# Web application for Intensity of Erosion and Outflow

## Name of the River Basin: Bijeli Potok

## Country: Montenegro

## Year: 2018

## GPS coordinates, latitude and longitude with Google Maps: 42.608963,19.927246

## INPUT DATA

### Geometric characteristics of the river basins

**F = 2.93072 km$^2$ (Surface area of the drainage basin)**

**O = 8.8377 km (Length of the watershed)**

**Fv = 1.66941 km$^2$ (Surface area of greater portion of the drainage basin)**

**Fm = 1.26131 km$^2$ (Surface area of smaller portion of the drainage basin)**

**Lv = 2.6891 km (Natural length of main water course)**

**Lb = 3.73001 km (Length of the drainage basin measured by a series of paraller lines)**

### Topograpfic characteristics of the river basins

**Contour line length - Liz [km]: ["0.259726 ","0.7709245 ","0.7897265 ","0.7963905 ","0.8544795 ","0.953394 ","1.075335 ","1.129429 ","1.2246205 ","1.302132 ","1.5839155 ","1.560719 ","1.4873385 ","1.46047 ","1.3958955 ","1.351942 ","1.3419545 ","1.2875715 ","1.209958**

**The area between the two neighboring contour lines - f [km$^2$]: ["0.019194 ","0.0530775 ","0.0605325 ","0.046683 ","0.056154 ","0.071862 ","0.107583 ","0.074088 ","0.0976395 ","0.0867615 ","0.1995735 ","0.11592 ","0.1190385 ","0.213948 ","0.14385 ","0.134085 ","0.194523 ","0.1463595 ","0.1594845 ","**

**h0 = 900 m (Altitude of the initial contour)**

**Δh = 50 m (Equidistance)**

**Hmin = 890 (Lowest altitude in the drainage basin)**

**Hmax = 2211 (Highest altitude in the draigane basin**

## Hydrological characteristics of the river basins

**ΣL = 7.9001 km (The total length of the main watercourse with tributaries of 1st and 2nd class)**

**Lm = 2.30494 km (The shortest distance between the fountain (head and mouth))**

## Water permeability

**fp = 0.045477513895907 (Part of the surface area of the drainage basin which is composed of highly water permeable structures from the rocks (limestone, sand, gravel))**

**fpp = 0.42678120262759 (Part of the surface area of the drainage basin which is composed of the rocks of medium water permeability (schist, marls, sandstone))**

**fo = 0.527741283476503 (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 = 0.5026 (Part of the surface area of the drainage basin under the forest)**

**ft = 0.422 (Part of the surface area of the drainage basin which is under the grass, meadows, pastures and orchards)**

**fg = 0.0754 (Part of the surface area of the drainage basin which is bare or under the soils without grass vegetation)**

## Meteorological data

**hb = 89.4 mm (Level of torrent rain)**

**Up (years) = 100**

**to = 8.1 °C (Average annual air temperature)**

**Hgod = 1182.3 mm (Average annual quantity of precipitation)**

## Erosion coefficients

**Y = 0.418595 (Types of soil structures and allied types)**

**0.68 % (Sand, gravel and incoherent soils)**

**0.68 % (Saline soils)**

**1.38 % (Decomposed limestone and marls)**

**1.38 % (Serpentines, red sand stones, flishe deposits)**

**6.88 % (Podzols and parapodzols, decomposed schist)**

**3.44 % (Solid and Schist limestone, Terra Rosa and Humic soil)**

**6.88 % (Brown forest soils and Mountain soils)**

**0 % (Epieugleysol and Marshlands)**

**4.35 % (Good structured Chernozems and alluvial well-structured deposits)**

**74.33 % (Bare, compact igneous)**

**Xa = 0.39804 (Planning of the drainage basin, rate of drainage basin regulation)**

**7.04 % (Bare lands)**

**0.5 % (Plough-lands)**

**2.01 % (Orchards and vineyards)**

**20.1 % (Mountain pastures)**

**20.1 % (Meadows)**

**15.08 % (Degraded forests)**

**35.18 % (Well-constituted forests)**

**$\phi$ = 0.38333 (Numerical coefficient of visible and clearly pointed processes of soil erosion)**

**8.16 % (Depth erosion)**

**0 % (80% of the river basin under rill and gully erosion)**

**0 % (50% of the river basin under rill and gully erosion)**

**29.63 % (100% of the river basin under surface erosion)**

**0 % (100% of the river basin under surface erosion, without visible furrows, ravines and land slides)**

**7.55 % (50% of the river basin under surface erosion)**

**0 % (20% of the river basin under surface erosion)**

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

**3.82 % (The river basin mostly under plough-land)**

**50.84 % (The river basin under forests and perennial vegetation)**

## INPUT DATA

**A = 0.64086553121862 (Coefficient of the river basin form)**

**m = 0.44311337256912 (Coefficient of the watershed development)**

**B = 0.78571371122329 km (Average river basin width)**

**a = 0.27849811650379 ((A)symmetry of the river basin)**

**G = 2.6956174591909 (Density of the river network of the basin)**

**K = 1.1666681128359 (Coefficient of the river basin tortuousness)**

**$H_{sr}$ = 1583.2574787083 m (Average river basin altitude)**

**D = 693.2574787083 m (Average elevation difference of the river basin)**

**$I_{sr}$ = 47.388430999891 % (Average river basin decline)**

**$H_{leb}$ = 1321 m (The height of the local erosion base of the river basin)**

**$E_r$ = 321.37298223072 (Coefficient of the erosion energy of the river basins relief)**

**$S_1$ = 0.84467913087418 (Coefficient of the regions permeability)**

**$S_2$ = 0.71456 (Coefficient of the vegetation cover)**

**W = 1.1211873686047 m (Analytical presentation of the water retention in inflow)**

**$2gDF^{1/2}$ = 199.6567269289 m km $s^{-1}$ (Energetic potential of water flow during torrent rains)**

**$Q_{max}$ = 86.588361799373 $m^3$ $s^{-1}$ (Maximal outflow from the river basin)**

**T = 0.95393920141695 (Temperature coefficient of the region)**

**Z = 0.17856779049295 (Coefficient of the river basin erosion)**

**$W_{god}$ = 783.56905057397 $m^3$ $god^{-1}$ (Production of erosion material in the river basin**

**$R_u$ = 0.39013605212536 (Coefficient of the deposit retention)**

**$G_{god}$ = 305.69853595854 $m^3$ $god^{-1}$ (Real soil losses)**

**$G_{god}$ $km^{-2}$ = 104.30833923355 $m^3$ $km^{-2}$ $god^{-1}$ (Real soil losses per $km^2$)**