

# TECHNICAL REPORT

## SERBIA

SITE: Kula & Vrbas Municipalities Vojvodina Province: Industry waste water

### ENVIRONMENTAL/HUMAN HEALTH PROBLEM

Historic and ongoing industrial, sewerage and food production discharges have contributed to the **clogging and gross pollution of the "grand canal"**. **Nutrient levels and microbiological contamination** of the waters are at dangerous levels to human health and have resulted in an absence of oxygen in the river and creation of a dead zone. Odour from the canal also represents a major impact on the community and the river sludge is also heavily contaminated with metals in certain locations. 12 industries continue to discharge untreated waste waters to the canal with an estimated 400,000 cubic meters of toxic sludge contaminated with harmful microbes, nutrients and heavy metals.

### INTERVENTION & WORKS

The planned intervention is to construct a main water collector connecting the 12 industries and the local sewerage to this and sending all the waters to a centrally located water treatment plant for treatment in accordance with best practice. The other action planned is to monitor before and after each of the 12 discharge points at an upstream and downstream location. This will provide the current baseline for each industries discharge point and permit a characterization of their current wastewater discharges.

### CURRENT POSITION

Construction of the waste water collector (stages covered through this program) have now been completed and are undergoing the final stages of official acceptance, and some acceptance are already done. Field monitoring of the industrial discharge points, water monitoring and further characterization of the sludge has been completed with a final report due in early 2009.

Considering moves have been made to organize cleaner production training for the major industries located on the canal and to and potentially run through the larger industries through an IPPC process to help move them towards better industrial and environmental practices.

The NPC has also sought to access further funding to continue the environmental monitoring conducted so far through grants allocated under the national environmental tax system. This will allow a better baseline to be determined to show eventual improvements once the waste water treatment plant is constructed and industry is connected and has ceased discharges to the canal.

### NEXT STEPS

With the physical works and environmental monitoring concluded it is recommended that further engagement on the good progress made by the NPC so far continues in encouraging capacity building for industry to minimize the discharge of raw effluent and to become further involved in a program of cleaner production processes that will have economic and environmental benefits including reduction in the uses and recovery of resources, decreased water and energy uses and the potential recovery of substantial quantities of biomass and reduction of green house gases.

This could potentially link with public awareness raising programs including industry, government and public forums similar to “community participation and review committees” conducted for industries in some Western Countries. The program of a simulated IPPC program is also supported and will help bring forward the industry’s ability to reduce the effect on environmental and human health in accordance with best practice requirements.