

ISO Standards Do Good: A New Perspective on Sustainable Development Goals

Tzvetelin Gueorguiev¹^a and Irina Kostadinova²^b

¹*Faculty of Mechanical and Manufacturing Engineering, University of Ruse “Angel Kanchev”,
8 Studentska Street, Ruse, Bulgaria*

²*Faculty of Business and Management, University of Ruse “Angel Kanchev”, 8 Studentska Street, Ruse, Bulgaria*

Keywords: Sustainable Development Goals, United Nations, International Standards, ISO.

Abstract: The paper presents a new perspective to looking at ISO standards. Standards are usually considered as best practices or state-of-the-art industrial norms. For some, they are a source of vital information, and for others—standards are inhibitors for human creativity and innovation. Regardless of personal opinions and preferences, the greater good should unite humankind in pursuit of sustainability. In 2015, the United Nations (UN) adopted 17 Sustainable Development Goals (SDGs) as part of its 2030 Agenda for Sustainable Development. In 2018, ISO engaged with its contribution to the UN SDGs. This paper focuses on the relationship between SDGs and some of the most popular ISO standards for management systems.

1 INTRODUCTION

The recent years have transformed the way we look at our world. The constant pursuit of increased profits and productivity are now increasingly balanced by a more holistic approach. Ordinary people, organizations and governments worldwide are becoming more conscious about the implications and effects of their activities on a global scale.


Back in 2015, the United Nations (UN) made publicly available its 2030 Agenda. As the 2019 UN Sustainable Development Goals (SDGs) Report put it, ‘the 2030 Agenda has provided a blueprint for shared prosperity in a sustainable world – a world where all people can live productive, vibrant and peaceful lives on a healthy planet’ (UN, 2020).


The UN has established 17 SDGs that range from some basic human needs like ‘zero hunger’ and ‘no poverty’, through ‘quality education’ and ‘decent work and economic growth’ to ‘sustainable cities and communities’ and ‘climate action’ (UN, 2018). Each of the SDGs is made more concrete by specifying targets to be achieved. In addition, the 2019 report examines the trends in the implementation of the SDGs and the how likely it is to achieve these targets by year 2030.

Even though there are some positive developments, there are still many areas which need further improvement and more focused actions. Such areas are the deteriorating natural environment, increasing poverty and hunger, educational inequalities, etc. No single nation can successfully tackle these issues on its own. Instead, an integrated action plan with the support of other international organizations can help solve this complex challenge.

One such organization that creates global consensus and promotes economic growth is the International Organization for Standardization (ISO). With more than 160 national standards bodies as its members and more than 22000 published international standards ISO is a stakeholder that can enhance the visibility of the SDGs.

In March 2018, ISO published a special brochure explaining how it contributes to the UN SDGs (ISO, 2018). This document explains how ISO standards support the three pillars of sustainable development—economic, social and environmental sustainability. Furthermore, the brochure details how many ISO standards contribute to creating a favourable context for achieving the SDGs.

^a <https://orcid.org/0000-0002-2023-6032>

^b <https://orcid.org/0000-0001-8845-7598>

2 ISO STANDARDS AND SUSTAINABLE DEVELOPMENT GOALS

In September 2018 ISO created a specific webpage dedicated to ISO standards that are directly applicable to each of the SDGs (ISO, 2018).

The analysis is based on monitoring relevant ISO publications and summarizing the trends in the development of SDG related standards. The source information is available on the official web page of the International Organization for Standardization. In order to look up a specific ISO standard, one must use the embedded search engine by typing the standard's reference number. Along with general information such as the latest edition of the standard, the date when it was published and the Technical Committee (TC) which has developed it, the specific results page also contains a listing of icons with hyperlinks to the applicable SDGs. The stakeholders and contributors involved in the TCs of ISO are coming from the following groups: standardizers, industry representatives, academia, auditors and accreditation bodies, lead implementers, etc. For example, Fraga et al. (Fraga, 2019) discusses the work of ISO/TC 184 in order to assure interoperability of international standards. It is necessary to note that even standards that are still under development (at stages like Committee draft- CD, Draft International Standard-DIS, or Final Draft International Standard- FDIS) are considered in respect to the UN SDGs.

Normally one standard relates to one or more of the SDGs. Figure 1 presents the latest statistics for the correspondence between the SDGs and ISO standards. 5 of the 17 SDGs account for nearly 80% of the 28040 direct citations in ISO standards.

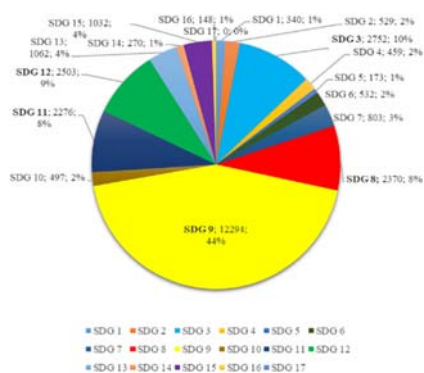


Figure 1: SDGs in ISO standards.

The Top 5 SDGs in ISO standards are:

- SDG 9 Industry, innovation and infrastructure (12294 standards, i.e. 43,8%) which is aimed at

building resilient infrastructure, promoting inclusive and sustainable industrialization and fostering innovation;

- SDG 3 Good health and well-being (2752 standards, i.e. 9,8%) which plans for ensuring healthy lives and promoting well-being for all at all ages;
- SDG 12 Responsible consumption and production (2503 standards, i.e. 8,9%) whose purpose is to ensure sustainable consumption and production patterns;
- SDG 8 Decent work and economic growth (2370 standards, i.e. 8,5%) promoting sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all;
- SDG 11 Sustainable cities and communities (2276 standards, i.e. 8,1%) designed to make cities and human settlements inclusive, safe, resilient and sustainable.

The focus of this paper is to analyse the most popular series of standards for management systems and their contribution to the latest Sustainable Development Goals of the United Nations. The proposed method for achieving this purpose is to establish the most widely used ISO standards and to highlight their relevance to the UN SDGs.

Yearly, the International Organization for Standardization produces ‘The ISO Survey’ of the 12 most popular management systems standards (ISO, 2020). The most recent edition of this survey was published in September 2020 and covers the period from 1 January 2019 till 31 December 2019. The overall conclusion based on the explanatory note of the survey is that ‘The overall results show an increase, from 2018, of 3.8% of the total number of valid certificates.’. Table 1 presents the Top 6 of the 12 Management Systems Standards (MSS) included in the ISO Survey.

Table 1: Total number of sites for each management system standard.

Management System Standard	Total Number of Sites
ISO 9001:2015 Quality	1 217 972
ISO 14001:2015 Environment	487 950
ISO/IEC 27001:2013 Information security	68 930
ISO 45001:2018 Occupational health and safety	62 889
ISO 50001:2018 Energy management	42 215
ISO 22000:2018 Food safety management	39 651

It can be seen that ISO 9001:2015 ‘Quality management systems — Requirements’ is by far the most widespread MSS with 61.7% of all certificates. ISO 14001:2015 ‘Environmental management systems — Requirements with guidance for use’ ranks second with 24.7%, and the other standard frequently used to create an integrated management systems- ISO 45001:2018 ‘Occupational health and safety management systems — Requirements with guidance for use’ comes fourth with 3.2%. The main reason it falls behind ISO/IEC 27001:2013 ‘Information technology — Security techniques — Information security management systems — Requirements’ currently ranked third with 3.5%, is the fact that ISO 45001:2018 is in its first edition. It builds on the best practice of its predecessor BS OHSAS 18001:2007 ‘Occupational health and safety management systems. Requirements’. The top half of the MSS ranking is completed by ISO 50001:2018 Energy management systems — Requirements with guidance for use’ with 2.1%, and ISO 22000:2018 ‘Food safety management systems — Requirements for any organization in the food chain’ with 2% of the total number of sites having ISO certification. The MSS not included in Table 1 account for less than 3 % of the total number of certificates.

2.1 Quality Management Systems

The ISO 9000 series of standards are in existence since 1987. For more than 30 years these standards have shaped generations in the way they approach management. Strictly considered, the ISO 9000 series currently includes:

- ISO 9000:2015 Quality management systems — Fundamentals and vocabulary;
- ISO 9001:2015 Quality management systems — Requirements;
- ISO/TS 9002:2016 Quality management systems — Guidelines for the application of ISO 9001:2015;
- ISO 9004:2018 Quality management — Quality of an organization — Guidance to achieve sustained success.

The chronological development of the ISO 9000 series is closely followed by the guidelines for auditing management systems set out in ISO 19011.

In order to reap the complete benefits of quality management systems organizations are supported by a set of 15 additional quality management standards (Fig.2). They relate to:

- Customer satisfaction- ISO 10001, ISO 10002, ISO 10003, ISO 10004, ISO 10008;
- Quality plans- ISO 10005;

- Quality management in projects- ISO 10006;
- Quality Tools and their application- ISO 10009;
- Measurement systems- ISO 10012;
- Documented information- ISO 10013;
- Realizing financial and economic benefits- ISO 10014;
- Competence management and people development- ISO 10015;
- Statistical techniques for ISO 9001:2015- ISO 10017;
- People engagement- ISO 10018;
- Selection of quality management system consultants and use of their services- ISO 10019.



Figure 2: SDGs in ISO 9000 series of standards for quality management.

Similar tables have been developed also for the other series of ISO management systems standards.

Quite expectedly, the main standard in the ISO 9000 series- ISO 9001:2015 covers the largest number of UN Sustainable Development Goals. These include: SDG 1, SDG 9, SDG 12 and SDG 14. For the remainder of the quality management standards, SDG 9 ‘Industry, innovation and infrastructure’ dominates. It is closely followed by SDG 8 ‘Decent work and economic growth’ and SDG 10 ‘Reduced inequalities’.

2.2 Environment Management Systems

This second most widespread set of MSS is the ISO 14000 series. The core standard ISO 14001:2015 ‘Environmental management systems — Requirements with guidance for use’ relates to 12 of the 17 UN SDGs with the exception of SDG 5, SDG 10, SDG 11, SDG 16 and SDG 17.

As for the remaining 9 international standards for environmental management systems, the most frequently cited SDG is SDG 13 ‘Climate Action’ (5 standards). It is followed by SDG 11 ‘Sustainable cities and communities’ (2 standards), and SDG 12 (ISO 14053:2021) and SDG 14 (ISO/AWI 14002-2).

2.3 Occupational Health and Safety Management Systems

The main standard in this series is ISO 45001:2018 'Occupational health and safety management systems — Requirements with guidance'. It supports 7 SDGs: SDG3, SDG 5, SDG 8, SDG 9, SDG 10, SDG 11 and SDG 16. The ISO 45000 series also includes:

- ISO 45003:2021 'Occupational health and safety management — Psychological health and safety at work — Guidelines for managing psychosocial risks'- covering identical SDGs as ISO 45001;
- ISO/PAS 45005:2020 'Occupational health and safety management — General guidelines for safe working during the COVID-19 pandemic'.

ISO/PAS 45005 was developed and published in record-breaking time. The project for this standard was approved on 15 September 2020, it became a draft international standard on 2 December 2020, and on 7 December- a final draft international standard. Only 3 months after the initiation of the standard's lifecycle it was officially published on 15 December 2020.

Without any exaggeration, the urgency of developing a guideline against the COVID-19 pandemic, turned the UN SDGs and Agenda 2030 into reality. For comparison, ISO 9001:2015 took nearly 3 years (from 5 October 2012 to 22 September 2015) to complete the same steps.

Two additional standards that contribute to the UN SDGs are in preparation by ISO/TC 283 Occupational health and safety management:

- ISO/CD 45002 'Occupational health and safety management — General guidelines for the implementation of ISO 45001:2018'- SDG 3, SDG 5, SDG 8 and SDG 10;
- ISO/AWI 45004 'Occupational health and safety management — Guidelines on performance evaluation'- SDG 3 and SDG 8.

2.4 Energy Management Systems

The ISO 50000 series is based on ISO 50001:2018 'Energy management systems — Requirements with guidance for use'. The main focus is on: SDG 7 'Affordable and clean energy', SDG 11 'Sustainable cities and communities', SDG 12 'Responsible consumption and production', and SDG 13 'Climate Action'.

12 additional international standards for energy management systems support ISO 50001 and its set of SDGs. 8 of them are active, and 4 are still under development.

The richest palette of SDGs is in ISO/AWI 50010 'Energy management and energy savings - Guidance for zero net energy in operation'. It expands the contribution of ISO 50001 with SDG 1 'No poverty', SDG 8 and SDG 9 and is well presented in the work of Dimitrov (Dimitrov, Venelinova, 2019).

2.5 Food Safety Management Systems

The ISO 22000 series is said to support not only the UN SDGs but also the EU Strategy 'Farm to Fork' which is at the heart of the European Green Deal (EU, 2020).

Three SDGs are in the spotlight of ISO 22000:2018 'Food safety management systems — Requirements for any organization in the food chain' and its 10 supporting standards:

- SDG 2 'Zero hunger';
- SDG 3 'Good health and well-being';
- SDG 12 'Responsible consumption and production'.

2.6 Other Management Systems

It may seem surprising but the ISO/IEC series of standards for information security which rank third in the ISO survey are not well aligned with the UN SDGs. The exception is the recently published ISO/IEC TS 27006-2:2021 'Requirements for bodies providing audit and certification of information security management systems — Part 2: Privacy information management systems'. It is considered a contributor to SDG 9, SDG 12 and SDG 16. This instils optimism that future standards and new revisions of current standards for information security will take UN SDGs into consideration.

ISO 13485:2016 'Medical devices — Quality management systems — Requirements for regulatory purposes' covers two important SDGs: SDG 3 'Good health and well-being' and SDG 10 'Reduced inequalities'.

Even though ISO 26000:2010 'Guidance on social responsibility' is not a management system standard and is not intended for certification purposes since it does not contain requirements, this standard is an example for SDG contribution. 16 of the 17 UN SDGs are covered with the only exception of SDG 17 'Partnership for the goals'.

This 'gap', also seen in Figure 1, has an explanation. This is the way that the International Organization for Standardization justifies the misalignment: 'At ISO, we recognize the importance of global partnerships because the whole ISO system depends on it. An ISO International Standard is

developed with the collaboration and consensus of a wide range of stakeholders from all corners of the Earth, including representatives from government, industry and standardization bodies.’

The UN Agenda 2030 is SMART- specific, measurable, attainable, relevant and timely. In the words of the innovation management consultant Peter Merrill ‘Achieving the SDGs by 2030 has the potential to generate peace and shared prosperity on a healthy planet, but they require radical solutions. The SDGs are interconnected. There are 17 goals, 169 targets and 231 indicators to measure the SDGs.’ (Merrill, 2020).

3 CONCLUSIONS

The UN SDGs and their targets provide a roadmap to improve the overall wellbeing on a global scale.

The ISO standards, and more specifically the standards for management systems, support the achievement of the 17 UN SDGs.

By following the requirements and guidelines of ISO management system standards, organizations can enhance their individual performance, and at the same time- contribute to achieving a greater good for the entire world.

REFERENCES

- Dimitrov, M., Venelinova, N. (Dimitrov, Venelinova, 2019). *Smart, Secure and Safe Energy Management Approach – An Education Framework Improving the Competence Grid of the Professionals in the Energy Sector*. 25th International conference Knowledge-based organization, vol. XXV, No 1
- European Union (EU, 2020). *Farm to Fork Strategy. For a fair, healthy and environmentally-friendly food system*. https://ec.europa.eu/food/system/files/2020-05/f2f_action-plan_2020_strategy-info_en.pdf (accessed May 31, 2021).
- Fraga, A., Vegetti, M. and Leone, H. (Fraga, 2019) *Semantic Interoperability among Industrial Product Data Standards using an Ontology Network*. In Proceedings of the 20th International Conference on Enterprise Information Systems (ICEIS 2018), pages 328-335. DOI: 10.5220/0006783303280335. <https://www.scitepress.org/Papers/2018/67833/67833.pdf> (accessed July 31, 2021).
- International Organization for Standardization (ISO, 2018). *Contributing to the UN Sustainable Development Goals with ISO Standards*. <https://www.iso.org/files/live/sites/isoorg/files/store/en/PUB100429.pdf> (accessed May 31, 2021).
- International Organization for Standardization (ISO, 2018). *How ISO Standards Help Meet the SDGs*. <https://www.iso.org/sdgs.html> (accessed May 31, 2021).
- International Organization for Standardization (ISO, 2020). *The ISO Survey 2020*. <https://www.iso.org/the-iso-survey.html> (accessed May 31, 2021).
- Merrill, P. (Merrill, 2020) *Within Reach - Innovation management needed to achieve U.N.'s Sustainable Development Goals*. Quality Progress Magazine, December 2020, pp. 67-69.
- United Nations. (UN, 2020). *The Sustainable Development Goals Report*. <https://unstats.un.org/sdgs/report/2020/The-Sustainable-Development-Goals-Report-2020.pdf> (accessed May 31, 2021).
- United Nations. (UN, 2018). *17 Goals to Transform Our World*. (2018). <https://www.un.org/sustainabledevelopment/> (accessed May 31, 2021).