



ISO/TC 134 "Fertilizers, soil conditioners and beneficial substances"

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Strategic Business Plan ISO/TC134

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BUSINESS PLAN

ISO/TC 134

Fertilizers, soil conditioners and beneficial substances

EXECUTIVE SUMMARY

The scope of ISO/TC 134 fertilizers, soil conditioners and beneficial substances is standardization in the field of fertilizer materials and soil conditioners, that is, materials whose addition is intended to ensure or improve the nourishment of cultivated plants and / or to improve the properties of soils, and the efficient use thereof.

ISO/TC 134 has 28 participating members and 35 observer members which are both developed and developing countries. Notably, some countries that are important participants in production, trade and use of fertilizers, soil conditioners and beneficial substances are not currently represented.

Food production and food security are increasingly a concern as the world population continues to increase. Without significant increases in arable land to sustainably produce food this concern will continue to gain worldwide attention and interest. Consequently fertilizers, soil conditioners and beneficial substances use has, and will continue to increase in order to continue to meet expanding demands. Facilitation of trade, confidence in quality (both nutrient and contaminant related) in fertilizers, soil conditioners and beneficial substances is a key aspect contributing to and expanding food availability and food security.

Today, many products are traded on the basis of technical specifications, and most products traded require proof of compliance with certain technical specifications, contaminant levels and safety regulations before being released onto the global market, upon acceptance by the buyer, or upon entry into another country.

In addition, the role of international test methods and other technical information is very important for accessing the global market and the reliability of test data is a critical factor when making decisions on purchases and usage. To this end, development of consensus terminology, validation, acceptance and use of the most appropriate test methods should be goals of ISO/TC 134.

Therefore, the most important benefits expected from the work of ISO/TC 134 are improving the quality and safety of the products and their access to the global market. Those benefits cannot be realized without the availability of appropriate terminology and test methods for contaminants as well as nutrients found in fertilizers, soil conditioners and beneficial substances.

ISO/TC 134 standards are technical agreements which provide a framework for compatible technology worldwide. These standards will respond to market and regulatory needs in the global market and to scientific and technical development in all countries.

The main objectives and priorities of the technical committee are development of globally relevant international standards, in order to promote and assess fertilizers, soil conditioners and beneficial substances quality and safety as well as facilitate world trade.

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 propose new and relevant areas of work and prioritize among different projects, to identify the benefits expected from the availability of international standards, and to identify and 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 167 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 Publicly 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 also offers 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.

1.3 International standardization and the role of ISO/TC 134

ISO/TC 134 should support the above ISO activities by continually assessing the needs of its stakeholder members and developing relevant standards for fertilizers, soil conditioners and beneficial substances. This support should include: soliciting input from participating and observing countries; prioritizing needs, assessing and enlisting resources needed to carry out work items, proposing and developing necessary terms and methods, thus facilitating effective trade of fertilizers, soil conditioners and beneficial substances. A number of tools are used to assess these needs; including method needs polls and priority rankings by a broad set of stakeholders.

2 BUSINESS ENVIRONMENT OF THE ISO/TC 134

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 134, and they may significantly influence how the relevant standards development processes are conducted and the content of the resulting standards:

The scope of ISO/TC 134 is standardization in the field of fertilizers, soil conditioners and beneficial substances, that is, materials whose addition is intended to ensure or improve the nourishment of cultivated plants and/or to improve the properties of soils.

The fertilizers, soil conditioners and beneficial substances industries are rapidly developing new products. These products need new and innovative methods that adequately characterize the attributes of these products. Technical and regulatory requirements are becoming more strict in order to protect both consumers and the environment. Many products claiming enhanced efficiency have been and are being developed. The efficacy and nutrient release of these products will need to be evaluated by new and innovative methods to accurately evaluate their claims and value. It is expected that changes and innovations developed through the committee are needed and will improve the quality, environmental impact and safety of the products in the global marketplace.

There are notable challenges to the rapid growth and trade of fertilizers, soil conditioners and beneficial substances that will impact priorities and topics to be designated as areas of future work. These include:

- Scrutiny of products for contaminants relating to food safety and protection of the environment
- Environmental impact of fertilizer components on air and water quality
- Influx of new unproven technologies that originate from non-traditional nutrient sources
- Unprecedented fluctuation of pricing and supplies of commodity nutrient sources
- The need to raise productivity and efficiency while minimizing impact to the environment
- Development and promotion of standards based on sound scientific principles/protocols

The categories of relevant stakeholders are industry, government, consumer associations and other interested parties. The concern of the relevant stakeholders is to assess and standardize product quality, safety and assure fair access to the global market.

The ISO/TC 134 will closely cooperate with CEN/TC 223 "soil improvers and growing media", CEN/TC 455 "plant biostimulants", CEN/TC 260 "Fertilizers and liming materials", AOAC International (Association of Official Analytical Chemists) and other fertilizers, soil conditioners and beneficial substances standardization groups.

2.2 Quantitative indicators of the Business Environment

The following list of quantitative indicators describes the business environment in order to provide adequate information to support actions of the ISO/TC 134:

The Food and Agriculture Organization of the United Nations (FAO) has estimated the global fertilizer industry to produce close to 270.000 million tons of fertilizer nutrients (N+P₂O₅+K₂O) in 2022. These are used in every corner of the globe to support agricultural production. There is no substitute for the nutrients absorbed by crops. As a major source of these, fertilizers therefore represent an essential ingredient in the drive towards world food security. While demand continues to increase, production is expected to increase as well, just not at the same pace.

The world estimated supply of ammonia, phosphoric acid and potash, 2016-2022 is shown in the table 1.

Table 1- World estimated supply of ammonia, phosphoric acid and potash, 2016-2022 (thousand tonnes)

Year	2016	2017	2018	2019	2020	2021	2022
Ammonia, as N	153 646	155 253	157 819	161 504	160 492	161 572	163 219
Phosphoric acid, as P ₂ O ₅	46 308	47 564	48 620	49 510	50 520	51 520	52 066
Potash, as K ₂ O	44 177	46 284	49 422	51 373	52 752	53 664	54 197
Total (N+P ₂ O ₅ +K ₂ O)	244 131	249 101	255 861	262 387	263 764	266 756	269 482

[Source: FAO. 2019. World fertilizer trends and outlook to 2022. Rome. Page 3, Table 2]

Fertilizers, soil conditioners and beneficial substances terms, methods and products have developed regionally and are generally not harmonized. Different organizations (AOAC International, CEN and others) have worked, more or less independently, to develop regional standards. ISO/TC 134 has the opportunity to facilitate collaboration among these organizations to align standards, modernize methods, and coordinate unified method development. This cooperation will promote trade, assure worldwide stakeholder buy in, reduce trade disputes and promote development of safe and effective standards by aligning these regional efforts. The standards, if fully adopted would enable the industry to better assure quality and regulatory compliance of the billions of dollars of products sold globally each year.

Note: The global fertilizer market is expected to value at USD 155.8 billion in 2019, and it is expected to register a CAGR of 3.8% during the forecast period (2019-2024).

[Source: APNews, Global Fertilizer Market Growth, Trends and Forecast (2019-2024)]

The following table shows how FAO has forecasted the world capacity for producing ammonia, phosphoric acid and potash until 2022:

Table 2- World capacity for producing ammonia, phosphoric acid and potash,2016-2022 (thousand tonnes)

Year	2016	2017	2018	2019	2020	2021	2022
Ammonia, as N	180 496	184 558	186 974	189 523	187 354	188 908	190 397
Phosphoric acid, as P ₂ O ₅	57 295	60 224	61 464	62 357	62 612	63 552	63 702
Potash, as K ₂ O	54 638	58 455	61 951	62 055	63 467	63 513	64 553
Total (N+P ₂ O ₅ +K ₂ O)	292 429	303 237	310 389	313 935	313 433	315 973	318 652

[Source: FAO. 2019. World fertilizer trends and outlook to 2022. Rome. Page 2, Table 1]

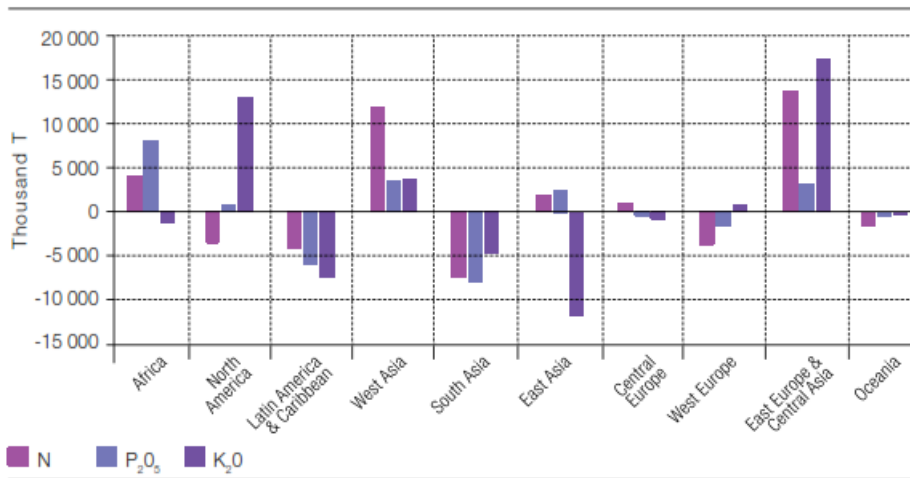


Figure 1- Potential balance of nitrogen, phosphorus and potassium in 2022,by region (thousand tonnes)

[Source: FAO. 2019. World fertilizer trends and outlook to 2022. Rome. Page 9, Figure 6]

The potential balance of nitrogen, phosphorus and potassium in 2022, by the region, is shown in figure 1.

Total number of national adoptions of the ISO committee’s International Standards:

- ISO/TC 134 has been published 30 new International Standards since 2011 bringing the total number of standards to 59 in 2022.
- Currently, ISO/TC 134 has 6 work items under development.

3 BENEFITS EXPECTED FROM THE WORK OF THE ISO/TC 134

Specific benefits expected from the work of ISO/TC 134 are:

- establishing and developing harmonized terminology and best practice methodology appropriate for determining product quality, safety and facilitating trade;
- Identifying and characterizing benefits of nutrients that establish the value of products;
- promoting product quality methods necessary to quantify chemical and physical attributes;
- reducing costs leading to minimizing disputes and facilitating efficient transactions;
- improving health and safety leading to improve customer confidence and product perception;
- Improving market competitiveness and export capability assuring access to harmonized standards acceptable to all fertilizer and soil conditioners;
- access to the global market through development of accessible standards for fertilizer, soil conditioners and beneficial substances;
- assessing characteristics of enhanced efficiency fertilizers as the become increasingly used to mitigate the impact of excess nutrients on the environment;
- assessing characteristics of contaminants found in fertilizers as they become more regulated;

- several methods have been identified by stakeholders as priority methods for development or implementation including: sulfur speciation and analysis, silicon analysis, improved total N analysis and several others;
- development and implementation of international standards in the field of fertilizers, soil conditioners and beneficial substances will eliminate or reduce technical barriers to trade and provide equal access to the global market.

4 REPRESENTATION AND PARTICIPATION IN THE ISO/TC 134

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

4.2 Analysis of the participation

ISO/TC134 has 28 participating members and 35 observer members which are from developed and developing countries. The experts are from industries, governmental organizations, technical sectors and other interested parties. While this participation is widespread, some countries that are important participants in production, trade and use of fertilizers, soil conditioners and beneficial substances are not represented. Efforts must be made to engage such countries as stakeholders to solicit their input and perspective as well as take advantage of their technical expertise. Of specific note is the absence of Argentina and Canada. Considering their major role in production, trade and product use every effort should be made to engage these countries.

5 OBJECTIVES OF THE ISO/TC 134 AND STRATEGIES FOR THEIR ACHIEVEMENT

5.1 Defined objectives of the ISO/TC 134

Based on the considerations above, the ISO/TC 134 proposes the following objectives and strategic directions for its future work:

- *developing or updating globally relevant International Standards for terms associated with the accurate and precise characterization and measurement of nutrients, contaminants and conditioning agents;*
- *conduct global input opportunities to assess stakeholder needs;*
- *improving of quality and safety of fertilizers, soil conditioners and beneficial substances by providing standards and validated methods enabling the accurate detection and quantification of contaminants;*
- *facilitating global trade of fertilizers, soil conditioners and beneficial substances by providing harmonized accessible standards and methodology;*
- *meeting market and stakeholder needs;*
- *global dissemination of technologies and good practices in the field of fertilizers, soil conditioners and beneficial substances .*

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

ISO/TC 134 will use the following strategies to reach the objectives:

- To organize one plenary meeting each year in order to discuss committee activities and progress on the work items within the committee;
- To organize working-group meetings as often as needed, at least one time a year in areas identified by stakeholders or at the direction of ISO as being in need of revision or additional standards;

- To ensure the interested parties involvement, specifically by identifying and inviting representatives from under-represented nations (previously noted) having significant impact on the global fertilizer and soil conditioner markets.

Liaison committees of ISO/TC 134:

- The following committees can access the documents of ISO/TC 134: ISO/TC 24, ISO/TC 47, ISO/TC 69, ISO/TC 275
- ISO/TC 134 can access the documents of the following committees : ISO/TC 23/SC 18, ISO/TC 24, ISO/TC 34/SC 10, ISO/TC 47, ISO/TC 69, ISO/TC 190, ISO/TC 190/SC 3
- The following liaison organizations are: IFA(International Fertilizer Industry Association), IFDC(International Center for Soil Fertility and Agricultural Development), IMPHOS(World Phosphate Institute), FE(Fertilizers Europe), AOAC(Association of Official Analytical Chemists), EC(European Commission), WCO(World Customs Organization), OEDC(Organization for Economic Co-operation and Development), FAO(Food and Agriculture Organization of the United Nations)

6 FACTORS AFFECTING COMPLETION AND IMPLEMENTATION OF THE ISO/TC 134 WORK PROGRAMME

Risk analysis

The risk factors identified for the ISO/TC 134 are:

- inability to involve relevant stakeholders;
- inability to identify resources to complete work items, e.g. ring test participants and reference materials;
- inability to agree on effective standards and terms;
- inability to identify or validate appropriate methodologies for analysis of fertilizers, soil conditioners and beneficial substances;
- responding in a timely manner to emerging topics requiring new or revised standards;
- meeting the target dates for the publishing of International Standards (IS).

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

This section gives an overview of the ISO/TC's structure, scopes of the ISO/TCs and information on existing and planned standardization projects, publication of the ISO/TC 134.

[7.1 Structure of the ISO committee](#)

[7.2 Current projects of the ISO technical committee](#)

[7.3 Publications of the ISO technical committee](#)

Reference information

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

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