

# Elevation of Village Settlements by Municipalities in the River Basin of CrnaReka and Their Importance for Development of Tourism in the Republic of Macedonia\*

Cane Koteski

University GoceDelchev, Stip, Republic of Macedonia

The drainage area of CrnaReka is a spatial area that extends into two states in the southwestern part of the Republic of Macedonia. The boundaries of Macedonia and the northern part of the Republic of Greece are naturally clearly defined. The drainage area of CrnaReka in the Republic of Macedonia extends between 40°51'56" and 41°36'20" s.š.i 20°56'45" and 22°4'58". The total length of CrnaReka is 207 km<sup>2</sup>, with a total area of the catchment area (in both countries) of 5,774.99 km<sup>2</sup>, of which the Republic of Macedonia belongs the largest part of 4,869.72 km<sup>2</sup>, while the Republic of Greece belongs 905,27 km<sup>2</sup>. The research paper presents 335 village settlements located in 13 municipalities in the CrnaRekaBasin in the Republic of Macedonia. Macedonia and another 50 settlements settlement plus the city of Lerin are located in the neighboring Republic of Greece. Let us see how spatial and which rural settlements are located in the Crna River Basin in both countries. The villages will be represented by municipalities according to their main characteristics, municipal belonging, and altitude.

*Keywords:* river basin, village settlements, altitude

## Introduction

The rural settlements differ from the cities according to their physiognomy, or type, size, and population, have different construction and urban design, after the occupation of the population where the main activity is agriculture and the modest beginnings for the development of rural tourism in the villages of infrastructure facilities. In the Crna River Basin, there are 335 villages and three towns that belong to 13 municipalities in the Republic of Macedonia and 50 villages and plus the city of Lerin in the neighboring Republic of Greece. To see the spatial distribution of rural settlements in the Crna Reka Basin will be presented the villages according to their municipal belonging and altitude (Koteski, 2011, pp. 178-194).

## Elevation of Village Settlements by Municipalities in the CrnaReka River Basin in the Republic of Macedonia

The height distribution of rural settlements is a very important element in the study of settlements,

---

\***Acknowledgements:** This scientific paper was published as part of the research project "Possibilities and Perspectives for the Development of Tourism in the Black River Basin" funded by GoceDelcev University, Stip, Macedonia (Contract No. 0206-151/16, 0201-545/9 and 0307-98/77, from 01.11.2017) and the Senate Decision No. 0201-922/30 of 21 November 2018.

Cane Koteski, Ph.D., associate professor, Faculty of Tourism and Business Logistics, University GoceDelcev, Stip, Republic of Macedonia.



Raec	300 m			Gorno Selo	750 m	Birino	970 m
Resava	330 m	Municipality Dolneni		Gostirazni	740 m	PustaReka	940 m
Faris	415 m			Drenovci	770 m	Selce	920 m
Sivec	180 m			Zrze	720 m	Municipality of Mogila has no villages in this group	
Municipality Krivogastani		Belopole	610 m	Lazani	780 m	Municipality Novaci	
		Brailovo	660 m	MaloMramorani	715 m		
Borotino	590 m	Vrance	603 m	Margari	760 m	Grumazi	1,090 m
Vrbjani	548 m	Dabjani	605 m	Strovija	720 m	Iveni	940 m
Kruseani	597 m	Debreste	680 m	Municipality Drugovo does not have villages from this group		Polog	940 m
Obrsani	589 m	Desovo	680 m	Municipality Kavadarci		Sovic	1,080 m
Pasino Ruvci	585 m	Dolgaec	700 m	Municipality Prilep			
Slavej	600 m	Dolneni	622 m	Bojanciste	900 m	Zivovo	920 m
The municipality of Krusevo has no villages in this group		Dupjacani	660 m	Galiste	740 m	Krstec	1,080 m
		Zabjani	630 m	Klinovo	770 m	Pletvar	990 m
		Zitose	630 m	Kumanicevo	900 m	Polciste	910 m
		Zabrcani	660 m	Majden	780 m	Prisad	940 m
		Kostinci	620 m	ОпштинаКривогаштани немаселадоваагрупа		The municipality of Rosoman has no villages in this group	
		Kosino	690 m	Municipality Krusevo		Municipality of Caska has no villages in this group	
		Kutlesevo	660 m				
Municipality Mogila		Lokveni	625 m	Belusino	880 m		
		Nebregovo	700 m	Gorno	800 m		
		Novoselani	620 m	Divjaci			
Budakovo	525 m	Pestalevo	610 m	Dolno	860 m		
Vasarejca	584 m	Rilevo	660 m	Divjaci			
Gorna Carlija	583 m	Ropotovo	610 m	Jakrenovo	730 m		
Dedebalci	592 m	Sarandinovo	610 m	Norovo	785 m		
Dobrusevo	594 m	Sekirci	620 m	Ostrilci	860 m		
Dolna Carlija	582 m	Senokos	623 m	Municipality Mogila			
Loznani	600 m	Slepce	700 m	Mojno	710m		
Mogila	582 m	Slivje	625 m	Municipality Novaci			
Nospal	588 m	Sredorek	602 m	Armatus	840 m		
Radobor	531 m	Crniliste	662 m	Brnik	740 m		
Trap	573 m			Brod	740 m		
Municipality Novaci		Municipality of Drugovo does not have villages from this group of villages		Budimirci	800 m		
		Municipality Kavadarci		Gnilez	840 m		
Biljanik	580 m	Garnikovo	680 m	Gradesnica	800 m		
Gneotino	577 m	Grbovec	670 m	Grunista	800 m		
GornoAglarci	590 m	Dradnja	610 m	Dolno	720 m		
Dalbegovci	592 m	Dragozel	610 m	Orehovo			
Dobroveni	580 m	Kesendre	670 m	Zivojno	710 m		
Dobromiri	575 m	Pravednik	650 m	Meglenci	740 m		
DolnoAglarci	582 m	Seskovo	620 m	Orle	830 m		
Novaci	576 m			Paralovo	820 m		
Ribarci	540 m			Petalino	800 m		
Skocivir	600 m			Staravina	850 m		
Municipality Prilep		Municipality Krivogastani		Tepavci	750 m		
Gugakovo	580 m	Bela Crkva	603 m	Municipality Prilep			
Dren	570 m	Vogani	603 m	Belovodica	800 m		
Erekovci	600 m	Godivje	650 m	Besiste	900 m		
Klepac	590 m	Korenica	623 m	Varos	830 m		
Nikodin	600 m	Krivogastani	607 m	Veprceni	800 m		
Podmol	600 m	MirceAcev	609 m	Vitoliste	830 m		
Topolcani	600 m	Municipality Krusevo		Volkovo	780 m		
Trojaci	600 m	Aldanci	645 m	Vrpsko	800 m		
Trojkrsti	600 m	Arilevo	660 m				
Cepigovo	600 m						

Municipality Rosoman		Borino	690 m	Kokre	720 m		
Debriste	300 m	Bucin	607 m	Krusevica	759 m		
Kamen Dol	260 m	Vrboec	640 m	Leniste	780 m		
Krusevica	280 m	Milosevo	651 m	Lopatica	750 m		
Manastirec	145 m	Presil	640 m	Malo Ruvci	740 m		
Mrzen	570 m	Sazdevo	650 m	Marul	780 m		
Oraovec		SvetoMitrani	670 m	Oreovec	860 m		
Palikura	140 m	Municipality Mogila		Prilepec	830 m		
Ribarci	150 m	Alinci	604 m	Selce	740 m		
Rosoman	135 m	Beranci	640 m	Caniste	720 m		
Sirkovo	300 m	Dolno Srpci	640 m	Cumovo	860 m		
Trstenik	140 m	Ivanjevci	630 m	Stavica	800 m		
Municipality of Caska has no villages in this group		Musinci	630 m	The municipality of Rosoman has no villages in this group			
		Novo Selani	610 m	Municipality of Caska has no villages in this group			
		Podino					
		Puturus					
		Sveta Todorci					
		Trnovci					
		Crnicani					
		Municipality Novaci					
		Baldovenci	690 m				
		Bac	620 m				
		Vele Selo	700 m				
		Vranjevci	660 m				
		Germijan	610 m				
		Zovik 1	680 m				
		Zovik 2	680 m				
		Makovo	700 m				
		Novo Selo	700 m				
		Rapes	700 m				
		Slivica	610 m				
		Suvodol	650 m				
		Municipality Prilep					
		Alinci	670 m				
		Berovci	628 m				
		Bonce	620 m				
		Veselcani	613 m				
		Galicani	617 m				
		Golem	620 m				
		Radobil					
		Golemo	607 m				
		Konjari					
		Dabnica	605 m				
		Dunje	690 m				
		Zagorani	612 m				
		Kadino Selo	612 m				
		Kalen	640 m				
		Kanatlarci	620 m				
		Mazuciste	660 m				
		Mal Radobil	620 m				
		Malo Konjari	613 m				
		Manastir					
		Novo	690 m				
		Lagovo	640 m				
		Pestani					
		Rakle	670 m				
		Smolani	700 m				
		Staro Lagovo	650 m				
		Toplica	685 m				
		Carevik					

		Seleverci	680 m 696 m 635 m				
		The municipality of Rosoman has no villages in this group					
		Municipality Caska					
		Popadija—700m					

Notes. <sup>a</sup>Panov, M. (1998). Encyclopaedia of the villages in the Republic of Macedonia, Skopje; <sup>b</sup>Military Geographic Institute (1972). Printing maps with scale 1: 25000 (GausKriger's projection) for the territory of the Republic of Macedonia (216 sections), Belgrade.

For a clear view of the height distribution of rural settlements by municipalities and their total number of villages, especially for each category of altitude in the CrnaReka River Basin in the Republic of Macedonia, we will use the data from Table 2.

Table 2

*Total Number of Villages by Municipalities According to the Categories of Altitude in the Black River Basin in the Republic of Macedonia*

Општина	0-600м.н.в	600-700м.н.в.	700-900м.н.в.	над 900м.н.в	Total
Bitola	16	16	19	13	65
Gradsko	/	1	/	/	1
DemirHisar	/	17	14	10	40
Dolneni	1	28	8	/	37
Drugovo	/	/	/	3	3
Kavadarci	12	7	5	1	25
Krivogastani	6	6	/	/	12
Krusevo	/	9	6	3	18
Mogila	11	11	1	/	23
Novaci	10	12	15	4	41
Prilep	10	25	19	5	59
Rosoman	10	/	/	/	10
Caska	/	1	/	/	1
Total	76	133	87	39	335

Notes. <sup>a</sup>Panov, M. (1998). Encyclopaedia of the villages in the Republic of Macedonia, Skopje; <sup>b</sup>Military Geographic Institute (1972). Printing maps with scale 1: 25000 (GausKriger's projection) for the territory of the Republic of Macedonia (216 sections), Belgrade; <sup>c</sup>The calculations are from the author.

According to the results from Table 2, we find that the largest number of villages 133 is located at an altitude of 600-700 m, in the CrnaRekaBasin in the Republic of Macedonia.

Second place is 87 villages at an altitude of 700-900 meters, in the Black River Basin in the Republic of Macedonia; In the third place, there are 76 villages at an altitude of 0-600 m, in the river basin of CrnaReka in the Republic of Macedonia; and in the fourth place, there are 39 villages at an altitude above 900 meters, in the CrnaReka River Basin in the Republic of Macedonia.

The rural settlements located in the groups with altitudes 0-600 and 600-700 meters above sea level make up 209 villages as flatland in the river CrnaReka in the Republic of Macedonia. In these villages, there are favorable conditions for the development of agriculture, especially the cultivation of cereals, tobacco production, sunflower, and viticulture. In the plain part, there are also good conditions for growing large livestock and producing milk in small family farms. The rural settlements located in the groups with an altitude

of 700-900 and above 900 meters above sea level comprise 126 villages as a hilly mountain in the river CrnaReka in the Republic of Macedonia. In these villages, there are favorable conditions for development of horse-breeding, sheep breeding, forestry, herbalism, and development of rural tourism. The CrnaRekaBasin includes part of the National Park Pelister and the village Nizhepole where there are ski lifts, hotels, and private houses for weekend tourists. In the basin of CrnaReka, it is quite interesting for the development of mountain and hunting tourism, the Mariovo region, which extends to the territory of three municipalities: Novaci, Prilep, and Kavadarci. In the Mariovo region, in the municipalities of Novaci and Prilep, there are large reserves of coal. The largest Mining Energy Combine (REK) located in the Municipality of Novaci where Thermo Power Plant works and produces more than 80% of the electricity in the Republic of Macedonia.

### **Conclusion**

In the Crna River Basin in the Republic of Macedonia, there are 335 villages.

According to the obtained data in the group of villages with altitude of 0-600 m, there are 76 villages in the CrnaRekaBasin.

In the group of villages at an altitude of 600-700 meters, in the basin of CrnaReka, there is the largest number of 133 villages.

In the group of villages with an altitude of 700-900 meters, in the basin of CrnaReka, there is a second group of 87 villages.

In the group of villages with an altitude above 900 meters, in the basin of CrnaReka, there is the smallest group of 39 villages.

We can freely conclude that in both groups of villages with an altitude of 700-900 m and over 900m, there are good conditions for the development of rural tourism in the Black River Basin in the Republic of Macedonia.

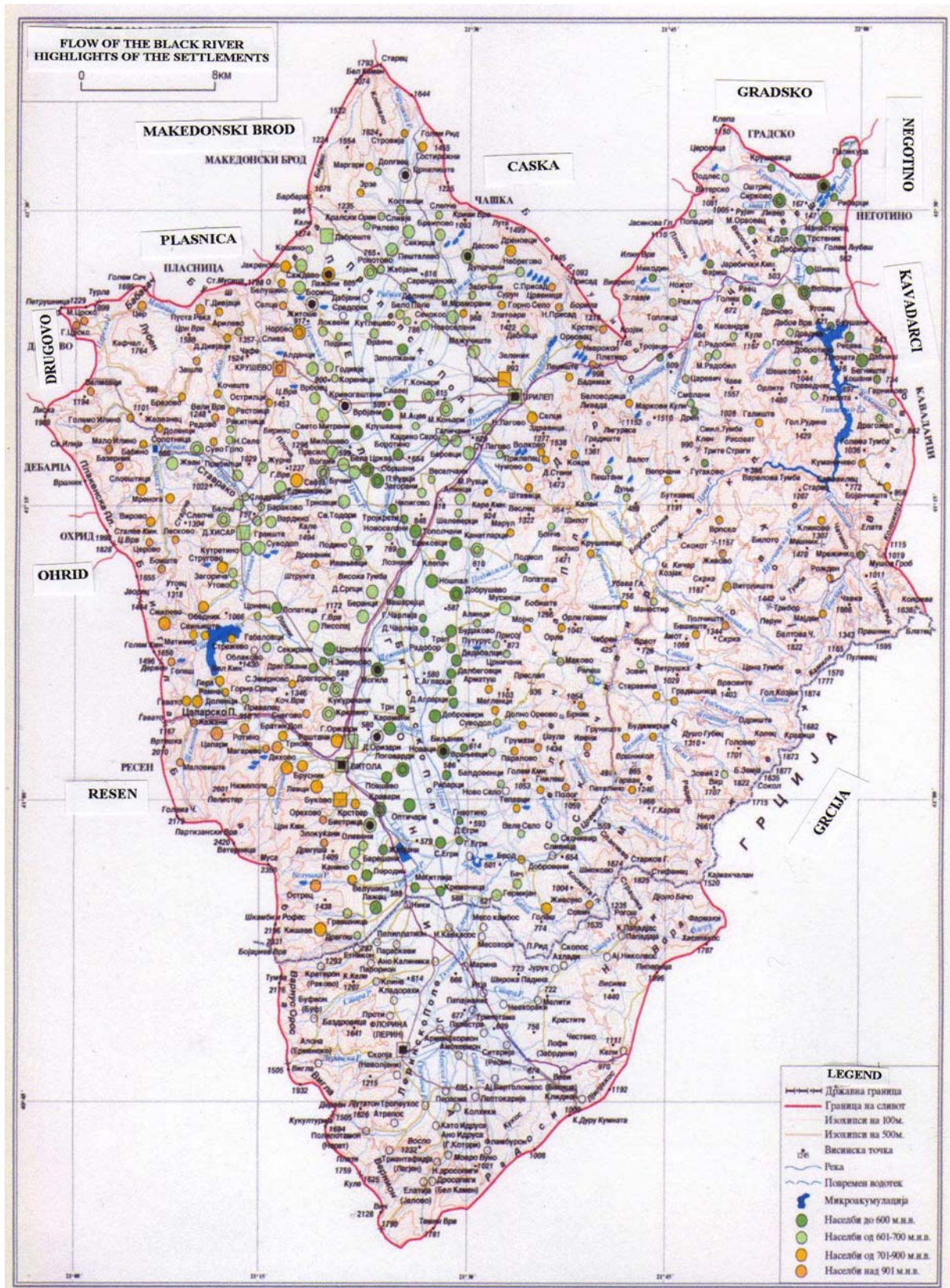


Figure 1. Figure of the Black River Basin in the Republic of Macedonia and the height distribution of the settlements.

### References

- Dimitrov, V. N., & Koteski, C. (2015). *Tourist geography—textbook*. Stip:University Goce Delčev (UGD). (in Macedonia)
- DNU.(1987). *Mariovo, natural and socio-economic features and development opportunities*. Prilep: Printing house „11 Oktomvri- Prilep (in Macedonia)
- Koteski, C.(2004). The thematic atlas of Mariovo and Raecka valley (Master's thesis in manuscript, Institute of Geography, University St. Cyril and Methodius, Skopje). (in Macedonia)
- Koteski, C. (2009). *Plumna Crna Reka—Geographic cartographic modeling, differentiation and functional development of certain regional entities* (Doctoral dissertation in the manuscript, Institute of Geography, University St. Cyril and Methodius, Skopje). (in Macedonia)
- Koteski, C. (2011). *Plum of CrnaReka*.Shtip: Printing house 2 August.(in Macedonia)
- Panov, M. (1984). *Social geography (Settlements)*.Skopje:University printing house - Skopje. (in Macedonia)
- Panov, M. (1998). *Encyclopedia of the villages in R. Macedonia*. Tetovo: Printing company Joint Stock Company "Napredok" -Tetovo. (in Macedonia)
- Republic Institute for Statistics.(2002). *Census of Population in 2002*. Skopje, Macedonia: State Census of Population and Households in the Republic of Macedonia in 2002.