonia County	440	8,801	19,299
Brod-Posavina County	726	20,143	35,585
Zadar County	114,024	1,074,192	6,783,072
Šibenik-Knin County	63,567	657,371	4,139,536
Vukovar-Srijem County	1,580	33,808	60,538
Split-Dalmatia County	164,493	1,834,876	10,517,880
Dubrovnik-Neretva County	65,130	1,122,420	5,188,091
TOTAL CROATIA	448,116	5,482,557	29,053,489

Table 29: Beds, Tourist Arrivals and Nights in Croatia in 2012

Source: CROATIA: Central Bureau of Statistics, Statistical Yearbook of the Republic of Croatia 2012

Table 30: Beds in Montenegro in 2012

Montenegro	No. of beds
Bar	20,662
Budva	58,052
Cetinje	208
Danilovgrad	47
Herceg Novi	35,914
Kotor	9,506
Nikšić	413
Podgorica	1,492
Tivat	7,901
Ulcinj	19,670
TOTAL MONTENEGRO	157,697

Source: MONSTAT 2012

Tourism dominates the Croatian service sector and was estimated at 15.4% of Croatian GDP in 2012. Annual tourist industry income for 2012 was estimated at EUR 6,83 billion. Its

positive effects are felt throughout the Croatian economy in terms of increased business volume observed in retail business, processing industry orders and summer seasonal employment. The industry is considered an export business, because it significantly reduces Croatia's external trade imbalance.

In Montenegro, direct impact of tourism to the national GDP in year 2012 was EUR 335,9 million (9.9% of total GDP). In the period 2013-2023, it should grow on the annual rate of 8.1% (to EUR 827,1 million in 2023). The number of employees in tourism sector in 2012, tourism sector directly generated 14,500 jobs (8.7% of total employment).

Table 31: Share of tourism in GDP

Country	Share of tourism in GDP % in 2012
Croatia	15,4 %
Bosnia and Herzegovina	2.05%
Monetnegro	9.9 %

Source: Croatia Ministry of Tourism, GDP and income of Tourism 2012, Tourism Development strategy to 2020; Ministry of Sustainable Development and Tourism; Montenegro: MONSTAT; Bosnia and Herzegovina: Agency for Statistics BiH, National Accounts Bulletin, February 2014

Conclusion:

- Natural beauty of the coast and great potential in the continental part (thermal springs, castles, protected areas, mountains, rivers, etc.) is a great advantage for development of tourist offer.
- Ecologically clean and natural environment result in large number of protected areas of nature and represent rich natural heritage of the programme area.
- Number of attractions in the programme area as well as long tradition of tourism are highest advantage in terms of development.
- In the programe area there is insufficient diversification of tourist offer which can be developed on the basis of existing attractions and natural and cultural heritage (cultural tourism, cycle-tourism, memorial tourism, active tourism, city breaks, rural tourism, eco-tourism, gastronomy tourism, religious tourism, hunting, bird watching, adventure, wine, winter tourism, etc.).
- In the programme area there is a rich cultural and historical heritage with a few globally recognized and protected locations, whereas its number is still insufficient.
- In the continental part of the programme aera there are ideal natural preconditions for organizing quality offerings in wellness programs and events, and development of health and pleasure tourism.
- Inadequate tourism infrastructure.
- Tourism can stimulate a faster growth of production and trade by connecting agriculture and other sectors with tourism.

4.2 Cultural cooperation

The programme area abounds in major natural resources. It is also an intersection of major transport routes and a key strategic point. Because of its geographic position, the programme area represents a blend of four different cultural spheres. It has been a crossroad of influences of the western culture and the east—ever since division of the Western Roman Empire and the Byzantine Empire—as well as of the Central Europe and the Mediterranean culture.

The rich and unique cultural heritage reflects the programme area's long and eventful history but also the ethnic diversity of its inhabitants. The presence of ethnic territory provides a rich cultural variety. This is partly due to the fact that it has an above average percentage of members of minorities on all sides of living in the cross border with long-region. These minorities have an established institutional background, cultural and educational institutions create organizations and bilingual and minority education, which is favorable conditions for cultural exchange. Cultural cooperation has been and still is a very important tool to build bridges between communities. It helps foster mutual understanding and overcome prejudices and stereotypes in a region still marked by the war.

In addition, the programme area is rich in cultural heritage like the numerous museums, galleries and churches (many of which appear on the UNESCO World Heritage List) but also in diverse musical, film, dance and theatre festivals and other cultural events that take place throughout the year.

A series of cultural festivals are held annually which attract some participation from all sides of the borders ("Vinkovačke jeseni", "Iločka berba grožđa", "Vukovarske adventske svečanosti", "Zlatne žice Slavonije", Autumn in Lika, Music evenings in St. Donat, Split summer festival, Days of Marulić, Children's festival in Šibenik, "Dubrovačke ljetne igre", Sarajevo film festival, Ducic's Days and Ducic's Poetry Evenings in Trebinje, DUKATFEST Banjaluka, etc.). The programme area also boasts a number of museums and art galleries, which showcase local artists and promote artistic and cultural expression in all of its forms. During the three summer months, especially on the coast, various events of mixed contents are held - concerts, literary evenings, exhibitions, theater plays and performances. The evening or all-day programs are diverse and of high quality and often world-famous artists take part. During summer music and film festivals are held as well as book fairs and art colonies - usually under the open sky.

In Montenegro, of particular importance are the following events: Grad teatar, festival Pašticada, Petrovačko ljeto, Children theater festival, Festival klapa, summer and winter traditional carnivals, Bokeljska noć, Montenegro film festival, Guitar art summer fest, Festival Purgatorije, Lake fest, etc.

The programme area is particularly rich in architectural heritage and has many significant cultural and historical sites and is largely influenced by Hungarian, Austrian, Venetian and Ottoman culture where political and social changes influenced the creation of distinct cultural and architectural habits of the population.

The main monuments and sites of historical and artistic interest include:

- The monuments under UNESCO:
 - Dubrovnik old town
 - Diocletian palace and Medieval Split
 - Historical core of Trogir
 - St. Jacob's Cathedral in Šibenik
 - National Park Plitvice Lakes
 - Starigrad Plain
 - Kotor old town
 - Old bridge in Mostar
- Numerous churches and monasteries
- Rich architectural heritage
- Industrial sites
- Old castles and fortifications
- Many archeological sites
- Historical sites
- Traditional buildings and open-air museums.

Besides monuments protected under UNESCO, some architectural heritage throughout programme area is protected under national legislation. However, the lack of resources for preserving this heritage for future generation remains a source of concern. On the other hand, this heritage also represents an important asset through the development of tourism by including cultural activities in tourism offer.

Conclusions:

- Programme area represents a blend of four different cultural spheres. It has been a crossroad of influences of the western culture and the east — as well as of the Central Europe and the Mediterranean culture.
- The rich and unique cultural heritage reflects the programme area's long and eventful history but also the ethnic diversity of its inhabitants.
- Number of cultural attractions in the programme area are high advantage in terms of development.
- Programme area is particularly rich in architectural heritage and has many significant cultural and historical sites, some of which are protected under UNESCO as well as under national legislation.
- The lack of resources for preserving cultural heritage for future generation remains a source of concern. On the other hand, this heritage also represents an important asset through the development of tourism by including cultural activities in tourism offer.

5. Youth and education

5.1 Education and skills

The education system in Croatia begins in preschool institutions. Children who are six and a half or over must attend compulsory elementary education, which lasts 8 years. There is an adult education system as well for those over the age of 15 who fail to complete elementary education.

Following elementary education, secondary education enables everyone, under equal terms and according to one's capabilities, to acquire knowledge and skills required for work or continuation of education. The secondary school level includes the grammar schools, with grammar programme, art schools and vocational schools. Grammar schools include 29% of all students in secondary education. Vocational education and training serves to develop general competences necessary for continuation of education and lifelong learning, and acquirement of professional competences necessary for successful entry to labour market, professional development and competitiveness of an individual, but also entire economy.

University studies are organised and implemented at universities which comprise several faculties, and may be at the level of undergraduate, graduate or postgraduate studies. After completing a three or four-year undergraduate course, students are awarded the title of Bachelor (univ. bacc.) and after a further one or two years of graduate studies, the title of Master (mag.). Postgraduate studies last three years and end with the defence of a doctoral dissertation.

Today, 90 public and 32 private higher education institutions are operating in Croatia. The largest number of students, 67.5%, are enrolled in university courses in faculties.

In the academic year 2011/12, total of 152,857 students were enrolled in higher education institutions, and 36,448 of them graduated.

The education system in Bosnia and Herzegovina is similar to the Croatian one and is also made of three levels: primary, secondary and university education. In accordance with laws and regulations, higher education institutions are funded by the corresponding entity authorities (Federation BiH and Republika Srpska). Higher education activities are thus governed by either Republika Srpska or Federation BiH legislation, with the state level Ministry of Civil Affairs assuming the task of coordinating the higher education activities of the two entities. Bosnian and Herzegovinian higher education system comprises eight universities (three of them are within the programme area) with some 90 faculties in total (48 in the programme area).

The education system in Montenegro is organised as well through preschool and elementary education, secondary schools and higher education institutions. The vocational education and training system in Montenegro comprises programmes at three different levels, within which students are offered nearly 82 educational profiles—two two-year, 35 three-year and around 45 four-year programmes. The secondary vocational education infrastructure consists of 26 vocational and 11 mixed schools (gymnasium/vocational school). Vocational schools currently provide education in 14 occupational sectors.

In the winter semester 2010/2011, higher education institutions were attended by 25,169 students. Out of this number of students, 88% are full-time students. Also, during 2010, 3,083

students completed undergraduate studies at higher education institutions. However, there is a record of an increase in the number of those who completed specialist studies (by 12%) and those who completed post-graduate studies (by 14%). The study programmes attracting the largest numbers of students include economy, law and electrical engineering.

Table 32: Schools in the programme area

Country	No. of Grammar schools	No. of Industrial and crafts schools	No. of Technical and related schools
Croatian programme area			
Zagreb County	8	11	10
Sisak-Moslavina County	6	11	9
Karlovac County	4	11	8
Bjelovar-Bilogora County	5	10	8
Lika-Senj County	4	4	4
Požega-Slavonia County	3	5	5
Brod-Posavina County	3	5	5
Zadar County	9	12	11
Šibenik-Knin County	4	9	7
Vukovar-Srijem County	4	12	8
Split-Dalmat County	25	31	20
Dubrovnik-Neretva County	8	11	8
Bosnian and Herzegovinian programme area	No. of Grammar schools	No. of Industrial and crafts schools	No. of Technical and related schools
RS: 94 secondary schools in total in whole RS; some of them are centres which include different types of schools – neither data for the programme area nor division per type of school are available			
Federation BiH (355 secondary schools in total in whole Federation BiH – 267 in the programme area)	63	79	99
Brčko District total 4 high schools	1	n/a	3
Montenegrin programme area	No. of Grammar schools	No. of Industrial and crafts schools	No. of Technical and related schools
Herceg Novi	4	n/a	1
Kotor	5	2	1
Tivat	2	1	1
Budva	3	n/a	1
Bar	10	2	1

Ulcinj	4	1	1
Cetinje	4	2	1
Nikšić	22	4	1
Podgorica	30	9	2
Danilovgrad	4	n/a	1

Source: Croatia, Bosnia and Herzegovina, Montenegro: relevant official we-sites

Table 33: Students and programmes/faculties in the programme area

Croatian programme area	No. of students	Number of study programmes/faculties	% of total No. of students in Croatia (149,520)
University of Zadar	5.293	25 departments	3.54
University of Split	21.879	12 faculties, 5 departments	14.63
University of Dubrovnik	1.975	10 study programmes	1.32
Bosnian and Herzegovinian programme area	No. of students	Number of study programmes/faculties	% of total No. of students in Bosnia and Herzegovina
University of Banja Luka	17.000	16 faculties	n/a
University of Tuzla	11.686	13 faculties	n/a
University of Mostar	15.150	11 + 8 faculties	n/a
Montenegrin programme area	No. of students	Number of study programmes/faculties	% of total No. of students in Montenegro
University of Montenegro	18.253	20 faculties	12,21
Mediterranean University	1.237	6 faculties	0,83
University of Donja Gorica	1.644	10 faculties	1,1
Other	1.145	n/a	0,76

Source: Croatia Catalogue of information of University of Zadar, 2012; University of Split, <http://www.unist.hr/Sastavnice/tabid/197/Default.aspx>; International University in Dubrovnik, <http://www.unidu.hr/>; Agency for Science and Higher Education Croatia, 2011; Montenegro MONSTAT, Data for school year 2012/2013; Bosnia and Herzegovina: web-sites of the three universities

For the time being, there is no comprehensive analysis that would systematically examine the responsiveness of the education system to the labour market needs in any of three counties.

Structure of persons in Croatia in employment by educational attainment in 2012 is as follows: 14.7% persons with uncompleted or completed primary school, 61.5% with secondary school and 23.8% with tertiary education. On the other hand, the structure of unemployed has retained the same pattern, but with a lower share of highly educated: 15.4% persons with uncompleted or completed primary school, 69.2% with secondary school and 15.4% with tertiary education.

In Bosnia and Herzegovina, according to the Labour Force Survey in 2012, 20.6% of the employed completed elementary school or less, 62.8% completed secondary school, and

16.5% college or faculty, MA or PhD studies. The structure of the unemployed is as follows: 19.5% completed elementary school or less, 71.3% secondary school and 9.2% college or faculty, MA or PhD studies

Of the total number of employees in Montenegro, 50.6% completed a secondary vocational education, while 18.0% of the employed received higher education. If we analyse employment rates according to the level of education, we conclude that the rate is highest for those with higher education: 71.7%, and the lowest for those who did not go to school, or did not receive elementary education in full. In addition, employment rate is also high for those who received secondary vocational education.

Overall, the population in the programme area has relatively high rates of secondary education, low rates of higher education and the workforce has relatively low skill levels. Therefore, there is a significant mismatch between the education programmes and the requirements of the labour market and very low levels of provision of adult education and training. However, more reliable information needs to be gathered on skills availability and needs.

5.2 Education system and labour market

Educational system, especially in vocational education and training should keep up with the labour market demands and priorities in each sector, especially the ones which are of primary importance for further development of economy. Special effort should be put in development of VET qualifications and curricula on the basis of labour market research and analysis.

In addition, consideration should be given to improving the knowledge of students and young persons so that the new generation are prepared to enter the world of entrepreneurship, knowing the basic principles underlying modern society, taking a positive attitude to obligations, legal framework and responsibilities of the society with a view to creating a more favourable environment for professional development and development of a knowledge-based society.

Entrepreneurship is interconnected to the labour market status. In cases of high unemployment, certain number of people is motivated to become self-employed as entrepreneurs or craftsmen. However, a supporting mechanisms are important in the early stages of business launch but also business counselling for the newly founder entrepreneurship.

Further on, increased investment in human capital is necessary throughout the programmes of life-long learning. This requires well-trained, flexible and mobile personnel in all sectors and from all qualification levels. In order to adapt to rapidly changing work environments, personnel will be expected not only to build their professional knowledge but also skills and competencies.

There are various reasons why people do not undertake learning activities - lack of knowledge of what is on offer, poor quality of existing learning offers in the local communities, costs, or simple lack of interest. When it comes to the issues of geographical coverage, the major gaps

exist in less prosperous and rural areas. Therefore, in order to increase the participation of people especially youth in education programmes, all respective authorities and institutions in whole programme area should work on raising the awareness of life-long learning and benefits that stem from it. In doing so, the challenge for relevant institutions in the programme area is to increase the overall volume of participation in life-long learning by motivating, encouraging and supporting people to participate in learning in all its modes, formal and informal.

Establishing a sustainable and effective vocational education and training system joined with appropriate lifelong learning programmes is essential to maintain workforce whose skills can contribute to further development and progress of economy.

5.3 Youth

Croatia has been facing a severe problem of birth-rate decline and demographic aging of the population while the overall population of Croatia is continuously decreasing. The CBS forecasts a further decline of the Croatian population by 700,000 (-16%) by 2050, while share of youth (15-24 years of age) may drop from 13% to 10%.

Additionally, the problems of youth unemployment is significantly pronounced and it is connected with the lack of initial work experience, lack of skills for the labour market needs and lack of professional mobility and the unwillingness to participate in training and retraining programmes.

Concerning the long-term unemployed, those most at risk are young people without any working experience. Due to the fact that many employers prefer to hire workers with experience and demonstrated ability, young persons need special attention and help for entering the labour market. According to the February 2013 CBS data, there were 62,282 unemployed persons with no work experience, out of whom 35,571 were high school graduates (57.1%) and 11,295 (18.1%) were highly educated persons with no work experience.

Unemployment rate of youth (15-24) in 2012 was 43%, much above EU-27 average 22.8%. Negative population growth and demographic aging are also characteristics of population in Bosnia and Herzegovina. The preliminary results of census 1013 show considerable decrease in total population in comparison with previous census (1991). Furthermore, available statistical data show very high unemployment rates of youth: 57.9% in 2011 raised to 63.1% in 2012 with slight decrease in 2013 (59.1%) (source: Labour Market Survey 2013).

Over the last decades, the most significant trend featuring the demographic landscape of Montenegro is population aging. The average age of population in Montenegro is 37, according to the 2011 census. The share of school age population (6 to 15 years) equals 13.2 %, while secondary school age, between 15 and 19 years, constitutes 7.1% total population.

One of the characteristics of Montenegro is also a lower activity rate. The lowest activity rate is among the population from 15 to 24 years of age (35% on the average). According to the Labour Force Survey, the rate of work inactivity amounted to 49.9% in 2010. The age group

15-24 has the largest share in inactive population (28.1%). Most of the inactive population lives in the Central region (41.3%), while 24.7% lives in the Southern region.

The problem of unemployment among young people is one of predominant issues of overall unemployment in Montenegro. Irrespective of the fact that youth unemployment has been decreasing for the last several years, according to 2010 data, it amounts to 45.5%, while the share of young persons of the total unemployment equals to 20%. Additionally, young persons represent the only age group whose unemployment rate is: (i) higher than the average (19.7% in 2010), and (ii) almost triple the rate for adults (for age group 25-64 -15%).

The age structure of employees is as well unfavourable. Thus, the employment rate is highest for employees of 25 to 49 years of age – 62.9%, while only 13.7% of young persons, aged 15-24, have jobs. In addition, according to 2010 data, young persons of 15 to 24 years of age constitute only 6.4% total number of employees in Montenegro.

Table 34: Youth unemployment

Country	No. of youth (15-24)	Total population	Share of youth (15-24) in total population	Total no. of unemployment
Croatian programme area – NUTS 3				
Zagreb County	37,306	317,606	11.84	20,566
Sisak-Moslavina County	19,507	172,439	11.31	21,770
Karlovac County	13,701	128,899	10.63	12,119
Bjelovar-Bilogora County	14,688	119,764	12.26	13,958
Lika-Senj County	5,334	50,927	10.47	4,238
Požega-Slavonia County	10,455	78,034	13.4	7,819
Brod-Posavina County	21,451	158,575	13.53	19,575
Zadar County	20,287	170,017	11.93	12,958
Šibenik-Knin County	12,522	109,375	11.45	9,668
Vukovar-Srijem County	23,254	179,521	12.95	23,547
Split-Dalmatia County	57,057	454,798	12.55	51,606
Dubrovnik-Neretva County	14,838	122,568	12.11	10,430
TOTAL CROATIAN PROGRAMME AREA	250,400	2,062,253	12.14	208,252
Bosnian and Herzegovinian programme area	No. of youth (15-24)	Total population	Share of youth (15-24) in total population	Total no. of unemployment

Entire BiH in 2013 ¹¹	421,000	3,050,000	13,8%	311,000
Montenegrin programme area - Municipalities	No. of youth (15-24)	Total population	Share of youth (15-24) in total population	Total no. of unemployment
Bar	5,721	42,048	13.6%	n/a
Budva	2,353	19,218	12.24%	n/a
Cetinje	2,412	16,657	14.48%	n/a
Danilovgrad	2,788	18,472	15.1%	n/a
Herceg Novi	3,544	30,864	11.48%	n/a
Kotor	2,832	22,601	12.53%	n/a
Nikšić	9,963	72,443	13.75%	n/a
Podgorica	26,598	185,937	14.3%	n/a
Tivat	1,771	14,031	12.62%	n/a
Ulcinj	2,896	19,921	14.54%	n/a
TOTAL MONTENEGRIN PROGRAMME AREA	147,787	620,029	23.84 %	55,125

Source: Croatia: Croatian Bureau of Statistics – Author's calculation; Montenegro: MONOSTAT, Labour Force Survey (2011)

Conclusions:

- In the programme area there is a significant mismatch between the education programmes and the requirements of the labour market.
- Educational system, especially in vocational education and training should keep up with the labour market demands and priorities in each sector.
- Problems of youth unemployment is significantly pronounced in whole programme area.
- Youth unemployment is connected with the lack of initial work experience and lack of skills for the labour market needs.
- Population, including young persons, in the programme area has relatively high rates of secondary education, low rates of higher education and the workforce has relatively low skill levels.
- Increased investment in human capital is necessary throughout the programmes of life-long learning.
- Improving the knowledge of basic principles of entrepreneurship is necessary especially among students and young persons.

6. Local and regional governance, planning and administrative capacity building

¹¹ Data provided for Bosnia and Herzegovina as whole since data at the programme area in BiH are not available. Source: Agency for Statistics (Labour Force Survey)

Three partner countries have different local self-government systems but the general issues and challenges related to service delivery and planning and administrative capacity building are similar.

The current local self-government system in Croatia was fully established in 1993 according to which local self-government units are (rural) municipalities and cities/towns, and regional self-government units are counties. Croatian part of the programme area comprises a total of 169 local self-government units out of which there are 88 municipalities and 69 cities and towns, and 12 regional self-government units, i.e. counties.

Bosnia and Herzegovina is a complex state, consisting of two entities: Federation of Bosnia and Herzegovina (51% of the territory) and Republika Srpska (49% of the territory) and the Brčko District. Federation of Bosnia and Herzegovina consists of ten cantons (further administratively divided into municipalities) and those are: Una-Sana Canton, Posavina Canton, Tuzla Canton, Zenica - Doboje Canton, Bosnian-Podrine Canton, Central Bosnia Canton, Herzegovina-Neretva Canton, Western Herzegovina Canton, Sarajevo Canton and Canton 10.

The territory of Montenegro is divided into 23 municipalities (until 2013-2014, the number of municipalities was 21), representing local self-government units. Out of 23 municipalities, 10 municipalities are located in the programme area. The national association of all municipalities is the Union of Municipalities of Montenegro.

Local and regional governance should perform their tasks as a professional, accountable, flexible and transparent civil service at local/regional level, user-oriented through its quality services and founded upon professional values. In addition, civil servants at local/regional level are expected to perform their tasks founded upon the following values: professionalism, accountability, ethics, impartiality and efficiency.

As the civil service aim to improve the quality of service, human resource management system must be central to its efforts. Therefore, it can be concluded that the lack of a professional human resource management system for civil servants in local and regional governments is an ongoing challenge in all three countries.

Some of the main areas identified for improvement within the human resources management system are: recruitment process, competency system for given jobs, methodology for validation of competence of civil servants, the system of assessment and monitoring of civil servants based on monitoring the efficiency of their work and connection of that evaluation to the system of career development and progress. Emphasis is especially put on the need for more objective selection of the most competent candidates for promotion to management positions, opening wider range of options for different ways of career development with the aim to decrease turnover within and outside the civil service. In order to retain highly competent and motivated employees, it is necessary to develop and implement the reform of the system of rewards and promotion, which should be more functional and more applicable to the needs of modern public administration.

The fight against corruption represents an integral part of the process aimed at making the civil service democratised and modernised and at protecting citizens in exercising their rights while using public services. To strengthen integrity, accountability and transparency in the work of civil servants at local/regional levels, training programmes should be delivered, including those to make civil servants familiar with basic attitude of ethics, integrity and morals, the notion of corruption and the meaning of its suppression, the rights of persons who report their suspicion of corruption (the so-called “whistleblowers”) and the prevention of conflicts of interest in the performance of public duties. This field requires the development of new ways of training and informing civil servants at local/regional levels.

Conclusions:

- The delivery of services must be in full compliance with the needs of the users.
- Civil servants at local/regional level must be competent to deliver qualitative and effective public services.
- Support to strengthening the human and organisational capacities of local and regional governance must be given.
- Access to training programmes to all civil servants at local and regional level must be increased.
- Recruitment process, competency system for given jobs, methodology for validation of competence of civil servants, the system of assessment and monitoring of civil servants are the main areas identified for improvement within the human resources management system.
- Availability of the existing training programmes and manners of informing civil servants at local/regional level in the area of anti-corruption is to be enhanced and increased.

7. Competitiveness and business environment development

7.1 SMEs

The development of SMEs in all three countries and therefore in whole programme area contributes to the increase in the gross domestic product, creation of new jobs and reduction of the unemployment rate, substitution of imports and higher export competitiveness of the domestic economy. SMEs are potential for innovation but also play a significant role in uniform regional development, as well as in the process of European integration.

Similar as in past programming period it can be concluded that the SME sector is relatively well represented and is a potential source of strength. As it is visible from the data below there are more than 150.000,00 SME in the programme area. The majority of these SMEs are, however, very small and improvement of professional support and services to help them build up performance and strengthen their competitiveness is still needed. In addition, SME sector do employ significant number of population, however it is still potential to be used in

the future while SMEs should be provided with the support needed in order to create more jobs.

SMEs¹² in Croatia are vital for national economy. They represent 99,7% of all companies with predominantly micro enterprises 90,7%. In 2013 SMEs employed 64,2% of total labor force.

This sector as much as any other is strongly affected with financial crisis where total number of SMEs has decrease from 2010 till end of 2011 for 4,7% losing in total 28.199 jobs. Average number of employed per SME in Croatia is 5 with average of 2 in micro enterprises, 20 in small and 97 in medium. When looking into specific sector highest number of SMEs is in trade with 22,7% while manufacturing was taking up to 12,1%, construction 11,9%, expert, scientific and technical activities 10,6% and accommodation and food services with 10%. These 5 most important sectors are 67,3% of all SMEs in Croatia.

Data on SMEs in Croatia are also showing that 94,4% micro enterprises have annual turnover less than 500.000 EUR, 3% of them are with turnover between 500.000 EUR and 1 million EUR, and 1,4% with turnover between 1 and 2 million EUR (0,57% 2-5 million EUR; 0,16%, > 5 million EUR).

Data available from Croatian Financial Agency are showing that SME sector has become more important for export where it represent 44% of total export in 2012 in comparison to 2010 when it represented 40%.

Table 35: Export and SMEs in Croatia

SME	Share in total export	Share in total export in SME sector
Micro	8%	17.7%
Small	13%	30.5%
Medium	23%	51.8%

Source: Observatory report on SMEs 2013, Ministry of Entrepreneurship and Crafts, Croatia

Croatia has different types of support institutions to SMEs. They are divided in 4 groups: incubators, support centers, technology parks and regional and local development agencies. 42.37% out of total support institutions in Croatia are in the programme area. Regardless of number of support institutions across Croatia and support received from public funding it will be crucial to secure additional funding in order to improve their structure and quality of support service both to SMEs but also other entities in order to increase competitiveness in general.

Table 36: Overview of SME's supporting institutions in the Croatian programme area

Croatian programme	Incubators	Support	Technology	Regional and
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¹² Observatory report on SMEs 2013, Croatian Ministry of Entrepreneurship and Crafts, Croatia

area - NUTS 3		centres	parks	local development agencies
Zagreb County	0	4	0	1
Sisak-Moslavina County	1	1	0	1
Karlovac County	1	0	0	1
Bjelovar-Bilogora County	3	1	0	2
Lika-Senj County	0	0	0	1
Požega-Slavonia County	2	2	0	1
Brod-Posavina County	2	1	0	2
Zadar County	1	0	0	1
Šibenik-Knin County	1	0	0	1
Vukovar-Srijem County	0	0	1	4
Split-Dalmatia County	4	6	0	2
Dubrovnik-Neretva County	1	2	0	2
TOTAL CROATIAN PROGRAMME AREA	16	17	0	17
TOTAL CROATIA	32	51	8	27

Source: Ministry of Entrepreneurship and Crafts, SME supporting institutions, 2014. <http://www.minpo.hr/default.aspx?id=180>

When it comes to policy level in supporting and developing SMEs in Croatia main instrument is grant scheme of Ministry of Entrepreneurship and Crafts – entrepreneurial impulse. Ministry has received 5,400 applications in 2011 and has approved grants to 2,460 applicants with total amount of almost EUR 22 mil (HRK 167,8 million). In 2012 there were 11,079 applications, which demonstrates increase of 40,6%. Average value of grants in 2012 was 68,231 HRK in comparison to HRK 36,824 2011.

Besides grants other instruments used to support SMEs from national level are: subsidies, interest rates, loans and support to venture capital funds. Institutions dealing with these support schemes are Croatian Agency for SMEs and Investments (HAMAG INVEST) and Croatian bank for Reconstruction and Development (HBOR).

In Bosnia and Herzegovina, due to devastated industry and the large lagging behind in technological development after 1995, SMEs necessarily have a key role in the economic development and new job creation. Figures support this statement showing that in Bosnia and Herzegovina private sector¹³ employs more than half a million people which is 75.83% of total employed in 2012 (814,000). Distribution of the employment per sectors is as follows:

¹³ Data on number of employed for all companies submitted financial report for 2012. Data does not cover (private) arts and crafts sector.

Table 37: Share of employment in SMEs in Bosnia and Herzegovina

	Micro	Small	Medium	Large
Total	0-9	10-49	50-249	≥ 250
617.279	69.382	128.205	181.941	237.751

Source: Agency for Statistics of Bosnia and Herzegovina 2012

In Bosnia and Herzegovina, 379,528.00 were employed in SME sector in 2012, which was 46.62% out of total number of employees.

Due to the complex political structure of Bosnia and Herzegovina, institutional support for the development of the MSME sector remains scattered and uncoordinated. At state-level, the Ministry for Foreign Trade and Economic Relations coordinates SME-related policies and the implementation of the Small Business Act (SBA). There is no SME agency at state-level, though an SME Council with a coordinative function amongst entities has formally been created but in practice has not yet started to work. Individual policies and strategies are implemented at entity-level. Both entities have an SME strategy in place, but only Republika Srpska has an agency to effectively support the implementation of SME policies. In addition, SMEs representation at both state and entity level remains highly limited and as a result, public-private dialogue on SME development is almost non-existent. A recently launched Association of business women aims at assisting female entrepreneurs to position themselves in the market has not yet become self-sustainable.

In Montenegro, SMEs together with foreign direct investments, restructuring and privatization have strong impact on the economic development of Montenegro. SMEs especially are contributing to the country's transition process but also are important in creating conditions for Montenegro EU membership. Out of total number of employees in 2012 – 166,531, number of employees in SMEs is very significant and is 111,576 which is 67% of total employment.

In 2012 99% of all enterprises in Montenegro were SMEs (22313). Out of this number 98,86% are small and 1.14 % medium. When it comes to share in export in 2012 based on Monstat data it was 45.04%. When looking into specific sector highest number of SMEs is in trade, accomodation and food services, construction and manufactory industry, while in transport of electricity and gas there are smallest number of registered SMEs.

Table 38: Division of SMEs in Montenegro

Montenegrin programme area	2012		
Municipalities	Small	Medium	Total
Bar	2.262	15	2,277
Budva	2.486	10	2,496
Cetinje	576	3	579
Danilovgrad	354	8	362

Herceg Novi	1,732	16	1,748
Kotor	1,018	10	1,028
Nikšić	1,561	23	1,584
Podgorica	6,928	135	7,063
Tivat	725	8	733
Ulcinj	963	4	967
TOTAL MONTENEGRIN PROGRAMME AREA	18,605	232	18,837

Source: MONSTAT 2012

In the Montenegrin part of the programme area there are several different business support institutions distributed in 3 main groups: business incubators in Podgorica and Bar, open business zones in Cetinje, Niksic and Ulcinj which is more than 80% of total in the country. Regional development agencies FORS Montenegro (Foundation for development of northern Montenegro) and Regional development agency for Bjelasica, Komovi and Prokletije.

When it comes to policy level in supporting and developing SMEs in Montenegro main instrument is Investment-development fund (provides support for the SMEs) and activities of Directorate for development of SMEs.

In addition, the situation analysis has shown that the development of clusters and cluster networks is uneven across the programme area. As described in the Strategy of Clusters' Development 2011-2020 of Republic of Croatia, with its cluster policy, Croatia aims to strengthen existing regional advantages, as well as competitiveness and innovations. Until 2011, clusters have been developed within the following industries: wood processing, leather and footwear industry, printing industry, construction industry, ICT, tourism and catering, shipbuilding, medical equipment manufacture, municipal equipment manufacture, food industry and metallurgical industry. The existing clusters in Croatia are generally small, and the emphasis is on the improvement of cooperation and networking of existing clusters, as well as building of international cluster network (e.g. SEE Wood clusters Network, Ecorural NET, SEE Autoclusters Network). Cluster networking through strengthening connections and synergies with other enterprises, educational institutions, business incubators, business parks, regional development agencies and other institutions is important especially on the regional level, within Republic of Croatia, and in cross-border cooperation. In order to strengthen and improve those synergies, efforts in establishing and strengthening of cluster networks on the regional level will be undertaken and supported.

There have been several cluster development programmes in Bosnia and Herzegovina since 2004, but the number of active clusters is in decrease. United States Assistance for International Development (USAID), through the Cluster Competitiveness Activity Project, conducted a four-year program (2004-2008) to assist businesses in sectors with large potential for economic development in BiH: wood processing and forestry, and tourism. The goal was to: increase overall revenues, exports, profits, and employment of the BiH wood processing and tourism sectors; and achieve institutionalized sustainability of joint action for individual company competitiveness for these two sectors. The other major cluster development program in BiH is the Automotive Cluster Bosnia and Herzegovina (AC-BiH), led by the German Gesellschaft für Technische Zusammenarbeit (GTZ). It focuses on supporting a

growing automotive component cluster, comprising companies from the entire country. The AC-BiH brings together the competences of its members along the supply chain and acts as a platform and motor for technological innovations, national and international co-operation, marketing, and distribution. There are also a number of active clusters at the regional level in BiH, including wood processing and renewable energy industries. Examples may be the DRVO-PD cluster in the Prijedor and Banja Luka region (wood processing, encompassing R&D and innovations in wood design), or the SOLAR Group in Banja Luka region (renewable energy industry). However it has been noticed that the number of active clusters is decreasing, according to the survey of the World economic forum there were less active clusters in 2013 than in 2012 in Bosnia and Herzegovina.

The Ministry of Economy of Montenegro also recognises cluster development as a mean of overcoming regional differences, reducing unemployment, stimulate job creation and increasing export capacities thus strengthening micro, small and medium enterprises (MSMEs). In the Strategy for Sustainable Economic Growth in Montenegro through the Introduction of Business Clusters 2012-2016, Ministry of Economy of Montenegro identified tourism, wood processing, agriculture and food processing, and construction industry as the main clusters in Montenegro. Therefore, the Cluster Strategy envisages to contribute to a more balanced regional socio-economic development by enhancing the competitiveness and employment capacities of MSMEs (particularly in less advanced municipalities) and ensuring that the benefits deriving from the EU integration process and the further opening of markets are spread more equally across the different economic actors within the country

Conclusions:

- SMEs have a key role in the economic development and new job creation and contribute to the increase in the gross domestic product.
- SME sector is recently becoming more important for export which contributes to the competitiveness of the domestic economy.
- There are support institutions to SMEs in the programme area but improvement of their professional structure and services to help SMEs build up performance and strengthen their competitiveness is still needed.
- Out of total labor force the highest percentage of employees is in SMEs in all three countries.
- Out of total enterprises the highest percentage are SMEs in all three countries
- Cluster development is recognised as a mean of overcoming regional differences, reducing unemployment, stimulate job creation and increasing export capacities thus strengthening micro, small and medium enterprises (MSMEs).
- Development of clusters and cluster networks is uneven across the programme area.

8. Research, technological development, innovation and ICT

8.1 R&D and Innovation

From the table below it can be concluded that the whole programme area has relatively low

level of R&D spending and is in contrast to the European average of 2.01%.

While data related to level of R&D spending are not available on local/regional level, it can be concluded on the basis of the number of research institutions that R&D potential is concentrated around a few university centers in the programme area, with domination of Split in Croatia followed by Zadar, Banja Luka, Tuzla and Mostar in Bosnia and Herzegovina and Podgorica in Montenegro.

In Croatia, most of the county development strategies concerned recognize insufficient orientation of the regional businesses towards R&D as their developmental weakness, while plan measures should lead to the improvement of such situation.

Croatia has a low share of labour force dedicated to R&D activities, which are the key for driving productivity improvements across the economy. The number of total researchers decreased in the last decade by 22 percentage points, while the government and higher education sectors together employed over 80% of researchers (82.43% in 2012) and business sector only 17.4%. It is clear that Croatia needs to increase the scale and quality of the R&D workforce, particularly in the business sector. Croatian companies must have access to research skills that will enable them to move up the value chain and increase their competitiveness. Public sector research organisations, including universities, must have a sufficient research skills base to engage in world-class research and support their diverse roles in society, including productive contribution to the economy.

In Bosnia and Herzegovina, gross domestic expenditures on R&D in 2012 were highest in the field of Engineering and Technology - 33.5%, followed by Natural sciences with a share of 30.7%. Regarding sources intended for R&D 25.3% were own resources, while 24.8 % were from central government resources and other levels.

There were 1,705 persons in full- time and part time employment engaged in R&D, out of which 44.1% were women. Out of total number of employees, researches have the biggest share (46,8%). The share of women among researchers was 34.5%.

799 researchers employed full-time and part-time jobs in research and development, according to international standards can be expressed by means of full time equivalent (FTE). So we get 577.3 person-years (i.e. researchers employed full-time on R&D).

Number of units engaged in research and development is 84 (in private sector 32.1% of the units, in public sector 13.1%, higher education 50% and 4.7% of the non-profit sector).

Out of the total number of enterprises, 25.5% introduced at least one of the above innovation activities in the period 2010-2012. In the same reporting period, 74.5% of enterprises have not implemented innovative activities.

Enterprises which were innovation-active in the period 2010-2012 were mostly engaged in the acquirement of machinery, equipment, software and buildings (80.3%), while the lowest number of them acquired the existing knowledge from other enterprises and organisation (22,4%). Factors hampering innovation activities are: cost factors, knowledge factors, market factors and institucional factors.

According to the IPC codes, the highest share of granted patents in 2013 related to section C Chemistry (47.0%), follows section A Human necessities (34.1%). In the national register (on the day 30 June 2014), 743 patents are in force.¹⁴

The private sector is technologically weak, resulting mainly from the low volume and low investments into R&D of the private businesses and collaborations between the private and public sector R&D actors are few and insufficient. These pose major obstacles to better innovation performance and competitiveness. Support to joint industry-research projects should therefore be considered a priority where there are benefits for both enterprises and the public sector researchers.

In Croatia, a set of Competitiveness Clusters is being established for the key industrial sectors, based on the triple helix principle (bringing together industries, research institutions and local and regional governments), most significantly: food and processing industry, wood industry, pharmaceutical and health industry, energy, with a set of others in different phases of establishment. These have a potential to be drivers of not only nationally, but also regionally and locally based development of R&D. The Smart Specialisation Strategies for 2014 - 2020 for NUTS 2 level regions are in preparation and will presumably be aligned with the strategies of the key competitiveness clusters.

Table 39: GERD¹⁵ as a % of GDP

GERD as a % of GDP				
Country	2008	2009	2010	2011
Croatia	0.90	0.85	0.75	0.75
Bosnia and Herzegovina	0.02 i	0.02 i	n/a	n/a
Montenegro	0.20	0.24	0.13	0.41

The number and density of broadband connections is unevenly distributed across the Croatian part of the programme area. Counties in the south, Zadar County and Split-Dalmatia County and Vukovar-Srijem County in the north-east, have the highest standard fixed broadband coverage. No region had NGA coverage over 35% in 2012. Furthermore, less than 0.01% of households had access to NGA services in rural areas at the end of 2012.

In the last five years the density of broadband Internet in the programme area is increasing rapidly. Density of broadband Internet access through fixed access in Croatia was 20.78% at the end of 2012.

Grey spots cover 43.1% of total population mostly in rural and suburban settlements with below 2,000 inhabitants. Black spots encompass 54.7% of Croatian territory. Only 15% of Croatian population enjoys NGA located mostly in the four largest cities (FTTH network of one provider; grey spots).

¹⁴ Source:

http://www.bhas.ba/saopstenja/2014/NTI_RD_2012_001_01_bos.pdf;
http://www.bhas.ba/saopstenja/2014/NTI_PAT_2013_001_01_bos.pdf;
http://www.bhas.ba/saopstenja/2014/NTI_INO_2012_001_02_BA.pdf

¹⁵ GERD - gross expenditure on research and development

ICT development may be used also as a driver to achieve more inclusive growth. The potential of ICT shall be used particularly in the rural and remote areas of the programme area (e.g. inhabited islands) to provide better education, healthcare, public and social services and facilitate business growth. This shall also provide a good opportunity for the growth of the ICT industry, creating demand for content development and employment.

Conclusions:

- Collaborations between the private and public sector among R&D actors are few and insufficient.
- The number of total researchers decreased in the last decade.
- The private sector is technologically weak, resulting mainly from the low volume and low investments into R&D of the private businesses.
- A set of Competitiveness Clusters based on triple helix principle already established in food and processing industry, wood industry, pharmaceutical and health industry, energy.
- The potential of ICT could be used in the rural and remote areas of the programme area.