

## Sustainable development and the digital economy: new opportunities for access to markets<sup>1</sup>

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The year 2015 had a special relevance for the international sustainable development agenda<sup>1</sup>. In September, at New York, during a United Nations-led meeting, 193 states approved a broad agenda for the future, the 2030 Agenda, defining 17 themes, 169 measures, which include eradicating hunger, combating climate change, sustainable and responsible production and consumption. In addition to the themes scope, the new agenda recognizes the need for participation of all actors: national and subnational governments, civil society and the private sector, including small and medium-sized enterprises (SMEs).

Although international trade is related to many of the measures, there is no specific target on the subject set out in the Sustainable Development Goals (SDG). For example, Objective 12 ("Ensuring Production Standards and Sustainable Consumption") requires the understanding of global production chains, the development of sustainability standards (such as certifications, labeling and seals) and the provision of information, enabling consumers choice. This is a growing reality of market access not only for participants in large global chains, but also for small and medium producers.

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<sup>1</sup> Originally published in Portuguese at ITCSD/ Pontes website. Available at: <https://www.ictsd.org/bridges-news/pontes/news/o-desenvolvimento-sustent%C3%A1vel-e-a-economia-digital-novas-opportunidades-de>

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Tracking and social and environmental certification have been important mechanisms for the implementation of these production standards. These initiatives gained importance in the 1990s, targeting sectors of high environmental impact such as fishing and forestry production and niche markets such as organic agriculture and fair trade. Currently, more than 240 initiatives also cover undifferentiated products such as commodities (agriculture and livestock, mining, chemicals), manufactures (food, clothing and accessories) and services (tourism, construction, transportation, energy)<sup>3</sup>.

Despite the evolution of standardization and traceability, adherence to certificates, codes of conduct and sectoral protocols is often viewed with caution by SMEs. First, by the level of effort in adapting to the usual mode of production. Second, the understanding that the differentiation obtained is quickly converted into a minimum qualification standard in access to new markets and international clients. Thirdly, the lack of access to information and the means to obtain recognition, and finally, the high costs involved and the complexity of agents and transactions, which may limit access to producers with less economic power or organizational capacity. Although it is a common aspiration, there are many barriers to overcome.

However, considering the relevance of SMEs in the global economy and in international trade, the feasibility of social and environmental standards should be rethought and facilitated. Among the challenges identified, it is worth exploring the issue of obtaining the means of implementation, especially for actors with less institutional and organizational capacity. In this sense, new tools and new models based on digitalization can bring tangible benefits to SMEs' access to global markets.

### **New times, new technologies**

The economy digitalization process, with the rapid absorption of new technologies and models on a global scale, may be an important driver of SDG implementation. The Internet, artificial intelligence, connectivity with the use of sensors and the use of the big data can create new opportunities and new arrangements that leverage and guarantee the necessary scale for advancing the sustainable development agenda. The digital age will certainly bring new challenges, but it may have a significant contribution to the advancement of 2030 Agenda, with impact in areas such as health, sanitation, agriculture, housing, energy and infrastructure. It is

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<sup>3</sup> See Sustainability Map for 2018, prepared by ITC and available at: [www.sustainabilitymap.org](http://www.sustainabilitymap.org).

worth remembering, for example, the level of absorption and the opportunities made possible by mobile telephony in countries with lower levels of development and in low-income markets.

Despite still incipient, the digital economy has the potential to bring practical benefits. First, with the better efficiency in capital allocation, either by the balance between supply and demand or the responsiveness and assertiveness of actions, as in predictive maintenance. Second, by reducing information asymmetries, facilitating and turning faster the access to information and knowledge, and by creating a new relationship between economic agents. Third, both by the rapid inclusion and access to markets, with low entry and exit barriers and the reduction of transaction costs, and in reducing the need for intermediaries. Finally, new technologies will allow the promotion of innovation, dynamism, business models and activities capable of transforming economies and societies.

Among the novelties mentioned, blockchain is the one that begins to be deciphered for widespread use. In simplified terms, it is a system, with encrypted digital language, of registration and custody of information, based on a chain of trust. The blockchain is not necessarily considered a new technology, but a new use of existing technologies combined. The result is a system for global digital transactions that does not require an independent third party to ensure storage, updating and authenticity checking. Just as Internet language, beyond technical complexity, it will bring benefits of use and applications that are just beginning to be explored by the various sectors of the economy.

Considering the 2030 Agenda, new technologies bring interesting perspectives. The experiences of Bitcoin and Ethereum as a means of payment can be applied, for example, in philanthropy and in the global donation sector (as in the case of Round-up), peer-to-peer micro-loans (eg Kiva) and microcredit. In all 17 SDG, there is possibilities for using blockchain language and new digital economy technologies. The application in customer loyalty systems, traceability and socio-environmental standards is a path still to be explored and can enable and leverage transformations of various sectors of the economy, including services and infrastructure.

### **Sustainable Energy Traceability**

The future of the energy sector involves the absorption of the transformations coming from the digital economy and the social and environmental balance of the sources of supply. Proposed measures for the implementation of SDG 7 (“Ensure access to affordable, reliable, sustainable and modern energy for all”) indicate the central role of energy in achieving the global agenda. Among the transformation drivers are the new renewable energies, the electric mobility, the use of sensors by all agents of the electrical systems, and especially for this analysis, distributed generation.

In countries such as Brazil, where electricity production is centralized in large enterprises, the advance of distributed generation is changing market dynamics, with the active role of consumers. These agents not only have new negotiating power, but also become capable of producing and storing their own energy, either for their own consumption or for sale to the network or other agents. Since 2012, the Brazilian market for distributed generation has grown rapidly, registering 20 thousand connections in 2018 - which indicates the feasibility of the new systems<sup>4</sup>. If, in one hand, the decentralization of production brings enormous benefits with the reduction of losses by the system and with lower local social and environmental impacts, it also raises doubts about how to guarantee the traceability of production standards.

One of the paths is in expanding the application of electrical energy seals and certifications to residential generators and SMEs. Some examples of certifications are the I-REC, NTA8080, UK Green Energy Certification and Green-e. These titles serve a growing demand, especially of corporations that consider sustainable development a value and important element of competitiveness. Large companies like Unilever, Natura, Honda, Citibank or real estate development companies willing to get seals like LEED and ACQUA are the potential customers of these initiatives. Once available to hundreds of large power plants, social and environmental standards may now serve, in the Brazilian market, a universe of thousands of new connections, of small agents that can offer “sustainable electricity” in a flexible and autonomous way. However, implementing these initiatives has not been an easy task.

Imagine a milk producer in Minas Gerais using biogas electric generation system. Or a small retailer in São Paulo with a photovoltaic system offering clean energy to the grid. Would they be able to obtain certificates and offer “sustainable electricity” in the national and international markets? Currently, in theory, the answer could be positive, but in practice this would hardly

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<sup>4</sup> Available at: [www.geracaodistribuida.org/copia-mapa-do-mercado-2](http://www.geracaodistribuida.org/copia-mapa-do-mercado-2).

occur. The traceability systems of electricity simply were not made for the level of pulverization of the generation and the rapid transformations that have been taking place in the sector. New problems require new solutions.

Certainly, the technologies of the digital economy can play an important role in this incipient context of massification of electric generation. Trading bonds can be facilitated in the virtual environment. Mobile marketplace platforms can connect supply and demand, share processes, and make life easier for SMEs. All certificates based on social and environmental standards are based on third party independent evaluation and certification bodies. Network-connected sensors can reduce the need for field visits with real-time monitoring. Blockchain can reduce the role of intermediaries, reducing verification and operating costs. Fewer transactions and lower costs can facilitate the adoption of initiatives, achieving the scale that new global agenda requires.

The adoption of technologies and solutions by the new agents of the electric sector will be an important step to overcome the restrictions for the adoption of social and environmental standards of production. Situational, institutional and organizational factors will still have a decisive contribution in the decision to adopt. However, the availability of information and reduction of transaction costs open quite positive horizons.

### **Final remarks**

The implementation of the digital economy will be one of the great drivers of change of the 21<sup>st</sup> century. New technologies and models may transform the way individuals, communities and organizations relate, produce, and consume. And it is precisely such a structural transformation that a broad and ambitious agenda as the 2030 Agenda requires for its success.

Considering SMEs and new businesses, there is a great opportunities perspective with the use of digital means. In less developed and developing countries, where these companies historically have a significant share of income and employment, facilitating and accessing markets can enable greater space for products and services of high social and environmental value. Just as in the energy sector, there are possibilities to be explored and deciphered that contribute decisively to balance and sustainable development.