

STATISTICAL RELEASE

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Protection against damaging water effects in the Republic of Serbia, 2010 – Preliminary data –

Statistical Release contains selected statistics referring to protection against flood and river control, land drainage, land erosion control and torrent regulation. Preliminary data present areas and facilities flooded by surface and ground waters, areas and facilities protected against flood and those being drained in the Republic of Serbia in 2010.

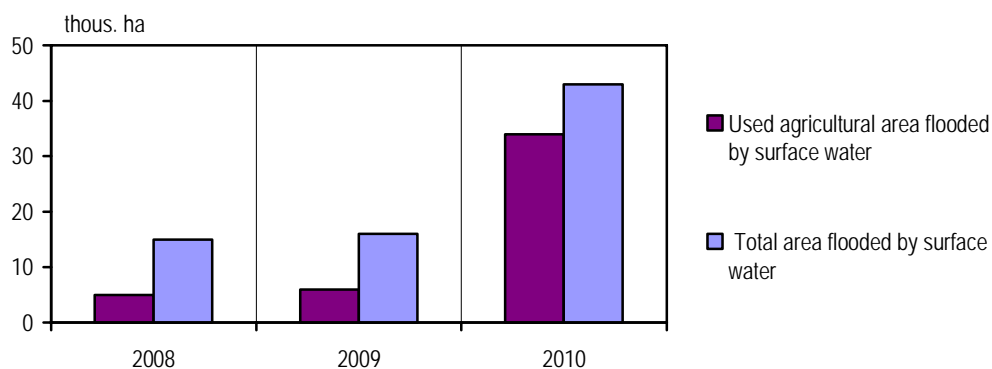
The total area flooded by surface waters in 2010 was 42 942 ha, of which 79.8% referred to used agricultural land.

The total area defended from flooding in 2010 decreased by 2% compared to the reference period of 2009. Used agricultural land represented 90% of the area defended from flooding, showing the decrease of 5.7%, compared to 2009.

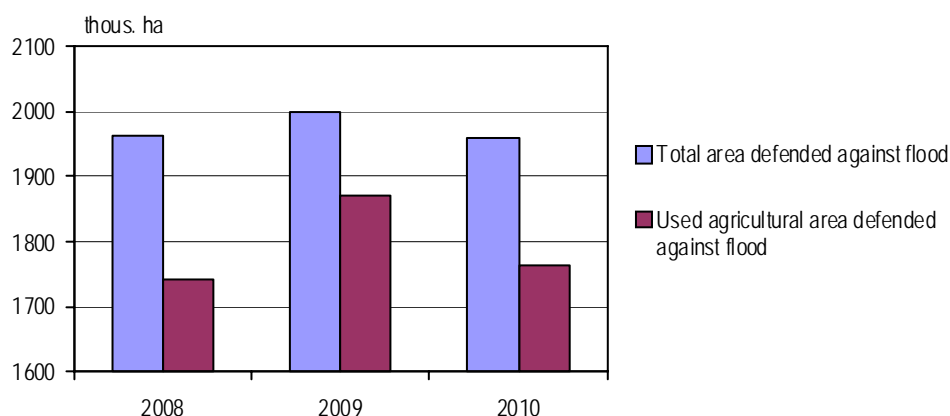
In 2010, system of drainage area increased by 4% relative to 2009, while the length of drainage canals was by 7.7% higher than the referent values in 2009. Area of eroded land in 2010 amounted to 2 623 km², i.e. 18% less than in the same period last year.

The data relate to the Republic of Serbia and its subdirectories. Starting from 1999 the Statistical Office of the Republic of Serbia has not at disposal and may not provide available certain data relative to AP Kosovo and Metohia and therefore these data are not included in the coverage for the Republic of Serbia (total).

Graph 1. Total and used agricultural areas flooded by surface waters in the Republic of Serbia, 2008–2010



Graph 2. Total and used agricultural areas defended against flood in the Republic of Serbia, 2008–2010



1. Protection against damaging water effects, 2010¹⁾

	Republic of Serbia				
	Total	Belgrade	Vojvodina	Sumadija and Western Serbia	Southern and Eastern Serbia
Areas and facilities flooded by surface water					
Total flooded area, ha	42 942	350	13 261	23 890	5 441
Used agricultural area, ha	34 302	230	10 201	19 192	4 679
Settlements, number	292	10	12	124	146
Buildings, number	4 726	180	83	3 306	1 157
Industrial facilities, number	126	-	4	97	25
Other industrial facilities, number	2 025	-	3	1 248	774
Railway lines, km	44	-	5	6	33
Roads, km	622	1	15	380	226
Areas and facilities protected against floods					
Total area protected against floods, ha	1 959 412	60 274	761 879	216 727	920 532
Used agricultural area, ha	1 763 506	51 694	624 000	168 502	919 310
Settlements, number	657	21	171	165	300
Industrial facilities, number	498	21	126	173	178
Other industrial facilities, number	5 716	143	288	4 535	750
Railway lines, km	862	52	280	116	414
Roads, km	4 810	100	751	2 703	1 256
Total length of embankment, km	3 299	471	1 229	514	1 085
Areas and facilities flooded by ground water					
Total flooded area, ha	74 334	-	57 512	12 786	4 036
Used agricultural area, ha	64 492	-	50 380	10 904	3 208
Settlements, number	156	16	29	36	75
Buildings, number	2 412	220	603	537	1 052
Industrial facilities, number	45	4	18	19	4
Other industrial facilities, number	688	-	105	464	119
Railway lines, km	6	-	5	1	-
Roads, km	141	-	15	70	56
Drainage					
Total area covered by drainage system, ha	2 333 037	333 330	1 713 496	211 708	74 503
Used agricultural area covered by drainage system, ha	1 971 410	253 366	1 488 187	165 541	64 316
Total drained area, ha	1 953 722	208 377	1 517 294	182 707	45 344
Used agricultural drained area, ha	1 673 447	179 119	1 308 756	140 395	45 177
Pumping stations, number	231	24	153	13	41
Land erosion					
Eroded land, km ²	2 623	1 446	36	498	643
Reclaimed land, km ²	316	10	-	184	122

¹⁾ Preliminary data

2. Floods and protection against damaging water effects, 2008–2010

Republic of Serbia

	2008	2009	2010 ¹⁾
Areas and facilities flooded by surface water			
Total flooded area, thous. ha	16	16	43
Used agricultural area, thous. ha	6	6	34
Settlements, number	21	32	292
Industrial facilities, number	6	176	126
Railway lines, km	12	12	44
Roads, km	68	56	622
Areas and facilities protected against floods			
Total area protected against floods, thous.ha	1 987	1 999	1 959
Used agricultural area, thous. ha	1 763	1 869	1 763
Settlements, number	558	563	657
Industrial facilities, number	450	442	498
Railway lines, km	989	983	862
Roads, km	2 906	2 558	4 810
Total length of embankments, km	3 287	3 032	3 299
Drainage			
Total drainage area, thous. ha	2 236	1 917	1 954
Drainage canals, km	5 766	5 093	5 488
Pumping stations, number	220	226	231
Land erosion			
Eroded land, km ²	1 221	3 201	2 623
Reclaimed land, km ²	36	505	316

¹⁾ Preliminary data

Methodological explanations

Data on the protection against damaging effects of water are compiled from regular reports of business entities dealing with water management, protection against damaging water effects and construction of hydro facilities, i.e. which activity is defined in the following sections: Construction (divisions 42 – Civil engineering and 43 – Specialized construction activities) and Professional, Scientific and Technical Activities (division 71 - Architectural and engineering activities), according to Classification of Activities.

The reports of the statistical survey related to protection against floods used to be collected three-annually in the period 1993-2008. However, due to climate changes, unpredictable periodicity of flood occurrence, as well as due to users' requests, the survey has been conducted annually since 2009.

The survey covers, from geographical aspect, all business entities that perform their activity on the entire territory of the Republic of Serbia. Starting from 1999 the Statistical Office of the Republic of Serbia has not at disposal and may not provide available certain data relative to AP Kosovo and Metohia and therefore these data are not included in the coverage for the Republic of Serbia (total).

Data collection is done by the reporting method, meaning that the reporting unit uses its available documentation and records to fill in the questionnaire in the first quarter of the current year for the previous year. If related records are non-existent for certain data, an expert will make an evaluation. The reporting unit forwards the questionnaire to the relevant statistical authority on which territory its head office is located.

Flood by surface waters is meant to be a (temporary) unusual flooding of land (valleys with large rivers) caused by the overflow of water from natural and artificial water bodies, over protective embankments and dams or by the break, i.e. destruction, of dams and other protective waterworks structures, including flood as a result of ice jams in waterways.

Flood by ground waters is the submersion of land (lowlands) due to an overflow of surface waters and high ground waters in period of abnormal water situation, and due to their slow drainage as well (lack of structures and insufficient capacity of the drainage network).

The drained area is made of total areas drained in a year irrespective of the number of drainages performed.

Under protection against flood presented are areas and structures being protected against damaging effects of surface, underground and torrent waters by protective embankments, drainage systems and devices.

Under eroded land presented is the land from which the fertile layer and vegetative cover have been detached or entirely transported by the devastating action of water or wind, thus its use in plant production has been significantly diminished or totally made impossible.

Reclaimed land is the land where there is no more nutrients wash off, landslide and transport of new alluviums.

More detailed view of methodologies by areas is available on SORS website: <http://webzrs.stat.gov.rs/WebSite/userFiles/file/Zivotna%20sredina/SMET8/SMET011030C.pdf>.