PROCEEDINGS OF THE INTERNATIONAL DRAINAGE WORKSHOP
Publication 25
PROCEEDINGS OF THE INTERNATIONAL DRAINAGE WORKSHOP

16–20 May 1978  Wageningen, The Netherlands

Edited by
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In 1976 the Government's Service for Land and Water Use launched the idea of bringing together a number of drainage specialists from different countries to exchange information on, and to discuss problems of, research, design, and installation of agricultural drainage systems in humid areas.

After the idea had been discussed with other institutions in The Netherlands, the decision was made to organize an International Drainage Workshop in Wageningen.

The organizing institutions, namely:

The Government Service for Land and Water Use (LD)
The Institute for Land and Water Management Research (ICW)
The International Institute for Land Reclamation and Improvement (ILRI)
The International Agricultural Centre (IAC)

nominated an organizing committee consisting of:

T. Couwenhoven (LD) chairman
J. A. C. Knops (ILRI) secretary
J. Wesseling (ICW) member
H. E. van Dissel (IAC) member

The organizing committee decided that the Workshop should be held from May 16-21, 1978, the week before the ICID Congress in Athens (Greece), because it was expected that many of the people who would be invited to the Workshop would also be planning to attend that meeting.

It was originally intended that four problem areas would be discussed at the Workshop. Because of the interests of the organizing institutions, it was later decided to add the drainage problems of irrigated areas. Unfortunately the subject of Maintenance and Economics of Drainage had to be cancelled because of the lack of discussion papers, although the subject was discussed incidentally under the other headings. Finally, the following problem groups were distinguished:

100 Design and Research
200 Materials
300 Installation Methods
400 Drainage of Irrigated Lands
In total 26 participants from abroad and 22 from The Netherlands responded to the invitation to attend the Workshop and to provide discussion papers.

The organizing committee was able to distribute these papers among the participants well before the start of the Workshop. This made it unnecessary to present the papers during the Workshop so that the time could be devoted entirely to discussions. The Workshop spent 2 days on group discussions, 1 day on an excursion and 1 day on a plenary session. In the latter session the preliminary conclusions from the various groups were discussed.

When the Workshop was originally being planned, it was not intended to publish the papers. ILRI planned to publish an overall review of the papers and the main results of the discussions. An editorial committee was given the responsibility for this publication. Its members were:

Chief editor: J.Wesseling (ICW)
Group 100: R.J.Oosterbaan (ILRI) and G.P.Wind (ICW)
Group 200: J.A.C.Knops (ILRI) and C.L.van Someren (ILRI)
Group 300: D.Boels (ICW) and W.H.Naarding (LD)
Group 400: R.van Aart (ILRI) and J.H.Boumans (Euroconsult)

During the plenary session of the Workshop the majority of the participants were in favour of publishing the papers in full. The organizing committee found ILRI willing to comply with these wishes. Several papers submitted to the Workshop, however, were purely discussion papers and not suitable for publication. Other papers had been submitted for publication elsewhere or had already been published. Therefore, the organizing committee had to set the following rules:

- All papers published elsewhere, only the title, reference, and an abstract would be taken up;
- Participants had to decide personally on the publication of their paper either in the submitted form or after revision;
- Papers submitted, but not intended for publication, would nevertheless be used by the editorial committee for their conclusions.

Following these rules, not all the papers submitted to the Workshop are found in this book. Although the decision to publish the papers has delayed publication somewhat, the editorial committee is glad that in this way the wishes of the majority of the participants could be met.
The report of the Workshop now consists of two sections. Section one, produced by the editorial committee mentioned above, gives a brief review of papers, discussions, and conclusions of the various groups. As agreed upon during the Workshop, a draft of this section was sent to the participants for their comments.

In the final version three types of references are given. References with a name followed by a year, e.g. Johnston (1978) refer to an article in the literature. If a name is followed by a number e.g. Johnston (4.01) the reference pertains to a paper in the second part of the book, namely Group 400, Paper 01. If only a name is given, the reference pertains to an opinion, remark, or point stated by a participant during the Workshop.

Section II contains the papers, which have been divided into the groups mentioned above. One should be aware that some of the papers were discussed in more than one group.

The sequence of the papers is arbitrary, in the sense that the numbering in each group was determined mainly by the order in which they appeared in the editorial procedure.

The reader will notice the variation in style in the papers presented. The editor, however, did not feel that it was his task to superimpose uniformity.

The editorial committee is grateful to all participants for their comments on the first draft of Section I and the cooperation they gave in revising their papers. It appreciates the willingness of ILRI provide funds for the publication and to go through all the problems a publication of this kind brings with it.

It is hoped that the book will find its way, not only among those who participated in the Workshop, but also among the numerous other people in the world who are interested in the problems of agricultural drainage.

J. Wesseling,
Wageningen, December 1978
AGENDA AND PROGRAMME

Tuesday, May 16

09.00 - 10.30 Registration
10.30 - 12.30 Group discussions, 1st session
13.45 - 15.30 Group discussions, 2nd session
16.00 - 17.45 Group discussions, 3rd session
20.00 - 23.00 Official opening

Welcome address by Mr. T. Couwenhoven, Chairman of the Organizing Committee

Welcome address by Mr. J. Koopman, Director of the Government Service for Land and Water Use (LD)

Speech by Mr. W. A. Segeren, Head of the Research Department (LD)

Film and social evening

Wednesday, May 17

08.30 - 10.15 Group discussions, 4th session
10.45 - 12.30 Group discussions, 5th session
13.45 - 15.30 Group discussions, 6th session
16.00 - 17.00 Group discussions, 7th session

Thursday, May 18

08.00 - 21.00 Excursions

Morning: Visit to IJsselmeerpolders Development Authority, Lelystad

Afternoon: Visit to Land Consolidation project "Het Grootlag", Bovenkarspel

The Group secretaries used this day for preparation of group reports

Friday, May 19

08.30 - 10.15 Group discussions, formulation of conclusions and recommendations
10.45 - 12.30 1st plenary meeting, presentation of group conclusions and recommendations by their respective chairmen
13.45 - 15.30 2nd plenary meeting, adjusting the group conclusions and recommendations
16.00 - 17.00 3rd plenary session, final conclusions and recommendations

Closing session
GROUP SCHEDULES

Group 100

Mr. J. Wesseling, chairman
Mr. R. J. Oosterbaan, secretary

Session 1-2: Theory of groundwater flow, surveys
Session 3-4: Drainage criteria
Session 5-6: Regional drainage problems
Session 7: Research needs and development

Group 200

Mr. W. J. Ochs, chairman
Mr. J. A. C. Knops, secretary

Session 1: General
Session 2: Research
Session 3: Entrance resistance
Session 4: Hydrodynamics, Soil stabilizers
Session 5: Hydraulics in pipes
Session 6: Maintenance
Session 7: Iron complexation

Group 300

Mr. G. Spoor, chairman
Mr. D. Boels, secretary

Session 1: Theory of mechanics
Session 2-3: Installation methods
Session 4-5: Experiences with drain performance
Session 6-7: Precision and control

Group 400

Mr. J. van Schilfgaarde, chairman
Mr. R. van Aart, secretary

Session 1: Theory of drainage and leaching
Session 2-3: Criteria
Session 4: Irrigation-drainage relations
Session 5: Drainage systems and techniques
Session 6-7: Economic evaluation, Research needs

Plenary sessions

Mr. J. Wesseling, chairman
Mr. J. A. C. Knops, secretary
Mr. R. J. Oosterbaan, secretary

The discussion in each session was often conducted with a list of questions at hand, which list was prepared in advance by the Organizing Committee.

Conclusions and recommendations are presented in Section I of this publication.
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Section I

Synthesis of the discussions and contributions