

**ICID's 10<sup>th</sup> International Drainage Workshop (IDW10)** was successfully held in Finland and Estonia from 6 to 11 July 2008. The workshop was jointly organized and hosted by the national committees of Finland (FINCID) and Estonia (ESTCID) under the aegis of Working Group on Drainage (WG-DRG) and attended by 110 participants from 25 countries. There were six keynote speeches, 29 oral and over 20 poster presentations. President Peter Lee, Pres. Hon. Bart Schultz, and four Vice Presidents were amongst the participants. Rauno Peltomaa, Secretary IDW10 and member WG-DRG, and Dr. Willem Vlotman (Australia), Chairman WG-DRG report on the biggest drainage workshop of the year.

## Programme Overview

The 5-day 10<sup>th</sup> International Drainage Workshop (IDW10) was opened with an ice breaker reception at the Finnish Environment Institute (SYKE), the venue of the event in Helsinki. The official opening of the workshop, three technical sessions with discussions and poster presentations were held in Helsinki. Due to the long mid-summer days at these northern latitudes, participants had their first ever technical tour from 6 to 11 pm including a wonderful light evening meal and visit to an agricultural museum at Gårdskulla Gård, 50 Km west of Helsinki - one of the largest farms in Finland. The events in Helsinki were concluded by a reception hosted by the State Secretary Jouini Lind, from Ministry of Agriculture and Forestry.

On 9 July, the participants travelled to Tallinn, Estonia by a ferry crossing the Gulf of Finland – a part of the Baltic Sea. A warm welcome to the participants was given by the Secretary General Ants Noot of the Estonian Ministry of Agriculture. Two more technical sessions were held at Tallinn. An extensive technical tour was organized to some of the EU funded projects, where participants could see drainage and sub-irrigation in practice and peep into manholes. A dinner and a cultural show were held at Tallinn's open air museum. On the evening of 10 July, the participants returned to Helsinki and a

technical tour to MIT Agri Food Research on 11 July concluded the workshop.

## Technical Summary

The objectives of the agricultural drainage have been evolved over the years and vary with the circumstances. The primary objective is to make agricultural production possible and profitable. Agricultural drainage can be seen as a part of integrated land and water resources management, where environmental aspects play an important role. The water quality is as important to farming as the public opinion and sustainability of farm production. The topics of the workshop focused on the water quality of agricultural drainage and the methods to mitigate nutrient and phosphate leaching. The effects of extreme weather conditions on agricultural drainage were also included in the topics. Finally, drainage was placed in the context of the environment, economic and social/cultural aspects and suggestions were made on how to proceed with key performance indicators for sustainable integrated water management, where drainage is a driver of this sustainability.

## Research Results

Very interesting field-scale data was presented including conflicting results. What is good for nitrogen (N) reduction is not for phosphorus (P) reduction. Multiple

solutions were presented. Field research on drain spacing and depth, rice husk envelopes, trace elements, bio diversity in re-shaped drains (brook, stream, river), and formulation of Manning's 'n' for natural streams were some of the interesting topics presented followed by lively discussions. One of the main challenges for the drainage community is to translate the 'research results' as guidelines in the workshop into 'design guidelines'. We need to make sure that we also reach the planners and designers of drainage systems and get them involved early. It was suggested that there is a role for the organisers (American Society of Agricultural and Biological Engineers, ASABE) of the 9<sup>th</sup> International Drainage Symposium, to be held in Canada in June 2010, to translate the field results into design guidelines.

There were fresh and frank presentations and discussions on some of the past results with controlled drainage. The effects of field size on results was analysed, presented and discussed. Some explanation as regards the movement of water and constituents such as Nitrates and Phosphorus, if they did not discharge from the controlled drainage system, was provided. The hypoxia problem (green algae effect) in the Gulf of Mexico as a result of water discharge from the Mississippi cannot be solved by controlled drainage alone but requires a range of



The field visit to an EU funded experiment showing subsurface drainage and sub-irrigation at Laheosa, Estonia (Photo: W F Vlotman)

concurrent measures such as winter cover crop, catch cropping, and buffer zones. More attention needs to be paid to describe the context of the drainage work with respect to current guidelines (those of the US Environmental Protection Agency or the EU Water Framework Directive) i.e. are the results indicating excellent, good or bad conditions?

## Key Highlights

**Silver pellets:** As mentioned before, it is not necessary to have a single solution to a problem, and Prof. Wayne Skaggs gave a model to remember this: *there is no silver bullet that will solve all our problems in a unique fashion; rather we need to think in terms of many silver pellets.* Instead of leaching of N and P through water management is but one of the solutions, whereas farm, crop and land use management were shown to be effective measures too; many silver pellets rather than one silver bullet.

**Transfer of knowledge:** Another silver pellet presented was the potential of applying the methods that resulted in long-term reductions in N and P in the Rhine basin to the hypoxia problem in the Gulf of Mexico. It was encouraging to see that the extension service in the US is very much alive and that private industry is taking an interest in becoming drainage ambassadors [see the Agricultural Drainage Management Coalition (ADMDC), [www.admcoalition.com](http://www.admcoalition.com)]. It was also noted that solutions may be explored with other organisations outside the ICID such as the UN Water Portal, GWP, etc. We need more results to be presented as a follow up of implementation of the EU WFD, so that we can compare and possibly apply those results in other basins outside the EU. The IDW10 achieved what was expected: networking of professional from across the world.

**Innovations:** There were several silver pellets that can be classified as innovations: new methods of flow measurement in pipes, a bio filter placed in subsurface drains, classifying flow resistance in natural streams, and a different type like - use hurricane Katrina's experience to emphasize that a billion dollar of investment will safeguard 100's of billions of dollars in damage prevention. Hence, if we classify the potential damage in areas and link this to the investment in research needs and propose preventative measures, we may find a more willing ear at political levels to spend money on improved drainage water management.

## Acknowledgements

The workshop was very well organised and both the national committees (FINCID and ESTCID) deserve heartfelt congratulations. It was a great honour to have the renowned keynote speakers viz., Pres. Hon. Prof. Bart Schultz (The Netherlands), Vice Pres. Dr.-Ing. Eiko Lubbé (Germany), Vice Pres. Hon. Prof. Chandra Madramootoo (Canada), Prof. Wayne Skaggs (USA), Dr. Seppo Rekolainen (Finland), and Dr. Willem F Vlotman (Australia), besides the participation of Vice Pres. Prof. P Kovalenko (Ukraine) and Vice Pres. Hon. Dr. M H Amer (Egypt). The organisers wish to thank the keynote speakers, the authors of the papers and posters, the Scientific Committee for reviewing the papers, and all the participants and organizations who made the workshop a grand success. The workshop proceedings are available at <[http://www.fincid.fi/julkaisut/IDW2008\\_proceedings.pdf](http://www.fincid.fi/julkaisut/IDW2008_proceedings.pdf)>. Rauno Peltomaa can be contacted at: <[rauno.peltomaa@salaojakeskus.fi](mailto:rauno.peltomaa@salaojakeskus.fi)>.



Workshop participants at old Parliament House, Helsinki