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Common borders. Common solutions.

FLASH FLOOD RISK ASSESSMENT

Danube Delta region

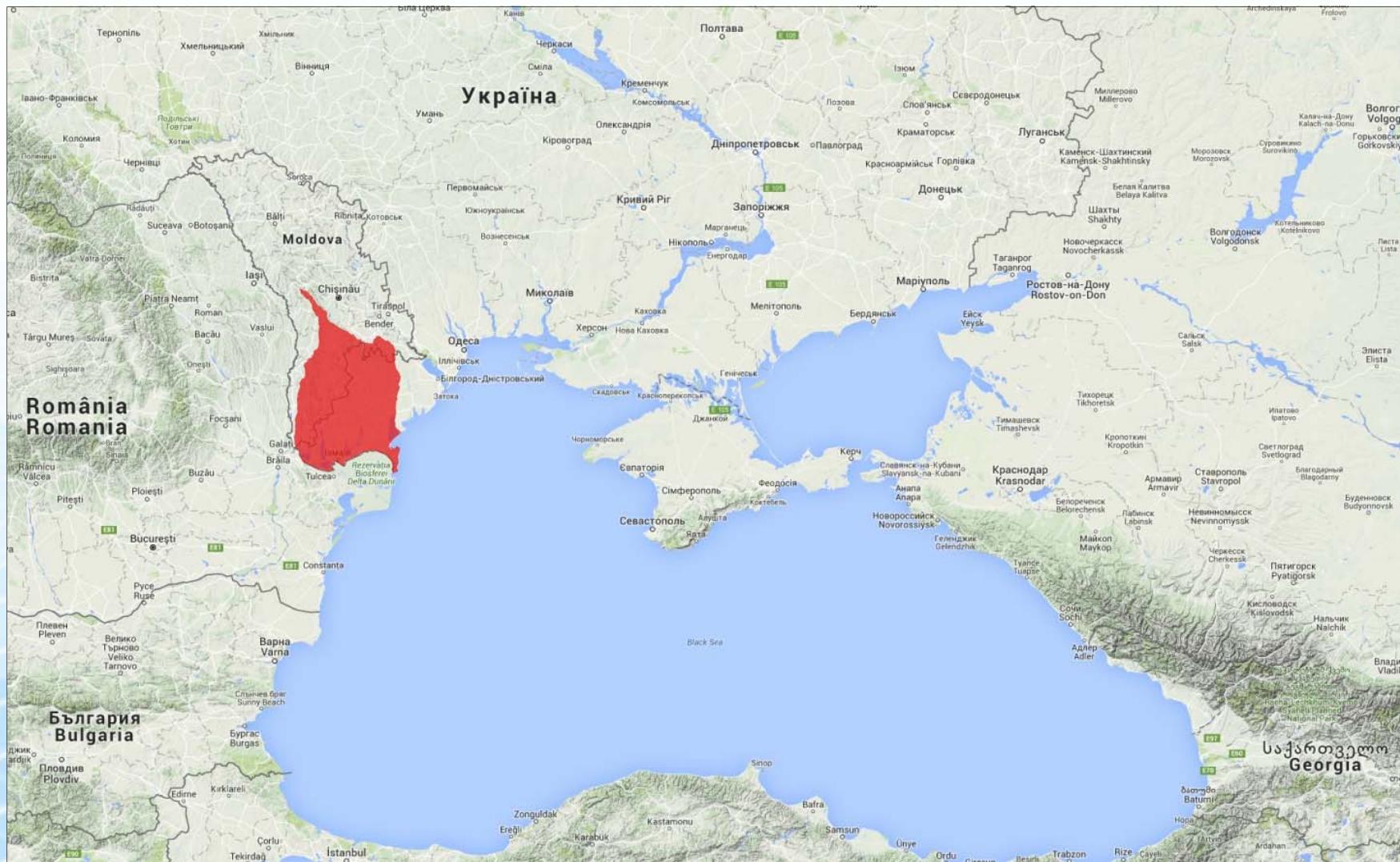
Roman Sizo, Yevgen Gazetov



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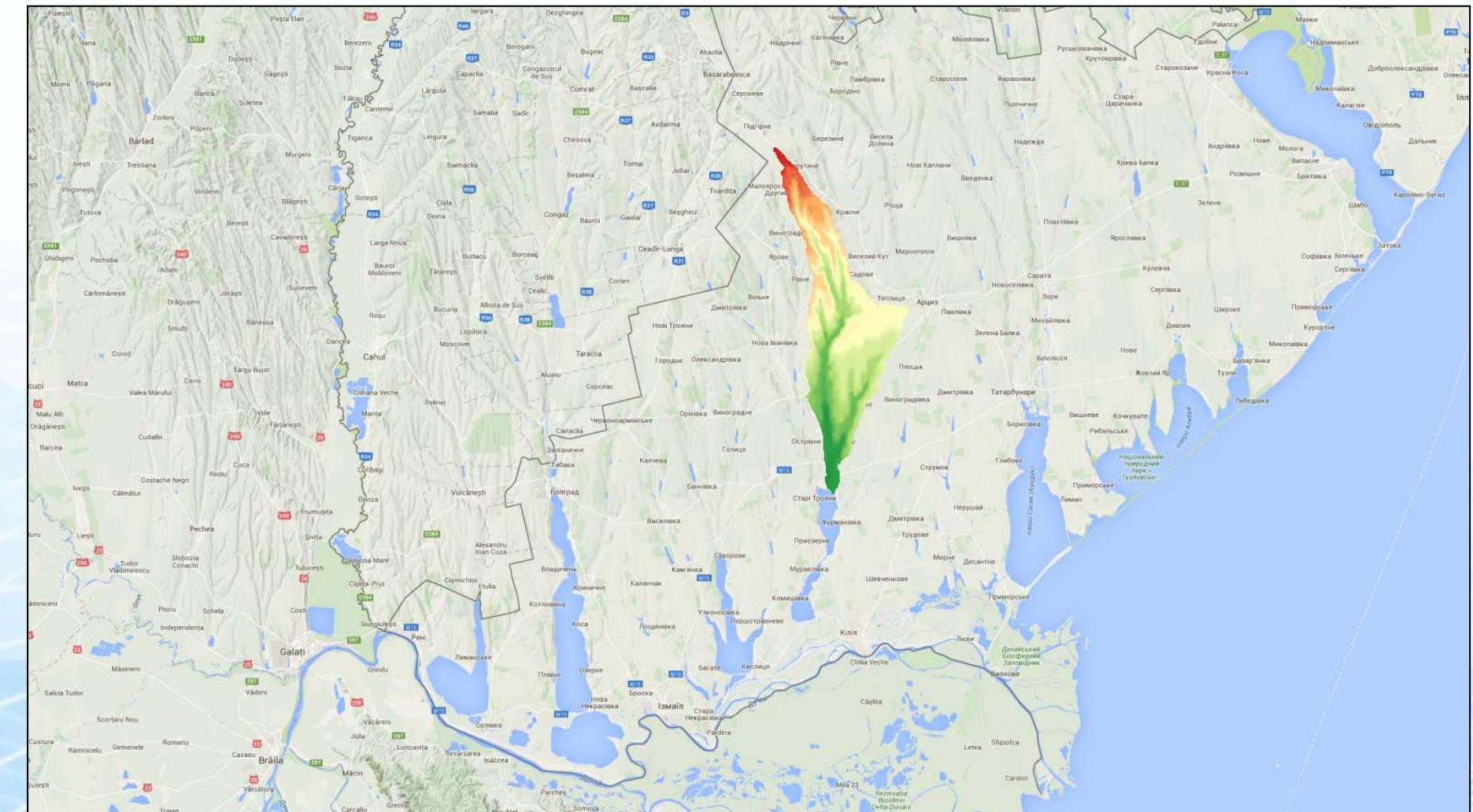




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The main task of this study was to roughly locate and assess the potential areas that can be influenced by flash floods

Results of the project “Joint environmental monitoring, assessment and exchange of information for integrated management of the Danube delta region” were partly used for this study



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Data

- Shuttle Radar Topography (SRTM)
- ENSEMBLES precipitation database (1950-2010)
- Topographic maps 1:100 000
- WorldView и Pleiades remote sensing data (some areas)
- Google Earth



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Flood risk depends on the several factors

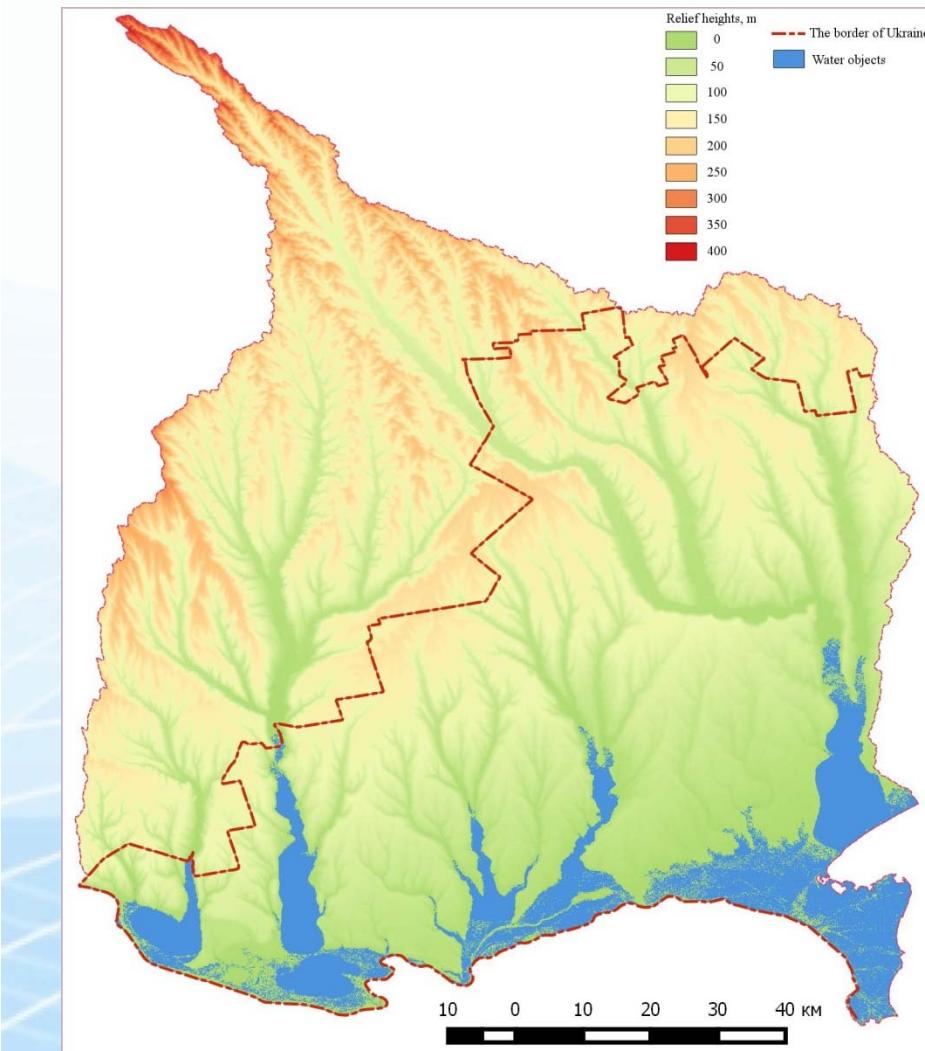
- Orographic conditions: catchment area, slope rate, etc.
- Intensity and quantity of precipitation
- Potential water volume that can be accumulated
- Floodplain width and configuration, type of vegetation
- Location of settlements
- Obstacles: bridges, dams, etc.



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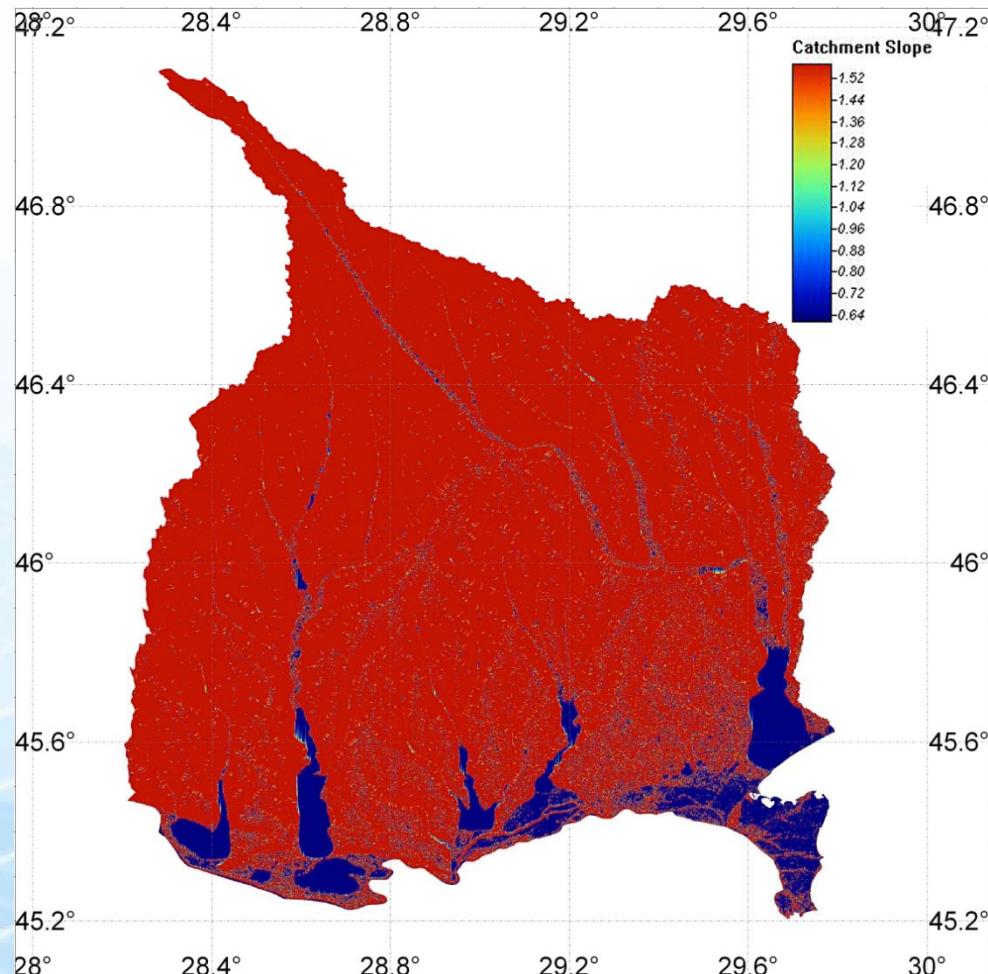
DEM of the Danube Delta
region based on SRTM data



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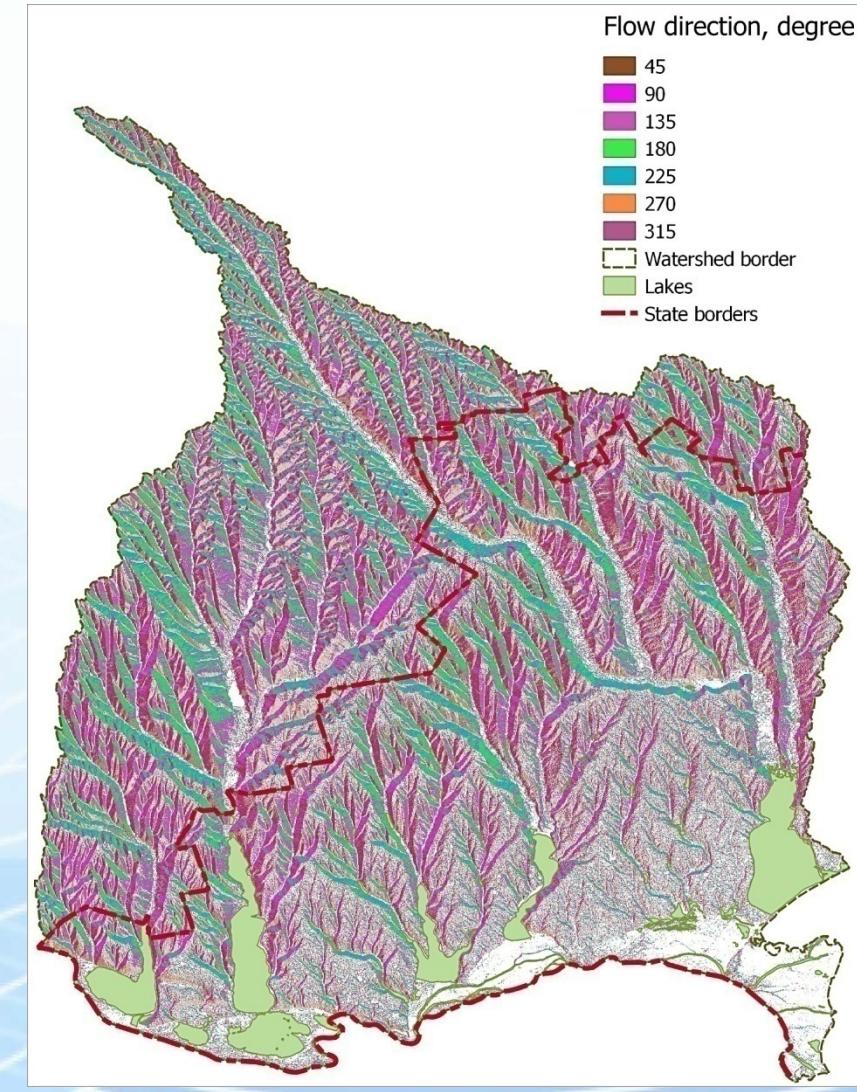
Slope rate



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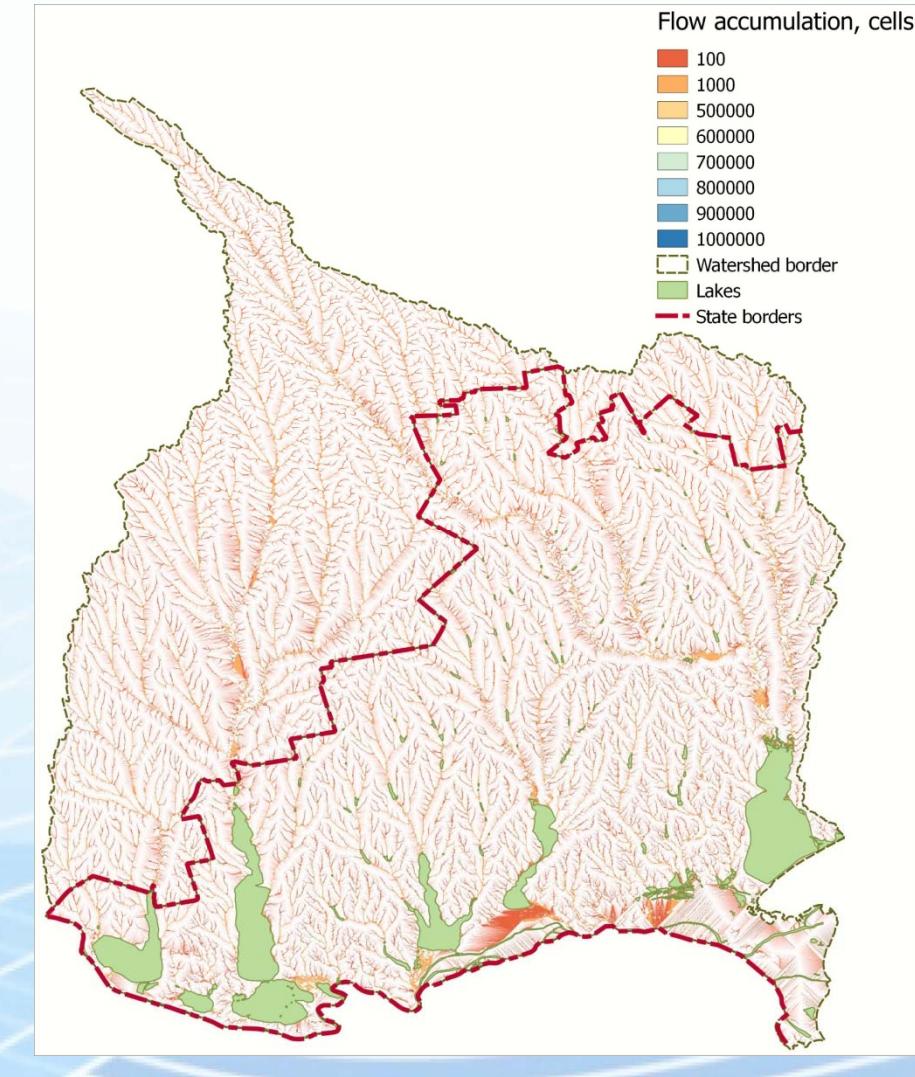
Flow direction raster



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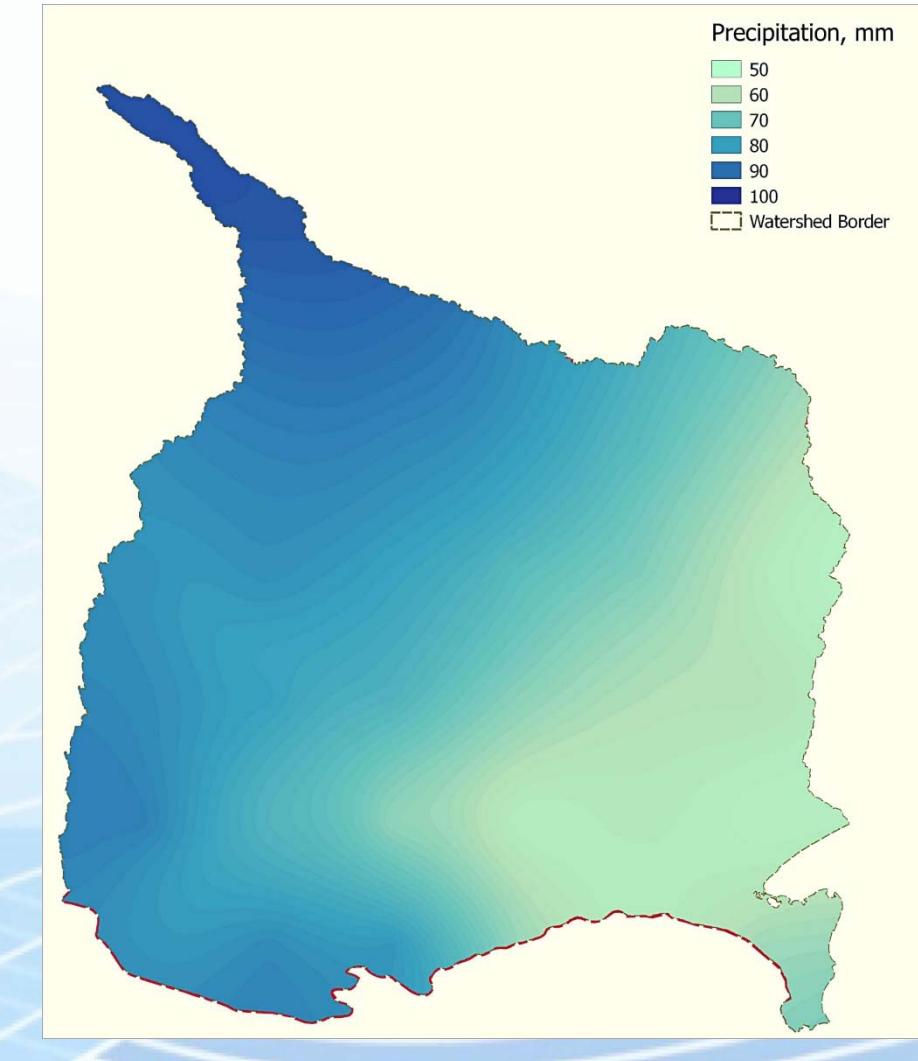
Flow accumulation raster



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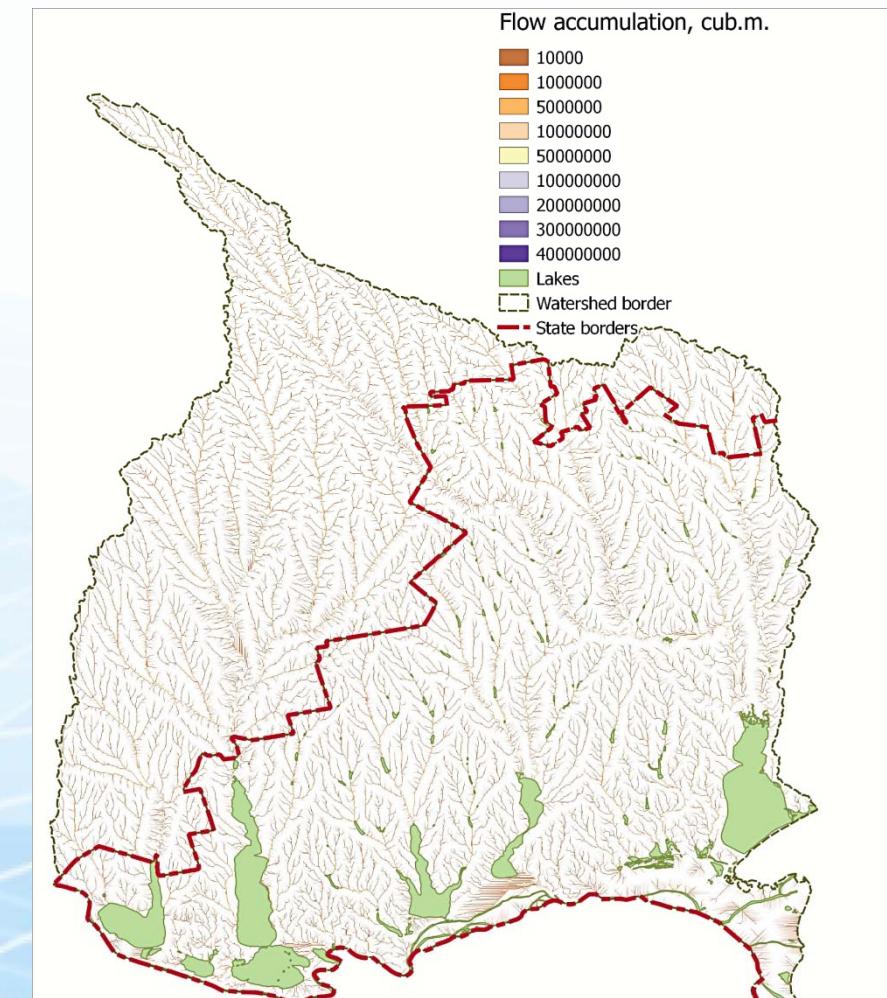
Precipitation raster based
on ENSEMBLES data



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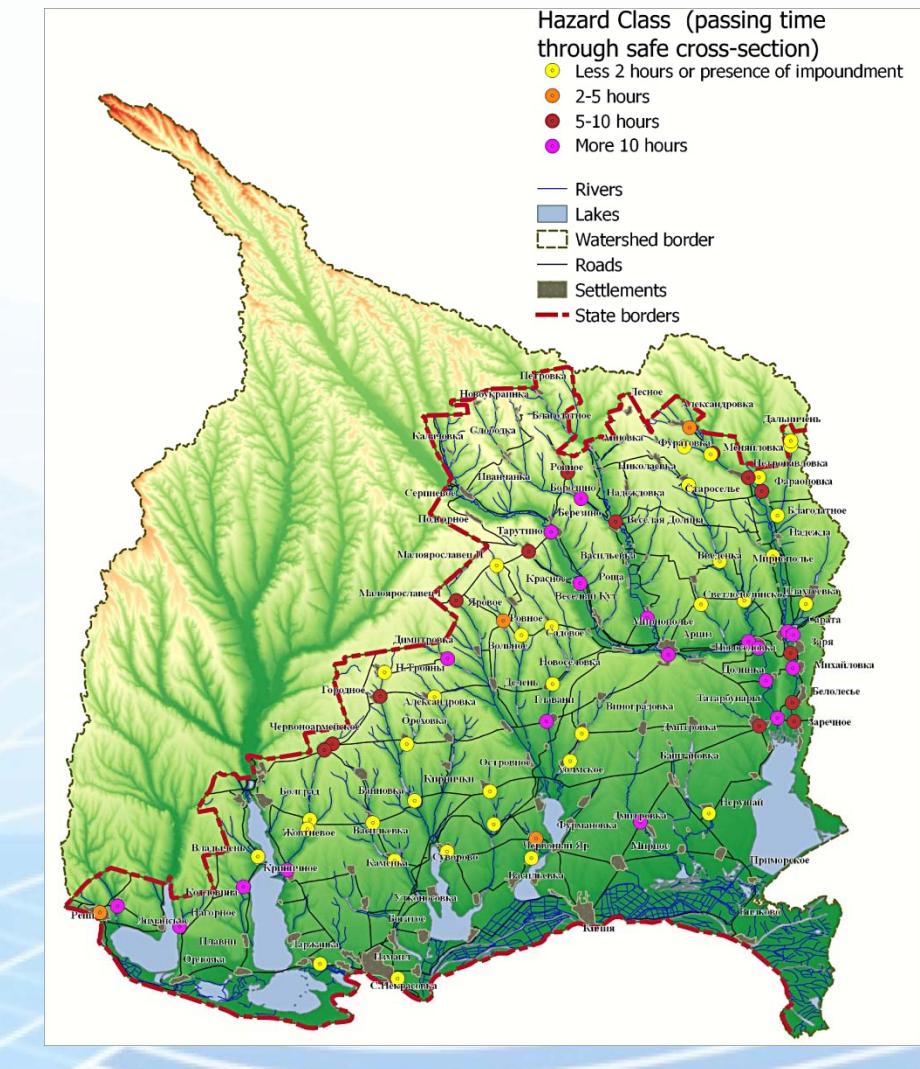
Potential flash floods water accumulation raster (based on flow accumulation raster and precipitation raster)



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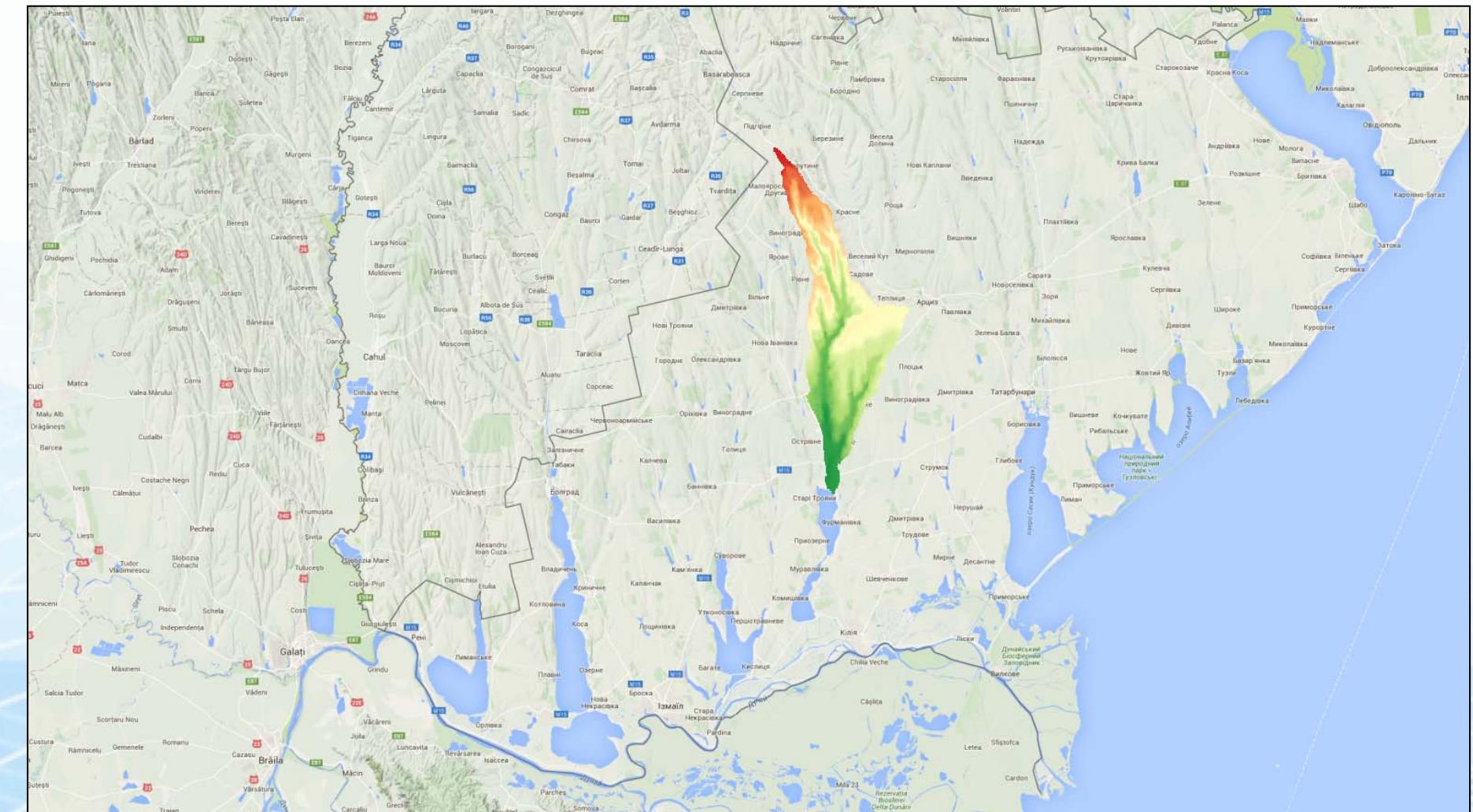
Flash floods "hazard" classes



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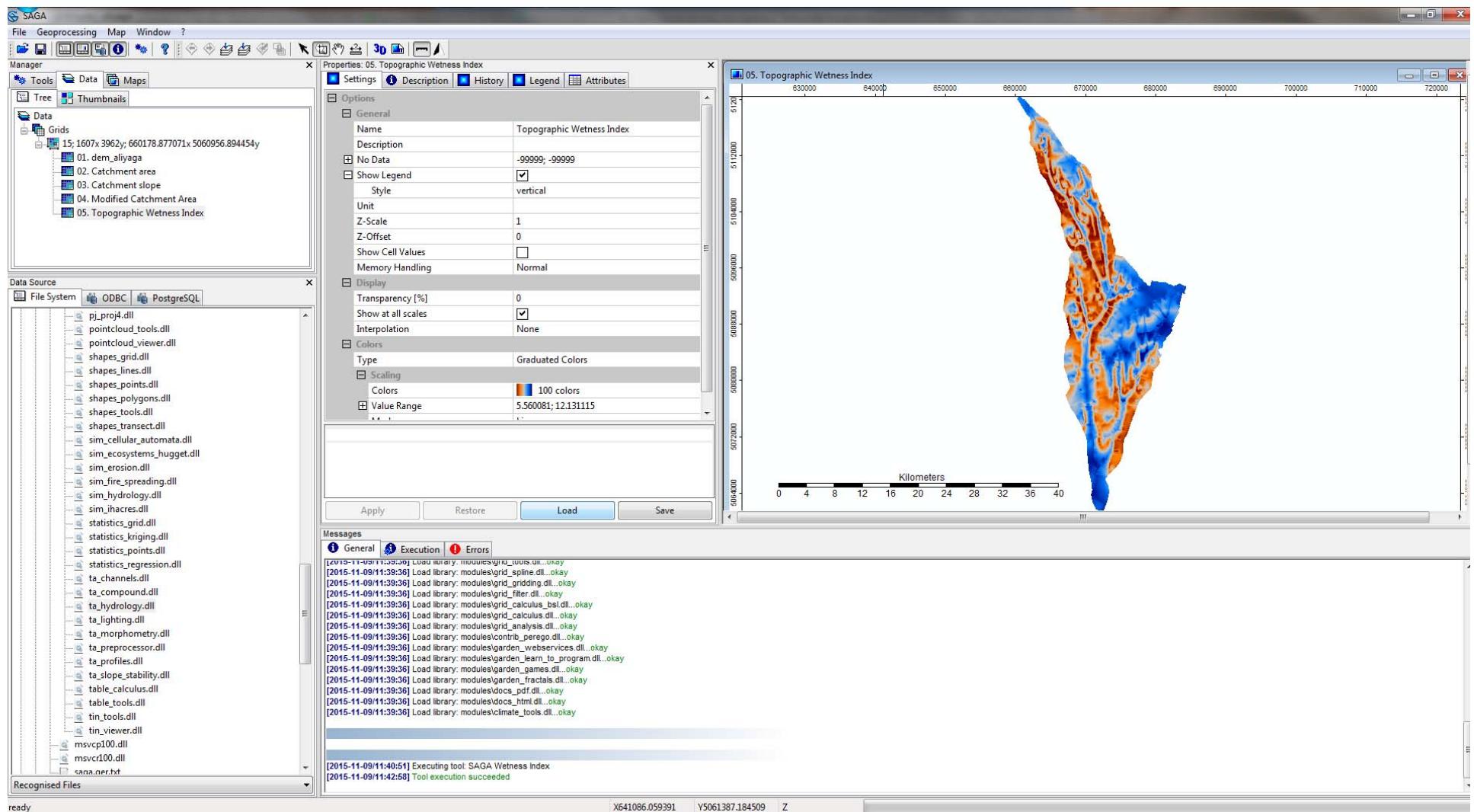




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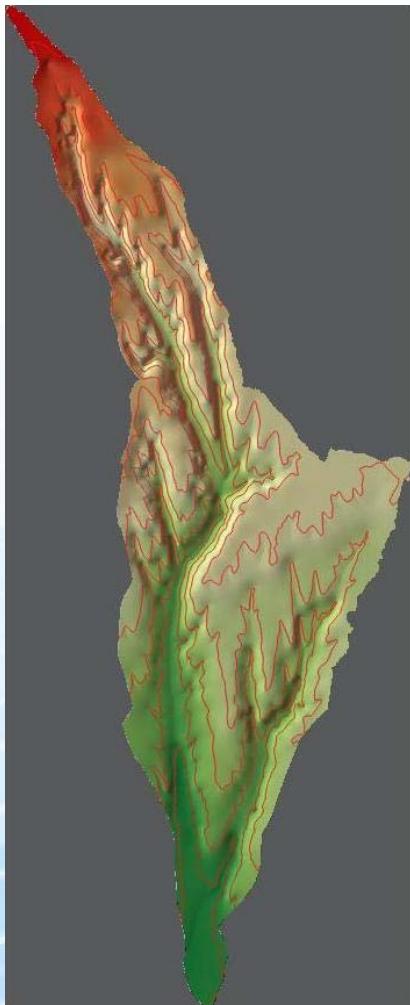




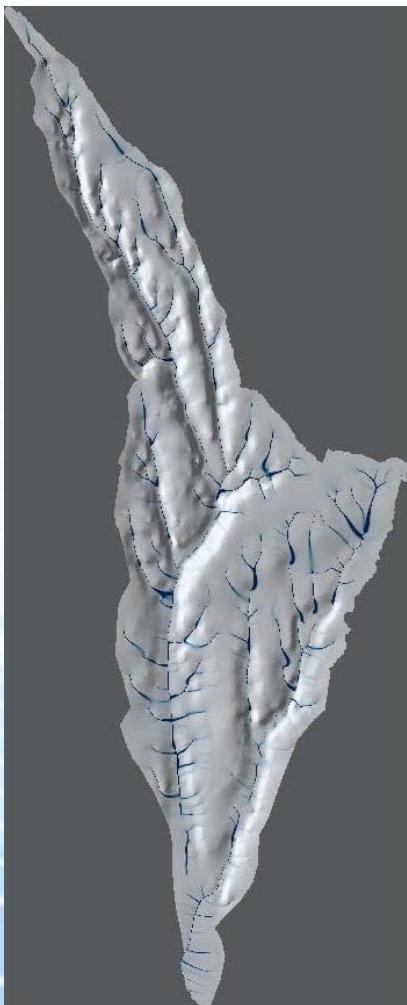
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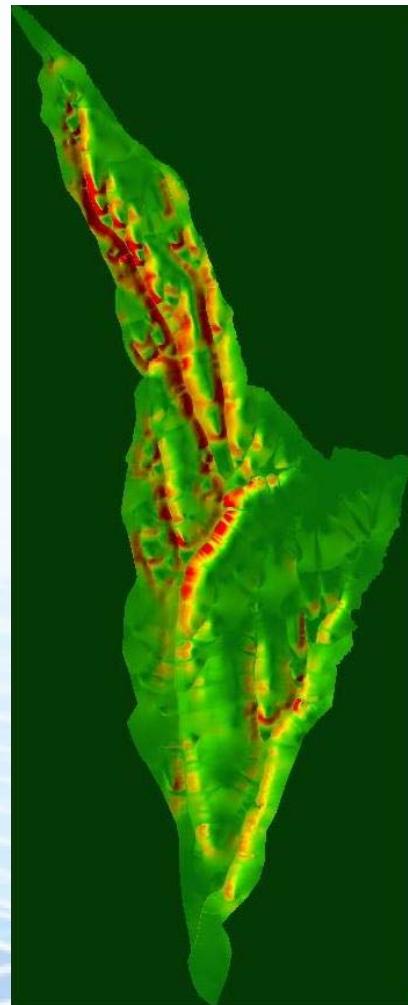
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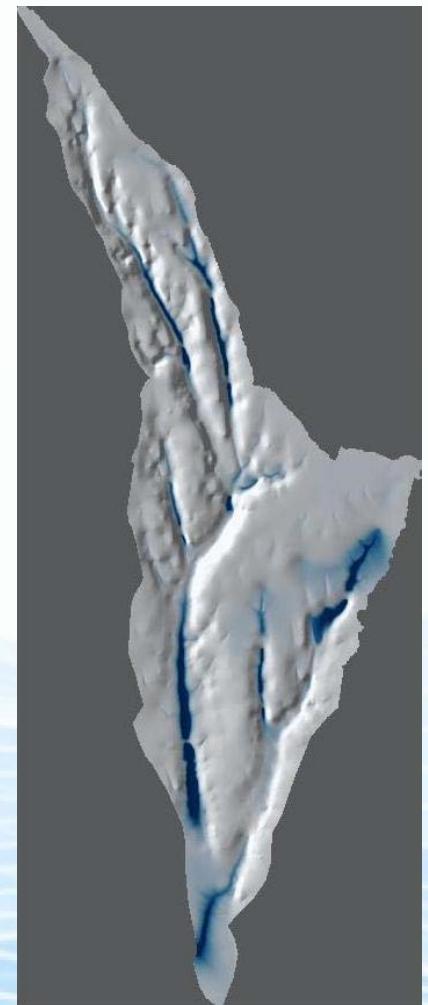
DEM



Catchment area



Slope area



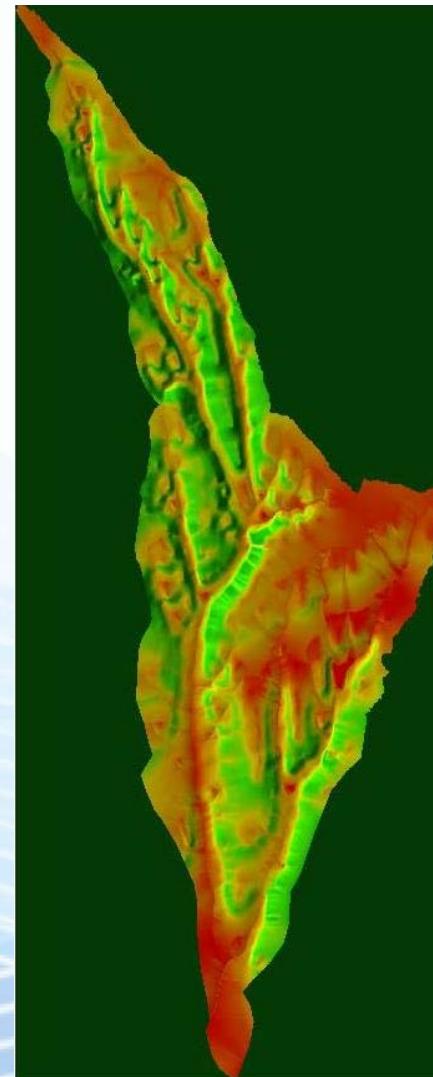
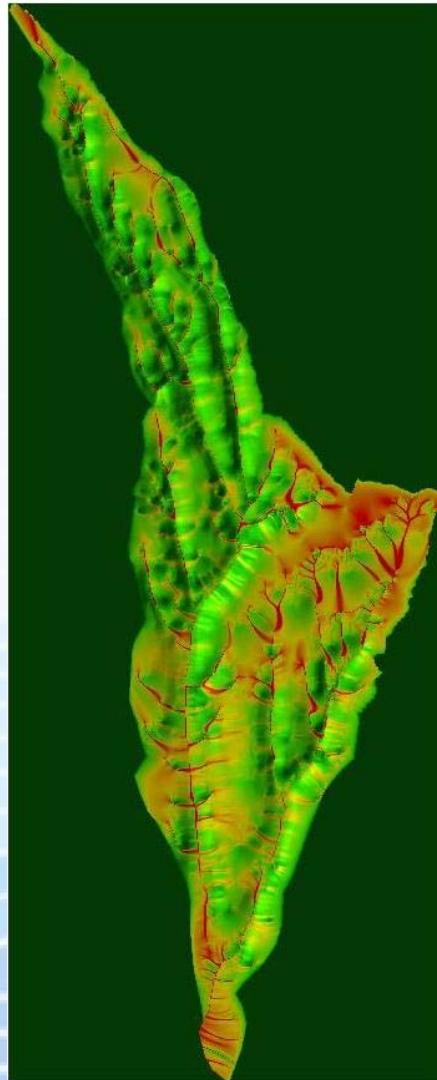
ModCatchment area



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Topographic
Wetness Index



SAGA
Wetness Index

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Thank you for your attention!