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ON SCIENCE AND TECHNOLOGY FOR DEVELOPMENT (CSTD)**

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Contribution by Algeria

to the CSTD 2025-2026 priority theme on “Science, Technology and Innovation in  
the age of AI”

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Object:

**Algeria's Contribution to the Initiative of the United Nations Commission on Science and Technology for Development on Priority Theme 2: "Science, Technology and Innovation in the Age of AI."**

Algeria wishes to express its appreciation to the United Nations Commission on Science and Technology for Development for its initiative aimed at fostering a collective reflection on the use of Artificial Intelligence (AI) and data in research, development, and innovation (R&D&I) processes. This initiative is particularly important given the rapid evolution of these technologies and the profound transformations they are driving in the scientific, industrial, and economic spheres.

Our country welcomes this initiative and is pleased with the opportunity to contribute to this exchange by sharing elements of its national experience. Through this contribution, Algeria seeks to enrich international reflection and promote institutional models and public policies capable of fostering inclusive and sustainable industrial and technological development in line with the transformations of the Fourth Industrial Revolution.

In this context, it is worth recalling that the integration of AI and data into research, development, and innovation (RDI) processes represents a major strategic issue. Although this theme remains relatively new, it is gaining increasing importance due to the disruptions it brings to research methods, production models, and innovation dynamics. The synergy between innovation, industry, and the knowledge economy has now become a key lever for enhancing competitiveness, stimulating value creation, and supporting sustainable development trajectories.

It must be noted, however, that the spectacular advances in the field of AI over the past decade have been largely concentrated in a small number of countries, leaving the majority of nations in a situation of relative digital divide. Aware of this reality, Algeria has, in recent years, undertaken significant efforts to align its economy and national innovation system with this global momentum.

In this regard, several structuring initiatives deserve to be highlighted:

- The creation of a Ministry of Knowledge Economy and Startups, tasked with promoting and coordinating innovation policies based on emerging technologies and the digital economy;
- The establishment of a National Artificial Intelligence Council;
- The development of a national AI strategy, currently in the process of adoption, aimed at defining priorities and ensuring the coherence of actions to be undertaken;

- The creation of specialized training programs in AI and data science, notably through the establishment of schools, institutes, and dedicated academic streams to strengthen national expertise;
- Investment in digital computing and communication infrastructure (5G, expanded fiber, scientific computing hubs, national data center).

These efforts reflect Algeria's determination to integrate into this global dynamic, strengthen its innovation ecosystem, and fully incorporate AI into its economic and industrial development model. This contribution thus aims to present key elements of the national experience and propose avenues for reflection on the regulatory, institutional, and policy conditions required for the optimal and responsible use of AI and data in support of research, development, and innovation.

### **Question 1: Examples of the use of AI and data for the development of science, technology, and innovation in Algeria**

In Algeria, the use of AI and data is progressing significantly, both within the scientific and academic community and the innovation and startup ecosystem. Several concrete examples illustrate this dynamic:

- **Use of AI by researchers and innovators:** Researchers, innovators, and startups are increasingly leveraging AI to develop new approaches to data analysis and to design programs and applications. The rise of open-source tools and the availability of free code libraries today offer greater possibilities for R&D activities. Moreover, the use of advanced language models (LLMs) significantly facilitates scientific writing, knowledge synthesis, state-of-the-art development, and the acceleration of collaborative research processes.
- **Adoption of AI by startups in strategic sectors:** A growing number of Algerian startups are using AI in various applications, spanning sectors such as industry, agriculture, energy, and water management. This momentum is enabled by the democratization of digital tools, access to open-source code, and the increasing skills of young tech entrepreneurs. These initiatives bolster local innovation capacity and pave the way for solutions tailored to national development needs.
- **Acceleration of digitalization and innovation through AI platforms:** The emergence of AI-based "no-code / low-code" development platforms enable many innovators and startups to quickly build application prototypes and, in some cases, ready-to-use solutions across diverse sectors. These tools promote rapid experimentation, lower technical barriers, and accelerate the innovation cycle, thereby energizing the national entrepreneurial ecosystem.

These indicates that AI and data use are now essential catalysts for the development of research, technology, and innovation in Algeria, both within academic RDI and in startup-driven projects. Their gradual integration across sectors contributes to modernizing RDI approaches, stimulating entrepreneurial creativity, and enhancing the country's industrial competitiveness.

## **Question 2: Challenges and opportunities related to the implementation of AI in RDI processes in Algeria**

As in many countries, the implementation of AI in Algeria's R&D&I processes is accompanied by certain structural challenges. Far from being mere constraints, these challenges also represent opportunities to strengthen the national innovation ecosystem and accelerate the transition to a knowledge economy.

Key challenges include:

- **Digital infrastructure**, which is still under consolidation, even though AI requires high computing capacity and efficient data centers. This necessity encourages investment in new data centers and the modernization of digital networks to meet international standards.
- **Availability and quality of data**, which remain limited and fragmented. This highlights the need to develop national data governance strategies aimed at improving accessibility, standardization, and valorization while respecting sovereignty and privacy protection principles.
- **Access to international AI platforms and tools**, which is sometimes limited by technical or economic barriers. Given that AI development is a major economic and strategic issue, the most advanced tools often remain concentrated in a few countries and private global actors. This concentration exacerbates technological disparities and complicates access for developing countries. However, it also encourages Algeria to promote local solutions, diversify partnerships, and strengthen South-South and international cooperation.
- **Development of specialized skills**, a top priority. Although qualified human resources remain limited, many training programs, the creation of specialized schools, and the launch of dedicated university tracks demonstrate Algeria's commitment to enhancing its human capital and retaining talent.
- **Regulatory and institutional frameworks**, which must evolve alongside AI development. Ongoing efforts to adopt a national AI strategy show the government's determination to foster an environment conducive to innovation while ensuring responsible, ethical, and secure use of technology.

Each of these challenges has already prompted concrete initiatives in Algeria. The country has begun investing in data centers, expanded AI and data science training efforts, and established institutions to support innovation, such as the Ministry of Knowledge Economy and Startups. These initiatives reveal a clear direction: to make AI and data not just technological tools, but key enablers of transformation for Algeria's research and innovation system, and levers to support its transition to sustainable, inclusive, and competitive development.

### **Question 3: Has the country adopted an AI strategy?**

Algeria has recently formulated and presented its National Artificial Intelligence Strategy, officially unveiled during the 3rd edition of the African Startup Conference held in Algiers in December 2024. This strategy is the result of the work of the National Scientific Council on Artificial Intelligence, jointly established by the Ministry of Knowledge Economy, Startups, and Micro-enterprises, and the Ministry of Higher Education and Scientific Research.

The strategy's vision is built around several complementary pillars. It aims to create an enabling environment for the development of AI by strengthening digital infrastructure—particularly data centers—and by establishing a modern, coherent regulatory and institutional framework. Data plays a central role, with a strong focus on collection, governance, and valorization, as well as the gradual opening of strategic datasets in a controlled open data approach that respects national sovereignty.

At the same time, human capital development is a priority, with a strong focus on skills building. This approach is further complemented by the promotion of an innovation culture and support for startups, to accelerate the creation of local solutions in vital sectors such as agriculture, health, industry, energy, and security. The strategy also includes an ethical and societal dimension, drawing inspiration from international best practices to ensure responsible and secure use of AI. It includes mechanisms to safeguard data privacy, protect citizens' rights, and align technological development with national values and priorities.

Importantly, the strategy goes beyond the national framework: it aspires to position Algeria as a regional hub for AI and a contributor to the development of African solutions tailored to the continent's realities. It reflects the belief that AI is both an opportunity for scientific and economic modernization and a major geostrategic challenge.

### **Questions 4 – Promotion of Open Innovation or open data.**

Yes, in terms of promoting open innovation and, more specifically, open data in the field of artificial intelligence applied to research, development, and innovation, Algeria has included in its AI strategy a forward-looking framework that supports this approach. It aims to strengthen research-industry collaboration around open data. More broadly, considering open-innovation a set of institutional and policy mechanisms has been established to stimulate collaboration between the various actors of the national ecosystem.

Driven by the Ministry of Knowledge Economy and Startups, an incentive framework has been established to foster collaboration between large corporations, startups, incubators, and research laboratories. The initiative includes favorable fiscal measures, such as tax exemptions for open innovation activities exceeding \$1 million per company, thereby encouraging the co-creation of technological solutions that integrate artificial intelligence (AI) across various strategic sectors. In this context and among others, artificial intelligence is considered a critical and cross-cutting technology, receiving particular support in public policies for innovation development.

## **Questions 5 – Mechanism in place to foster collaboration around AI and data for science and innovation among different stakeholders**

Regarding the mechanisms set up to encourage collaboration among stakeholders, industry players, research laboratories, and startups, for data and AI in research, development, and innovation, Algeria has adopted an integrated approach based on several complementary instruments:

- The first mechanism is open innovation, supported by a national digital platform launched by the Ministry of Knowledge Economy. This platform is open to actors including industry, startups, incubators, and laboratories. It facilitates networking between established companies and startups/innovators to co-develop solutions responding to specific industrial or societal needs.
- The second mechanism focuses on university incubators, which support the development of AI and data-focused startups and connect them with companies seeking innovative solutions. A notable example is the incubator at the National School of Artificial Intelligence, which supports applied projects, especially in smart agriculture and other priority sectors. Other public and private incubators are also actively promoting AI through innovation initiatives.
- Another significant mechanism involves the establishment and development of localized innovation ecosystems through the creation of specialized technology parks. A prominent example is the Sidi Abdellah Tech Park in Algeria, which serves as a strategic hub for technological development and innovation. Within this ecosystem, a growing number of data-driven companies and startups operate alongside specialized higher education institutions and research centers focused on mathematics, artificial intelligence, and related emerging fields. This close integration between academic expertise, research capabilities, and industrial activity fosters a collaborative environment that facilitates knowledge transfer, supports the incubation of innovative projects, and strengthens the country's overall capacity for technological advancement and economic diversification.
- Additionally, the ministry organizes regular events, sectoral meetings, and thematic forums to promote startup-enterprise collaboration. The public startup accelerator "Algerian Venture", under the ministry, also plays a central role by providing structured support to startups.
- A particularly innovative mechanism is the startup labeling system, which gives an advantage to young, innovative companies active in AI. This labeling opens access to direct contracts with national companies while boosting the credibility and visibility of startups in the market. It acts as a crucial lever to strengthen collaboration between academic research and the productive sector.

Through this set of mechanisms, Algeria is striving to create an ecosystem conducive to developing AI and data-driven solutions, placing synergy between universities, startups, and enterprises at the heart of its research, development, and innovation strategy.

## **Question 6 – Algeria’s Engagement in Bilateral or Regional AI Cooperation**

As part of its continental partnership, Algeria actively participates in promoting AI policies in Africa and plays an important role in implementing these within a regional framework.

During the 2023 African Startup Conference (ASC) Ministerial Summit, held in Algiers and focused on the theme of African AI, the African Framework for Public Policies on AI was adopted. This further reinforced Algeria’s commitment to enhancing regional cooperation for the development of artificial intelligence.

Through this initiative, Algeria supports the elaboration of harmonized strategies, fosters local innovation, and encourages inter-African partnerships to maximize the benefits of AI. The country places particular emphasis on supporting African startups, helping them develop technological solutions suited to the continent’s challenges.

Algeria is also working to build an AI-friendly ecosystem by developing digital infrastructure, facilitating access to funding, and promoting relevant training in tech-related fields. These actions aim to empower startups to play a central role in Africa’s innovation and economic transformation.

By promoting public policy adoption and uniting African countries' efforts, Algeria contributes to reducing the digital divide and strengthening local AI capacities. Its regional engagement is helping to establish a stable governance framework and to promote regulations adapted to Africa’s socio-economic realities, while positioning the continent as a key player in global technological innovation.

## **Question 7 –How International Partnerships Can Enhance the Use of AI and Data for Science and Innovation, and for Building National Technological Capacity**

In a context marked by the rapid acceleration of digital innovation, international collaboration emerges as a key factor in supporting the development of AI, data management, and technological capacity building in developing countries.

Working with international partners allows access to resources and tools often beyond local capabilities. This includes platforms for data hosting and processing, as well as advanced methods for developing AI-based solutions. Such partnerships also make it possible to leverage proven best practices in data governance, regulatory frameworks, and ethics aligned with international standards.

Another major benefit is the strengthening of local expertise. Through joint training programs, student/professor exchanges, and collaboration with research institutions, countries can establish a robust knowledge ecosystem. Initiatives such as bootcamps, joint university programs, and international certifications help form a new generation of professionals capable of developing and deploying context-appropriate AI solutions.

International collaboration also promotes the creation of industrial synergies. With shared innovation networks, incubators, and tech clusters, countries can jointly develop and implement technologies adapted to their economic contexts. These partnerships also ease access to international funding—whether through European programs, public grants, or private investments—which supports the development of modern infrastructure and resource pooling.

Moreover, international cooperation in AI and data fosters the creation of common standards and builds trust in emerging technologies. It promotes transparency, ethical use, and system interoperability among stakeholders.

In this framework, technical aspects of international collaboration in AI and data science can support Algeria's capacity building through the following components:

| Domain                                         | Key Point                                                                                                                                                                                                                                                                                                                                  | Relevance                                                                                                                               |
|------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|
| <b>Computing Capacity &amp; Infrastructure</b> | <ol style="list-style-type: none"> <li>1. Infrastructure selection (on-premise, hybrid, public cloud)</li> <li>2. Precise sizing (GPU cores, TB storage, IOPS)</li> <li>3. Scalability (auto-scaling, spot instances)</li> </ol>                                                                                                           | Engineering guides for estimating costs and needs considering future tech evolution.                                                    |
| <b>AI Models &amp; Technologies</b>            | <ol style="list-style-type: none"> <li>1. LLMs (Large Language Models)</li> <li>2. Autonomous agents (e.g., Retrieval-Augmented Generation)</li> <li>3. Fine-tuning platforms (Weights &amp; Biases, Hugging Face, TensorFlow Hub)</li> <li>4. Open-source solutions (LLaMA 2, Open Assistant, Hugging Face Transformers, etc.)</li> </ol> | Select the optimal mix: pre-trained models + fine-tuning on local data, while managing cloud costs or local infrastructure investments. |
| <b>Data Governance</b>                         | <ol style="list-style-type: none"> <li>1. Management policies (Data-Ops, FAIR, ISO 27001)</li> <li>2. Regulatory frameworks (GDPR, CCPA, ISO 27701)</li> <li>3. Audit &amp; traceability tools (Open-Metadata, etc.)</li> </ol>                                                                                                            | Develop a national framework inspired by best practices to ensure data integrity, security, and ethical use.                            |
| <b>AI Policy Governance</b>                    | <ol style="list-style-type: none"> <li>1. National governance body</li> <li>2. Cross-sectoral collaboration</li> </ol>                                                                                                                                                                                                                     | What governance model for AI policy? How to adapt strategic approaches to evolving technologies.                                        |
| <b>Ethical Frameworks</b>                      | <ol style="list-style-type: none"> <li>1. International ethics frameworks in development</li> <li>2. Specialized legal training</li> <li>3. Public awareness</li> </ol>                                                                                                                                                                    | Anticipate ethical implications at the national level in governance, legislation, and public education.                                 |
| <b>Education &amp; Training Trends</b>         | <ol style="list-style-type: none"> <li>1. University curricula (AI bootcamps, MOOCs, joint degrees)</li> <li>2. Certifications (e.g., AWS ML, Google Cloud AI)</li> <li>3. Student/professor exchanges</li> </ol>                                                                                                                          | Develop a training pipeline: bootcamps, university courses, certifications, internships with partner companies.                         |

In this context, the UNCSTD could play a catalytic and critical role by:

- Establishing a global institutional framework to promote collaboration between technology-owning countries and Global South nations, facilitating knowledge and technology transfer;
- Supporting the creation of an international innovation network in AI, with dedicated innovation centers in member countries serving as physical/virtual collaboration hubs;
- Promoting the concept of a “Digital Divide Tax”, advocating for taxes on large international digital transactions to be reinvested as innovation credits benefiting collaborative projects in less developed countries;
- Helping to develop and globally disseminate a “universal AI curriculum”, covering various facets of AI tool development and application, backed by an inclusive global platform for courses, code, experimentation, and AI development;
- Supporting the creation of a global AI literacy base, exchanges of expertise, educational materials, and international best practices focused on AI’s societal impact and ethical use.