Digitalization and Innovation in Achieving SDGs – Impacts on Legislation and Practice

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Abstract The 2030 Agenda for Sustainable Development builds upon the Millennium Development Goals while at the same time reaffirming the conclusions of the leading instruments in the field of human rights and international law. The 17 integrated and indivisible sustainable development goals (SDGs) require innovation through digitalization and legal activities. Digitalization and new technologies are crucial for SDG 8, 9, and 16. SDG 16: Peace, justice, and strong institutions directly focus on law. While SDG 16 does not directly mention it, digitalization is essential in achieving its specific targets. Examples include concepts of e-government (including data protection and public access to information), e-commerce, equal access to dispute resolution mechanisms in cyberspace, and enforcement of non-discriminatory laws for sustainable development. The right to a healthy and sustainable environment encompasses economic, social, and environmental aspects that SDGs capture. To achieve these goals, the 2030 Agenda relies on international law instruments. The right to a healthy and sustainable environment is developing towards an internationally recognized human right. As environmental goals do not recognize national borders, international law plays a key role. International environmental law should facilitate a broader application of existing clean technologies through the transfer of technology and examine the development of new technologies as to its compatibility with a sustainable environment. Moreover, the human right to share in scientific advancement and enjoy its benefits embodies equal access to technology. The legal enforcement of sustainable goals in the private and governmental sectors remains one of the main concerns of climate change.

1. Introduction

The 2030 Agenda is a comprehensive framework that builds upon the Millennium Development Goals but is far more ambitious. 2030 Agenda embeds an interdisciplinary approach to achieving the SDGs and recognizes the private sector as a driving force for innovation and a leader towards change and government regulation. Digitalization and new technologies are crucial for SDG 8, 9, and 16. SDG 16: Peace, justice, and strong institutions. The 2030 Agenda still places voluntarism as the primary method to achieve SDGs. The voices for more regulation of digitalization are getting louder to guarantee innovation through (intellectual) property rights and e-commerce regulation, address the challenging rise of cybercrime, lack of human communication, violation of the human right to privacy, and ethical concerns. At the same time, the right to a sustainable and healthy environment develops towards an internationally recognized human right, with digitalization as an integral part. The paper firstly analyzes the 2030 Agenda and the relationship between digitalization and sustainability. The focus shifts towards the regulation of sustainability and digitalization and its impacts on the legal profession. The human rights discussion embodies the dilemma between property rights, the right to privacy and digitalization contained in the right to be heard and the right to a sustainable and healthy environment.
2. Sustainable Development prior to the 2030 Agenda

Sustainable development has roots in early treaties dating back to the nineteenth century (Schrijver N, 2019). Nevertheless, the concept fully emerged on the international scene through the UN’s work, dominated primarily by soft-law instruments adopted over the last five decades. UN’s work before adopting the 2030 Agenda falls into three phases. First covers the period from 1970 to 1992, with key milestones being the Stockholm Conference in 1972, the establishment of the UN Environment Program, and Our Common Future Report in 1987. The adoption of Agenda 21 in 1992 marked the second phase when it offered a framework for global cooperation and national guidelines. The third phase covers 1992 to 1994, with several important milestones, such as notably Oslo Symposium in 1994, Johannesburg World Summit in 2002, and the Rio Declaration in 2012.

UN efforts in sustainable development began in 1972 when the first Conference on the Human Environment in Sweden (the Stockholm Conference). The Stockholm Conference considered the need for a common outlook and principles to guide global society in preserving the human environment. Stockholm Conference was a turning point in the development of actions to protect the environment while simultaneously ensuring economic development for the benefit of people. The States for the first time agreed to a commitment to protect the environment within their territories and globally (Falkner R, 2021). The Conference Report outlined 26 environmental, social, and economic development principles to maintain the balance with nature, ensure appropriate boundaries to human activity to reduce pollution, overuse of natural resources, and prevent irreversible damage to the ecosystem. The Conference Report further outlined a robust set of recommendations for States to implement on an international and national level and for the UN to coordinate, monitor, and implement.

In 1983, the UN General Assembly adopted Resolution 38/16 establishing a World Commission on Environment and Development as a special commission to produce a report on the environment and global issues to 2000 and beyond. Our Common Future Report marked the second important milestone in the UN’s efforts toward sustainable development (Our common future, 1987).

The next milestone in the UN efforts was adopting Agenda 21 to offer a framework for global cooperation among states and adopting national guidelines. Agenda 21 described the social and economic dimensions to achieve sustainability, the framework for conservation and management of resources for development in balance with the environment, framework for strengthening the role of influential groups. The latter included women, children and youth, non-governmental organizations, workers and trade unions, business and industry, and the scientific community.

In the Rio Declaration Environment and Development adopted in 2012, Member States acknowledged that the human-centric approach to sustainable development (Principle 1, Rio Declaration). Principle 3 of the Rio Declaration places the right to development as vital in meeting development and environmental needs of the present and future generations in an equitable manner (Principle 3, Rio Declaration). The environment protection is integral part of development (Principle 4, Rio Declaration), with the states having a sovereign right to exploit their resources in a way that it is not damaging to the environment beyond their territories (Principle 2, Rio Declaration). Cooperation is essential in this process (Principles 5,6, 9 Rio Declaration), with a particular emphasis on exchange of scientific and technological knowledge, supporting development and transfer of technologies, including new and innovative technologies (Principle 9, Rio Declaration, emphasis added).

Three years after the Rio Declaration, the UN adopted the 2030 Agenda that aimed to balance environmental, economic and social aspects of sustainable development.
3. 2030 Agenda and SDGs

Adopted in 2015, the 2030 Agenda builds upon the Millennium Development Goals while at the same time reaffirming the conclusions of the leading instruments in the field of human rights and international law. The 2030 Agenda is a comprehensive framework that builds upon the previous work of the UN while at the same time framing the relevant issues as 17 Sustainable Development Goals (SDGs), accompanied with 169 specific targets. Compared to previous UN instruments in the field, the 2030 Agenda is more ambitious. It sets out a robust network of transformative goals and targets universal for the developed and developing countries. 2030 Agenda embeds an interdisciplinary approach to achieving the SDGs. To achieve the SDGs in scope and within the planned timeframe, diverse stakeholders must contribute their share. 2030 Agenda recognized private investment as a significant driver of inclusive economic growth and job creation, alongside private business activity and innovation.

Each SDG requires relevant stakeholder groups to work within their field, or ideally, foster collaboration leading to governmental regulation. 2030 Agenda emphasizes each country’s role to define and implement cohesive, sustainable development strategies. It further recognizes the private sector as an essential stakeholder by considering its innovation, diversity in structures, and flexibility in achieving change. Implementing SDGs for the private sector can take the form of, e.g., organizational transformation, an adaptation of business processes, re-branding, and increased digitalization feed. Simultaneously, the international economic environment should support and enable such national efforts through world trade, monetary and financial systems, and strengthened and improved global economic governance. While the goal is to foster a dynamic and well-functioning business sector, it is essential to protect labor rights, health, and environmental standards under international standards, agreements, and initiatives. The Addis Abba Action Agenda supports, complements, and helps contextualize the 2030 Agenda and its targets.

UNEP’s work program for 2021 includes the support of the SDGs’ realization. An essential contribution in the UNEP’s work, aside from collaborative projects with governments and stakeholders worldwide, is the measuring system of SDGs achievement. To that effect, UNEP designed key performance indicators for each SDG, thereby creating a uniform benchmarking system for the states to assess and compare their progress with that of other nations. UNEP’s work is mainly on the policy level, focusing on introducing SDGs in the policy decisions of governments and other stakeholders.

Voluntarism is central to the system of SDGs. Some suggest that such an approach may reflect a shift from ‘aid-centered’ goals in MDGs to a more holistic model in the 2030 Agenda (Blankenbach J, 2020). One of the main failures in the approaches to sustainable development pre-2030 Agenda has been a lack of integrated strategies, policies, and implementation (Le Blanc D, 2015). This is especially concerning integrating sustainable consumption and production as a vital element of sustainable development. A mapping of SDGs suggests that the 2030 Agenda remedies the previous failures by integrating SDGs as a network of multiple goals and targets (Le Blanc D, 2015).

Digitalization is integral in the voluntary achievement of SDGs for all stakeholders. Businesses increasingly rely on emerging technologies to innovate in line with SDGs, resulting in an increased need to regulate the use of emerging technologies. This includes e-commerce regulation, cybersecurity, product liability associated with the use of artificial intelligence, and the overarching underpinning ethical questions. While legal regulation is necessary, the legal profession is not free from the impact of digitalization. On one side of the spectrum is the technology-driven provision of legal services, while on the other side is the impact of digitalization on access to justice. An example of the latter includes using Online Dispute Resolution methods for small and medium enterprises. Equally, digitalization is integral in achieving the right to a healthy environment since its effective use can contribute to a comprehensive framework to balance social, economic, and environmental aspects of sustainable development.
4. Digitalization, Sustainability, and Law

Digitalization is the process of connecting organizations to digital platforms and investing in digital platforms as a competitive priority, which involves integrating technology into everyday business practices. In doing so, organizations usually hope to reduce certain costs and enhance an organization’s system (Albakjaji M, et al., 2021; Ahmed M U, Murray J 2019). Digitalization within servitization is not just an innovative solution for businesses to maximize their profits and remain competitive; it also serves as a possible solution to achieve society’s broad sustainable development goals, such as sustainable consumption and production patterns (Meskic Z, Jevremovic N, 2021). However, research on digital transformation has found an immense tension between sustainability and digitalization (see Arnold M G, Fischer A, 2021). A clearer and stricter legal regulation as well and advancement of the society are needed. As for the increased significance of sustainability, researchers have claimed that this is due to the limitation of resources, which requires governments’ cooperation at a global level (Ibid, 2021). Thus, it is a conventional belief that the digitalization-sustainability convergence in the workplace offers both opportunities and challenges. For example, digital technologies are improving employee engagement, flexible timings, time and cost management and sustainable innovation – as found by Minothi & Suresh (2019), who also claimed that new “vulnerabilities like, cybercrime, lack of human communication and privacy loss are threats to be overcome by careful planning of HR strategies” (p. 171). With this in mind, business sustainability will be focusing on the three P’s of businesspeople, planet and profit, and digitalization contributes to sustainability through the contemporary workforce who is heavily dependent on digitalization and who also focus on environmental issues. In addition, the combination of digital and sustainable practices increases the organization’s productivity and enhances the brand image (Minothi J, Suresh A 2019).

From a different perspective, as sustainability requires a proper legal framework that would follow the main idea of humans living with the nature and not living at nature’s expense. In this regard, many legal sources on environmental protection have been adopted on international and national level, and yet sustainability still simply lacks a proper legal framework and protection (Dernbach J C, Mintz J A 2011). Here, a comprehensive environmental law is needed to achieve and govern sustainability. Governments have often used pre-existing traditional environmental laws to foster sustainability, but there is a need for a real reform. Maintaining sustainability requires using the law to protect and restore ecological integrity and deal with climate change. Thus, sustainable development requires transparency, involvement of the public and enforceability before courts (Dernbach J C, Mintz J A 2011). The enforceability should include adequate remedies before independent judiciary and the prospect of actually enjoying the rights granted.

5. Digitalization in the Legal Science and Profession

The legal profession and legal science are widely known to be conservative and more resilient to change. Relying on the principle of legal security, judges and lawmakers will not easily overturn long-established practices, even when social change makes us doubt the justification of the future application (Bodenheimer E 1948; Koulu R, Hakkarainen J 2018). Digitalization has shaken the legal world more than any other development in the past century. Two perspectives frame the discussion concerning digitalization in law: the legal regulation of digitalization and the digitalization of legal services.

The legal regulation of actions and products related to digitalization has been challenging, affected all areas of law, and even created new ones. Until today, the approach towards the regulation of digitalization has been sectoral and not methodological. Thus, there is no global or comprehensive regulation of digitalization (Sidorenko E L, von Arx P, 2020). The OECD principles on the regulation of Artificial Intelligence, supported by G20 (G20 AI Principles 2019, Annex,) are illustrative of the impact of AI on all areas of law: 1. AI pursuing inclusive growth, sustainable development and well-being; 2. respect for the rule of law, human rights and democratic values; 3. transparency and responsible disclosure regarding AI systems; 4. robust, secure and safe technology; 5. developers’ and users’ responsibility for the operation of digital technology (OECD 2019). Property law is one of the
core legal areas in civil legal systems is resilient to change since Roman times and yet had to adapt to encompass digitalization. Reforms include treating digital assets as the object of property rights (Allen J G, Rauchs M, Blandin A, Bear K 2020) and regulating digital rights as part of the traditional property rights system or within intellectual property rights and human rights (Makarov T G, Kobchikova E V 2020). Intellectual Property regulations have gained greatly in importance with the innovations at their heart and rights on intangible goods as their object (Committee on Intellectual Property Rights 2000).

At the same time, legal science is expected to answer new threats caused by digital development. Areas like cyber security (Prasad R, Rohokale V 2020) and data protection (Tamô-Larrieux A 2018) became obligatory topics or courses in every law curriculum. The collection of data by governments and big tech companies led to strict regulations such as the General Data Protection Regulation in the EU (Voigt P, V.D. Bussche A 2017).

The opportunities and challenges of Legal Tech to the legal profession range from lawyers’ use of technology to lawyers being replaced by technology. We speak firstly of “enabler technologies” that facilitate access to data; secondly of “support process” for a more effective case and human resources management; and thirdly, the assistance or replacement in giving legal advice (Corrales M, Fenwick M and Haapio H 2019). Another important fact needs to be considered. It is no secret that many students choose legal studies because of their poor success in mathematics. The Latin phrase “index non calculate”, meaning a miscalculation by a judge will not render the judgment void, indicates a lack of lawyers’ aptitude towards calculations (Berkel G 2021, 47). The use of technology for a typical lawyer is reduced to online research platforms, cloud storage, switch to soft copies, group work on live documents, filing online submissions, holding online meetings and use of software for file and business management. However, more and more lawyers participate in online hearings or use blockchain and smart contracts. This is still far away from the discussions of Robot Lawyers (Markovic M 2019), Robot Judges (Sourdin T 2018) or Robot Administration (Cogliansese C, Lehr D 2017). One of the most promising AI applications is in predictive analytics with the possibility of knowing probable outcomes of disputes in advance, based on similar previously concluded matters (Marchant G E 2017). AI can further assist judges in analyzing expert witness testimonies so that the judge does not have to solely rely on the expert in areas where the judge does not have sufficient expertise, such as technology, construction or finance (Katz P S 2014). These developments inevitably invite consideration of the professional legal ethics and regulatory implications of the increasing use of AI or automated systems in legal practice (Rogers J, Bell F 2019).

6. Right to a Sustainable and Healthy Environment as a Human Right

The discussion on sustainable environment switched to the domain of human rights quite early. With digitalization, the right to be heard within online dispute resolution and the right to privacy and data protection added new and somewhat opposite arguments to the development. This is where the third and fourth generations of human rights meet. One of the reasons is that both digitalization and sustainability are cross-border questions in their essence. The consequences of pollution committed within a state’s borders are rarely limited to that State. Harmful consequences spread to neighboring, but sometimes very distant countries. (Degan V D 2011, 394). For these reasons, no State can solve environmental problems on its own. This protection requires an international approach and international cooperation and agreements, (Shaw M N 2008, 862). It has become clear that unilateral actions of States, regulations at the national level or a limited number of States are not enough, but urgent, systemic, planned and coordinated action of States at the international level is needed. Some international instruments proclaim a special right of every human being to live in a healthy environment. This is very well connected with a large number of SDGs, particularly with (6) Clean Water and Sanitation, (7) Affordable and Clean Energy, (13) Climate Action, (14) Life Below Water, (15) Life on Land. (Eisenmenger N et al. 2020).

The 1972 Stockholm Declaration introduced the concept of the right to a healthy environment. The then adopted Declaration states that the fundamental goal of environmental development is the reduction of
risks in terms of living conditions and the improvement of the quality of life, with particular attention paid to the protection of the environment in achieving these goals. However, at the international level, conventions for protecting human rights that mention the right to a healthy environment, in general, are a rare exception. Thus, under Article 24 of the 1989 United Nations (UN) Convention on the Rights of the Child it is ensured that a child enjoys highest attainable standard of living and that, among others, risks of environmental pollution will be taken into consideration when implementing this right. At the regional level, two human rights instruments guarantee the right to live in a healthy environment: The 1981 African Charter on Human and Peoples’ Rights (Article 24) and the 1988 Protocol of San Salvador to the 1969 American Convention on Human Rights (Article 11), which gives more precise formulation than the African Charter. On the other hand, the 1950 European Convention on Human Rights (ECHR), and its Protocols, do not mention this particular right.

Today, however, the European Court of Human Rights (ECtHR) recognizes the importance of the right to a healthy environment and protects various aspects of the environment, indirectly bringing them into line with the rights guaranteed by the ECHR. The case law of this Court has suffered significant differences concerning indirect environmental protection compared to the original cases of the Court when deciding that the submissions in this part were unfounded, as the ECHR, as previously mentioned, does not guarantee the right to environmental protection. Since the 1970s, the Court significantly changed its practice about indirect environmental protection, mainly by changing its interpretation of the ECHR provisions regarding the protection of the right to private and family life (Article 8), the right to free enjoyment of property (Article 1 of Protocol No. 1 to the ECHR), rights to life (Article 2), freedom of expression (Article 10). (e.g., Önerylidiz v. Turkey, 2004; Hatton and Others v. The United Kingdom, 2003; Guerra and Others v. Italy, 1998). The Court also considered petitions for endangering the human rights of individuals with State measures aimed at protecting the environment, e.g., endangering the right to free enjoyment of property (by introducing a construction ban) to protect natural resources. The Court emphasized the predominant interest in environmental protection over the individual’s interest. Hence, López Ostra v. Spain (1994) was the first judicial review of human rights violations due to environmental damage.

Notwithstanding that 80 per cent of the UN Member States already recognize the right to a healthy environment through national law (https://www.unep.org/news-and-stories/story/landmark-un-resolution-confirms-healthy-environment-human-right), some might see that what happened on 8 October 2021, when the UN Human Rights Council (47 Member States) adopted Resolution 48/13, which recognized the right to a healthy environment as a human right, represent a turning point in history. It recalls the UN General Assembly Resolution 70/1 of 25 September 2015, in which the Assembly adopted a broad and complete set of universal Sustainable Development Goals and targets (Preamble), and further recognized climate change and threats to environment and sustainability as most serious threats to human rights (Preamble).

This international body in the Resolution recognized further that the right to a clean, healthy and sustainable environment as a human right of a great importance for other human rights and emphasized on the full implementation of the multilateral environmental treaties (Resolution, points 1, 2, and 3). States have been encouraged for decisive action to ensure that the right to a healthy environment is protected effectively and without delay (Resolution, point 4).

The Council also adopted a Resolution establishing the function of Special Rapporteur on the promotion and protection of human rights in the context of climate change (Resolution, A/HRC/48/L.27) and thus strengthening its focus on the impact of climate change on human rights (https://news.un.org/en/story/2021/10/1102582). The main task of the Special Rapporteur is to assess the effects of climate change on human rights and to recommend measures to fight them.(Resolution, point 2(a)).

For a new human right to have practical significance, some might opt for a new article to be added to the Universal Declaration of Human Rights. This amendment would be the first addition to the
Declaration since it was adopted and implemented on 10 December 1948. Council resolutions are non-binding international documents and do not represent an international treaty. However, could it be considered that the right to a healthy environment already represents a general customary international law, knowing that plenty of States have had some formal domestic responses to environmental human rights claims so far? (Hancock J 2003; Dumberry P 2016). Two international covenants of 1966 and other human rights conventions, including codification conventions, play, in customary process, either the role of a pure codification of law already in force or crystallization into a new positive law.

Given that all the rights and freedoms provided for in these conventions are prescribed in a general and normative manner, if a convention is concluded for an indefinite period, and if the vast majority of States in the world (or in a region) are bound by it, this may provide a basis for States parties to argue that these rules are, in a customary manner, binding on all States. International organizations and other international bodies, therefore, have the right to demand respect for these legal obligations from all States of the world. That is why the obligation to respect human rights and freedoms is considered today an obligation erga omnes.

If the Council Resolution contains a legally recognized right, there would be another question - whether the solitary proclamation of this right is enough to legally regulate relations between States, i.e., States and individuals, and other participants in international relations? For a right to be applicable in practice and valuable to individuals, it as such must be applied in order for an individual can sue a State Party. For now, there is no universal, multilateral international treaty that recognizes the enjoyment of this right by every human being. Therefore, amendments to the Universal Declaration of Human Rights will clearly not be enough in this regard. Supplementing some of the international covenants from 1966 or adopting a new multilateral international convention is necessary. At the European, regional level, this right can be included in the European catalogue of human rights and freedoms by supplementing the ECHR, i.e., by adopting a new protocol to the Convention.

The proclamation of a new human right is futile and pointless if those entities’ duties and financial obligations that should ensure it on our entire planet are not specified. (Degan V Đ 2011, 395). International obligations of States have to be accurately specified since the State’s obligations should match every human right simultaneously. Accordingly, “the named “right” should be taken as a distant goal of humanity as a whole” (Degan V Đ 2011, 395) and its realization. On the other hand, what is detectable is that fragmentation in human rights and the environment remains. Overlapping mechanisms, the expansion trend and increased legislation and institutionalization of international law continue.

7. Conclusion

Digitalization and SDGs are closely linked. The multidisciplinary approach to achieving SDGs and digitalization in all areas of life makes them more and more intertwined. Digitalization often supports sustainability - all stakeholders are expected to embrace digitalization to achieve SDGs. The legislators need to regulate the use of emerging technologies to support innovation, e-commerce, and online dispute resolution. Although known to be more conservative, legal practice faced a heavy impact, including the introduction of new areas of law focused on digitalization and the impact in everyday practice. While the application of predictive analysis shows promising results, we are still far away from replacing judges, lawyers, or administration with AI. Legal education is warned to provide added value for their students, critical analysis and creative thinking, which cannot be achieved by lawyer robots relying on previous judgments and similar factual scenarios. Digitalization invites new threats with cybercrimes and privacy violations, and legislators are still running behind innovations in this area. Sustainability is built on its human rights nature and the exercise of human rights in the digital age is unthinkable without broader and equal access to internet. Adequate protection of the human right to sustainable development remains a challenge and the primary recommendation to the voluntary achievement of SDGs is still the reality of the 2030 Agenda.
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