

**INTERSESSIONAL PANEL OF THE UNITED NATIONS COMMISSION  
ON SCIENCE AND TECHNOLOGY FOR DEVELOPMENT (CSTD)**

**Geneva, Switzerland  
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**Contribution by Portugal**

to the CSTD 2020-2021 priority theme on “Harnessing blockchain for sustainable  
development: prospects and challenges”

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**PRIORITY THEME 1:** Harnessing blockchain for sustainable development: prospects and challenges

**United Nations Commission on Science and Technology for Development (CSTD)**

Dear CSTD member,

As you are aware, the CSTD 23<sup>rd</sup> annual session selected “Harnessing blockchain for sustainable development: prospects and challenges” as one of the priority themes for its 24<sup>th</sup> session (2020-21 period).

In an increasingly digitalized economy and society, the security and accountability of data transactions are critical elements for creating trust and enabling breakthrough innovations in the digital world. In this regard, blockchain technology has been perceived as a game-changer, with the potential to revolutionize processes from finance to pharmaceutical industries, from humanitarian work to development aid. The blockchain serves as the base technology for cryptocurrency, enabling open (peer-to-peer), secure and fast transactions. The application of blockchain has expanded to include various financial transactions (online payments and credit and debit card payments) as well as IoT, health and supply chain. However, issues associated with scalability, privacy concerns, uncertain regulatory standards and difficulties posed by the technology in integration with existing applications are some of the potential market constraints. The priority theme will focus on the importance of developing a local financial infrastructure that avoids financial exclusion of the most vulnerable communities. There is also the risk that the potential of blockchain for solving developmental problems had been somewhat inflated by its early adopters and the tech media and may not be as applicable for developing and least developed countries. What are the emerging uses of blockchain that can be breakthroughs in accelerating progress towards the SDGs? What are the potential negative unintended social and economic effects of this technology? How could governments maximize the opportunities and minimize the risks? The CSTD could consider this priority theme to examine the potential of harnessing blockchain for sustainable development.

The CSTD secretariat is in the process of drafting an issues paper on the theme to be presented at the CSTD inter-sessional panel meeting. In this context, we would like to solicit inputs from the CSTD members on this theme. We would be grateful if you could kindly answer the following questions based on your experience from your country or region.

1. Could you share specific examples, projects or initiatives that have used or plan to use blockchain technology for the SDGs in your country? What are the main challenges confronted while trying to implement these projects/initiatives? (Examples may include blockchain solutions for financial inclusion, trade facilitation, supply chains, health, energy, e-Government, etc.)

In Portugal there have been several initiatives related to blockchain and the SDGs. We provide a few examples, with a mix of public and private promoters:

- [GovTech](#) was a Portuguese public competition held in 2018. The objective was to reward innovative products and services provided by startups that addressed at least one of the 17 SDGs. To support voting on the projects, a virtual coin based on blockchain technology called GovTechs was used. Participants voted on their preferred projects by investing with GovTechs on the website, assuring the security and transparency of the process. Projects selected: Intelligent Forest Management Technologies; Green Salt and Healthy Life for All; and Bio2Skin.
- [Bee2WasteCrypto](#) is a project involving a company (Compta), two higher-education schools (Instituto Superior Técnico, NOVA Information Management School), and some of these schools' research centers. Over this summer, 12 master and undergraduate students developed new blockchain-based solutions for Regional Waste Management Utilities (RWMU) and behavioral change on the management of waste. The teams will present publicly the work developed over the 12 weeks on late October 2020.

- Bitcliq, a technological SME, developed a blockchain-based e-marketplace for seafood. This platform, named Lota Digital, can be leveraged for quality control and to control the trade agreements with the use of blockchain.

These initiatives suffer from many challenges. Some of the main are:

- The technology is still in its early stages (it has a decade, when AI for example is 60 years old), so there is uncertainty about the economic viability of many ideas and prototypes, which therefore are discarded by their promoters before they become a product.
- For the same reason, the ideas that do become a product are still in an early stage and still do not take to their full extent the benefits of blockchain technology, namely in terms of decentralization and cybersecurity.
- There are not enough engineers, designers and other professions to implement solutions based on blockchain.
- There is considerable legal uncertainty, e.g., when cryptocurrencies or tokens are used in the solutions, and in relation to the GDPR application to on chain data.

2. National systems of innovation affect how different countries can harness blockchain for increasing competitiveness, growth and sustainable development. Please share information about the ecosystem of innovation in blockchain in your country by informing: What are the key industries/specific sector that are pioneer in blockchain innovation in the country? What are the key actors in the national ecosystem of innovation (entrepreneurs, development teams (firms), venture capital, Banks and financial services, academia, regulators)? What are the key networks of the ecosystem in your country (including online networks, innovation hubs, forums, etc)? What are the national strategies, policies, laws and regulations (in place or preparation) related to blockchain?

Key pioneer industries/sectors: 1) technological startups, SMEs and larger companies; 2) the financial sector, that become interested around 3 years ago, but seems to have lower interest now; 3) industries related to supply chain; 4) the legal area, especially law offices; 5) the public sector.

Key actors: 1) Portuguese Blockchain Alliance; 2) several companies; 3) universities and research centers (INESC-ID, LASIGE); 4) public sector (AMA, IGFEJ, CMVM, Banco de Portugal,...); 5) Portuguese Blockchain and Cryptocurrencies Association; 6) innovation hubs and initiatives (Startup Lisboa, Startup Portugal, Made of Lisboa, Web Summit).

National strategies, policies, laws and regulations: to the best of our knowledge, nothing specific on blockchain exists at the moment.

3. What are the challenges that your government have faced or may face for promoting innovation and competence building in blockchain in your country, to contribute to national development priorities and accelerate the progress towards the SDGs?

As most technological sectors, blockchain will probably be adopted and successful in Portugal if it leads to economically viable business models. There is a flourishing business blockchain sector promoted by the key actors mentioned above. The Portuguese Government is starting to promote it also under initiatives such as INCODE.2030, a public policy initiative aimed at enhancing digital competences. Example challenges the government may face are the creation of legislation, the costs of promoting innovation, organization issues in order to promote that same innovation, etc.

4. What are the actions that the international community, including the CSTD, can take to contribute to harnessing blockchain for sustainable development?

First and foremost, to identify and publicize use cases in which the use of blockchain is indeed beneficial. There have been many cases of false claims on good applications for blockchain technology, e.g., finding a cure for cancer, so identifying a set of cases for which it is really useful is important. Publicizing these applications can lead to their development and availability.

Second, to support the development of such applications if they need that support, e.g., through specific funding and reaching out the countries that can benefit from them.

5. Could you suggest some contact persons of the nodal agency responsible for projects/policies and international collaboration in this context as well as any experts (from academia, private sector, civil society or government) dealing with projects in this area? We might contact them directly for further inputs or invite some of them as speakers for the CSTD inter-sessional panel and annual session.

Experts:

Miguel Pupo Correia – INESC-ID, Instituto Superior Técnico, Universidade de Lisboa – academic, national representative at the European Blockchain Partnership

Rui Serapicos – Portuguese Blockchain Alliance

Paulo Cardoso do Amaral – Universidade Católica Portuguesa – academic, entrepreneur

6. Do you have any documentation, references, technological assessments, future studies or reports on the priority theme in your country or region?

Portugal Fintech Report 2019 – <https://www.portugalfintech.org/portugalfintechreport2019>

Please send your responses and any further inputs on the theme to the CSTD secretariat ([stdev@unctad.org](mailto:stdev@unctad.org)) by 7 October 2020. We look forward to receiving your valuable inputs.

Sincere Regards,

CSTD secretariat