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**Workshop on**  
**“Nutrient leaching from agricultural soils”**  
*12 October 2010, Yogyakarta, Indonesia*

**Theme: “Nutrient leaching from agricultural soils: loads to groundwater and surface water systems and water quality issues”**

**Scope:**

Although nitrogen, phosphorus, and sulfur cycle naturally throughout the environment, an increase in levels of these particular pollutants, due to human activity, are occurring at concentrations which can put species at risk. Much of the increase is a result of various agricultural, industrial, and urban activities which generally fall into two categories: point and non-point source.

**Point source** pollutants, such as a municipal or industrial waste discharges, stem from a particular location. Since these discharges can be clearly identified, they are easier to regulate, monitor, and treat. **Non-point source** pollutants are transported over a broad area, through watersheds, making them difficult to identify, measure, and regulate. Sources include runoff from agricultural lands, construction sites, urban areas, and atmospheric deposition.

*Nitrogen* plays a key role in ecosystem health as it is a greenhouse gas, contributes to both acid precipitation and photochemical smog, and is a primary cause of eutrophication in coastal waters. The main source of excess nitrogen is through synthetic fertilizers used in agriculture, although improperly managed livestock operations and sewage leaks also play a role. According to the United Nations Educational, Scientific, and Cultural Organization (UNESCO), there has been a two-fold increase in nitrogen to the oceans and more than ten-fold increases in some rivers draining industrialized regions. Excess *phosphates*, like nitrogen, also contribute to eutrophication by entering waterways through agricultural fertilizer runoff, untreated municipal sewage, and from industrial waste such as in small-scale mining. Since phosphorus is not highly soluble, it tends to settle on ocean floors and lake bottoms where it can stimulate overgrowth of plankton and weedy plants like algae. The organisms consume large amounts of dissolved oxygen, which has the potential to suffocate fish and other marine organisms, while also blocking available sunlight to bottom dwellers.

Pollutants in the air, water, and soil can influence organisms in many different ways, from altering the rate of plant growth to changing reproduction patterns to, in certain extreme situations, leading to extinction. Excess pollutants can also leave a species weakened, susceptible to other drivers of biodiversity loss such as habitat change or competition from invasive species. These elements make nutrient loading a complicated driver of biodiversity, especially within aquatic ecosystems where plants and marine organisms are disproportionately affected. Continued exposure to these and other pollutants has the ability to significantly decrease the diversity of plants and animals in a variety of ecosystems over time. Since the sources of pollution vary as much as the effects, regulation is often complex. The majority of current laws attempt to regulate the concentration of pollutants allowed to enter the environment. However, conflicts often arise when there are multiple sources which contribute to the rise of a certain pollutant or when negative outcomes are difficult to measure and/or inconsistent across species.

In this workshop we will focus on nutrient loads from agricultural soils to groundwater and surface water systems, by leaching from this non-point source. Reference <http://www.enviroliteracy.org/article.php/1518.html>.

The authors are requested to contribute on following sub-themes:

- Environment: quality standards soil - groundwater – surface water systems, including ecology
- Good Agricultural Practice: nutrient use, crop efficiency, and environmental sustainability
- Law and legislation: environment, water quality management, and agriculture
- Field experiments and monitoring data
- Modeling of nutrient leaching
- Efficient and effective measures to reduce nutrient leaching from agricultural soils: sharing experiences
- Environmental nutrient loads: from upstream to downstream issues
- Scale issues: from field to region to basin systems approach

Integrated ICID approach: combine strategy themes

- Knowledge
- System
- On-farm
- Basin

**Deadlines:** Abstracts (500-600 words) by ..... **01 June 2010**  
Acceptance of papers by ..... **01 August 2010**  
Power Point Presentation by ..... **01 October 2010**

Please mail the *Expression of Interest* and Abstract to Dr. G.A.P.H. van den Eertwegh, Secretary WG-ENV (The Netherlands) with copy to ICID Central Office as per above deadlines. The authors must follow the prescribed guidelines while preparing their manuscripts.

This International Workshop is being organized by ICID's Working Group on Environment (WG-ENV) during its 61<sup>st</sup> International Executive Council (IEC) Meeting and 6<sup>th</sup> Asian Regional Conference from 10-16 October 2010 at Yogyakarta, Indonesia.

**Contact co-ordinates:**

**Workshop Convener:** Dr. G.A.P.H. van den Eertwegh, KWR Watercycle Research Institute, PO Box 1072, 3430 BB Nieuwegein, The Netherlands. Tel: +31 (0) 30 6069 650, Mobile: +31 (0) 6 23 224 968, Fax: +31 (0) 30 6061 165, E-mail: [ge.van.den.eertwegh@kwrwater.nl](mailto:ge.van.den.eertwegh@kwrwater.nl)

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**Website:** Please access conference website: <http://www.icid2010.org> for more information on events during 61<sup>st</sup> IEC and 6<sup>th</sup> Asian Regional Conference at Yogyakarta, Indonesia

**Workshop on  
"Nutrient leaching from agricultural soils"  
12 October 2010**

**During**

**61<sup>st</sup> International Executive Council Meeting and the  
6<sup>th</sup> Asian Regional Conference  
Yogyakarta, Indonesia, October 2010**

**EXPRESSION OF INTEREST**

Name (Mr/Ms/Dr/Prof): \_\_\_\_\_

Occupation: \_\_\_\_\_

Organization: \_\_\_\_\_

Full Postal Address: \_\_\_\_\_

\_\_\_\_\_

Tel: \_\_\_\_\_ Fax: \_\_\_\_\_

E-mail address: \_\_\_\_\_

Please consider my abstract/paper under following sub-theme (choose one from the announcement):

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**Registration Fee:** There is no separate registration fee for this Workshop. However, participants must register for the main event i.e. 61<sup>st</sup> IEC and 6<sup>th</sup> ARC, **10-16 October 2010**, Yogyakarta, Indonesia.

**Please access our websites:** <http://www.icid.org> and/ or <http://www.icid2010.org> for more information.

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## GUIDELINES FOR AUTHORS

Please follow the instructions below in preparing your manuscript in hard copy, to be reproduced in the Proceedings (Volume) of the Workshop. Please make sure that your manuscript is written in English.

### Printing requirements

Only single-sided laser printouts (or printouts of similar quality) of 300 dpi or more and with uniform blackness of the lettering are acceptable. Print out your text on a normal white A4 (size 21 X 29.7 cm) paper with margins of 3.5 cm at the top and the bottom and 2.5 cm on the left and right of the page. Number all pages consecutively outside the printing area. Maximum length of the paper (including references and figures) is 10 pages.

### General typing requirements

Typeface: Times New Roman

Size of type in text: 12-point justified

Space between lines (leading): single space

Type size for small print (footnotes, etc.): 10-point justified

Section Headings (incl. Abstract, Introduction, Materials and Methods, Results and Discussions, Summary and conclusions): 12-point boldface.

Section Sub-Headings & Sub-Sub-Headings: numbered, 12-point justified incl. number(s), 1 blank line between sub-sections.

Space between separate sections: 2 blank lines

Space between separate paragraphs: 1 blank line.

### Structuring the text

Please structure the paper as follows: Abstract, Introduction, Materials and Methods, Results and Discussions, Conclusions, Summary, Acknowledgements, References and Appendices.

**Title:** Times New Roman font, capital letters, 14-point, boldface and centered. 1 blank line afterwards

**Authors:** Times New Roman font, 12-point, italic, centered. Three blank line afterwards. Authors must be listed successively one after another as R. Goodman, P. Youngs and G. Taylor. At the bottom of the 1<sup>st</sup> page type a black line to separate the text from the affiliation footnotes. Type all affiliations (names and postal addresses of corresponding institutes or organizations) or information directly associated with authors (e.g., "On leave from" or "Postal address" etc.) in 10- point Times New Roman.

After each free standing heading, sub-heading or sub-sub-heading, there is one blank line.

Allow 2 blank lines after each section to the heading of the following one.

**References:** References in the text are cited as follows: Miller (1986), Miller and Anderson (1987) or Miller et al. (1989), if there are more than two authors.

**Mathematical Symbols and Formulae:** All characters should be typed. Avoid confusion between similar looking symbols, letters and numbers or Greek and Roman letters. Equations should be numbered by Arabic numerals in parentheses on the right-hand side (flush right).

**Units:** The metric system is mandatory and wherever possible, SI units should be used.

**Figures:** All figures, whether diagrams, graphs or photographs (black and white) should be of high quality. Figures and legends must be centered. Figure legends (10-point type with 2 point space between lines) are to be placed under the figures. Figures must be numbered and abbreviated as Fig.1., Fig. 2. etc. in boldface. The text of the caption should follow immediately. Allow 2 blank lines after each figure before the text is continued. Figures should be in file formats that are compatible with WORD Office 97 for Widows such as BMP or TIFF files.

**Tables:** Tables should be handled like figures. The table caption should be numbered as Table 1., Table 2. Etc. boldface. The text of the caption should follow immediately. Table captions appear above the table. Tables should be created by WORD Office 97 or by Excel 97 for Windows. Equations, figures and tables are numbered consecutively.

**Footnotes:** They should be numbered consecutively and prepared in 10-point type.

**Appendices:** Appendices should be labeled by capital letters, e.g. Appendix A, Appendix B etc. and treated like independent sections otherwise.

**Acknowledgements:** This section should be prepared in 10-point type with, preferentially, "Acknowledgement(s)" in italic. The text follows immediately. Allow 2 blank lines after this section.

**References:** Heading in 12-point type boldface and free standing, one blank line afterwards. If possible, book titles and titles of journals incl. volume numbers in italic. The first line of each individual reference begins on a new line. All authors' names and initials have to be typed as surname followed by initial, i.e., Mandelbrot, B.B. If there are more than two authors, please use "and"; before the last author.

**Writing Style:** Neither headings, sub-headings, figure legends, table captions nor any other word in the text should be capitalized except for the opening letter, names and certain abbreviations. Only when used with numbers, the following abbreviations and expressions should be capitalized: Fig(s). 1, Table(s) 2, Sect(s). 5, Chap(s). 10, Appendix A, Paper II, Theorem 5, Eq(s). (9), etc. If abbreviations of names or concepts are used throughout the article, they should be defined at first occurrence. The following words should be abbreviated when they appear in the running text followed by a number unless they come at the beginning of a sentence: Eq., Fig., Sect., Chap.; e.g. "The results are depicted in Fig. 15. Figure 3 reveals that ...". The respective numbers of equations should occur in parentheses, e.g., Eq. (9). Thus, e.g., "We have shown in Eq. (9) that ... Equation (9) indicates that ...".

**PLEASE SEE NEXT PAGE FOR EXAMPLE OF ABSTRACT**

## EXAMPLE OF ABSTRACT

### ABSTRACT

**Title: Installation of Settling Basin for the water quality improvement in Freshwater Lake**

**Author: Park, Sang Hyun<sup>1</sup> and Uom Myung Chul<sup>2</sup>**

The Saemangeum tidal reclamation project has been developed for 28,000 ha of land and 12,000 ha of freshwater lake in the western coast of Korea since 1991. There are two rivers that flow into the lake. The Mangyung River, located in the urban areas, is more polluted than Dongjin River, located in rural area. In the Mangyung River basin, high concentrations of total phosphorous (T-P) and total nitrogen (T-N) are not estimated to be decreased within the allowance level until the land reclamation to be started when the seadike is closed in 2006. For the improvement of water quality in the Mangyung watershed area, more sewage treatment systems in the city and livestock areas would be installed until 2006. In addition, several artificial wetlands and a settling basin are to be installed in the lake of Mangyung area. In spite of such kind efforts, T-P is estimated to be 0.103 mg/l that is beyond the allowance level of 0.100 mg/l in lake of Mangyung area.

On this basis, tidal area in Dongjin river estuary is to be reclaimed partly from 2006 and Mangyung area is to be suspended until the water quality improved. More effort is poured to improve the water quality in Mangyung area. Result from model study applying WASP5 model, most efficient scheme is derived to expand 3,500 m long setting basin to 10,500 m long basin at the upper part of lake. The water level will be increased to 1.5 m depend on water flows, density of nutrients and irrigation demands during crop season. After the expansion of the basin, 0.103 mg/l of TP decrease to 0.096 mg/l in the lake that would be allowed in standard level.

As the long settling basin will supply irrigation water at (+) 1.5 m of high water level to the low part of farmland directly, irrigation cost would be decreased than pump from the lake at the water level of (-) 1.5 m during cropping season. The side slope of the channel in the basin is milder than 1:3 to improve the water quality and ecological diversity in the riparian buff zone of the lake. The sediment soil in the basin would be dredged after floods to keep enough space for the flows and it would be nourished in the low part of the reclaimed areas.

In conclusion, the new settling basin would contribute to improve water quality and ecological diversity and irrigation water management of Saemangeum fresh water lake in the near future.

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<sup>2</sup> Senior Researchers in Research Group on Saemangeum Tidal Reclamation Project in Rural Research Institute of Korea Rural and Agricultural Infrastructure Corporation (KARICO).