EUROPEAN UNION

GOVERNMENT OF ROMANIA

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Structural Funds 2007-2013

ENVIROBANAT
Common History, Common Future

INDUSTRIAL FACILITIES AND ENVIRONMENTAL MONITORING SPOTS IN BANAT - AP VOJVODINA

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Industry

- Food industry
- Ceramic industry
- Oli and natural gas production
- Chemical industry
  - Basic :methanol and acetic acid, sintetic ruber, petrohemical products
  - Processing : drugs, detergents, cosmetics, plastics

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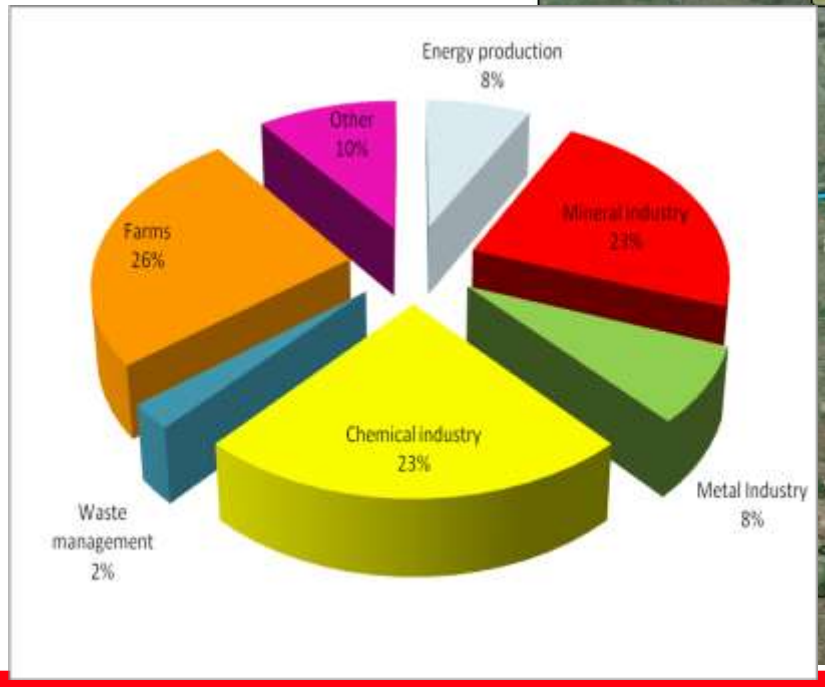
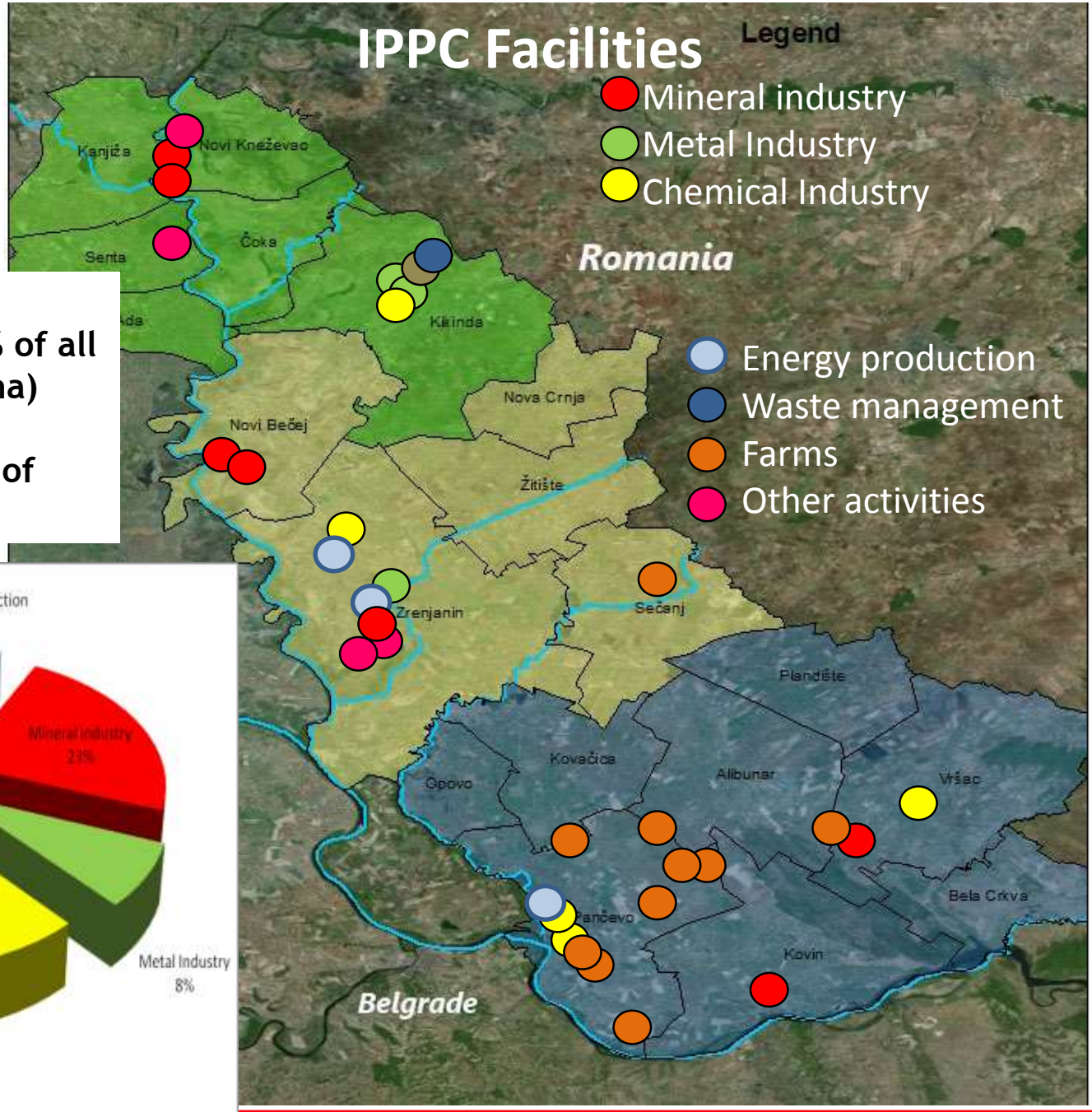
IPPC Facilities

34 facilities have been indentified in Banat (51% of all IPPC facilities in Vojvodina) which confirmes the importance and benefits of industry in this region





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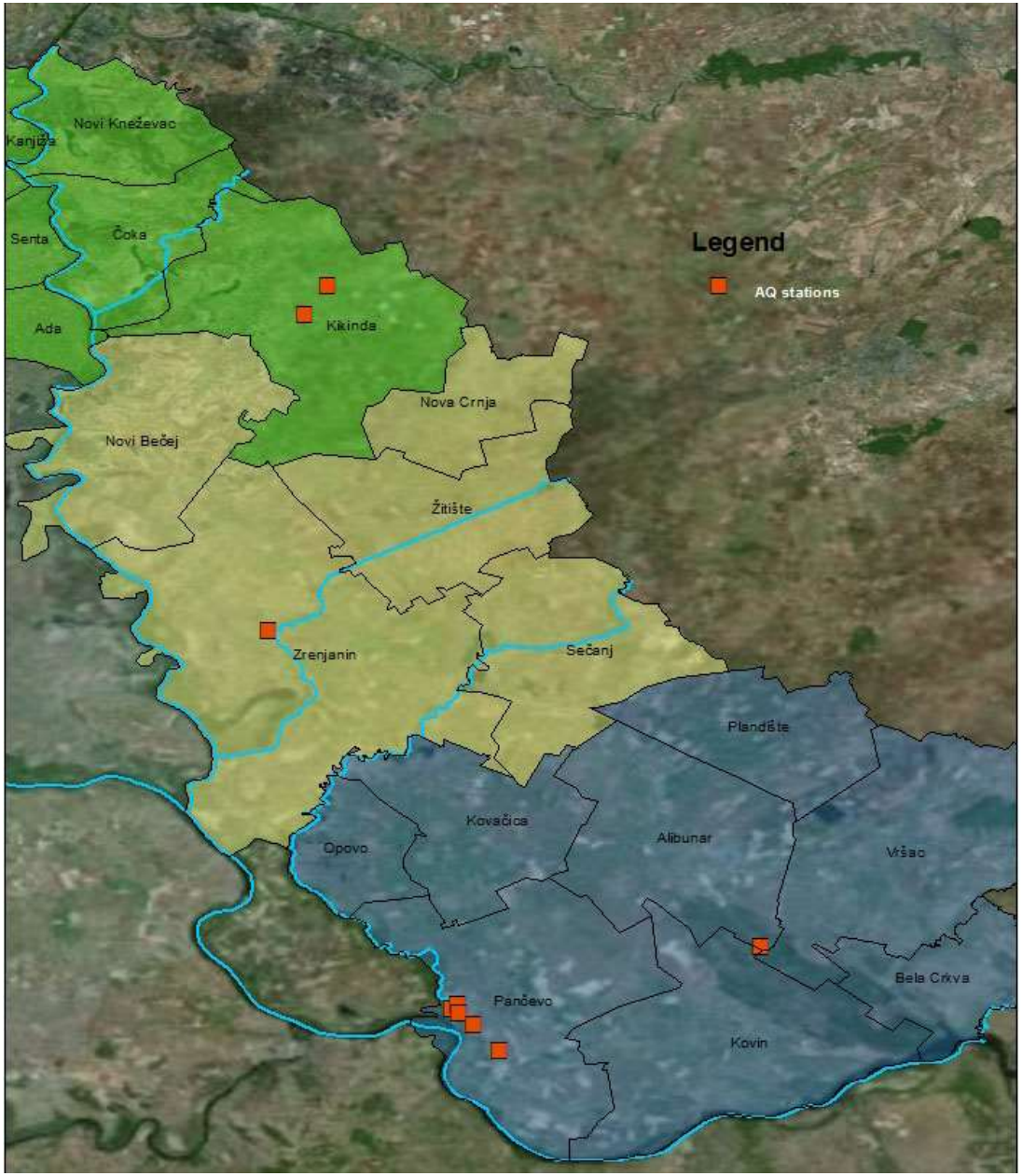
Air quality monitoring

State and local air monitoring stations network which include 18 stations on the territory of Vojvodina, 50% of which are on the territory of Banat



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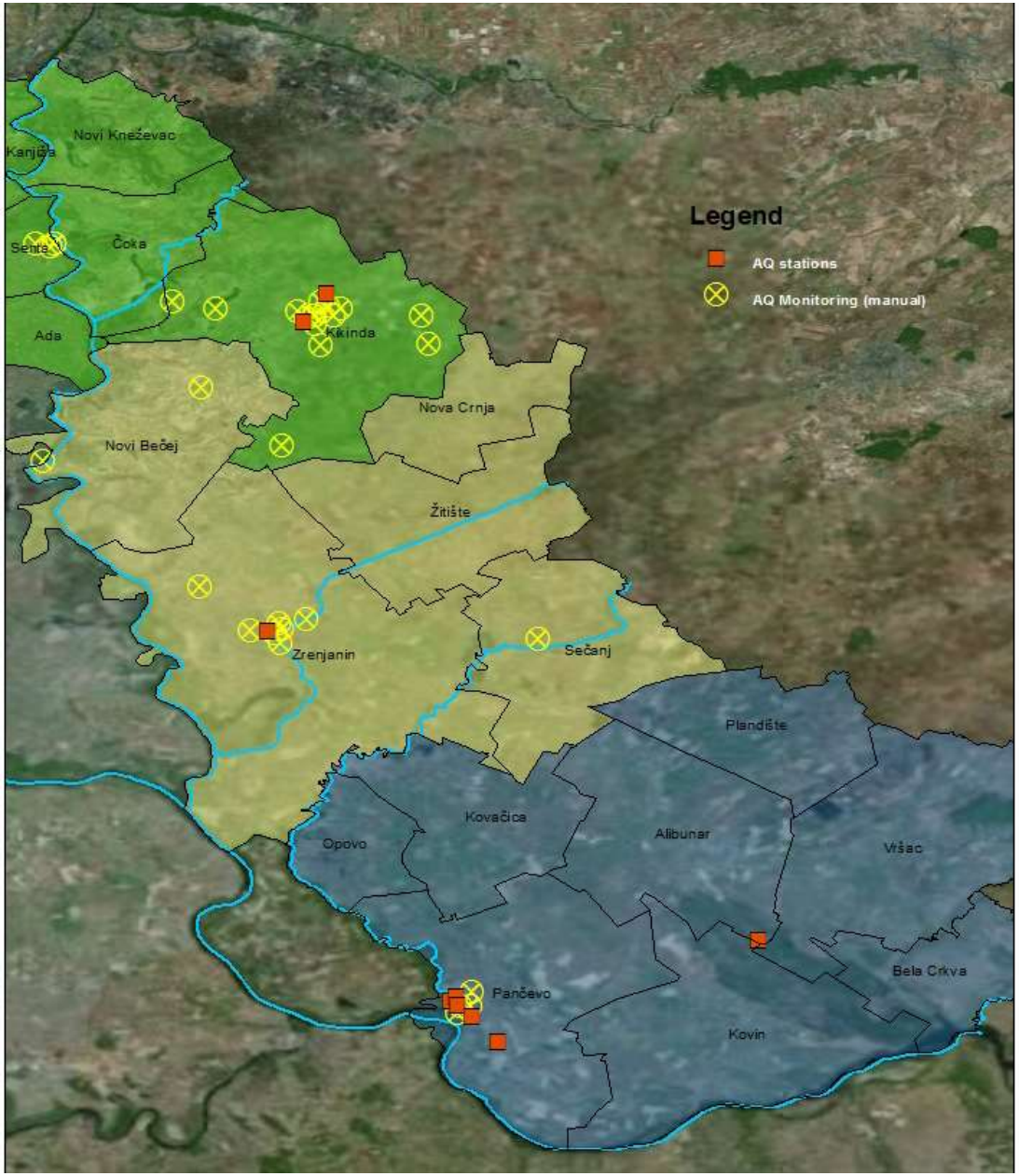
Air quality monitoring

If we consider the last seven years, measuring has been carried out at more than fifty measurement sites.

Map-Sites with more than five years measurment period



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Environment in AP Vojvodina: "State-Challenges-Perspectives"

- Based on the summarized results of the monitoring, **suspended particulates (PM10) were identified as the main problem in Banat**. Exceedance of 24 hour treshold value has been noted on every measurement site and highest mean annual concentrations were noted in Pancevo, on the measurement site of Vojlovica (45.76µg/m^3-2009).
- Pancevo is also affected by other pollutants. Pollutants that have the most significant impact on the ambient air quality of Pancevo are soot, total suspended solids and benzene.
- Based on the results of monitoring conducted in the period between 2005 and 2012 it can be concluded that the soot and total suspended particles concentration is higher in winter (exceeding Maximum Allowable Concentration MAC). This is a direct consequence of using of the traditional tipe of fuel (coal and wood) for household heating in Pancevo and meterological conditions.
- Pancevo also has a frequent episodic air pollution by benzene. However, the measurements that are carried out since 2005 (at three measurment sites) indicate a decreasing trend of annual concentration of benzene at two measurement sites (Fire station and Vojlovica). Decreasing of the benzene concentration is a result of the action for improving of process and emission technology in the industrial complexes in Pancevo which has been taken during last few years.

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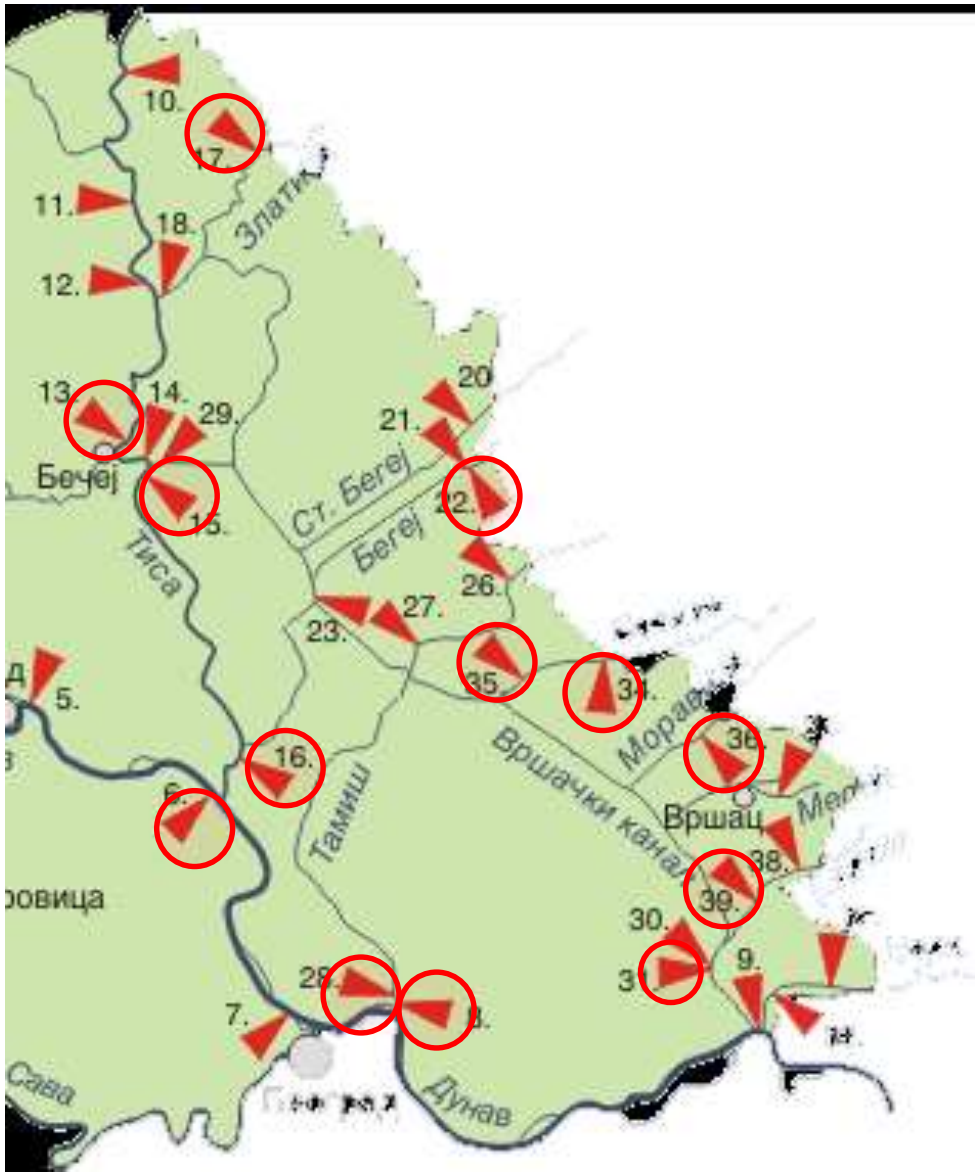
Surface water monitoring

Republic Hydrometeorological Service



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Surface water and sediment monitoring

1 - Cross boreder profiles
2. Profiles that are located downstream of the major industrial centers:
3 - Profiles that are under the indirect influence

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Environment in AP Vojvodina: "State-Challenges-Perspectives"

- Based on the study where the results of AP Vojvodina quality monitoring have been summarized, there have been identified the most vulnerable sections of rivers and canals in the territory of Banat.
- **1.Canal Bega,** on the course between the Romanian border and lock in Klek, where the higest concentrations of heavy metals is found in sediments and where is a strong influence of wastewater from Romania (Timisoara).
- **2.Canal Aleksandrovo** (entire course) where sediments where toxic metals (primarily chromium) were detected. Industries and the city have powerful anthropogenic influence because the wastewater is being released into the canal.
- **3.Bega** (through Zrenjanin up to dam in Stajicevo and partly up to its confluence with Tisa). Anthropogenic influence of industrial wastewater in the city and inflow of Aleksandrovac canal.
- **4. Tisa** (from Senta to the dam on the Tisa). Hungarian transboundary pollution influence as well as the industries in Senta, Ada and Mol.
- Also, the study provides a general conclusion that the variability of water quality in the Banat region is a consequence of transboundary pollution influence.

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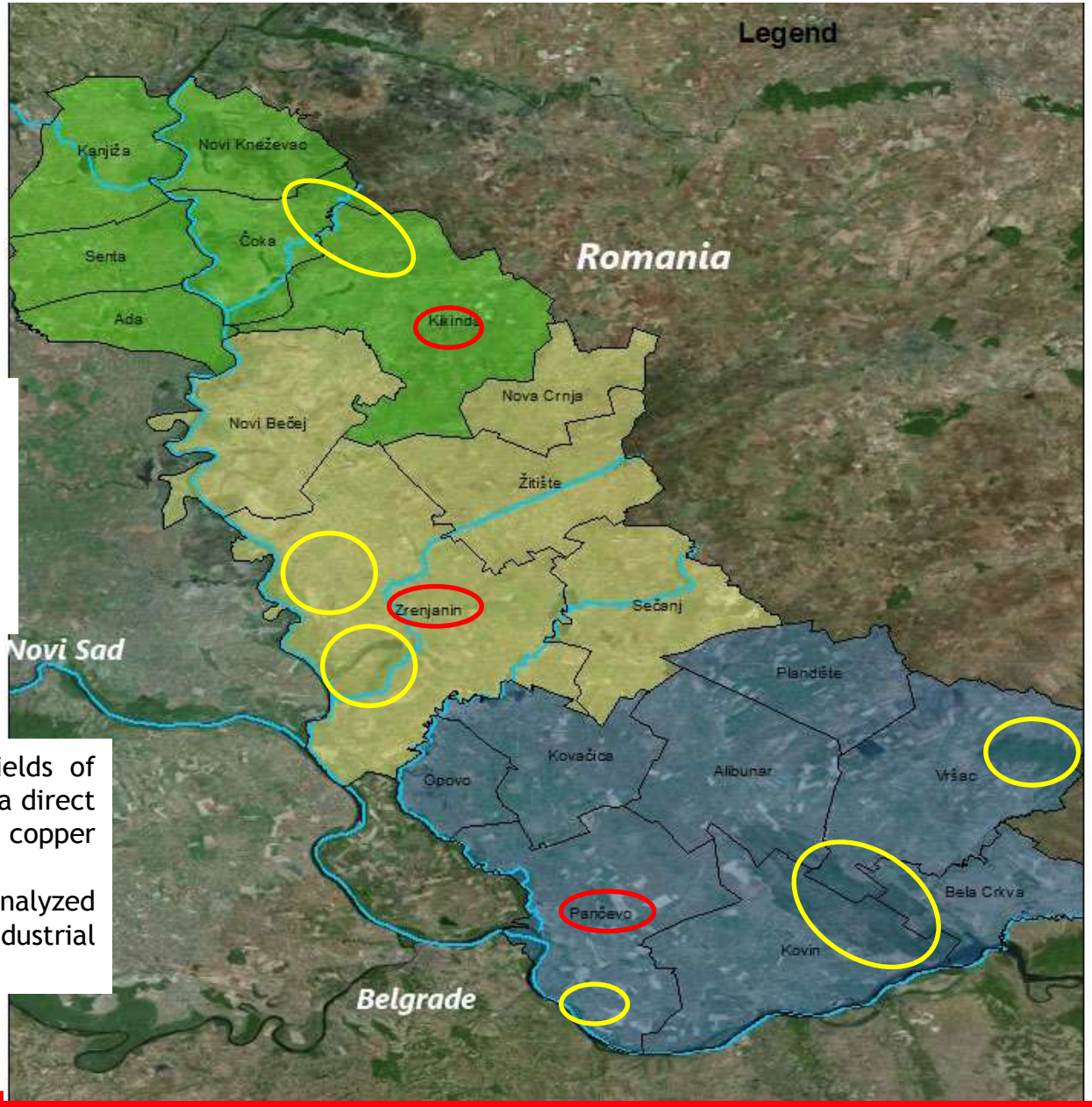
Soil quality monitoring

Soil samples were tested on pH, content of $CaCO_3$, humus, nitrogen and sulphur, content microelements (Cu, Zn, Fe, Mn), heavy metals (Co, Pb, Ni, Cr, Co, As), microorganisms
PAHs



higher copper concentration in fields of the former vineyard Vrsac which is a direct consequence of long-term usage of copper fungicides
Pollutant concentrations in the analyzed samples of protected areas and industrial zones were below permitted levels.

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Conclusion

- All natural areas, resources and business sectors indicate that Banat, as administrative region of Vojvodina, is very important and has great potential for the whole region
- Althought there is variety of industry sectors most of them have a negative impact on environment due to outdated technology, lack of equipment maintenance, poor energy efficiency, lack of or poor functioning of abatement devices which put industry in confrontation with sustainable development of the region.
- Overview of existing industrial complexes in the Banat as well as environmental monitoring which has been done over the last 10 years should be useful as a basis for modeling and simulation of possible pollution scenarios, potential hazards and accidents as well as for the life quality improvement in Banat and the Danube basin.