Regulatory Approaches for **Artificial Intelligence**

Authors: Uchenna Anyamele Ph.D. / Tikristini Olawale and Onyinye Onuh

CSEA
CENTRE FOR THE STUDY OF
THE ECONOMIES OF AFRICA

#Policy Brief

Introduction:

Artificial Intelligence (AI) is transforming industries, governance, and societies, offering immense benefits in efficiency and economic growth. Although AI continues to impact various sectors globally by driving innovation, it also raises complex regulatory challenges. The rapid advancement of AI raises significant ethical, social, and economic risks, including data privacy violations, job displacement, and bias in decision-making. Thus, there is an urgent need for effective AI regulation as governments and international bodies grapple with balancing innovation with safeguards to protect individuals and society.

To guide policymakers, the UNESCO consultation paper on AI regulations outlines nine emerging AI regulatory approaches that address different aspects of governance, innovation, and risk mitigation. The document emphasises the creation of a global ethical framework to guide the development and use of artificial intelligence. It outlines fundamental principles, challenges, and strategies for addressing the ethical, social, and regulatory issues posed by AI systems. The document's overarching goal is ensuring that AI contributes to sustainable development, human rights, and social well-being.

In response to UNESCO's open consultation, the Centre for the Study of the Economies of Africa (CSEA) reviewed efforts to clarify the various regulatory approaches outlined and emphasised the most prominent justifications for AI regulation. This brief therefore highlights key points from our submission to UNESCO and provides actionable recommendations for refining and enhancing AI regulatory approaches.

Justification for AI Regulation

There are several justifications for AI regulation:

- **Addressing Public Problems:** High-risk AI systems pose unacceptable societal risks, such as those targeted by the EU AI Act. Hence, regulation is needed to prohibit AI practices that pose unacceptable risks, set clear requirements for AI systems with high-risk applications, and require a conformity assessment before a given AI system is put into service or placed in the market.

- **Promoting Fundamental Rights:** AI regulation is required to protect, respect and promote fundamental and collective rights. Therefore, regulatory frameworks must safeguard human rights and mitigate discrimination or privacy violations risks. The EU AI Act (article 27) also captures this through the Fundamental Rights Impact Assessment (FRIA), which aims to mitigate possible harms of high-risk AI systems on individuals' fundamental rights.

- **Bridging the AI Divide:** Another justification for regulating AI is the widening AI/digital divide between countries, (particularly between Africa and the rest of the world), due to the lack of high-quality datasets, high-performance computers, and inadequate talent capabilities critical for AI development and deployment in Africa. As a result, there is a risk of economic power centralisation where a few big tech companies dominate AI technologies and their financial benefits possibly deepening inequality amongst countries. Thus, this growing technological divide necessitates regulations that foster AI development while mitigating global inequality.

Overview of UNESCO's AI Regulatory Approaches

The nine AI regulatory approaches outlined in the UNESCO consultation paper include Principles-based, Standard-based, Agile and Experimentalist, Facilitating and Enabling, Adapting Existing Laws, Access to Information and Transparency Mandates, Risk-based, Rights-based, and Liability approach. While these approaches are effective, and some provide sufficient detail to guide in-depth research for parliamentarians interested in exploring one or more approaches, there is the need for a more dynamic and multi-stakeholder perspective on specific approaches, particularly in balancing innovation with risk management. Thus, these approaches need to fully recognise the different roles and competencies of executive, legislative, and judicial bodies in overseeing AI systems. Additionally, regulations should vary where necessary across jurisdictions, guided by social, cultural, and political idiosyncratic tendencies.

Some Key Considerations in the UNESCO Approaches

The UNESCO consultation paper rightly identifies the Agile and Experimentalist approach as one of the ways to regulate AI. In this approach, context for cooperation within sandboxes and testbeds would often be important. Public and private cooperation in developing rules that meet the requirements of safe AI, results in outcomes that can be conflicting for participants. Within this approach, possible conflicts that may emerge from a divergence of expected outcomes is also necessary. It has been suggested that the Agile approach to regulating AI could focus more on cooperation across jurisdictions. Charmaine and Edson (2023).

The Agile and Experimentalist approaches, whilst interdependent, are also distinct. In adopting this approach to regulating AI, considering the key features of the Agile and Experimentalist approach is necessary. The emphasis should not be limited to the experimentalist approach because the Agile aspects require developing a dynamic system to multi-stakeholder considerations. The Agile approach has the main goal of adopting a soft law strategy of mitigating risks whilst legislation is being drawn. More specifically, this approach takes cognisance of the concerns regarding AI impacts exceeding an agency or nation's regulatory scope, capabilities, and jurisdictions. The Agile approach can encompass the Experimentalist approach however, it may not focus on pilot projects and experimental sandboxes as the Experimentalist approach does.

In adopting the Adapting Existing Laws approach, there should be emphasis on the necessity and use of soft law frameworks in addition to existing laws to ensure seamless adaptation and implementation of said laws. Additionally, industry standards and co-regulatory tools developed in collaboration with stakeholders, along with tools such as codes of conduct, certifications, and assurance models—play a crucial role in ensuring that existing laws are not applied too rigidly, which could hinder the development and deployment of beneficial AI applications.

Generally, many approaches and strategies function best when combined. For example, the Risk-based approach would often integrate transparency and governance models (as seen in the [EU AI Act Risk-based approach](#)) from Experimentalist frameworks, and sector-specific rules benefit from Agile dynamics. The combination of approaches, as employed in the [Utah private sector AI bill,](#) demonstrates the importance of a holistic regulatory framework.

Recommendation of Additional AI Regulatory Approaches for Consideration

AI is an emerging technology and likely at the top in terms of complexity and dynamism of the requisite knowledge for effective regulation. In broad terms, it is fair to imply that the approaches outlined above capture the main ways AI is regulated. However, the dynamic nature of this emerging technology means that regular modifications to regulatory frameworks can lead to an entirely different and specific approach. Hence, here are some related but possibly omitted AI regulatory approaches and models that could be included:

- **[Competency-based Approach](#):** This model recognises the regulatory roles of the executive, legislative, and judicial branches in overseeing AI systems. Under this approach, legislators would establish a regulatory agency responsible for certifying AI products and services, mainly focusing on user and social safety (Scherer, 2016). This agency, supported by researchers, would have two essential functions: policy-making and certification. It would monitor technological advancements, assess AI learning and application risks, issue technical guidelines, and ensure AI technologies are used as intended. A certification process would approve AI designers, manufacturers, and service providers, with pre-certification guidelines shared publicly. Thus, this approach focuses on the specific roles of government branches in certifying and monitoring AI products. The main strength of this approach is that it draws on the natural attribution of each government entity. However, agility is required for the actions performed by the regulatory agencies. This would give them a key role in the regulation process. Thus, enabling the evolution of technology whilst legislation matures.

- **Pro-innovation and [Market-driven](#) Approach:** The Pro-innovation approach balances innovation and safety in the progressive development of AI. The market-driven approach, similar to the pro-innovation approach, is premised on the fact that markets have a greater incentive for progress when compared to state intervention, which limits such progress in responsible AI development and adoption. Hence, these models are geared toward balancing safety and innovation, as promoted in the UK and the US, respectively. The main advantage of the pro-innovation approach is that it focuses on the context in which AI is deployed, enabling the adopters to weigh up the benefits versus the potential risks.

- **Sector-specific Approach:** This approach prioritises sector-specific considerations to regulate AI development, deployment, and applications. In the sector-specific approach, lawmakers focus on narrow and specific goals for legislation that are easily defined and understandable. Current examples include the [U.S. Senate Bill Block Nuclear Launch by Autonomous Artificial Intelligence Act of 2023](). This bill is focused only on nuclear launches and not on any broader national security issue. Considering the rapid evolution of AI technology, being able to regulate according to each sector's specific considerations ensures that regulators can keep up with technology by dealing with a particular sector's needs.

- **Critical Algorithmic Systems Classifications (CASC):** This approach requires the creation of a new regulatory instrument known as the Critical Algorithmic Systems Classifications. The CASC enables a comprehensive approach to developing application-specific rules for algorithmic systems. In doing so, the approach maintains long standing consumer and civil rights protection without necessitating a parallel regime for algorithmic systems. The justification for this approach is that algorithmic systems are being widely used for many impactful socioeconomic determinations and these algorithms are unique to their circumstances. Considering this challenge, there is a need for an approach to governing algorithms that comprehensively enables application-specific oversight. For the regulatory instrument, two new regulatory agencies with (1) administrative subpoena authority for algorithmic investigations, and (2) rulemaking authority for especially impactful algorithms within federal agencies' existing regulatory purview, are required.

When and How to Regulate AI

In deciding when to regulate AI systems, governments should consider whether they have sufficient and capable regulatory bodies to handle the diverse range or scope of foreseeable AI risks. Furthermore, governments need to consider that their regulation needs to be adapted to fit different circumstances and, if this is the case, whether there are different specialised regulatory bodies set up to handle the different effects of AI systems. For instance, the problems created by ineffective products differ from those created by pollution. Hence, there should be different bodies for these challenges. These different specialised regulatory bodies have an advantage over a general legislature in that they can draw upon the specialised knowledge needed to address the different types of problems, their origins in different industries, and their effects on different subsets of the population. Therefore, Governments can either consider using existing regulatory bodies to regulate AI or create new regulatory bodies when existing ones cannot fill gaps.

Furthermore, Governments should adopt a multi-stakeholder approach for deciding when to regulate by necessitating enhanced policy coordination mechanisms at different levels to ensure commitment from multiple stakeholders is actualised during policy implementation. Participatory governance is advocated to inform novel rationales and identify alternative models for policy action when addressing development challenges, including resilience against emerging disasters or risky AI machines. There are [four steps to follow]() in order to adopt a participative process for deciding when and how to regulate AI applications. They include:

- **Preparing the process:** Here, it will be necessary to identify the stakeholders that the government will be involved in the process for deciding when to regulate. This could include civil society organisations (CSOs) interested in protecting fundamental rights and collective rights, developers of AI systems, lawmakers, citizens, and research think tanks with expertise in this AI.

- **Organising the process:** Immediately after identifying the stakeholders, the organisation of the participatory process can begin. The planned activity, that is, the discussion of the readiness for AI regulation and the nature of the process, can be disseminated through various channels. Stakeholders can then be approached through multiple communication means and provided with various materials to facilitate their decision to participate in the activity.

- **Implementing a participatory process:** There are different levels of interaction between citizens and stakeholders. This includes non-participation, tokenism and citizen power. In the non-participation level manipulation and treatment will be involved. The latter, suggested, is where the citizens who will be affected by AI are educated in resolving issues or parties involved. There is the tokenism stage, which involves informing, consultation and placation. In order for the process to be legitimised, the citizens have to be informed. At this level, there is only a one-way flow of information with no means for participants to provide comments. The goal here is simply to disclose information. Then there is the consultation process where members of the public have the ability to participate in the decision-making process through surveys, questionnaires, etc. At the placation level, interaction primarily with representatives of stakeholder groups is established, e.g., through the creation of advisory positions. Those with a stake in the project get to evaluate input, and stakeholders are invited to engage with them before further decisions are made. Partnership, delegated power, and citizen control are part of the third level, which focuses on citizen power. Citizens and power holders share planning and decision-making duties in partnerships, and power is redistributed via negotiation. Through joint committees, for example, vulnerable persons whose rights will be significantly affected by AI can negotiate and engage in trade-offs with power holders.

- **Evaluating the results:** Here, various models of systems thinking can be applied as highlighted in the United Nations Industrial Development Organization (UNIDO) Technical Report on 'Approaches to Participatory Policymaking Processes'.

Figure 1: Steps to Participatory AI Regulation Process

Preparing the process
- Stakeholder's mapping
- Background information
- Political, legal, social. cultural, technical and economic boundaries

Organising the process
- Decision-making experiments
- Focus group discussions
- Jam sessions etc

Implementing the process
- Identification of possible level of action: from tokenism to partnership and co-creation

Evaluating the process
- Various methods of analysis including multi. criteria decision analysis
- Ensuring data protection guidelines

Source: UNIDO Technical Report (the original authors elaboration from Rodriguez and Komendantova, 2022).

Conclusion

Regulation is critical to ensure that all the benefits of Artificial Intelligence are widely distributed while minimising risks. The regulatory approaches to AI vary in scope and application, and there is no one-size-fits-all solution. Hence, it is important to clarify roles and outcomes in regulatory approaches to ensure they are well deployed and are effective in achieving sustainable growth and development. Moreover, regulatory models that are sector-specific and address competency, innovation, and international collaboration should be included to have a holistic AI regulation. A hybrid approach that combines risk-based, rights-based, and sector-specific regulation, complemented by international cooperation, is the most promising path forward.

Furthermore, AI development in regions like Africa should be encouraged through regulatory frameworks that address the widening global AI divide. Policymakers must remain vigilant to the risks AI presents while also fostering an environment where innovation can thrive responsibly. By adopting a balanced and dynamic approach to AI regulation, policymakers can ensure the responsible development and deployment of AI technologies that serve individuals and society's best interests.

References

Adams, R., 2022. AI in Africa: Key concerns and policy considerations for the future of the continent. Africa Policy Research Institute (APRI), Policy Brief (8). Available from: https://afripoli.org/ai-in-africa-key-concerns-and-policy-considerations-for-the-future-of-the-continent

APCO, 2023. Three Approaches to AI Governance. Available from: https://apcoworldwide.com/blog/three-approaches-to-ai-governance/

Benizri, I., Evers, A., Mercer, S. T., and Jessani, A. A., 2023. A Comparative Perspective on AI Regulation. LAWFARE. Available from: https://www.lawfaremedia.org/article/a-comparative-perspective-on-ai-regulation

Centre for Information Policy Leadership (CIPL), 2023. Ten Recommendations for Global AI Regulation. Available from: https://www.informationpolicycentre.com/uploads/5/7/1/0/57104281/cipl_ten_recommendations_global_ai_regulation_oct2023.pdf

Charmaine, N., and Edson, P., 2023. It's time we embrace an agile approach to regulating AI. World Economic Forum. Available from: https://www.weforum.org/agenda/2023/11/its-time-we-embrace-an-agile-approach-to-regulating-ai/

Congressional Research Service (CRS), 2023. S.1394 - Block Nuclear Launch by Autonomous Artificial Intelligence Act of 2023. Congress Gov. Available from: https://www.congress.gov/bill/118th-congress/senatebill/1394?q=%7B%22search%22%3A%22Block+Nuclear+Launch+by+Autonomous+Artificial+Intelligence+Act+of+2023%22%7D&s=2&r=1

de Almeida, P. G. R., dos Santos, C. D., and Farias, J. S., 2021. Artificial intelligence regulation: a framework for governance. Ethics and Information Technology, 23(3), pp.505-525. Available from: https://link.springer.com/article/10.1007/s10676-021-09593-z

Engler, A., 2023. A comprehensive and distributed approach to AI regulation: Proposing the Critical Algorithmic Systems Classification (CASC). Brookings. Available from: https://www.brookings.edu/articles/a-comprehensive-and-distributed-approach-to-ai-regulation/

Gov, UK., 2023. A pro-innovation approach to AI regulation. Available from: https://www.gov.uk/government/publications/ai-regulation-a-pro-innovation-approach/white-paper

Gov, UK., 2023. The Bletchley Declaration by Countries Attending the AI Safety Summit, 1-2 November 2023. AI Safety Summit. Available from: https://www.gov.uk/government/publications/ai-safety-summit-2023-the-bletchley-declaration/the-bletchley-declaration-by-countries-attending-the-ai-safety-summit-1-2-november-2023

Gutiérrez, J.D., 2024. Consultation paper on AI regulation: Emerging approaches across the world. UNESCO. Available From: https://unesdoc.unesco.org/ark:/48223/pf0000390979

NCSL, 2023. Approaches to Regulating Artificial Intelligence: A Primer. Available from: https://www.ncsl.org/technology-and-communication/approaches-to-regulating-artificial-intelligence-a-primer

Rodriguez, F. S., and Komendantova, N., 2022. Approaches to participatory policymaking processes: Technical report. United Nations Industrial Development Organization (UNIDO). Available from: https://www.unido.org/sites/default/files/unido-publications/2022-12/PPM-WEB-final.pdf

Scherer, M. U., 2016. Regulating Artificial Intelligence Systems: Risks, challenges, competences and strategies. Harvard Journal of Law & Technology, 29(2), 354–398

Stauss, D., and Davis, O., 2024. Utah Legislature Passes Private Sector AI Bill. Husch Blackwell. Available from: https://www.bytebacklaw.com/2024/03/utah-legislature-passes-private-sector-ai-bill/

The European Parliament, 2024. Artificial Intelligence Act. European Union (EU). Available from: https://www.europarl.europa.eu/doceo/document/TA-9-2024-0138_EN.pdf

The White House, US., 2022. Blueprint for an ai bill of rights: Making automated systems work for the American people. Available from: https://www.whitehouse.gov/ostp/ai-bill-of-rights/