
Will AI help with sustainability?

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Is AI's impact on sustainability only positive? How can new technological solutions be used at the state and business levels? What opportunities and threats are posed by the technological progress?

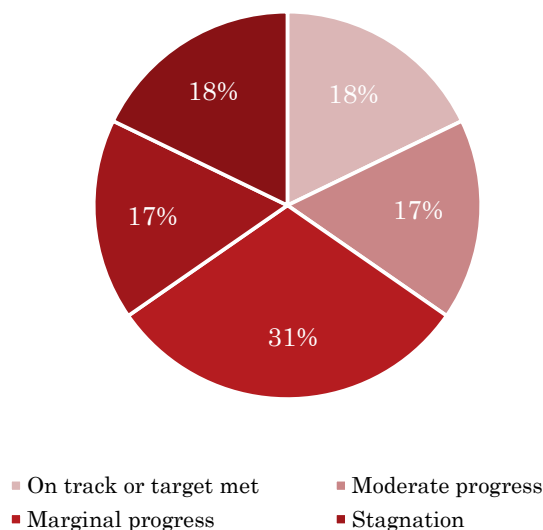
AI and the Sustainable Development Goals

Sustainability efforts across the world are based on the UN Sustainable Development Goals. These were adopted by the organisation's 193 member states in 2015 and included in the "2030 Agenda for Sustainable Development". There are 17 of these goals, with 169 more specific tasks assigned to them. The goals include, among others, combating poverty, hunger and inequality worldwide, improving quality of life and health, education, clean energy, gender equality, responsible consumption and production, climate change. The Sustainable Development Goals are the basis for international regulations covering both states and companies that aim to contribute to their implementation. These regulations include the EU Corporate Sustainability Reporting Directive (CSRD), which makes sustainability reporting mandatory for companies, and the global standards developed by the International Sustainability Standards Board (ISSB) in the form of IFRS S1 and IFRS S2.

The Sustainable Development Goals were planned to be achieved by 2030. However, five years before this deadline (2025), only 35 per cent of the tasks show adequate progress (18 per cent are on track and 17 per cent are making moderate progress). 48 per cent of the tasks show insufficient progress (31 per cent are making only marginal progress and 17 per cent are making no progress at all). As many as 18 per cent of the tasks show a regression from the 2015 level. Will artificial intelligence – used in nearly 400 sustainable development projects run by the UN system¹ – accelerate the achievement of these goals? The answer is not so obvious.

¹ International Telecommunication Union, *AI for Good. Impact Report*, 2024 p. viii.

Overall progress across targets based on 2015-2025
global aggregate data



Source: International Telecommunication Union, AI for Good. Impact Report, 2024

AI can assist in the fight against hunger (goal two) and responsible consumption and production (goal twelve) by, among other things, increasing agricultural productivity, helping to combat food waste and optimising the supply chain². Improved patient diagnosis and research processes for new medicines can help to reduce the cost of various treatments and make them more accessible, thereby improving health and prolonging people's lives (goal three)³. Artificial intelligence today appears to be an indispensable tool for improving innovation, industrial development and infrastructure (goal nine). All of these technological solutions are effective, but they are also costly – so there is a risk that rather than levelling the playing field and living standards across the world, they may only exacerbate inequalities. Thanks to the latest technologies, wealthy countries can grow even faster than before, leaving developing countries behind.

There are also paradoxical areas within the Sustainable Development Goals, where artificial intelligence can help on the one hand and do harm on the other. The use of technology to improve access to clean water (goal six) through better water management, agricultural improvements, resource monitoring in systems goes hand in hand with the use of water to cool servers and data centres⁴. The case is

² Ibid., p. 32.

³ Ibid., p. 33.

⁴ Ibid., p. 37.

similar with ensuring access to clean energy (goal seven) – AI can help optimise the use of renewable energy and allow for the development of its production, but also needs this energy itself to operate⁵. Another example of such a paradox is the use of AI to achieve economic growth and decent work (goal eight) – smart systems can assist in the development of workers and increase their productivity, while at the same time leading to the replacement of these or other workers by AI-based tools⁶.

Therefore, artificial intelligence has the potential to accelerate and support the achievement of the Sustainable Development Goals. However, it must be used with prudence and in an ethical manner, always keeping the bigger picture in mind – short-term benefits must not outweigh long-term negative impacts⁷, and gains in one area or social group must not be associated with losses in other areas. Whether AI will serve society also depends on synergies between the activities of administration, business and the third sector, as well as appropriate education and transparency.

AI and ESG. Business strategy implementation

Companies have been implementing various sustainability strategies and projects in their operations for a long time. Nowadays, not only because of international regulations making it mandatory to report this type of activity, but also because of customer expectations, this type of initiative has become a regular feature of many companies' operations. Artificial intelligence can be used both to conduct ESG projects and to fulfil sustainability reporting obligations. The development of smart systems in this matter is yet to come – currently the number of AI tools used in ESG is small and their capabilities are limited⁸.

Applying AI in the ESG area saves time, reduces costs and increases profits. It particularly serves to improve operational efficiency and build relationships with key stakeholders (e.g. investors)⁹. It can optimise business processes and, on the basis of the data collected, propose solutions that can help companies achieve the goals set out in their strategies¹⁰; it also assists management in making better decisions based on more qualitative data¹¹.

⁵ Ibid., p. 38.

⁶ Ibid., p. 39.

⁷ Ibid., p. 49.

⁸ Polskie Stowarzyszenie ESG, *Sztuczna inteligencja a ESG: Wyzwania przyszłości*, 2024, p.7.

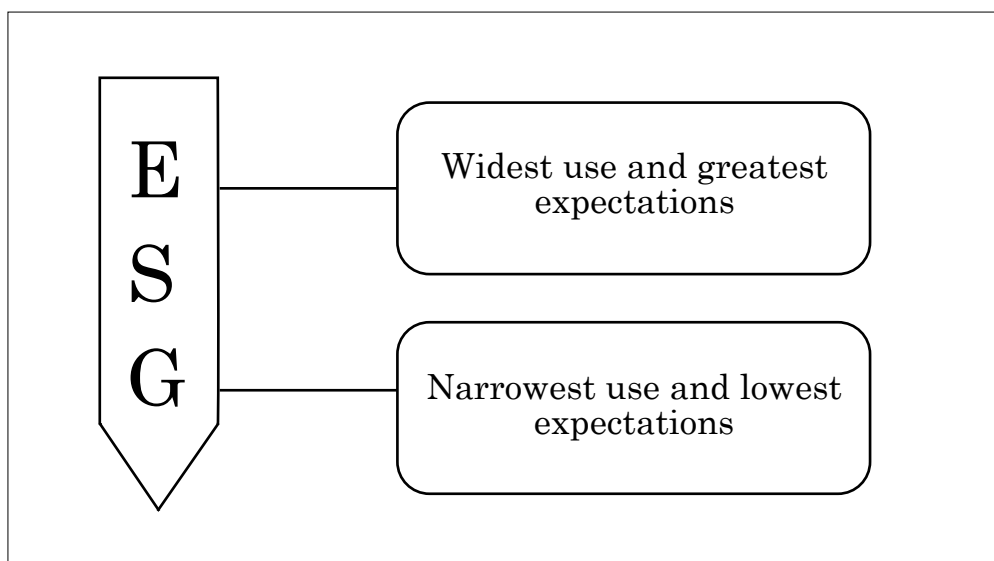
⁹ SAP Polska *Biznes napędzany cyfrowo – czy przez ludzi? AI, ESG i fundusze unijne z perspektywy polskich menadżerów*, 2024, p. 33.

¹⁰ Polskie Stowarzyszenie ESG..., p. 9.

¹¹ Yuping Xiao, Li Xiao, *The impact of artificial intelligence driven ESG performance on sustainable development of central state-owned enterprises listed companies*, Scientific reports, nature.com, p. 13.

The Polish ESG Association report “Artificial Intelligence and ESG: Challenges of the Future” (2024) allows one to conclude that the greatest hopes are raised by the use of AI in the area of the environment, while the least – in the area of governance. The attitude of companies can therefore be presented by the following diagram¹². Of course, the use of AI itself to achieve better ESG indicators looks different in different industries – e.g. in energy, it is most useful for optimising energy consumption and reducing carbon emissions (environment), and in financial institutions mainly for risk management and monitoring compliance issues (governance)¹³.

Use of AI in ESG among companies – expectations and forecasts



Source: Compiled by the author based on report by Polish ESG Association „Sztuczna inteligencja a ESG: Wyzwania przyszłości” (2024).

¹² Polskie Stowarzyszenie ESG..., pp. 7-14.

¹³ Yuping Xiao, Li Xiao..., p. 16..

In the area of the environment (E), AI is mainly used for energy management – forecasting consumption and optimising it for both economy and environmental impact, adapting production processes to the availability of green energy (measuring sun exposure and wind speed). The effects include rational resource management, reduced carbon emissions, achieving energy efficiency, reduced energy consumption, optimised water use¹⁴. The environmental benefits are therefore followed also by economic benefits. An example is Alaska Airlines’ use of algorithms to optimise air routes (AI analyses weather models, wind data, turbulence zones and air traffic to keep fuel consumption as low as possible)¹⁵. Artificial intelligence can also be used for implementing a circular economy within an organisation – algorithms can track products throughout their life cycle and facilitate their recycling and reuse¹⁶. Furthermore, they can significantly reduce waste – the US Walmart uses AI to analyse its sales data, so it is able to predict demand and optimise inventories¹⁷.

When it comes to social (S) issues in an organisation, AI can collect and analyse human capital data, e.g. in terms of gender quotas or staff turnover. Examples of projects include development path assistants for workers¹⁸ and smart worker health monitoring systems (not only in the area of so-called wellbeing, but also enabling e.g. the reduction of workplace injuries)¹⁹. AI can also provide knowledge and inspiration to HR project managers on valuable social projects of other companies and allow in the design of similar or completely new solutions.

AI is most difficult to apply in the area of governance (G) because here, unlike the environment and social areas (where numbers and data are key), the qualitative aspect prevails over the quantitative. Admittedly, artificial intelligence could help e.g. in establishing internal company regulations (in terms of compliance or anti-corruption policies), but these regulations could not necessarily be in line with the existing standards. A knowledgeable worker would have to review and check them anyway to reduce the risk of hallucinations²⁰. Here, it is worth citing the case of *Mata vs. Avianca, Inc.* in federal court in New York, where lawyers lodged a pleading based on rulings “made up” by ChatGPT and were sanctioned by the court for doing so. The pleading contained at least six non-existent cases with fictitious citations and excerpts of reasoning²¹. There were several more similar cases.

¹⁴ Ibid., p. 13.

¹⁵ SWPS Innowacje, *Digital Poland, Zarządzanie innowacją. Tech ethics w działaniach ESG*, 2024 p. 94.

¹⁶ Ibid., p. 76.

¹⁷ Ibid., p. 95.

¹⁸ Polskie Stowarzyszenie ESG..., p. 11.

¹⁹ Yuping Xiao, Li Xiao..., p. 13.

²⁰ Polskie Stowarzyszenie ESG..., p. 13.

²¹ Molly Bohannon, *Lawyer Used ChatGPT In Court–And Cited Fake Cases. A Judge Is Considering Sanctions*, 8 June 2023, forbes.com. <https://www.forbes.com/sites/mollybohannon/2023/06/08/lawyer-used-chatgpt-in-court-and-cited-fake-cases-a-judge-is-considering-sanctions/>.

However, AI-based models for risk forecasting and management can be introduced in the governance area and internal audit can be automated²².

AI and ESG. Reporting

83 per cent of managers declare that their companies have either already invested in AI or intend to do so in the near future²³, while in the area of ESG reporting, 71 per cent of companies have implemented or are implementing it²⁴. These companies declare that they are most willing to invest in such tools when they are flexible and customisable. The scalability of the tools and the possibility to customise them definitely facilitate the implementation of ESG in a company²⁵.

In ESG reporting, AI can help in two areas:

- a) in the data collection process related to a report;
- b) in the preparation of the report itself²⁶.

Smart tools can be used to significantly improve processes by collecting data from different sources, and detecting gaps, errors and anomalies in data sets²⁷. In ESG reporting, especially in large companies, data from different sources (both at the level of different departments of the organisation itself, its subsidiaries and suppliers) is often an issue. AI can be used for verifying this data and make it consistent – not only at the level of the required data points, but also in terms of its format²⁸.

Artificial intelligence is particularly helpful in supply chain monitoring – enabling real-time data tracking and automatic calculation of the carbon footprint at product level. The use of such tools also reduces the administrative burden placed on suppliers, many of whom may be small and medium-sized enterprises and who are required by large companies to provide the data required by the regulations – reporting can then take place with little involvement from the workers of the company concerned²⁹.

²² Yuping Xiao, Li Xiao..., p. 13.

²³ SAP Polska..., 2024, p. 10.

²⁴ Ibid., p. 35.

²⁵ SAP Polska..., p. 34.

²⁶ Polskie Stowarzyszenie ESG..., p. 8.

²⁷ Sacha Bazin, Mike Hayes, *How AI can transform sustainability reporting*, *World Economic Forum*, 26 August 2025, <https://www.weforum.org/stories/2025/09/harnessing-ai-for-sustainability-reporting-path-forward/>.

²⁸ EcoActive, *The AI Shift in ESG Reporting: 6 Trends Sustainability Teams Can't Ignore*, 15 July 2025, <https://ecoactivetech.com/ai-esg-reporting-trends-2025/>.

²⁹ Sacha Bazin, Mike Hayes, *op. cit.*

Individuals and entire teams can save a lot of time with AI tools. Once the data has been collected, AI tools can help to assess its relevance, which can be extremely helpful, as it is this aspect that often causes the greatest difficulty for those preparing reports. Smart systems can also “tailor-make” sustainability reports to meet specific regulatory requirements, standards and even be adapted to the needs of different audiences³⁰. AI is also useful in the benchmarking process – by scanning publicly available reports from other companies, it can identify relevant issues and how they are disclosed and structured, which can help align reports with industry standards and norms³¹.

Of course, with the benefits also come risks. As implementation scales up, automation can compound errors and data³², and the sheer quantity of data does not always automatically translate into better quality or greater reliability³³. AI assistants can draw conclusions based on inaccurate and incomplete data, hallucinate by filling in these gaps, and even misinterpret correct and already human-verified data (e.g. by using the wrong context). Artificial intelligence may also fail to distinguish between a company’s aspirational goals and the actions actually taken – instead of creating a report based on data, it may create a superior marketing product and thus greenwashing.

Therefore, the information provided by AI cannot be relied on uncritically, and proper human oversight and critical evaluation of this data is necessary here. This is particularly important in terms of the attestation of sustainability reports. Professionals preparing the reports should be able to justify the results and the process of obtaining them – it is not enough to enter the data into the AI as if it were a “black box” and extract the result. Attestation not only allows additional verification of the information contained in a report, but is also for this reason a tool for minimising the risk of misleading investors and other stakeholders³⁴, who can also use AI to summarise, analyse and evaluate reports.

Conclusion

The implementation of AI in sustainability activities at both the state and corporate level has a number of benefits, but also carries some risks. AI can serve to achieve the Sustainable Development Goals worldwide, strengthening innovation, efficiency and productivity, but it should also raise questions about ethics and

³⁰ Ibid.

³¹ Eco Active, *op. cit.*

³² Sacha Bazin, Mike Hayes, *op. cit.*

³³ Ibid.

³⁴ Ibid.

environmental consequences. New solutions do not exist in a vacuum – the human factor is extremely important, as it is responsibility always rests on human.

In ESG and sustainability reporting projects, the benefits of AI include time savings, automation of transforming data into reports, reduction of human error, improvement in data consistency and adaptation of reports to different requirements. However, the introduction of new technological solutions carries new risks in the area of cybersecurity and operational risk³⁵, hence it is crucial to adequately secure and protect data in all three dimensions of ESG reporting – not only sensitive personal data, but also company business data.

What might the (near) future hold? Artificial intelligence will not replace sustainability professionals, but those able to use it effectively and responsibly will have a distinct advantage. The key to success will be to combine the computing power of artificial intelligence with human judgement, transparency and the involvement of the right people and actors.

³⁵ SWPS Innowacje, p. 67.