



#### INVESTMENT

GEF USD 34,000

Co-financing from local government  
USD 4,000

Total USD 38,000

#### PROJECT DURATION

November 2009 to October 2010

#### NUTRIENT CHALLENGES

- In an attempt to achieve the highest possible harvests, farmers improperly use modern fertiliser without scientific support or ecological control, leading to high nutrient pollution (nitrogen ammonium, total nitrogen, phosphates, total phosphorous) of ground and surface waters in the Irshavka riparian zone.
- Hoophouse agriculture uses lots of fertiliser and heavy irrigation with return flow discharge to the river and almost certainly results in high levels of nutrient discharge. Hoophouses also act as areas of impervious surface that increase water runoff volume, increasing soil erosion and flood risk.
- Soil contamination from chlorinated hydrocarbon pesticide use
- Maintaining protective zones along rivers where there is little land area and in mountainous regions

## UKRAINE

# Best Practices for Fertiliser Reduction from Agricultural Lands in the Upper Tisza Basin

### Project Summary and Scope

The objective of this project is to demonstrate cost-effective measures to reduce nutrient loads by highlighting good agricultural practices, using Irshavka River as an example. The villages of Siltse and Zarichya were selected for the project because they are at the centre of a developing closed hoophouse cabbage and vegetable production industry that is changing the hydrology of the region and increasing nutrient pollution.

- **Component 1:** Analysis of soil and water conditions – The project analysed soil in the villages to determine soil characteristics, nutrient levels and contaminants. In the project's short timeframe, analysis did not show trends in water quality but did underscore heavy pollution in the Irshavka River. The project also developed specific recommendations for farmers regarding the optimal use of fertilisers, taking into account the present state of the soils.
- **Component 2:** Development of a local strategy for nutrient reduction based on the best available practices and international experience.
- **Component 3:** Practical implementation of the measures stated in the strategy:
  - Protecting the riparian zone – In order to reduce the practice of agricultural activity right up to the river's edge, local officials and landowners were educated on the importance of riparian-zone protection and a buffer zone was created along six kilometres of the river bank.
  - Promoting of optimisation of use of fertilisers – The project conducted the analysis of fertilisers that are legally permitted in Ukraine and chemical means for plant protection. A relevant workshop was held on best practices.
  - Reinforcing controls on the nutrient content of products – The project team purchased special nitrate-measuring devices for the two villages and a special laboratory device to measure nitrates. The equipment assisted in improved controls over concentrations of nutrients in agricultural products.



- **Component 4:** Information dissemination and replication – The project involved a public awareness campaign with the motto "Produce for People Without Damage to Nature." This effort included a children's drawing competition with the theme, "Find the cleanest vegetable." Activities included joint tree planting and the publication of articles and billboards. The project team also prepared a documentary on their activities.

### Benefits and Best Practices

- A buffer zone of plum trees was created to remove nutrients and sediment while maintaining some economic value (more than 700 trees and bushes were planted).
- The buffer zone discouraged dumping of manure and other solid waste along the river bank.
- A comprehensive local strategy was developed regarding the advising of local officials, citizens and farmers on reducing nutrient loading through better home management of waste and sewage, expansion of buffers and vegetable production that doesn't pollute the river.
- A well-organised team with prior experience worked together to facilitate progress in the short timeframe of the project.

### Other Key Successes

- Testing was carried out on soil quality and characteristics, nutrient levels and contaminants.
- A first public hearing was held on April 14, 2010 and during the workshop on best agricultural practices, presentations were made on actions to improve the environment while promoting good harvests.
- A riparian zone was established on stopped river bank erosion.

### Key BMP Indicators

- Level of nutrient pollution (nitrogen ammonium, total nitrogen, phosphates, total phosphorous) in the Irshavka riparian zone and downstream in the Tisza and Danube rivers.
- Level of soil contamination from chlorinated hydrocarbon pesticide use
- Number of hoophouses using improved irrigation and fertilisation practices

### Further Information

For more information, please visit <http://www.youtube.com/watch?v=3V6Lecv18fg> or contact Vasyl Manivchuk, project coordinator, Zakarpattya Oblast Organisation of All-Ukrainian Ecological League at [blu-rivers@utel.net.ua](mailto:blu-rivers@utel.net.ua)



#### About the Living Water Exchange

The Living Water Exchange, a GEF/UNDP project promoting nutrient reduction best practices in Central and Eastern Europe, will share information and accelerate the replication of the most appropriate nutrient reduction practices developed from GEF and other investments in the region.

For more information, please visit <http://nutrient-bestpractices.iwlearn.org/> or email Chuck Chaitovitz [chuck@gef.org](mailto:chuck@gef.org)

