



STRATEGIC BUSINESS PLAN

ISO/TC 190

EXECUTIVE SUMMARY

Scope of ISO/TC 190:

Standardization in the field of soil quality.

Considered are:

- soils in situ;
- soil materials intended for reuse in or on soils, including dredged sub-aquatic soil materials (= excavated sediments).

Standardization in the field of soil quality includes mainly description of soils, definition of terms, sampling of soils, measurement and reporting of soil characteristics and potential contaminants, monitoring of soil quality, electronic exchange of soil related data and guidance documents for soil management and decision making.

These guidance documents include: guidance for improvement of soil quality by describing methods for cleaning polluted soils, guidance for the human and ecotoxicological risk assessment of soils related to their use and guidance for the description of soil degradation related to local and diffuse contamination, erosion, loss of organic matter, acidification, risk of landslides, loss of bio-diversity, salinization, desertification, sealing and compaction.

Excluded from the scope are:

- setting threshold or limit values for the assessment of soil quality;
- civil engineering aspects (are dealt with by ISO /TC 182 'Geotechnics');
- in situ sediments (are dealt with by ISO/TC 147 'Water quality');

NOTE Excavated sediments are defined as soil and such to be dealt with by ISO/TC 190. In-situ sediments are dealt with by ISO/TC 147. Characterization of sediments should therefore be dealt with in close co-operation with ISO/TC 147.

Soil quality is not an absolute concept: the quality of a soil, in terms of fitness for use, depends upon the purpose that the soil serves. Various soil functions can be distinguished: agricultural land, natural habitat, a platform for housing, construction and industry, a matrix to capture e.g. groundwater and carbon dioxide.

Within ISO/TC 190, soil quality is historically approached from an environmental point of view. The emphasis of the work of TC 190 has changed from the development of individual standards to determine soil pollution back in 1985, to standards that provide guidance on the practical applicability of these standards, and standards that can be used in support of political topics in which soil is also playing a role, such as:

- climate change
- food, feed and energy crop production
- spatial pressures/developments
- ecosystem services.



1. INTRODUCTION

1.1 ISO technical committees and business planning

The extension of formal business planning to ISO Technical Committees (ISO/TCs) is an important measure which forms part of a major review of business. The aim is to align the ISO work programme with expressed business environment needs and trends and to allow ISO/TCs to prioritize among different projects, to identify the benefits expected from the availability of International Standards, and to ensure adequate resources for projects throughout their development.

1.2 International standardization and the role of ISO

The foremost aim of international standardization is to facilitate the exchange of goods and services through the elimination of technical barriers to trade.

Three bodies are responsible for the planning, development and adoption of International Standards: [ISO](#) (International Organization for Standardization) is responsible for all sectors excluding Electrotechnical, which is the responsibility of [IEC](#) (International Electrotechnical Committee), and most of the Telecommunications Technologies, which are largely the responsibility of [ITU](#) (International Telecommunication Union).

ISO is a legal association, the members of which are the National Standards Bodies (NSBs) of some 140 countries (organizations representing social and economic interests at the international level), supported by a Central Secretariat based in Geneva, Switzerland.

The principal deliverable of ISO is the [International Standard](#).

An International Standard embodies the essential principles of global openness and transparency, consensus and technical coherence. These are safeguarded through its development in an ISO Technical Committee (ISO/TC), representative of all interested parties, supported by a public comment phase (the ISO Technical Enquiry). ISO and its [Technical Committees](#) are also able to offer the ISO Technical Specification (ISO/TS), the ISO Public Available Specification (ISO/PAS) and the ISO Technical Report (ISO/TR) as solutions to market needs. These ISO products represent lower levels of consensus and have therefore not the same status as an International Standard.

ISO offers also the International Workshop Agreement (IWA) as a deliverable which aims to bridge the gap between the activities of consortia and the formal process of standardization represented by ISO and its national members. An important distinction is that the IWA is developed by ISO workshops and fora, comprising only participants with direct interest, and so it is not accorded the status of an International Standard.

2. BUSINESS ENVIRONMENT OF THE ISO/TC

2.1 Description of the Business Environment

The following political, economic, technical, regulatory, legal and social dynamics describe the business environment of the industry sector, products, materials, disciplines or practices related to the scope of this ISO/TC, and they may significantly influence how the relevant standards development processes are conducted and the content of the resulting standards:

2.1.1 Political, regulatory and legal factors

At the time of its establishment, the focus of ISO/TC 190 was dominated by the awareness that soils may contain substances (whether of anthropogenic or of natural origin) that are not only potentially harmful to humans, but also to other living organisms and our cultural heritage.

Over the past years, this awareness has broadened. Soil is now considered as a critical component of the natural system and a vital contributor to all terrestrial populations. It serves, among others, as a basis for the production of food and water. It provides the basis for the terrestrial biodiversity and has a major impact on the climate. For all of these roles, the chemical, physical and/or biological characteristics are essential. Knowing the characteristics and understanding the chemical, physical and biological processes in soil is an important step towards a sustainable use of soil.

Inappropriate practices, growing population pressures and inadequate governance are currently major threats to soil.

Standardization is considered to be an effective tool to implement policy goals. Standardization can deliver analytical methods and procedures to characterize the soil, as well as guidelines for assessing these results. International standardization ensures the comparability of results throughout the world.

2.1.2 Technical aspects / dynamics of the soil system

To characterise the soil system, the following documents are required:

- standard test methods for laboratories examining the chemical/biological and/or physical soil characteristics
- standards for in-situ characterization
- guidances for the evaluation of risk assessment
- standards with definitions regarding soil terminology
- standards on exchanging soil data
- standards on collecting representative soil samples
- standards for toxicological assessment of soils
- standards for ecotoxicological assessment of soils.
- guidances on risk management
- standards on non-intrusive investigations

2.1.3 Economical factors

Soil is a limited natural resource. On a human time-scale it is non-renewable. Despite the essential role that soil plays in the life of people, there is an increase of degradation of soil resources due to inappropriate practices, growing population pressures and inadequate governance over this essential resource. Therefore 'good' soil becomes more and more precious. Restoration of the soil quality (amongst which remediation of contaminated land) is often impossible (e.g. soil loss) and where it still is possible, will most often be very expensive.

Financial resources to develop standards to characterize soil are limited. Standards development should be based on a clear need from the market, in order to make the necessary resources available. In cases where several proposals compete for the same resources, priorities need to be clearly defined.

2.1.4 International dynamics

Soil is a diverse matrix. Many different types of soil exist worldwide. When drafting International standards for the determination of soil characteristics, these differences need to be taken into consideration so that the standards can be widely used.

Checking and protecting soil quality is an international issue. Various International organisations are active in this field, e.g.:

- Food and Agriculture Organization (FAO)
- International Union of Soil Sciences (IUSS)
- Society of Environmental Toxicology and Chemistry (SETAC)
- ISRIC World Soil Information
- International Committee on Contaminated Land (ICCL).

2.1.5 Social aspects

The degree to which environmental soil quality is important to citizens, is strongly related to the economical development of their country. Countries going through a phase of economic development show increased interest in their soil quality.

Worldwide, some 60 000 soil scientists are charged with the responsibility of generating and communicating soil knowledge for the common good. Many events are focussed on increasing the public awareness of soil and its contribution to humanity and the environment. Based on an initiative of the International Union of Soil Sciences in 2002, the 5th of December is now proclaimed as World Soil Day to attract people's attention to the value of soil.

2.1.6 Parties involved

- *Policy makers*

Over the past years the awareness of soil, and good soil quality as an essential asset, has grown amongst policy makers.

- *Government agencies*

Governments worldwide, both national and regional (e.g. state, county, province or city councils), increasingly demand consistent information on their soil quality. This is a strong incentive to the work of this TC. Governments benefit from the work of ISO/TC 190 in three ways:

- 1) They can get their preferred methods adopted as International standards;
- 2) Mutual development of standards by ISO/TC 190 saves development costs for individual governments;
- 3) Governments prefer referring to standards in their legislation rather than specifying technical details in legislation.

As governments are often responsible for several (environmental) fields (e.g. soil and water; agriculture, waste), they benefit from standards that can be used for not only soil but also for relating matrices (see 5.2).

- *(Environmental) consultancies and laboratories*

Both (environmental) consultancies and laboratories are frequent and direct users of standards for the characterization of soil. (Environmental) consultancies often have an overall project responsibility for the assessment of soil. They therefore have to be aware of the (quality of the) applied methods, whereas the laboratories use the developed standards for the handling of samples, analyses protocols and data reporting.

- *Research institutes and Universities*

Soil research experts play an important role in standards development and maintenance. To them the availability of validated methods provides a sound basis for their research work.

- *Construction services*

Construction services are a diverse group of consumers. Firstly, they are in charge of construction sites for which the soil quality should meet the requirements for its future use. Secondly, they are involved in the transport of soil which may or may not be polluted. Finally, they are contractors for soil remediation works.

- *Manufacturers of soil measurement equipment*

Soil standards serve producers of equipment to develop or adapt equipment that meet the requirements given in standards.

2.2 Quantitative Indicators of the Business Environment

No records on financial revenues of individual member states are available. This lack of data prohibits the production of an overview of the total market. Therefore, no reliable indication of the total market's revenue can be given.



The costs of measures taken with regard to the investigation, assessment and abatement of soil pollution can easier be defined than to the financial benefit of taking adequate preventive measures against soil pollution. In addition, financial quantification of the effort made by governments dealing with legislation on environmental soil matters is complex. Moreover, it is clear that soil pollution has an impact on the economy through, for example through loss of the economic value of land. However, the actual financial loss will vary from location to location and will also depend on factors that are not related to soil pollution. In Western-Europe alone, and for soil sanitation only, the market has a multi-billion dollar turnover.

3. BENEFITS EXPECTED FROM THE WORK OF THE ISO/TC

The benefits from the work of ISO/TC 190 are:

- To fulfil the need for standards necessary to assess the environmental quality of soil.
- To provide the technical means (the instruments) for assessing soil characteristics.
- To support harmonisation of methods on the determination of soil quality.
- To support legislation that address soil issues

Since 1985, ISO/TC 190 has published over 170 ISO-standards, some 40 of which have been adopted so far by CEN as EN-ISO standards to promote the use of the ISO standards within Europe.

Standards developed by ISO/TC 190 are used for multiple purposes, e.g.:

- Manufacturers of equipment for the characterization or assessment of soil use the standards to develop widely accepted products;
- Users of the above mentioned equipment use the standards for calibration and guidance. This allows them to meet the agreed quality criteria, thus improving the quality of the data they produce;
- People commissioned to determine the level of a soil's fitness for purpose use the standards to:
 - derive a consistent judgment;
 - assessment of the risks for populations in cases of soil pollution;
 - determine the risks for adverse effects on soil;
 - determine countermeasures to eliminate these adverse effects;
 - etc.
- Governments and legislative bodies prescribe the standards in order to provide technical instructions in relation to legislation and thereby reinforce the quality of decisions based on that legislation;
- Accreditation and certification programmes refer to standards to control quality.

4. REPRESENTATION AND PARTICIPATION IN THE ISO/TC

4.1 Membership

Countries/ISO member bodies that are P and O members of the ISO committee

4.2 Analysis of the participation

ISO/TC 190 has established itself by providing the international community with a large number of standards in the field of soil quality and has contributed significantly to the quality of measurements.

About 30 countries, mostly from Europe and Asia, are P-member of ISO/TC 190. About half of them meet yearly to discuss the progress on the standards under preparation. In addition about 30 countries are O-member to ISO/TC 190. An increase of active memberships is necessary to broaden the support and use of the international standards developed, to develop new standards and to keep the published standards up-to-date. It is envisaged that the advancement of economic development will facilitate involvement of countries not yet actively participating.

Liaisons with a number of international organizations are established in order to promote support for and use of the TC 190 standards and to widen the impact of the work of ISO/TC 190.

5. OBJECTIVES OF THE ISO/TC AND STRATEGIES FOR THEIR ACHIEVEMENT

5.1 *Defined objectives of the ISO/TC*

The scope of ISO/TC 190 is standardization in the field of soil quality.

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ISO/TC 190 has had its focus on soil pollution for a long time. In 2010 the committee has taken steps to also look at the impact of soil quality as part of global topics such as climate change, food-, feed- and energy crop production, spatial pressures/developments and ecosystem services.

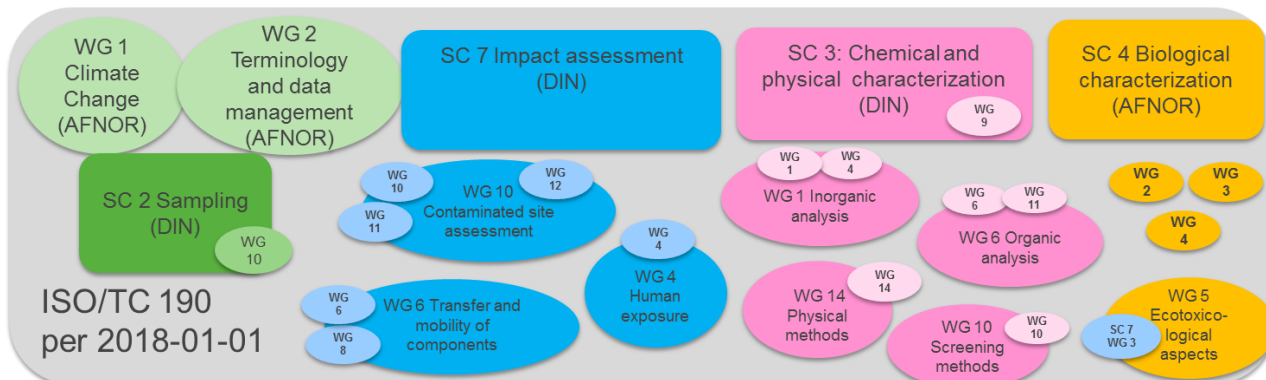
5.2 *Identified strategies to achieve the ISO/TC's defined objectives*

5.2.1 *Working methods*

- National standards of the member bodies are the most important source upon which the standards developed within ISO/TC 190 are based.
- The work is divided into several subcommittees and working groups, in order to effectively execute the work programme.
- The ISO Technical Committee will meet once a year, including all Subcommittees and Working Groups. Meeting location is subject to invitation by one of its members. During the year experts correspond through Livelink and e-mail, and Working Groups might organize intermediate meetings.

5.2.2 ISO/TC subcommittee structure

In 2017, ISO/TC 190 has amended the organizational structure of ISO/TC 190 to do the work as efficient as possible.



For an actual overview of the SCs, WGs as well as the acting Chairmen, convenors and Secretariats in ISO/TC 190, see the [ISO/TC 190 home page](#).

5.2.3 Relation with CEN

ISO/TC 190 has established non-official liaisons with the following related CEN committees:

Organisation	Name	Liaison officer to TC 190
CEN/TC 292	Characterization of waste	M. van Rijn, secr. (NEN)
CEN/TC 308	Management and characterization of sludges	C. Chagué, secr. (AFNOR)
CEN/TC 345	Characterization of soils	F. Lamé, Chair / S. Schulten, secr. (NEN)
CEN/TC 444	Test methods for environmental characterization for of solid matrices of sludge, biowaste and soil	F. Lamé, Chair (NEN)

The growing need for soil standards in Europe led in 2002 to the establishment of CEN/TC 345 'Characterization of Soils'. A close link to ISO/TC 190 was formalised between CEN and ISO to cooperate on the development of soil standards to be used both in Europe and worldwide.

In 2015, CEN/TC 444 'Test methods for environmental characterization for of solid matrices of sludge, biowaste and soil' was established. A huge part of the work programme of CEN/TC 345 was moved to CEN/TC 444 in 2016.

ISO/TC 190 cooperates with CEN/TC 345 and CEN/TC 444 to ensure that there is no duplication of efforts. Cooperation is done using the Vienna Agreement. The cooperation between ISO/TC 190 and CEN has - so far - resulted in the publication of more than 60 EN ISO standards on soil quality.

In order to facilitate the cooperation in the environmental field between ISO/TC 190 and related CEN/TCs, the Technical Management Board has decided upon a request from ISO/TC 190 (TMB resolution 11/2011) that ISO/TC 190 is allowed to widen the scope of individual standards beyond soil and soil material (including excavated sediments), in order to allow the development of horizontal EN-ISO-standards in the environmental field subject to the following conditions:

- Widening of the scope of an individual standard would only be considered when a horizontal EN-ISO-standard is developed within the environmental field;
- Widening of the scope of an individual standard would only be considered when the proposed EN-ISO-standard is the result of the active cooperation with CEN/TC 345 'Characterization of soils' and at least



one or more other CEN/TCs in the environmental field and insofar as the scope of the latter environmental CEN/TC is not covered by any other ISO/TC;

- If involvement of CEN/TCs (other than CEN/TC 345) in the work of ISO/TC 190 implies that the potential standard will be within the scope of any other ISO/TC, the normal procedures of ISO/TC cooperation will apply.

5.2.4 Relation with other ISO/TCs and organizations in liaison

As soil is closely related to other (environmental) matrices, ISO/TC 190 encourages close cooperation with other ISO/TCs. Additionally, liaisons with other organizations have been established, to ensure the exchange of information on developments in both organisations.

Liaison officers are requested to deliver a short written report before every ISO/TC 190 meeting to highlight the matters of interest to ISO/TC 190. Additionally, these officers are also requested to deliver a written report to their liaison organization on the relevant work that is under development in ISO/TC 190. Liaison reports are discussed during the ISO/TC plenary meeting.

Liaisons are important in order to avoid duplication of work and to contribute to the harmonization of standards. Therefore, it is important that liaisons operate satisfactory.

For an actual overview of the liaisons to ISO/TC 190, see the online [ISO/TC 190 home page](#).

6. FACTORS AFFECTING COMPLETION AND IMPLEMENTATION OF THE ISO/TC WORK PROGRAMME

The financial resources allowing experts to actively participate in the development of standards, to organize validation trials and participation in the annual meetings require continuous attention. The funding which allows these experts to take part in standardization activities is subject to market trends. In the current economic situation, it is still difficult for experts to find the necessary financial support to contribute actively.

Due to a high number of European participants in ISO/TC 190, the acceptability to the wider international market of future International Standards may be hampered. An increase of participation from countries in Asia, Africa and the America's is highly welcomed.

7. STRUCTURE, CURRENT PROJECTS AND PUBLICATIONS OF THE ISO/TC

This section gives an overview of the ISO/TC's structure, scope, projects and publications. All of this information is updated regularly and is available on ISO's website, ISO Online.

Information on ISO online

The link below is to the TC's page on ISO's website:

[ISO TC 190 on ISO Online](#)

Click on the tabs and links on this page to find the following information:

- About (Secretariat, Secretary, Chair, Date of creation, Scope, etc.)
- Contact details
- Structure (Subcommittees and working groups)
- Liaisons
- Meetings
- Tools
- Work programme (published standards and standards under development)



Reference information

[*Glossary of terms and abbreviations used in ISO/TC Business Plans*](#)

[*General information on the principles of ISO's technical work*](#)