EXPERIENCES AND RESULTS OF NATIONAL AND INTERNATIONAL STANDARDIZATION OF SOIL INVESTIGATION METHODOLOGY

Dick Hortensius, Netherlands Normalization Institute, PO Box 5059, 2600 GB Delft, Netherlands.

1. INTRODUCTION

Since 1984 the Netherlands Normalization Institute (NNI) is running a programme on standardization of methods for investigating polluted soils. Soil pollution has been a major environmental policy issue in the Netherlands since 1980. Within the legal framework of the Soil Clean-up (interim) Act many polluted sites have been investigated and if necessary been cleaned-up. Nowadays it is expected that up to a hundred thousand (industrial) sites will have to be dealt with in the future.

It has been recognized that standardization of methods for sampling and analysis of soil is important to improve the quality of scientific information that is needed for effective decision making and to support the Netherlands' soil clean up programme and soil protection policy [1]. Initially provisional guidelines for sampling and analysis were drawn up in 1985 by government order by a private consultant engineering agency [2]. Since 1987 draft and final standards prepared by the NNI Standards Committee on Soil Quality have been issued. At present a large number of (draft) standards is available and a broad range of issues is covered, varying from sampling strategies to toxicity tests with earthworms. Recently the scope of the programme was broadened to also include the investigation of polluted sediments.

Because of its experiences in this field of standardization, NNI was in a good position to take on the secretariat of a technical committee of the International Organization for Standardization (ISO) on soil quality. The scope of this international committee is standardization in the field of soil quality including classification, definition of terms, sampling of soils and measurement and reporting of soil characteristics. The committee has been active now for about 6 years and a large number of draft standards has been developed and circulated for ballot among the members of ISO.

In this paper some experiences and results of the national and international standardization activities are reviewed.

2. DUTCH STANDARDIZATION IN THE FIELD OF SOIL QUALITY

The NNI standards committee on soil quality was established in 1984. To carry out its programme initially 4 sub-committees and a number of working groups were established; the organizational structure is given in figure 1. Until now about 30 final standards have been issued and about 15 draft standards and still a lot of items are on the programme of work. A task of growing importance is providing the Dutch input into the international standards committee on soil quality of ISO. However, also new developments in the Netherlands call for action by NNI and in 1992 a new sub-committee on submerged soils was installed.
Standards are now already referred to in various (semi-)legal regulations, showing that the results of standardization are considered of importance for implementation and enforcement of soil protection legislation. Standardization should be considered as part of more comprehensive system aimed at improving the quality of environmental measurement data. Other parts of that system are: (certified) laboratory quality systems, use of (certified) reference materials, proficiency testing of laboratories and collaborative studies to test methods. The Dutch ministries responsible for environmental management (the Ministry of Housing, Physical Planning and Environment and the Ministry of Transport, Public Works and Water Management) have recognized the importance of improving the quality of environmental measurements. A special programme has been started to support development and validation of standardized environmental measuring methods that are considered necessary to enforce environmental legislation.

As an example of practical problems due to a lack of standardization and the way NNI coped with it, standardization of cyanide determinations is discussed in the next chapter.