# Web application for Intensity of Erosion and Outflow

## Name of the River Basin: Orahovacka rijeka

## Country: Montenegro

## Year: 2018

## GPS coordinates, latitude and longitude with Google Maps: 43.126851,19.766691

## INPUT DATA

### Geometric characteristics of the river basins

**F = 11.4021 km$^2$ (Surface area of the drainage basin)**

**O = 14.58839 km (Length of the watershed)**

**Fv = 5.7314 km$^2$ (Surface area of greater portion of the drainage basin)**

**Fm = 5.6707 km$^2$ (Surface area of smaller portion of the drainage basin)**

**Lv = 5.20805 km (Natural length of main water course)**

**Lb = 6.52291 km (Length of the drainage basin measured by a series of paraller lines)**

### Topograpfic characteristics of the river basins

**Contour line length - Liz [km]: ["4.66683 ","6.71907 ","7.60343 ","6.77277 ","5.69539 ","3.50497 ","2.04705 "]**

**The area between the two neighboring contour lines - f [km$^2$]: ["0.84581 ","1.59509 ","2.10808 ","2.21129 ","2.09680 ","1.37155 ","0.81267 ","0.36081 "]**

**h0 = 600 m (Altitude of the initial contour)**

**▲h = 100 m (Equidistance)**

**Hmin = 537 (Lowest altitude in the drainage basin)**

**Hmax = 1212 (Highest altitude in the draigane basin**

## Hydrological characteristics of the river basins

**ΣL = 5.20805 km (The total length of the main watercourse with tributaries of 1st and 2nd class)**

**Lm = 4.07012 km (The shortest distance between the fountain (head and mouth))**

## Water permeability

**fp = 0 (Part of the surface area of the drainage basin which is composed of highly water permeable structures from the rocks (limestone, sand, gravel))**

**fpp = 0.0766 (Part of the surface area of the drainage basin which is composed of the rocks of medium water permeability (schist, marls, sandstone))**

**fo = 0.9234 (Part of the surface area of the drainage basin which is composed of the rocks of poor water permeability (heavy clay, compact eruptive))**

## Land use

**fs = 0.512796530 (Part of the surface area of the drainage basin under the forest)**

**ft = 0.401242996 (Part of the surface area of the drainage basin which is under the grass, meadows, pastures and orchards)**

**fg = 0.085960473 (Part of the surface area of the drainage basin which is bare or under the soils without grass vegetation)**

## Meteorological data

**hb = 157.6 mm (Level of torrent rain)**

**Up (years) = 100**

**to = 8.9 °C (Average annual air temperature)**

**Hgod = 873.7 mm (Average annual quantity of precipitation)**

## Erosion coefficients

**Y = 1.13519 (Types of soil structures and allied types)**

**3.91 % (Sand, gravel and incoherent soils)**

**0 % (Saline soils)**

**0 % (Decomposed limestone and marls)**

**96.09 % (Serpentines, red sand stones, flishe deposits)**

0 % (Podzols and parapodzols, decomposed schist)

0 % (Solid and Schist limestone, Terra Rosa and Humic soil)

0 % (Brown forest soils and Mountain soils)

0 % (Epieugleysol and Marshlands)

0 % (Good structured Chernozems and alluvial well-structured deposits)

0 % (Bare, compact igneous)

Xa = 0.481495 (Planning of the drainage basin, rate of drainage basin regulation)

0 % (Bare lands)

8.6 % (Plough-lands)

4.48 % (Orchards and vineyards)

10.59 % (Mountain pastures)

25.06 % (Meadows)

33.33 % (Degraded forests)

17.95 % (Well-constituted forests)

$\phi$ = 0.30398 (Numerical coefficient of visible and clearly pointed processes of soil erosion)

2.72 % (Depth erosion)

2.42 % (80% of the river basin under rill and gully erosion)

2.12 % (50% of the river basin under rill and gully erosion)

1.81 % (100% of the river basin under surface erosion)

25.06 % (100% of the river basin under surface erosion, without visible furrows, ravines and land slides)

0.91 % (50% of the river basin under surface erosion)

0.6 % (20% of the river basin under surface erosion)

0 % (There are smaller slides in the watercourse beds)

8.6 % (The river basin mostly under plough-land)

55.76 % (The river basin under forests and perennial vegetation)

## INPUT DATA

A = 0.54621903591555 (Coefficient of the river basin form)

m = 0.4350886861393 (Coefficient of the watershed development)

B = 1.7480081742658 km (Average river basin width)

a = 0.010647161487796 ((A)symmetry of the river basin)

**G = 0.45676235079503 (Density of the river network of the basin)**

**K = 1.2795814374023 (Coefficient of the river basin tortuousness)**

**$H_{sr}$ = 857.74575253681 m (Average river basin altitude)**

**D = 320.74575253681 m (Average elevation difference of the river basin)**

**$I_{sr}$ = 32.458503258172 % (Average river basin decline)**

**$H_{leb}$ = 675 m (The height of the local erosion base of the river basin)**

**$E_r$ = 116.92508350443 (Coefficient of the erosion energy of the river basins relief)**

**$S_1$ = 0.97702 (Coefficient of the regions permeability)**

**$S_2$ = 0.7146327878 (Coefficient of the vegetation cover)**

**W = 1.709670871128 m (Analytical presentation of the water retention in inflow)**

**$2gDF^{1/2}$ = 267.86895367866 m km $s^{-1}$ (Energetic potential of water flow during torrent rains)**

**$Q_{max}$ = 174.65785292733 $m^3$ $s^{-1}$ (Maximal outflow from the river basin)**

**T = 0.99498743710662 (Temperature coefficient of the region)**

**Z = 0.47755619836772 (Coefficient of the river basin erosion)**

**$W_{god}$ = 10276.645623896 $m^3$ $god^{-1}$ (Production of erosion material in the river basin**

**$R_u$ = 0.28447270568727 (Coefficient of the deposit retention)**

**$G_{god}$ = 2923.4251860189 $m^3$ $god^{-1}$ (Real soil losses)**

**$G_{god}$ $km^{-2}$ = 256.39357539566 $m^3$ $km^{-2}$ $god^{-1}$ (Real soil losses per $km^2$)**