

Discussion Paper on Use of Peat Lands
WATER MANAGEMENT OF FARMLANDS IN
PEAT AREAS IN THE TEMPERATE HUMID ZONE
A DISCUSSION NOTE

Background

Peat soils in the temperate humid zone may be used by farmers as meadows or arable lands. Over the centuries farmers have taken care of water management in these areas in such a way that they would have optimal benefits while, to the extent possible, preventing oxidation and subsidence of the peat soil. Nevertheless, farm practices have resulted in significant subsidence of the peat soils and significant CO₂ emission. These trends are illustrated by the subsidence of the peat farmlands in the Netherlands as shown in Figure 1.

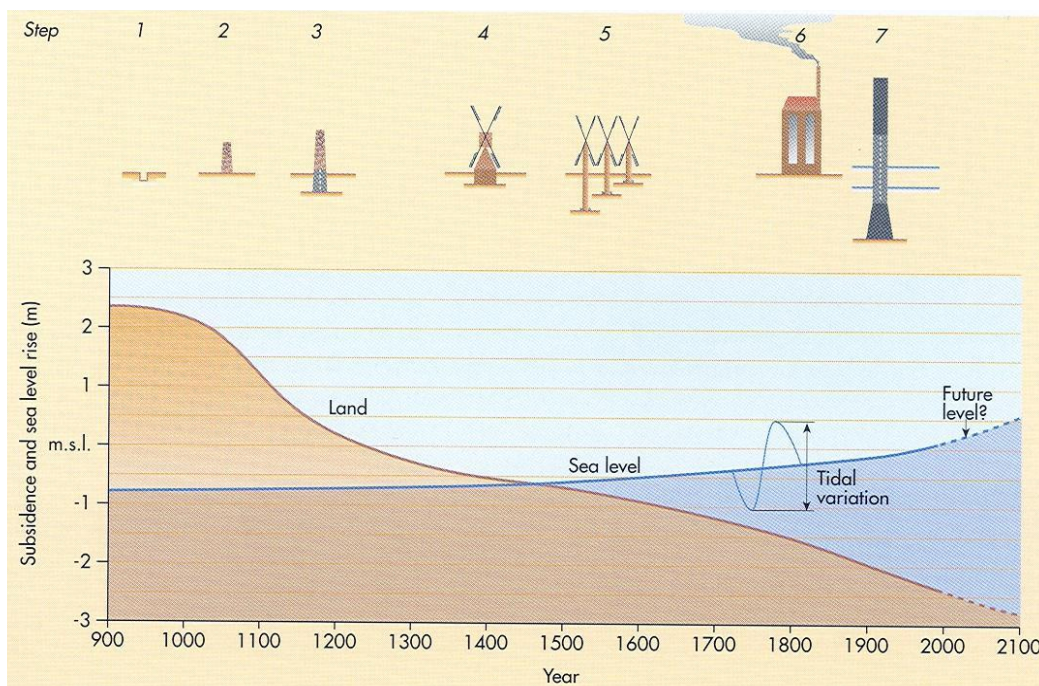


Figure 1. Sea level rise and subsidence of farmlands on peat soils in the Netherlands since 900 (After de Jong et al., 1999)

Farmlands in peat areas may be classified as *lowland* peat soils and *highland* peat soils. This discussion note focusses on *lowland* peat soils in the temperate humid zone, which are largely found in deltaic and coastal areas of countries in Central and Northern Europe and North America.

Increasingly discussions are taking place about appropriate water management for these areas, generally with a focus on the reduction of CO₂ emission. These discussions may result in requirements for higher open water and/or groundwater levels, installation of new infrastructure for water control, adaptation of operation and/or maintenance practices, or even abandoning of agriculture in the area.

ICID ER-WG propose to collate experiences in countries, where discussions on management of peat soils are taking place, to understand the measures that are being proposed and/or have already been taken, and the impact of these measures on farming practices.

Proposal

To implement a study of management of agriculture in peat soils, outlined above, it is proposed to:

- invite ICID National Committees to prepare a Country Paper on the issues at stake with respect to water management of farmlands in peat areas in the temperate humid zone;
- organise a workshop in one of the forthcoming ICID meetings where these Country Papers can be presented and discussed;
- prepare and publish the workshop proceedings as an ICID publication; and
- summarise the key issues and recommendations in a paper for *Irrigation and Drainage*.

Indicative content of the Country Papers

1. Introduction
2. Background
Country, area, climate, physical and environmental conditions in peat soil areas
3. Present water management practices in farmlands in peat areas
Design criteria, operation and maintenance practices, farming practices, flood protection provisions (if required), regulatory authorities and arrangements, water management charges compared to farm income.
4. Ongoing discussions on requirements for future water management
Focus of the ongoing discussions, issues at stake, formulation of requirements.
5. Proposed solutions, operation and maintenance practices
Modification of design criteria, operation and maintenance practices, farming practices, flood protection provisions (if required), regulatory arrangements, impacts of the modified approaches.
6. Evaluation

Reference

de Jong, J., P. Huisman, H. Pauwels and R. Powel, 1999. *How to maintain the sustainable development in The Netherlands?* In: H. Oudshoorn, B. Schultz, A. van Urk and P. Zijderveld (ed.), Sustainable development of deltas. Proceedings International conference at the occasion of 200 year Directorate-General for Public Works and Water Management, Amsterdam, the Netherlands, 23 - 27 November, 1998, Delft University Press, Delft, the Netherlands.

Bart Schultz, President Hon., ICID
Lelystad, 28 April 2021