



BANGLADESH

Artificial Intelligence Readiness Assessment Report

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Table of contents

ACKNOWLEDGEMENTS	i
FOREWORD	v
ACRONYMS AND ABBREVIATIONS	vii
EXECUTIVE SUMMARY	1
CHAPTER 1: DIAGNOSIS OF THE NATIONAL AI LANDSCAPE	4
CHAPTER 2: LEGAL AND REGULATORY DIMENSION	5
AI POLICY AND REGULATION	5
DATA PROTECTION AND PRIVACY LAWS	6
DATA SHARING AND ACCESSIBILITY	8
PROCUREMENT LAWS AND POLICIES	9
FREEDOM OF INFORMATION ACTS/ACCESS TO KNOWLEDGE ACTS	9
DUE PROCESS AND ACCOUNTABILITY, ONLINE SAFETY AND INTEGRITY OF SPEECH	10
PUBLIC SECTOR CAPACITY	10
CHAPTER 3: SOCIAL AND CULTURAL DIMENSION	11
DIVERSITY, INCLUSION AND EQUALITY	11
PUBLIC ENGAGEMENT AND TRUST	14
ENVIRONMENTAL AND SUSTAINABILITY POLICIES	16
HEALTH AND SOCIAL WELL-BEING	16
CULTURE	17
CHAPTER 4: SCIENTIFIC AND EDUCATIONAL DIMENSION	18
RESEARCH AND INNOVATION	18
EDUCATION	19
CHAPTER 5: ECONOMIC DIMENSION	24
LABOUR MARKETS	24
INVESTMENTS AND OUTPUT	24

CHAPTER 6: TECHNICAL AND INFRASTRUCTURAL DIMENSION	25
INFRASTRUCTURE AND CONNECTIVITY	25
APPLIED STANDARDS	26
COMPUTING CAPABILITIES	26
STATISTICAL PERFORMANCE	27
<hr/>	
CHAPTER 7: DEVELOPING A NATIONAL MULTISTAKEHOLDER ROADMAP	28
OVERVIEW OF THE STAKEHOLDER ENGAGEMENT PROCESS	28
MAIN AI ACTORS IN BANGLADESH	28
AI GOVERNANCE IN BANGLADESH	28
INSTITUTIONALIZING AI GOVERNANCE IN BANGLADESH	29
CREATING AI KNOWLEDGE AND COMPETENCIES IN BANGLADESH	30
CONCLUSION	30
<hr/>	
CHAPTER 8: POLICY RECOMMENDATIONS	32
REGULATION	35
INSTITUTIONAL FRAMEWORK	38
CAPACITY BUILDING	41
<hr/>	
REFERENCES	45
<hr/>	

Foreword

We have officially entered the Age of Artificial Intelligence. The world is now set to change at a pace not seen in decades, even centuries. AI-based tools and applications make our lives easier, smoother and richer. They help us move efficiently, get informed, get credit, get a job or get our taxes done.

But in its current form, AI reproduces and amplifies many of the social challenges we face. It is not acceptable that around one-third of the world's population still lacks adequate internet access. Upstream, the AI industry is highly concentrated, with just a few countries and a dozen companies accounting for a major share of the sector. This can only lead to greater inequality of outcomes – including gender disparities – downstream.

Non-diverse AI teams, unrepresentative datasets, and opaque and biased algorithms can cause harm, particularly to those who are already vulnerable, whether companies or individuals, children and young people, women or entire democracies.

That is why UNESCO drafted the Recommendation on the Ethics of Artificial Intelligence, which was adopted by 193 countries in 2021, to make sure AI delivers fair, sustainable and inclusive outcomes. The Recommendation is based on the protection and promotion of human rights, human dignity and environmental sustainability, and these values are then translated into principles such as accountability, transparency and privacy. The Recommendation also sets out concrete policy actions that governments can draw on to steer technological developments in a responsible direction, premised on the belief that light-touch regulation, which has been the norm until now, is insufficient. We need capable governments that are well equipped, in terms of competencies, institutions and laws, to frame responsible AI development and protect the rule of law online; and public and private developers who are accountable for putting human rights and fundamental freedoms – not profits or geopolitical considerations – first.

The Readiness Assessment Methodology (RAM) is a diagnostic tool intended to assist Member States in upholding their commitment to the Recommendation by helping them understand how prepared they are to implement AI ethically and responsibly for all their citizens. By highlighting any institutional, regulatory or data gaps and obstacles, it enables UNESCO to tailor support for governments to fill those gaps to ensure an ethical AI ecosystem aligned with the Recommendation.

Bangladesh's readiness assessment reflects a nation actively laying the foundations for responsible and inclusive AI development. A draft National AI Policy is currently under review, seeking to build on the principles of UNESCO's Recommendation on the Ethics of Artificial Intelligence. The forthcoming policy outlines a comprehensive implementation framework, emphasizing ethics, human rights, transparency and accountability in AI use. It also seeks to clarify institutional responsibilities and coordination mechanisms across ministries, academia and industry to ensure cohesive governance. In parallel, recent initiatives such as the Personal Data Protection Ordinance and the Cyber Security Ordinance aim to establish a complementary legal framework for data governance and digital security, reinforcing the country's commitment to trustworthy AI adoption.



At the same time, the assessment identifies several challenges that warrant focused attention. Strengthening existing data protection and cybersecurity frameworks to address emerging AI-related risks and harms remains a key priority. Additionally, enhancing national capacities for AI adoption, market readiness and public service delivery will be critical to ensuring that the benefits of AI are distributed equitably. Effective coordination among government departments will be necessary to break silos and achieve cohesive policy-making and deployment. Furthermore, sustained investment in AI research, innovation and digital infrastructure is essential to build a vibrant and self-reliant AI ecosystem in Bangladesh.

Overall, this report presents a fundamentally optimistic vision that we at UNESCO share: that ethical governance and responsible regulation of AI is entirely consistent with innovation and economic growth and is essential for ensuring a technological ecosystem that benefits the public good.

It was a pleasure working with the Government of Bangladesh to conduct this exercise. We are grateful for their engagement with the RAM, and I am sure that, by following the path laid out in this report, Bangladesh will be able to reap the benefits of AI while making sure that AI technologies deliver fair, sustainable and inclusive outcomes.

Lidia Brito

Assistant Director-General *ad interim* for Social and Human Sciences, UNESCO

Acronyms and abbreviations

AI	artificial intelligence
a2i	Aspire to Innovate
API	application programming interface
BBS	Bangladesh Bureau of Statistics
COVID	COronaVirus Disease
CSO	civil society organization
ICESCO	Islamic World Educational, Scientific and Cultural Organization
ID	identity, identification
EBLICT	Enhancement of Bangla Language in ICT through Research & Development
EGDI	E-Government Development Index
CSV	comma-separated values
EGDI	E-Government Development Index
FGD	focus group discussion
GDP	gross domestic product
GERD	gross expenditure on research and development
GPT	generative pre-trained transformer
HEAT	Higher Education Acceleration and Transformation
ICT	information and communication technology
IMLI	International Mother Language Institute
ITU	International Telecommunication Union
KI	key informant
KII	key informant interview
LDC	least developed country
LLM	large language model
Mbit/s	megabits per second
Mbps	megabytes per second
MoU	memorandum of understanding
NCTB	National Curriculum and Textbook Board
ODIN	Open Data Inventory
OSI	Online Service Index

PDPO	Personal Data Protection Ordinance
RAM	Readiness Assessment Methodology
STEM	science, technology, engineering and mathematics
UN SDG	United Nations Sustainable Development Goal
UNDP	United Nations Development Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization
WIPO	World Intellectual Property Organization

Executive summary

In November 2021, UNESCO's 193 Member States unanimously approved the Recommendation on the Ethics of Artificial Intelligence (UNESCO, 2022). This global framework aims to ensure that artificial intelligence (AI) is developed and used in ways that maximize benefits and minimize risks. Its unanimous endorsement reflects a worldwide commitment to responsible AI development. UNESCO also helps countries implement ethical AI practices through various capacity-building initiatives.

To facilitate the practical application of these Recommendations, UNESCO has developed a Readiness Assessment Methodology (RAM) (UNESCO, 2023a). This tool evaluates a country's preparedness to adopt ethical AI practices, identifying areas for improvement in institutional and regulatory frameworks. In Bangladesh, the RAM was launched in November 2024 by the Information and Communication Technology (ICT) Division¹ of the Ministry of Posts, Telecommunications and Information Technology and UNESCO in collaboration with Aspire to Innovate (a2i)² and UNDP³.

This RAM country report has eight key sections. The first section introduces and provides an overview of the current AI landscape in Bangladesh, which is supplemented by detailed quantitative and qualitative information, aligned according to the five pertinent dimensions of the RAM.⁴ The last two sections analyse the current status and offer a way forward through policy recommendations and a roadmap to implement them. The eight sections are:

- 1. Diagnosis of the national AI landscape**
- 2. Legal and regulatory dimension**
- 3. Social and cultural dimension**
- 4. Scientific and educational dimension**
- 5. Economic dimension**
- 6. Technical and infrastructural dimension**
- 7. Developing a national multistakeholder roadmap**
- 8. Policy recommendations**

Legal and regulatory

- Bangladesh has a draft National AI Policy, currently under review. The findings of this AI readiness report for Bangladesh aim to strengthen the draft National AI Policy with a focus on ensuring the equitable and inclusive development and deployment of AI technologies.
- Bangladesh has an extensive Right to Information Act and has recently adopted the Personal Data Protection Ordinance, 2025. A Cyber Security Ordinance was gazetted in May 2025 by the Government of Bangladesh, replacing the previous Cyber Security Act.

¹ <https://ictd.gov.bd/>

² <https://a2i.gov.bd/>

³ <https://www.undp.org/bangladesh>

⁴ It should be noted that the RAM takes into account ICT-related indicators that are not directly related but closely linked to AI. Data centres, for example, provide the infrastructure necessary for AI's data processing and storage needs. Cybersecurity is another area that is essential for protecting AI systems from potential threats. These underlying ICT components play a vital role in supporting and enabling AI readiness.

- Bangladesh has been assessed as having relatively low levels of cybersecurity preparedness according to the **Comparitech Cybersecurity Index**, though other assessments, such as the ITU Global Cybersecurity Index, place it mid-range, acknowledging efforts to improve.

Social and cultural

- The digital divide in Bangladesh manifests across demography and geography. For example, the number of male internet users is significantly higher than the number of female internet users, and the number of urban internet users is much higher than the number of rural internet users. Currently, there are no specific policies to address these disparities.
- AI systems trained in Bengali and minority ethnic languages need greater attention building on existing initiatives such as the Enhancement of Bangla Language in ICT through Research & Development (EBLICT) project and focusing on the volume and quality of diversified datasets and structured data-sharing frameworks.
- Bangladesh scores far above the global average in the Online Service Index, which assesses the scope and quality of online services provided by a government, and it ranks very high in terms of trust in government websites and apps.

Scientific and educational

- AI integration in Bangladesh's education system is **nascent**. While various teacher-training initiatives and platforms (e.g. Dikkha, Muktopaath) show promise, structured AI curricula and ethical AI education are largely missing.
- While over 75 per cent of secondary schools have access to computers, only about half of these schools have access to the internet.
- In 2021, almost 2,000 scholarly texts on AI were published in Bangladesh, showing growth in AI research over the years.

Economic

- Some start-ups in Bangladesh are working on developing their own AI systems, including large language models trained in Bengali.
- Bangladesh has a 0.2 per cent share of global high-tech exports according to the World Intellectual Property Organization's 2023 Global Innovation Index, which ranks it at 104 out of 132 countries.
- Data on the extent of private investment in AI are currently unavailable, and the AI start-up ecosystem, while showing promise, is still at an early stage of growth.

Technical and infrastructural

- While mobile phones are widespread (111 subscriptions per 100 inhabitants), only 44.50 per cent of Bangladesh's population uses the internet, highlighting the need to expand coverage.
- Bangladesh has **eight data centres** and ranks **seventy-third of seventy-six countries** for colocation data centres.

- A significant gender gap persists in mobile and internet access, and rural areas continue to face infrastructural challenges, including frequent power outages.

Development of a national AI multistakeholder roadmap

UNESCO and the Government of Bangladesh collaborated to conduct a RAM in the country, forming a National Steering Committee that convened **three** times. The process involved extensive stakeholder consultations, conducted in collaboration with the ICT Division and a2i, including seven focus group discussions, nineteen key informant interviews and one public consultation. Stakeholders included representatives from the government, private sector, academia and civil society organizations. While the consultation brought together a diverse set of stakeholders, gender representation within the group was limited.

Topics for discussion included the RAM's indicators as well as issues around and suggestions towards AI governance and creating an AI ecosystem in Bangladesh that benefits all citizens. The outcome of these discussions, complemented by desk research, informed a roadmap for Bangladesh, building on challenges and opportunities.

Towards a national AI strategy: high level recommendations

The opportunities identified during the consultations led to fifteen actionable recommendations, divided across three categories: regulation, institutional framework and capacity building. The recommendations are:

Regulation

- Finalize an inclusive and enabling National AI Policy.
- Strengthen the Personal Data Protection Ordinance and the Cyber Security Ordinance.
- Develop comprehensive AI procurement policies.
- Update the Right to Information Act.
- Strengthen diversity and responsibility in data collection.

Institutional framework

- Establish a central office for AI governance within the ICT Division.
- Establish a national multistakeholder steering committee for AI.
- Establish an independent data protection and cybersecurity authority.
- Establish a committee for a certification programme for AI vendors.
- Develop and curate datasets in Bengali and minority ethnic languages.
- Enhance community-level institutions for AI learning and inclusion.

Capacity building

- Enhance general public awareness of AI.
- Develop AI-focused curricula with special emphasis on uptake by girls and women.
- Invest in reskilling and upskilling for a future-ready workforce.
- Encourage sustained investment in AI research, development and infrastructure.

CHAPTER 1

Diagnosis of the national AI landscape

In Bangladesh, artificial intelligence (AI) governance is primarily overseen by the Information and Communication Technology (ICT) Division of the Ministry of Posts, Telecommunications and Information Technology. The ICT Division takes a collaborative approach, inviting additional support from other key institutions, including the Cabinet and the Ministries of Law, Public Administration, and Home Affairs.

Currently, there is a draft National AI Policy (Government of Bangladesh, 2024), which includes a proposal to establish a steering committee tasked with overseeing the ethical use of AI. However, the draft is yet to be finalized.

The new Government of Bangladesh is yet to develop a comprehensive plan and prioritize specific sectors for AI interventions through regulations, strategies and guidelines. The draft AI policy includes ten priority sectors; however, concrete steps towards its implementation remain to be initiated (Government of Bangladesh, 2024). AI systems have not yet been incorporated fully into decision-making or public service delivery in Bangladesh; therefore, developing mechanisms for public communication and transparency remains a priority for future implementation. However, establishing public declaration and transparency mechanisms would be beneficial and appropriate in anticipation of AI integration into public services. This would ensure that information related to AI, and particularly related to decision-making and data usage, reaches the grassroots.

To conclude, the Government of Bangladesh is presently working to establish AI regulations and policies, and this report seeks to contribute to these efforts by offering a strategic roadmap and actionable recommendations.

CHAPTER 2

Legal and regulatory dimension

AI policy and regulation

A draft National Artificial Intelligence Policy for Bangladesh is in its final review stage (Government of Bangladesh, 2024) and a National Strategy for Artificial Intelligence 2019-2024 also exists, albeit in draft format (Government of Bangladesh, 2020a). Although the draft policy aligns well with the core values and principles of UNESCO's Recommendation on the Ethics of Artificial Intelligence (UNESCO, 2022), the policy may be updated to reflect recent changes in governance, ensuring coherence with the vision and priorities of the current government.

Section 5.2.2 of the draft policy, under 'Legal and regulatory framework' references plans to update the National Strategy for AI to incorporate AI ethics guidelines and principles aimed at providing guidance on the responsible and ethical development and use of AI technologies (Government of Bangladesh, 2024). As the draft policy is still being reviewed, the inclusion of a detailed implementation strategy for ethical guidelines is expected to be addressed in subsequent iterations. The 2019-2024 draft strategy has a strategic pillar (Pillar 4: Ethics, data privacy, security and regulations) that outlines a general guideline on what the strategy should emphasize (Government of Bangladesh, 2020a).

With regard to human rights, Section 3.6 ('Human-centred AI') of the draft policy reads 'The development and use of AI technologies in Bangladesh shall be guided by... Ensuring AI technologies uphold the rule of law, human rights, dignity, values, and preferences, including human intervention scopes and human oversight in AI systems where necessary' (Government of Bangladesh, 2024). Stakeholder perspectives from the consultations reflect a shared understanding that adopting a human-centred approach to AI development and deployment is a key priority for Bangladesh. Section 5 of the draft policy, 'AI policy implementation approaches', presents a detailed implementation framework encompassing institutional, legal and regulatory components. It also outlines roles and responsibilities for relevant ministries and departments, academia, private sector entities and industries (Government of Bangladesh, 2024).

Additionally, the draft policy delineates an implementation plan for investment and funding in AI. While the framework identifies key focus areas, it does not currently specify budgetary allocations for the recommended measures. In comparison, the draft strategy includes a brief sub-strategy – Strategy 5: 'Funding and accelerating AI start-ups' – that touches upon potential budgetary provisions (Government of Bangladesh, 2020a).

Furthermore, Section 7 of the draft policy, 'Policy review', stipulates that the national AI policy will undergo regular reviews every three years, with stakeholder engagement serving as a fundamental component of the review process (Government of Bangladesh, 2024).

The draft policy also incorporates AI-driven impact assessment within Section 4.6 ('Finance, trade, and economy'). In alignment with the principles outlined in Section 3.2 ('Transparency and accountability'), the policy emphasizes the importance of ensuring transparency and accountability in the collection, storage and use of data, with the objective of making AI-driven decision-making processes explainable and interpretable, thereby enabling users and stakeholders to understand, question and challenge such decisions (Government of Bangladesh, 2024).

Given the draft status of both these documents, Bangladesh currently does not have binding regulations or soft law instruments specific to AI governance. During the RAM consultations,

stakeholders suggested that the UNESCO Recommendation on the Ethics of AI could be further aligned with the ethical values articulated by the Islamic World Educational, Scientific and Cultural Organization (ICESCO)⁵, given the relevance of such alignment for a Muslim-majority country like Bangladesh. Furthermore, certain AI technologies – such as intimate AI companionship and brain-computer interface applications – while accepted in other contexts, need greater attention for alignment with Bangladesh’s cultural and religious values.

Consultations also suggested that the national approach to AI governance may draw from discourse surrounding governance of social media platforms – fostering public trust through transparency, accountability and continuous public awareness initiatives. Clear and consistent communication between users, service providers and public authorities were seen to be crucial as AI systems become more integrated into public services.

Data protection and privacy laws

The literature assessing the state of cybersecurity in Bangladesh presents varied findings. According to the Cybersecurity Index compiled by Comparitech, which was last updated in January 2024, Bangladesh ranks as the second-least cyber-secure country globally.

The index highlights several vulnerabilities, including a high incidence of ransomware Trojan attacks, a significant number of computers experiencing web-based malware infections, local malware attacks, and mobile devices affected by malware.⁶

However, the Global Cybersecurity Index 2020, published by the International Telecommunication Union (ITU) in 2024, places Bangladesh at 53rd out of 194 countries in terms of cybersecurity readiness. The report acknowledges Bangladesh, along with some other countries like Benin, Rwanda and Tanzania, as an outlier among least developed countries (LDCs), recognizing its demonstrated commitment to strengthening cybersecurity. Notably, the report commends the establishment of a national cybersecurity industry as a key indicator of the country’s capacity development efforts (ITU, 2024).

In terms of regulatory developments, Bangladesh adopted a new Cyber Security Ordinance in May 2025⁷, which replaced the Cyber Security Act of 2023 (Government of Bangladesh, 2023a). The draft Ordinance introduces notable provisions relating to AI, such as the inclusion of AI systems within the definition of ‘digital devices’. Specific terms like ‘machine learning’, ‘machine vision’, and ‘large language model’ are explicitly referenced, thereby ensuring that AI systems fall within the scope of all relevant provisions concerning digital devices. Furthermore, AI is explicitly incorporated into the definition of ‘service providers’, thereby extending accountability frameworks to encompass AI developers. The draft Ordinance also outlines redress and remedy mechanisms, though its provisions regarding monitoring and redress for any harm caused by AI systems specifically may warrant further elaboration. Chapter 6 of the Ordinance enumerates penalties for a range of cybercrimes, including cyber-bullying, blackmail, hate speech and related offenses.⁸

⁵ <https://icesco.org/en/2024/09/12/at-the-global-ai-summit-icesco-director-general-announces-the-launch-of-riyadh-ai-ethics-charter-for-the-islamic-world/>

⁶ <https://www.comparitech.com/blog/vpn-privacy/cybersecurity-by-country/>

⁷ <http://bdlaws.minlaw.gov.bd/act-1538.html>

⁸ https://ictd.gov.bd/sites/default/files/files/ictd.portal.gov.bd/notices/749b7e40_e05e_4c4f_a01f_ad007460412d/_v15-WOColor-22.01.2025.pdf and <http://bdlaws.minlaw.gov.bd/act-1457.html>

The government has recently approved the Personal Data Protection Ordinance, 2025,⁹ to replace the earlier legislation, and ensure alignment with the current administration's values and priorities.

The current draft incorporates several noteworthy elements.

Section 16 and Section 17 of the draft PDPO mention the rights of the data subject to delete their data ('erasure' is the word used in the draft) and to prevent data processors from processing their data; and the responsibilities of the data controller in this regard. It outlines specific circumstances under which these rights may be exercised and stipulates that such actions must be undertaken without undue delay. Moreover, the draft includes provisions that clarify the responsibilities of data controllers in cases where personal data has been made public – an aspect particularly relevant for private sector entities, which are tasked with ensuring compliance with data deletion requests and bearing associated liabilities.

Section 6 and Section 7 outline a foundational consent framework, stipulating that consent must be free, specific, clear and capable of being withdrawn. It is the data collector's responsibility to demonstrate compliance with these requirements. While this section addresses consent for data collection and processing comprehensively, it does not explicitly address data-sharing practices. Introducing clear provisions for sharing data, alongside a framework for classifying datasets based on sensitivity levels, would strengthen the PDPO. Such enhancements could facilitate the effective implementation of access-control and data-minimization measures. Additionally, **Section 13** outlines the process of withdrawing consent.

Section 9 outlines a general framework for sensitive data processing. However, the draft does not provide a definition or hierarchy of data sensitivity. Introducing classifications for distinct categories of sensitive data – such as personal health information or educational records – would offer additional layers of protection and ensure tailored safeguards.

Section 20 outlines transparency requirements from the perspective of the data controller. This section could be enhanced by incorporating provisions addressing the transparency and explainability of AI systems, given the challenges posed by opaque, 'black-box' models.

Chapter 10 of the draft has the very rough outline of a complaint and compensation process for when a data subject's rights have been violated.

Chapter 5 and Chapter 7 establish accountability requirements and institutional arrangements, including the introduction of data protection officers and dedicated data protection agencies. However, the draft does not currently include explicit provisions regarding the right to privacy, respect for private and family life, or the requirement to conduct data protection or privacy impact assessments. Additionally, the draft lacks explicit references to data minimization principles. Integrating such provisions – along with frameworks for access control (e.g. classification labels such as 'confidential', 'secret' and 'top secret') and sensitivity categorization – would bolster data protection efforts.

To ensure a comprehensive and cohesive approach to data protection, the PDPO could further establish clear guidelines and standards for both public and private sectors, recognizing their unique characteristics and needs. Mechanisms enabling secure data sharing across sectors – public-private, private-private and public-public – would also contribute to a more robust framework, particularly in critical areas such as healthcare and e-commerce.

⁹ https://ictd.portal.gov.bd/sites/default/files/files/ictd.portal.gov.bd/page/6c9773a2_7556_4395_bbec_f132b9d819f.pdf

Several aspects of the draft PDPO could be further refined to strengthen its overall effectiveness. Ensuring the independence of the proposed data protection authority would help minimize potential conflicts of interest and reinforce safeguards related to surveillance, privacy, and freedom of expression.

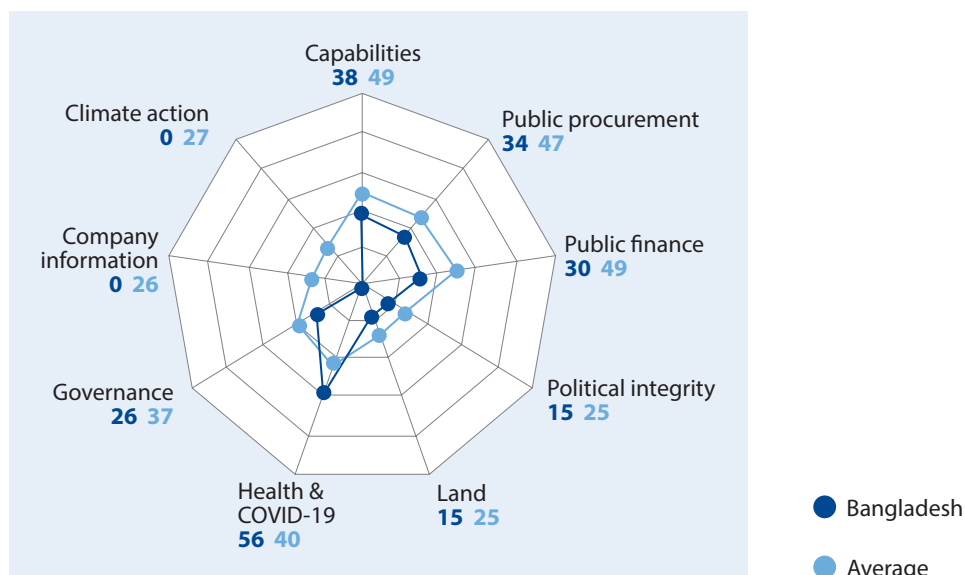
Past instances, such as during the COVID-19 pandemic, revealed gaps in data protection when sensitive personal information was collected without adequate safeguards for its use and storage. Existing legislation, including the Information and Communication Technology Act (Government of Bangladesh, 2006a), requires greater attention to address the issue of data misuse. These gaps highlight the need for stronger transparency provisions, mechanisms for informed consent, and effective enforcement measures to foster public trust and accountability. Additionally, emerging domains such as smart cities and AI-driven healthcare require particular attention, as they involve the processing of sensitive personal data that demand robust and clearly defined protections.

Data sharing and accessibility

In 2022, Bangladesh had an overall score of 40 (out of 100) in the Open Data Inventory (ODIN) by Open Data Watch and was ranked 140th of 195 countries.¹⁰ Similarly, the Global Data Barometer – which assesses data governance, capability and availability, as well as the use and impact of data for the public good – gave Bangladesh a score of 24, compared to a global average of 34. Notably, Bangladesh performed above the global average in the ‘Health & COVID-19’ category, scoring 56 versus the global average of 40.¹¹

Figure 1: Bangladesh’s score in the Global Data Barometer

● General country score **24** ● Average global score **34**



Source: <https://firstedition.globaldatabarometer.org/country/bangladesh/>

¹⁰ <https://odin.opendatawatch.com/Report/countryProfileUpdated/BGD?year=2022>

¹¹ <https://firstedition.globaldatabarometer.org/country/bangladesh/>

Bangladesh has not yet endorsed the international Open Data Charter, a set of principles and best practices for the release of governmental open data.¹² It is worth noting, however, that within the broader Asian region, only the Philippines, the Republic of Korea and Uzbekistan have formally adopted the charter.¹³

The country's primary data-sharing platform, Doptor Open Data, facilitates access to geographic and administrative information related to Bangladesh.¹⁴ There is also the Bangladesh National Portal Framework, where e-services are provided and government-related data are shared.¹⁵ A separate national data-sharing framework also exists; however, this framework is currently not accessible externally and does not support cross-border data sharing.¹⁶ The Bangladesh Bureau of Statistics (BBS) also shares data with various national agencies, although a dedicated and comprehensive data-sharing framework has not been identified.¹⁷

Bangladesh has formulated an Open Government Data Strategy under the Statistics and Informatics Division, Ministry of Planning (Government of Bangladesh, n.d.). It might consider enhancing the effectiveness of this strategy by introducing a structured assessment mechanism to evaluate its outcomes. Additionally, while the strategy aims to facilitate research by making datasets accessible, providing specific guidance to researchers would be a valuable next step, ensuring access to information for those who can benefit from it.

Procurement laws and policies

At present, Bangladesh does not have dedicated laws or policies governing the procurement of AI systems, products or services. However, the country's procurement processes are regulated by the Public Procurement Rules (Government of Bangladesh, 2008) and facilitated by the electronic Government Procurement (e-GP) system,¹⁸ administered by the Bangladesh Public Procurement Authority.¹⁹ The e-GP platform manages the entire government procurement process cycle and, in principle, could be extended to encompass AI procurement, too.

Given the distinct characteristics and implications of AI systems, the need to develop a robust and mandatory certification programme for AI vendors, which incorporates both technical standards and ethical considerations, is widely recognized. While traditional procurement guidelines prioritize financial and operational aspects, the procurement of AI systems may warrant additional frameworks that address ethical compliance, mechanisms for redress, and compensation provisions. Integrating these elements would ensure a more comprehensive and responsible approach to AI procurement.

Freedom of Information Acts/ Access to Knowledge Acts

Bangladesh has enacted a Right to Information Act (Government of Bangladesh, 2009a), which provides a comprehensive framework governing the preservation and publication of, and access to, information. The Act also stipulates the establishment, structure and functions of an Information Commission responsible for overseeing its implementation.

¹² https://en.wikipedia.org/wiki/Open_data

¹³ <https://opendatacharter.org/government-adopters/>

¹⁴ <https://doptor.gov.bd/>

¹⁵ <https://bangladesh.gov.bd/index.php?lang=en>

¹⁶ <https://data.gov.bd/>

¹⁷ <http://nsds.bbs.gov.bd/en>

¹⁸ <https://cptu.gov.bd/e-gp.html>

¹⁹ <https://cptu.gov.bd/>

Several independent studies have evaluated the effectiveness of the Right to Information Act. It has been suggested that ‘the legal framework needs to be reformed to make it [the Act] compliant with the international standards’ (Lubaba, 2020). A policy group called the Right to Information Forum (2012) has also presented a set of recommendations. Given that the Act was promulgated in 2009, it does not contain specific provisions addressing emerging technologies like AI. Nonetheless, Chapter 2 of the Act delineates the responsibilities and obligations of entities involved in the use or dissemination of data. Specifically, Section 5 and Section 6 address the preservation and publication of information, while Section 7 outlines exemptions to these provisions. Furthermore, the Act details procedures for requesting and providing information, thus contributing to a structured framework for public access to information.

Due process and accountability, online safety and integrity of speech

With respect to due process rights, the Cyber Security Ordinance 2025 delineates a range of cybercrimes and corresponding penalties. Chapter 6 of the Ordinance lists offenses that fall within its scope, including unauthorized access to systems and digital infrastructure, fraud, sexual harassment, blackmail, hate speech and other related offenses. Chapter 7 outlines procedures for investigation and adjudication, providing guidance on matters like jurisdiction, procedural timelines and related judicial processes.

Previously, the Digital Security Act of 2018 (Government of Bangladesh, 2018a) was enacted in order to prevent the dissemination of hate speech, extremism and other harmful content in digital spaces. However, the law attracted significant scrutiny due to concerns regarding its application in restricting dissenting opinion and limiting freedom of expression, without adequately addressing online security challenges. Consequently, the Digital Security Act was repealed and replaced by the Cyber Security Act of 2023 (Government of Bangladesh, 2023a), which also prompted public debate and has since been replaced by the Cyber Security Ordinance 2025.

Policy measures that enhance online safety could play a pivotal role in narrowing the digital gender gap, as women frequently encounter harassment and abuse in digital environments. Recognizing the evolving digital landscape, the Government of Bangladesh, especially under the ICT Act (2006a), has made efforts to establish a comprehensive digital safety framework aimed at safeguarding citizens online. This framework seeks to address issues like hate speech, violent content, misinformation and disinformation, while fostering a secure and inclusive digital space. However, there are emerging challenges, such as the admissibility of digital evidence (e.g. screenshots) to address cases of online abuse.

Public sector capacity

Bangladesh does not currently have a dedicated government strategy or programme aimed specifically at enhancing digital skills within the public sector. The Dikkha application, primarily designed to support teachers and students, contributes to digital capacity building to some extent.²⁰ However, a targeted government strategy or programme focused on strengthening digital competencies in the public sector could be a step towards addressing the digital divide and ensuring equitable access to digital opportunities across various segments of society.

²⁰ <https://dikkha.com/>

CHAPTER 3

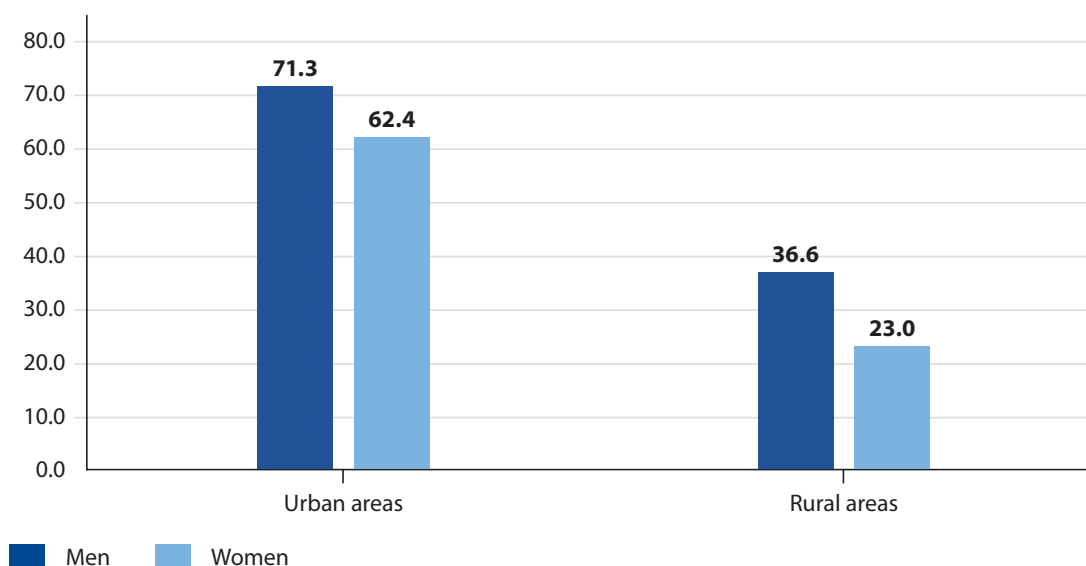
Social and cultural dimension

Diversity, inclusion and equality

As of June 2024, the gender gap in internet use in Bangladesh stood at 0.767.²¹ Despite gradual yet consistent progress in this regard since 2020, the number of male internet users remains higher than female users.

A pronounced disparity is also evident between urban and rural internet use. Approximately 66.8 per cent of the urban population uses the internet versus only 29.7 per cent of the rural population. Gender differences persist across both regions: in urban areas, 71.3 per cent of men and 62.4 per cent of women use the internet, while in rural areas, 36.6 per cent of men and 23 per cent of women are reported users.²²

Figure 2: Internet users by area and gender, 2024 (in percentage)



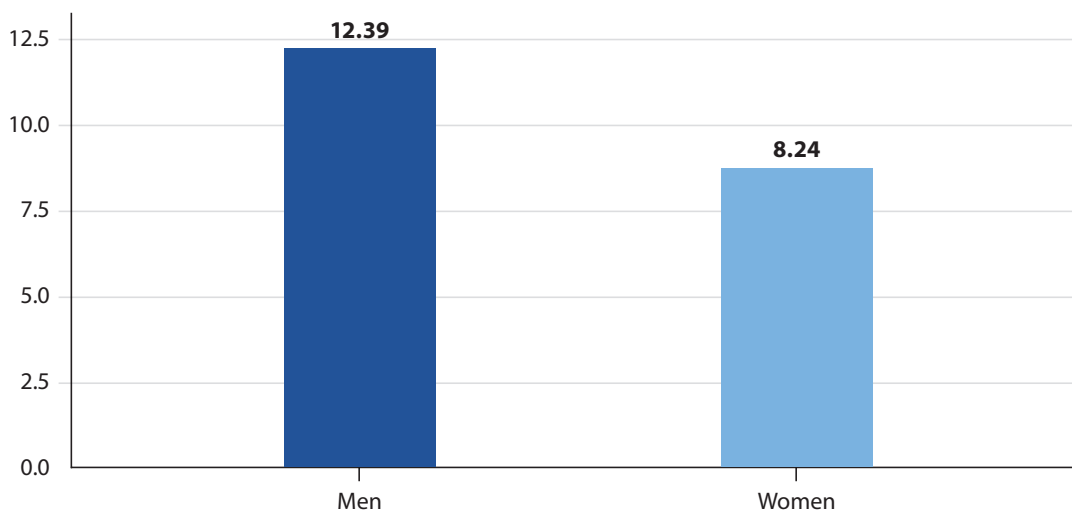
Source: <https://www.itu.int/en/ITU-D/Statistics/Pages/stat/default.aspx>

A gender gap exists in education, too. The proportion of females graduating from tertiary education programmes in science, technology, engineering and mathematics (STEM) fields is 8.24 per cent, compared to 12.39 per cent for males – a gender ratio of 0.67 (World Economic Forum, 2021).

²¹ <https://www.digitalgendergaps.org/>

²² <https://www.itu.int/en/ITU-D/Statistics/Pages/stat/default.aspx>

Figure 3: Graduates of tertiary education programmes in STEM fields by gender, 2021 (in percentage)



Source: World Economic Forum, 2021

Currently, Bangladesh does not have specific laws or policies aimed at reducing the digital gender gap. However, the National Information and Communication Technology (ICT) Policy (Government of Bangladesh, 2018b) references social equity and universal access (Chapter 2, 'Visions and objectives', Section 2.2.3). One notable initiative towards gender equity is the Her Power project, or প্রযুক্তির সহায়তায় নারীর ক্ষমতায়ন শীষক প্রকল্প (women's empowerment through technology) initiated by the ICT Division.²³ This project offers women-focused training in ICT fields, including e-commerce, information technology (IT) services, web development and graphic design.

Existing wage disparities in the ICT sector, including in entry-level roles such as data entry, highlight the need for policy interventions to promote equal pay and facilitate the upskilling of women, enabling them to transition into higher-value technological roles (Hossain, 2018). While broader education policies, such as the National Education Policy (Government of Bangladesh, 2010), encourage increased female participation in education, they do not specifically address the digital gender divide.

Bangladesh does not have targeted policies to address rural-urban disparities; however, general references to socio-economic disparities in this context exist in various policy documents. The draft National AI Policy (Government of Bangladesh, 2024) and the Smart Bangladesh: ICT Master Plan 2041 (Government of Bangladesh, 2023b) acknowledge these inequalities. The previous government's manifesto included a My Village-My Town initiative,²⁴ which sought to extend urban amenities to rural areas. Similarly, the Eighth Five-Year Plan (Government of Bangladesh, 2020b) references the issue, contributing to initiatives such as Union Information Service Centres and district-level Information Portals managed by Aspire to Innovate (a2i), a special programme for the digital transformation of Bangladesh, located within the ICT Division and the Cabinet Division. However, the effective implementation of such initiatives remains a challenge, constrained by infrastructural limitations and the erosion of public trust in initiatives undertaken by the previous administration, many of which are currently under review.²⁵

²³ <https://herpower.gov.bd>

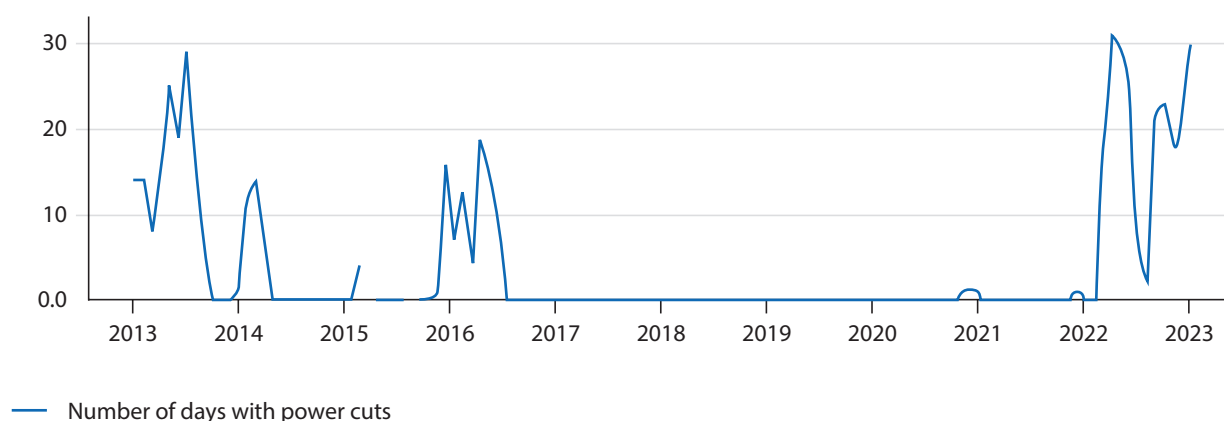
²⁴ https://lged.portal.gov.bd/sites/default/files/files/lged.portal.gov.bd/page/184c146e_dde0_485c_9c05_930b771411bd/2023-06-17-09-31-2095884d23bd34b76e1290a7b628d886.pdf

²⁵ <https://en.banglapress24.com/article/my-village-my-town-big-promises-small-delivery>

While Bangladesh has benefited from previous digitalization initiatives, which proved particularly valuable during the COVID-19 pandemic (a2i, 2023), the pandemic also exposed a significant digital divide. For example, limited access to devices in urban slum areas hindered residents' ability to receive essential digital services, including mobile financial aid (Siddiquee et al., 2022). By contrast, rural communities demonstrated resilience by relying on resource-sharing arrangements to overcome similar challenges.²⁶

The lack of continuous, and reliable electricity poses a significant challenge, too. While almost 100 per cent of Bangladesh's population has access to electricity,²⁷ power cuts are an issue (Varadhan and Chew, 2023), especially in rural areas, where daily interruptions can extend to seven or eight hours. These disparities are even more pronounced in geographically and administratively complex regions, such as the Chittagong Hill Tracts, where transportation difficulties and dual administrative systems often result in confusion regarding service delivery channels.

Figure 4: Number of days with power cuts in Bangladesh, 2013 to 2023



Note: All figures in number of days; Data for Feb 2013, July and December 2015 unavailable
 Source: Power Grid Company of Bangladesh

Although previous digitalization initiatives, such as those rolled out under the Bangladesh Vision 2021 programme (Centre for Policy Dialogue, 2007), improved connectivity and literacy, gender, occupational and regional disparities persisted. For instance, garment workers, despite having smartphones, faced language barriers and lacked the time and resources to engage meaningfully with digital technologies.²⁸ Similarly, communities in marginalized regions, including tea gardens, had limited internet access, leaving them disconnected from broader digital advancements.²⁹

There are additional challenges associated with disparities in the cost of communication between urban and rural areas, where marginalized populations often incur higher expenses (Hasan, 2025). A collaborative approach between the government and mobile service providers, building on the regulatory framework established by the Bangladesh Telecommunication Act (Government of Bangladesh, 2001), may help address these disparities and ensure equitable access to affordable communication services.

²⁶ <https://www.fao.org/bangladesh/news/detail-events/en/c/1504841/>
²⁷ <https://data.worldbank.org/indicator/EG.ELC.ACCS.ZS?locations=BD>
²⁸ <https://www.gsma.com/solutions-and-impact/connectivity-for-good/mobile-for-development/blog/covid-19-is-diversifying-mobile-internet-use-for-women-in-bangladesh-but-most-are-still-excluded/>
²⁹ <https://www.tbsnews.net/supplement/margins-mainstream-1147026>

In the context of diversity, the draft National AI Policy mentions workforce diversity, but it does not provide detailed provisions (Government of Bangladesh, 2024). Currently, Bangladesh does not have dedicated policies to promote diversity within the digital workforce, and there are no requirements mandating government contractors, academia or technology firms to publicly disclose diversity statistics.

Language inclusion is also a key consideration in AI development and innovation. The scarcity of diversified datasets impedes effective AI system training in local languages. Despite access to advanced tools like ChatGPT, output in Bengali remains suboptimal due to the limited availability of open-source datasets. Data translation from English to Bengali often results in poor outcomes, negatively impacting model performance. The Enhancement of Bangla Language in ICT through Research & Development (EBLICT) project,³⁰ under the Bangladesh Computer Council³¹ and the ICT Division, is a notable initiative meant to address this gap. It has been working on several projects to increase the inclusion of Bengali in the AI landscape, and has developed solutions, such as a sentiment analyser,³² an optical character recognizer,³³ a spell checker,³⁴ a speech-to-text and a text-to-speech generator,³⁵ etc. These solutions are available online, but datasets remain unavailable.

The draft AI policy of 2024 does not specifically focus on acquiring and training datasets for minority, indigenous or ethnic languages. Further, many ethnic languages lack written records, and some do not have dedicated fonts. While the International Mother Language Institute (IMLI)³⁶ has made strides in language preservation, such as collecting Santali language data for Google Translate, most ethnic languages remain under-represented.³⁷

There is a need for greater attention to disability access in AI policy-making and governance in Bangladesh. The comprehensive Rights and Protection of Persons with Disabilities Act (Government of Bangladesh, 2013a) is the foundational legislation that safeguards the rights of persons with disabilities. Digital technologies, like online banking, have demonstrated the potential to promote independence and dignity for persons with disabilities. Bangladesh's digital public infrastructure also includes measures to enhance accessibility in physical locations and call centres.³⁸ However, access to such services is not yet universal, and further efforts are required to ensure inclusivity.

Public engagement and trust

The Online Service Index (OSI), within the United Nations E-Government Development Index (EGDI), assesses the scope, quality and accessibility of online services delivered

by governments worldwide, with a maximum attainable score of 1.0. Bangladesh's performance in this area has improved steadily over time, progressing substantially from a score of 0.00917 when the OSI took its first measurements in 2003.³⁹ In 2024, Bangladesh received a score of 0.7374, significantly above the global average of 0.5754.

³⁰ <https://bcc.gov.bd/site/page/6a8cfbab-51b4-4d90-922c-c63e5cc1f541/->

³¹ <https://bcc.gov.bd/>

³² <https://sentiment.bangla.gov.bd/sentiment-emotion-analysis>

³³ <https://ocr.bangla.gov.bd>

³⁴ <https://spell.bangla.gov.bd/>

³⁵ <https://read.bangla.gov.bd/>

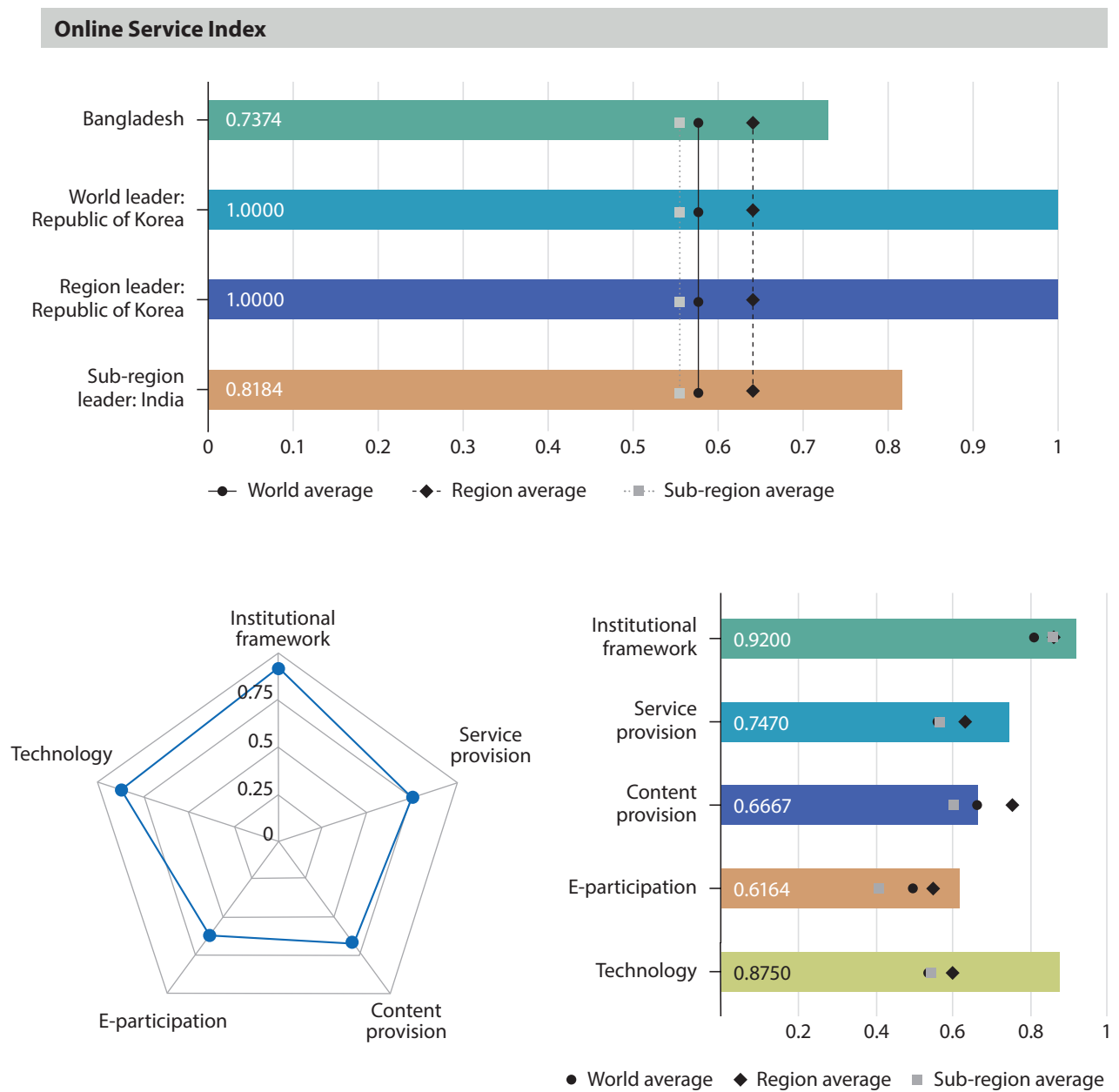
³⁶ <https://imli.gov.bd/>

³⁷ For a list of indigenous languages in Bangladesh, see: <https://www.ethnologue.com/country/BD/>

³⁸ <https://a2i.gov.bd/bangladeshs-phygital-public-infrastructure-bridges-dpi-theory-and-practice/>

³⁹ <https://publicadministration.un.org/egovkb/en-us/Data/Country-Information/id/14-Bangladesh>

Figure 5-8: Bangladesh's performance in the OSI



Online Service Index	2024	2022	2020	2018	2016	2014	2012	2010	2008	2005	2004	2003
Bangladesh (value)	0.73744	0.65210	0.61180	0.78470	0.62319	0.34645	0.44444	0.35555	0.35117	0.07307	0.08108	0.09170

Source: <https://publicadministration.un.org/egovkb/en-us/Data/Country-Information/id/14-Bangladesh>

The E-Participation Index, a supplementary index to the EGDI, assesses the availability and effectiveness of e-participation mechanisms, including e-information, e-consultation and e-decision-making, offered by governments relative to each other.⁴⁰ Bangladesh ranked 70th of 193 countries in the E-Participation Index of 2024, scoring 0.6164.⁴¹ The world average is 0.4893 and the highest possible score is 1.

Bangladesh ranked 8th of 100 countries in ‘trust in government websites and apps’ as per the Economist Impact’s Inclusive Internet Index 2022, with a score of 72 per cent.⁴² It is noteworthy, however, that this score may not fully reflect recent political developments in Bangladesh nor the perspectives gathered during stakeholder consultations, which indicated a degree of eroded trust in the previous administration.

As an example, the **e-Nothi system** is Bangladesh’s one-stop electronic filing platform designed to streamline government operations, promote paperless offices, and ensure faster, more transparent and accountable public service delivery for its 160 million citizens (Yesmin, 2020). It contains a vast repository of government information, and AI could be used to generate summaries from it.

Environmental and sustainability policies

The draft National AI Policy 2024 identifies the environment as a priority sector for AI application. Specifically, Section 4.4 (‘Environment, energy, and climate change’) underscores the potential role of AI in optimizing renewable energy production, enhancing weather forecasting capabilities and improving water resource management (Government of Bangladesh, 2024). While the draft policy provides a comprehensive overview of AI applications in environmental conservation, it places comparatively less emphasis on the environmental impact of and sustainability considerations around AI technologies themselves. Addressing this gap may involve the development and implementation of legal and regulatory frameworks that not only foster responsible deployment of AI but also prioritize environmental sustainability in alignment with Bangladesh’s broader development goals.

Health and social well-being

The Bangladesh Digital Health Strategy 2023–2027 was developed under the auspices of the Ministry of Health and Family Welfare (Government of Bangladesh, 2023c). The strategy mentions AI in the context of establishing a digital health information exchange programme (Section 4.2.2) and an accessible web-based health advisory service (Appendix 4, note 2). It comprehensively addresses both physical and mental health dimensions; however, it does not specifically examine the implications of AI technologies on children’s health and well-being.

Currently, AI-based prediction models for various diseases in the health sector in Bangladesh rely predominantly on foreign datasets. However, there are no specific ethics committees and/or internal review boards to facilitate data sharing from local institutions. Establishing clear policy mechanisms to streamline data-sharing processes would help address these challenges. Additionally, it is essential to raise awareness within the private sector about the importance of ethical data sharing. Equally critical is the development and enforcement of a comprehensive and robust data protection framework to ensure the safeguarding of personal health information.

⁴⁰ <https://publicadministration.un.org/egovkb/en-us/About/Overview/E-Participation-Index>

⁴¹ <https://publicadministration.un.org/egovkb/en-us/Data/Country-Information/id/14-Bangladesh>

⁴² <https://impact.economist.com/projects/inclusive-internet-index/2022>

Culture

Bangladesh does not have a comprehensive policy framework dedicated to the preservation of cultural heritage using AI, despite the ICT Division taking some initiatives, such as developing a local language keyboard and collecting approximately 12,000 minutes of audio data across 40 languages. However, these datasets are not yet publicly accessible, and key issues, such as the need to establish annotation standards and ensuring validation, require more attention. The National Cultural Policy (Government of Bangladesh, 2006b) broadly addresses cultural preservation but does not specifically incorporate AI-driven initiatives.

Research and stakeholder consultations underscored that AI technologies can play a significant role in safeguarding Bangladesh's cultural and linguistic heritage by supporting the digital preservation of artefacts, heritage sites and ecological elements, as well as strengthening links with traditional knowledge systems. However, leveraging AI for these purposes requires a stronger focus on developing culturally grounded language models and tools. Current progress in Bangla language AI remains limited – only a few initiatives, such as Hishab's Bengali language model,⁴³ exist, and efforts like the Naline Language Documentation Project by IMLI require greater focus on funding, technical expertise and skilled personnel. Complementary initiatives such as the National Linguistics Olympiad launched by IMLI have proven effective in raising awareness and promoting engagement among younger speakers of minority languages, highlighting the potential of participatory approaches in revitalizing linguistic diversity.

⁴³ <https://huggingface.co/hishab>

CHAPTER 4

Scientific and educational dimension

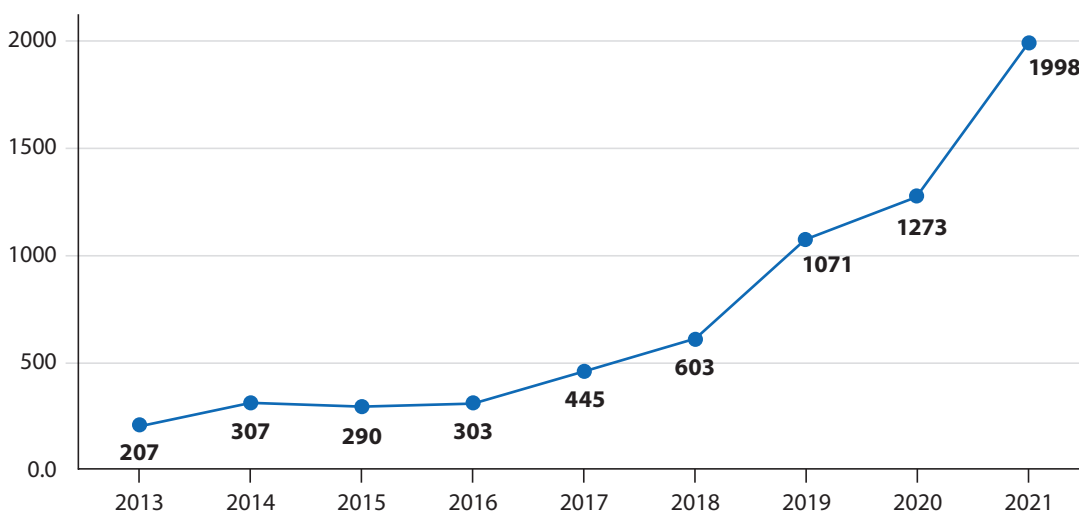
Research and innovation

In 2021, Bangladesh's gross expenditure on research and development (GERD) equalled 0.3 per cent of its gross domestic product (GDP), according to a survey report released by the Bangladesh Bureau of Statistics (BBS) in May 2024. This is a slight decline from 2020 (0.31 per cent) and 2019 (0.35 per cent). For comparison, other countries in the region allocated the following proportions of their GDP to GERD in 2022: India 0.6 per cent; Pakistan 0.2 per cent; and Myanmar 0.0 per cent.⁴⁴ This indicator aligns with the United Nations Sustainable Development Goal (SDG) indicator 9.5.1, which measures research and development expenditure as a proportion of GDP.

There are multiple research and innovation funding channels from the Government of Bangladesh, such as the a2i Innovation Fund (AIF); the Innovation Fund by the IDEA project; the Research and Innovation Grant by the Ministry of Science and Technology, etc.

According to data from the Center for Security and Emerging Technology, there were 1,998 scholarly publications on AI in Bangladesh in 2021,⁴⁵ an average of 0.000011 publications per capita.⁴⁶ This represents a marked increase from 2013, when only 207 publications were recorded. Notably, the number of publications more than tripled between 2018 and 2021, reflecting the country's growing engagement with AI-related research and academic contributions to it over recent years.

Figure 9: Number of scholarly publications on AI in Bangladesh (2013 to 2021)



Source: <https://ourworldindata.org/grapher/annual-scholarly-publications-on-artificial-intelligence?tab=table>

⁴⁴ <https://ourworldindata.org/sdgs/industry-innovation-infrastructure>

⁴⁵ <https://ourworldindata.org/grapher/annual-scholarly-publications-on-artificial-intelligence?tab=table>

⁴⁶ All indicators in this RAM that refer to 'per capita' use the following population of Bangladesh: 169,828,911. This is based on the country's Population and Housing Census 2022 (Bangladesh Bureau of Statistics, 2023).

Scholarly excellence in AI may also be gauged from performance in Kaggle, a data science competition platform and online community for data scientists and machine learning practitioners. Bangladesh has one double Kaggle grandmaster and one Kaggle grandmaster, both based in Dhaka, in addition to a Kaggle grandmaster of Bangladeshi nationality based in the USA,⁴⁷ all of whom are male. There are 0.00000001 Kaggle grandmasters in Bangladesh per capita (excluding those based abroad).

Bangladeshi engineers and scientists also contribute significantly on GitHub,⁴⁸ although contributions towards AI repositories were not possible to measure.

Education

Integration of digital tools and AI in education

Bangladesh's National Information and Communication Technology Policy aims to integrate digital tools in education by providing multimedia classrooms (Government of Bangladesh, 2018b). However, implementing this vision across over 100,000 primary schools and 33,000 secondary schools poses significant logistical challenges. Despite these hurdles, the concept of blended education has gained momentum, especially during the COVID-19 pandemic, and a framework is now in place to support its development.

The previous government introduced several platforms or applications aimed at enhancing educational access and efficiency. These include:

- Teachers' Portal (শিক্ষক বাতায়ন)⁴⁹ is an online platform for teachers designed to create and retrieve digital educational content for different subjects for classroom teaching.
- Dikha (দীক্ষা) is an initiative that integrates digital and multimedia classroom solutions, establishing an effective network that connects teachers and students across the country.
- Noipunno (নৈপুণ্য)⁵⁰ is another data framework designed to support teachers and students; however, it is not operational currently.
- Kishor Batayon (কিশোর বাতায়ন)⁵¹ helps students manage their classes and coursework.

The ICT Division's Hour of Code programme encourages school students to dedicate one hour each day to learning coding skills,⁵² while UNICEF and the Directorate of Secondary and Higher Secondary Education have developed gamified learning content, currently being piloted in twenty-four schools.⁵³

AI integration into the country's education system remains in its early stages, with significant potential for expansion. Government-led teacher-training programmes at the secondary and higher secondary levels provide basic digital literacy but do not include dedicated AI-specific tools or pedagogical applications. Expanding these initiatives to include practical, AI-enabled teaching methods will be essential for building future-ready classrooms and enhancing digital competency among educators.

⁴⁷ Personal research by co-author.

⁴⁸ https://github.com/gayanvoice/top-github-users/blob/main/markdown/total_contributions/bangladesh.md

⁴⁹ <https://www.teachers.gov.bd/>

⁵⁰ [https://dme.portal.gov.bd/sites/default/files/files/dme.portal.gov.bd/notices/a0c7fd36_216c_4a4f_a341_7a1fc241858c/2nd_Noioounno%20App%20Web%20Version_User%20guideline%20\(1\).pdf](https://dme.portal.gov.bd/sites/default/files/files/dme.portal.gov.bd/notices/a0c7fd36_216c_4a4f_a341_7a1fc241858c/2nd_Noioounno%20App%20Web%20Version_User%20guideline%20(1).pdf)

⁵¹ <https://www.undp.org/bangladesh/stories/kishore-batayan-konnect-becomes-students-way-out-during-pandemic>

⁵² <https://file-rangpur.portal.gov.bd/uploads/c18c0a17-a73f-456f-8e66-11fb8d20103c/65b/e69/922/65be699227414967104915.pdf>

⁵³ <https://changeagentbd.com/>

A recent survey of 1,253 teachers, conducted by the Asian Development Bank, revealed a positive outlook towards the use of AI tools to enhance teaching practices and educational outcomes (Asian Development Bank, 2024). Teachers were confident about using AI for tasks like lesson planning and assessment, while being cautious about AI's role in areas that require human interaction. Importantly, participation in AI training programmes increased teachers' confidence and willingness to adopt AI technologies, underscoring the importance of continuous capacity-building efforts. However, challenges persist, including infrastructural limitations, insufficient training opportunities, and concerns regarding online safety. Teachers recommended comprehensive training programmes, greater investment in infrastructure, and the development of culturally relevant AI tools to address these challenges effectively.

An example from the National Curriculum and Textbook Board (NCTB) illustrates these challenges. AI was used to translate a mathematics textbook into English, but the results were both inaccurate and culturally inappropriate. This incident underscored the importance of localizing AI tools and training them to meet a country's specific linguistic and contextual needs. Moreover, it raised ethical concerns about the unauthorized use of AI in government projects.

The Master Plan for ICT in Education in Bangladesh (2012-2021), although formulated prior to the advent of AI-specific policies, demonstrates the government's intent to leverage digital tools for education, a precursor to AI-driven initiatives (Government of Bangladesh, 2019).

The Ministry of Education initiated training of educators on AI and technology ethics in 2021, following formal processes that involved getting approvals from multiple stakeholders, securing budget allocations, and creating memoranda of understanding (MoUs). Training programmes are ongoing, with thirty educators per batch participating in both online and offline sessions. Additionally, blended learning programmes involving 30,000 educators from government and non-government schools have been implemented, focusing on AI-driven lesson plan development, peer reviews and moderation to ensure quality and understanding.

Intel has also provided some training on AI to educators within the Directorate of Secondary and Higher Secondary Education, preparing 'lead coaches' who could, in turn, teach other educators about AI and programming. This project ran between 2022 and 2024, and the contract with Intel will end in 2025. Current teacher-training programmes also incorporate blended learning methodologies, combining online and offline instruction, and are structured to accommodate future integration of AI components. Furthermore, the Higher Education Acceleration and Transformation (HEAT)⁵⁴ project focuses on capacity building for tertiary level educators, emphasizing the enhancement of teaching and learning environments and practices. Notably, the project includes dedicated components addressing technology ethics. Platforms like Muktopaath,⁵⁵ one of the largest e-learning platforms and learning management systems in Bangladesh, have been designed by the Government of Bangladesh with the flexibility to integrate AI applications, signalling a potential for scalability as formal AI policies evolve.

⁵⁴ <https://heat.ugc.gov.bd/>

⁵⁵ <https://muktopaath.gov.bd/>

While these initiatives reflect the government’s commitment to integrating AI into education, there remains scope to improve the timing and methods for introducing AI education to students. Additionally, specific guidelines on the ethical use of AI in education – such as clearly defined principles, codes of conduct or recommended practices – have not yet been officially communicated or widely disseminated (Hassan, 2023).

Another challenge concerns the localization of AI tools, such as tutor assistants and content generation platforms, due to the absence of robust national or global frameworks that address contextual adaptation. To foster creativity and innovation while ensuring responsible use, policy frameworks might consider reducing unnecessary restrictions while incorporating comprehensive ethical safeguards. Despite significant progress in teacher training, the lack of a unified, cohesive approach to integrating ethical AI practices in the education sector continues to hinder its effective implementation.

The tables below illustrate the proportions of primary, lower secondary and secondary schools with access to the internet for pedagogical purposes.

Table 1: Percentage of primary schools with access to the internet for pedagogical purposes

Year	Percentage
2020	49.3
2021	49.3

Source: UNESCO Institute for Statistics (UIS) dynamic template based on data provided by country

Table 2: Percentage of schools with access to the internet for pedagogical purposes

Year	Lower secondary schools	Secondary schools
2017	32.4	35.2
2018	34.2	36.2
2019	37.6	37.6
2020	38.3	41.5
2021	51.9	52.2
2022	53.1	53.3

Source: UNESCO Institute for Statistics (UIS) dynamic template based on data provided by country

This indicator is calculated as part of the UN SDG indicator 4.a.1: Proportion of schools with access to basic services. Just under half of Bangladesh’s primary schools had access to the internet for pedagogical purposes in 2021. For lower secondary and secondary schools, this number was just above 50 per cent in 2022. This is a remarkable increase, achieved within six years: in 2017, only around one-third of lower secondary and secondary schools had access to the internet for pedagogical purposes.⁵⁶

⁵⁶ UNESCO Institute for Statistics (UIS) dynamic template based on data provided by country.

The tables below show the proportions of primary, lower secondary and secondary schools with access to computers for pedagogical purposes.

Table 3: Percentage of primary schools with access to computers for pedagogical purposes

Year	Percentage
2020	41.7
2021	41.7

Source: UNESCO Institute for Statistics (UIS) dynamic template based on data provided by country

Table 4: Percentage of schools with access to computers for pedagogical purposes

Year	Lower secondary schools	Secondary schools
2020	77.8	79.1
2021	74.5	76.9
2022	75.5	77.8

Source: UNESCO Institute for Statistics (UIS) dynamic template based on data provided by country

This indicator is calculated as part of the UN SDG indicator 4.a.1: Proportion of schools with access to basic services. While just over 40 per cent of primary schools had access to computers, this figure was much higher, over three-quarters, for secondary schools. However, it is concerning that the percentage for secondary schools has declined slightly over the years.⁵⁷

AI in educational curricula

In Bangladesh, education plans and programmes, which include ICT education, exist for primary (Directorate of Primary Education, 2019), secondary⁵⁸ and higher secondary levels.⁵⁹ Since 2010, The National Education Policy includes policies on ICT education at primary, secondary, higher secondary and tertiary levels (Chapter 12), but does not mention specific technical or ethical aspects of such education (Government of Bangladesh, 2010). The secondary education curriculum introduces a course on ICT at every level from Grade 6 to Grade 12 (National Curriculum and Textbook Board, 2012: Section 5.2). Every textbook includes a chapter on ICT safety, security and ethical use, but does not detail technical aspects like programming or database management.

- **Grade 6 > Chapter 3:** The safe use of Information and Communication Technology (National Curriculum and Textbook Board, 2017a)
- **Grade 7 > Chapter 3:** Safe and ethical use (National Curriculum and Textbook Board, 2017b)
- **Grade 8 > Chapter 3:** Safe and ethical use of Information and Communication Technology (National Curriculum and Textbook Board, 2017c)
- **Grade 9-10 > Chapter 2:** Computer and security of the user (National Curriculum and Textbook Board, 2017d)

⁵⁷ UNESCO Institute for Statistics (UIS) dynamic template based on data provided by country.

⁵⁸ <https://shed.portal.gov.bd/site/page/db678016-cb3e-498c-844a-2a0290a67ec5>

⁵⁹ <https://shed.portal.gov.bd/site/page/db678016-cb3e-498c-844a-2a0290a67ec5>

Though rudimentary, this indicates the commitment of the Ministry of Education and associated stakeholders to promoting the ethical use of digital technologies within curricula development and implementation. Besides these institutionalized courses, the Digital Security Agency of the ICT Division offers a course on cybersecurity and usage of digital tools for secondary and higher secondary students.

When it comes to higher education, there is a gap between the technical and ethical aspects of AI education. Existing ICT and AI curricula are predominantly oriented towards technical competencies, such as coding and machine learning, with limited emphasis on critical ethical considerations, including privacy protection, bias mitigation and algorithmic fairness. Furthermore, soft skills relevant to ethical AI practices – such as responsible data use – are not yet systematically integrated into educational frameworks, though they are essential for fostering responsible AI development and deployment.

While AI, including its ethical dimensions, is largely absent from primary and secondary education curricula, notable progress has been made at the tertiary level. Universities have begun incorporating foundational AI tools into curricula across disciplines. Alongside, teacher-training programmes for secondary and higher secondary educators employ blended learning models that create opportunities for future AI integration. Nevertheless, a stronger focus on embedding the ethical aspects of AI in curricula, alongside efforts to bridge existing gaps in funding, resources and monitoring mechanisms, is warranted.

The Coursera Global Skills Report 2024 ranks Bangladesh at 94th out of 109 countries in data science (Coursera, 2024). The report highlights significant gaps in technology and data science competencies, noting that Coursera collaborates with local institutions to design tailored programmes aimed at bridging these skill gaps.

For the general public, Bangladesh does not currently offer structured technical or ethical AI courses. However, there are several independent initiatives in this domain. For example, Digitally Right, a Bangladesh-based organization dedicated to promoting a free and open digital space, offers several courses and modules within the field of AI ethics for the general population. In 2024, it launched a Digital Safety School,⁶⁰ where security audits are performed and seminars and workshops are conducted. It offers capacity building on digital safety and is a repository for digital safety resources. In addition to these initiatives, there are also some suitable international resources like the Khan Academy's⁶¹ AI in Education course, which emphasizes both AI development and ethical literacy. However, the overall observation is that there is limited adaptation of such programmes to local cultural contexts.

⁶⁰ <https://digitalsafetyschool.com/>

⁶¹ <https://www.khanacademy.org/>

CHAPTER 5

Economic dimension

According to the draft of Bangladesh's National Strategy for Artificial Intelligence, the previous government was 'planning to fund and accelerate 1,000 AI-based start-ups within the next five years' (Government of Bangladesh, 2020a, p. 42).

The AI industry in Bangladesh is still emerging, with limited data available on the number of AI-based companies or their economic contribution. Some start-ups are working on developing their own AI systems, including large language models trained in Bengali.^{62 63 64} Beyond these, over thirty companies supported by Startup Bangladesh Limited⁶⁵ – a government-backed venture capital fund under the ICT Division – use AI tools in their operations, though most are not yet engaged in developing proprietary AI systems.

Private investment in AI exists, but official data on the extent of this investment is not currently available. A government start-up policy to incentivize AI entrepreneurship is reportedly in draft form but not yet finalized. Nonetheless, regions like Sylhet are emerging as localized hubs for AI innovation, led by small firms and entrepreneurs, marking a shift away from Dhaka's traditional dominance in the tech ecosystem.

Broadly, the use of AI in Bangladesh's public and private sectors falls into three categories:

1. Applying AI solutions developed by external entities.
2. Adapting and modifying off-the-shelf AI solutions.
3. Developing homegrown, proprietary AI systems.

Both the private and public sectors fall predominantly within the first two categories, employing pre-existing AI technologies or customizing them for specific needs. Currently, only the three companies named above are actively engaged in the development of proprietary AI systems.

Data on investment in AI research and development by public and private sector entities are not readily available.

Labour markets

Bangladesh does not have a comprehensive strategy to address the impact of AI on labour markets. Strategies for upskilling and reskilling workers do not exist, either. Aspire to Innovate (a2i) predicts that AI and automation will have a significant impact on the job market and estimates that around 40 per cent of the workforce in Bangladesh is at risk of losing jobs due to automation. a2i has presented guidelines how this can be addressed (a2i, 2022).

Investments and output

Bangladesh has a 0.2 per cent share of high-tech exports according to the 2023 Global Innovation Index, which ranks it at 104 out of 132 countries (WIPO, 2023).

⁶² <https://www.markopolo.ai/>

⁶³ <https://www.myalice.ai/>

⁶⁴ <https://www.startupbangladesh.vc/startup-bangladesh-invests-in-hishab-telephony-driven-generative-ai/>

⁶⁵ <https://www.startupbangladesh.vc/portfolio-2/portfolio/>

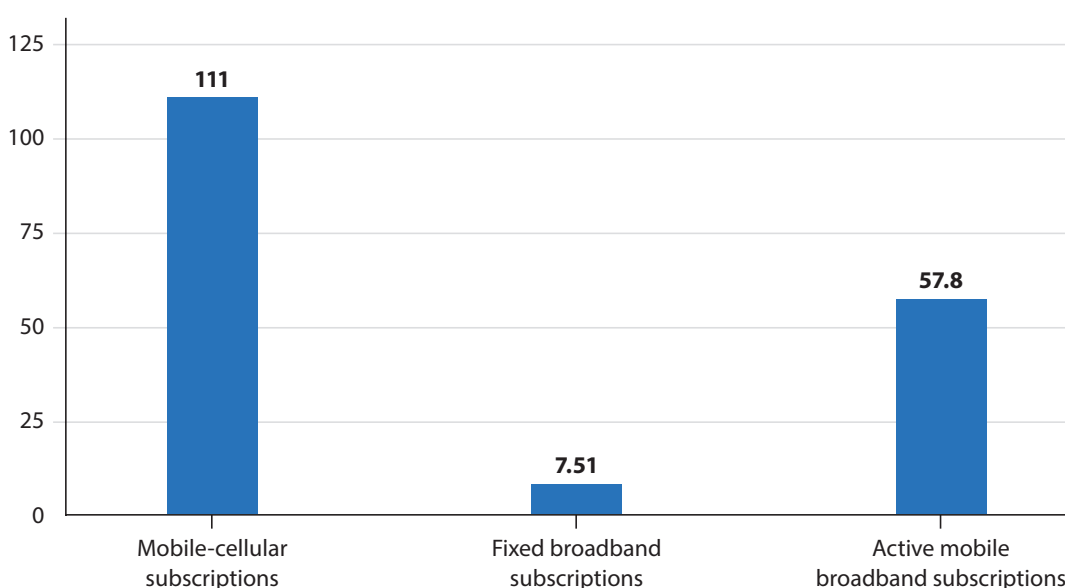
CHAPTER 6

Technical and infrastructural dimension

Infrastructure and connectivity

According to the International Telecommunication Union (ITU), Bangladesh had 111 mobile-cellular subscriptions per 100 inhabitants in 2023 and 7.51 fixed broadband subscriptions per 100 inhabitants in the same year.⁶⁶ The ITU also states that 57.8 per cent of the population of Bangladesh had an active mobile-broadband subscription in 2023⁶⁷ and that the country had an average international bandwidth usage of 6.3 million Mbit/s in that year.⁶⁸

Figure 10: Prevalence of telecommunication subscriptions in Bangladesh, 2023 (in percentage)



Source: International Telecommunication Union

In August 2024, the average fixed broadband download speed in Bangladesh was 47.43 Mbps. This ranks the country at 100 out of the 159 countries where Speedtest records this measure.⁶⁹

The UN SDG indicator 17.8.1: Proportion of individuals using the internet, tracked by the ITU, reveals that internet usage in Bangladesh reached 44.50 per cent in 2023.

This reflects a steady and significant increase from 2000, when internet penetration stood at merely 0.07 per cent.⁷⁰

Similarly, the proportion of the population covered by a 3G mobile network, at least, aligns with the UN SDG indicator 9.c.1: Proportion of population covered by a mobile network, by technology (per cent). In 2022, approximately 98.5 per cent of Bangladesh's population had access to at least a 3G mobile network, demonstrating extensive mobile connectivity across the country.⁷¹

⁶⁶ <https://datahub.itu.int/dashboards/?id=2&e=BGD>

⁶⁷ <https://datahub.itu.int/data/?e=BGD>

⁶⁸ <https://datahub.itu.int/data/?e=BGD&i=242>

⁶⁹ <https://www.speedtest.net/global-index>

⁷⁰ <https://www.itu.int/en/ITU-D/Statistics/Pages/SDGs-ITU-ICT-indicators.aspx>

⁷¹ <https://www.itu.int/en/ITU-D/Statistics/Pages/SDGs-ITU-ICT-indicators.aspx>

According to the World Bank, 99.4 per cent of the population of Bangladesh had access to electricity in 2022.⁷² However, it must be noted, as mentioned above, that rural areas are especially affected by frequent power outages.

According to Economist Impact, Bangladesh recorded a gender gap of 13.2 per cent in internet access and 18.6 per cent in mobile phone access in 2022, indicating notable disparities in digital connectivity between men and women.⁷³ The Mobile Gender Gap Report 2024 records different numbers, as shown in Table 5 (GSMA, 2024):

Table 5: Gender gap in mobile ownership and mobile internet adoption in Bangladesh, 2024 (in percentage)

	Women	Men	Gender gap
Mobile ownership	68	85	20
Mobile internet adoption	24	40	40

Source: GSMA, 2024

In 2023, according to the ITU, 63.1 per cent of urban households had internet access at home but only 37.1 per cent of rural households.⁷⁴

Applied standards

Currently, there is no standardized protocol in Bangladesh for AI and digital technologies, such as ISO/IEC or IEEE7000, for either technical or ethical dimensions. Domestic products are not currently subject to mandatory standardization. However, alignment with such internationally recognized protocols could boost the export of AI and digital technology products in the future.

Computing capabilities

There are ten data centres in Bangladesh, seven in Dhaka, one in Jashore, one in Gazipur, and one in Chittagong.⁷⁵

According to The Global Cloud Ecosystem Index 2022, Bangladesh's score for 'Colocation data centres per million population, 2020' is 1.1, with 1 being the lowest value and 10 the highest. This means that Bangladesh is ranked at 73 out of the 76 countries covered by the study.⁷⁶

Bangladesh has an extensive Cloud Computing Policy 2020⁷⁷ that outlines deployment and service models, tenancy, etc. According to the policy, Bangladesh has restrictive cloud computing regulations to protect sensitive data, prohibiting such data from being stored in foreign cloud systems. The policy specifically refers to the Government of Bangladesh Information Security Manual (GoBISM)⁷⁸ as the

⁷² <https://data.worldbank.org/indicator/EG.ELC.ACCS.ZS>

⁷³ <https://impact.economist.com/projects/inclusive-internet-index/2022>

⁷⁴ <https://datahub.itu.int/data/?e=BGD>

⁷⁵ <https://www.datacenters.com/locations/bangladesh>

⁷⁶ <https://docs.google.com/spreadsheets/d/1DjUfsihHolE806qLFYqCu-FAHrPWNXY1NYYjs73FXp8/edit?gid=288419984#gid=288419984>
Spreadsheet extracted from the Global Cloud Ecosystem Index 2022 report: <https://www.technologyreview.com/2022/04/25/1051115/global-cloud-ecosystem-index-2022/>

⁷⁷ https://ictd.portal.gov.bd/sites/default/files/files/ictd.portal.gov.bd/page/6c9773a2_7556_4395_bbec_f132b9d819f0/not_hi_10314_2021_07_30_51627641820.pdf

⁷⁸ https://bcc.gov.bd/sites/default/files/files/bcc.portal.gov.bd/publications/7ac8d822_081a_4521_b87d_dfd3537147b1/GOBISM2.pdf

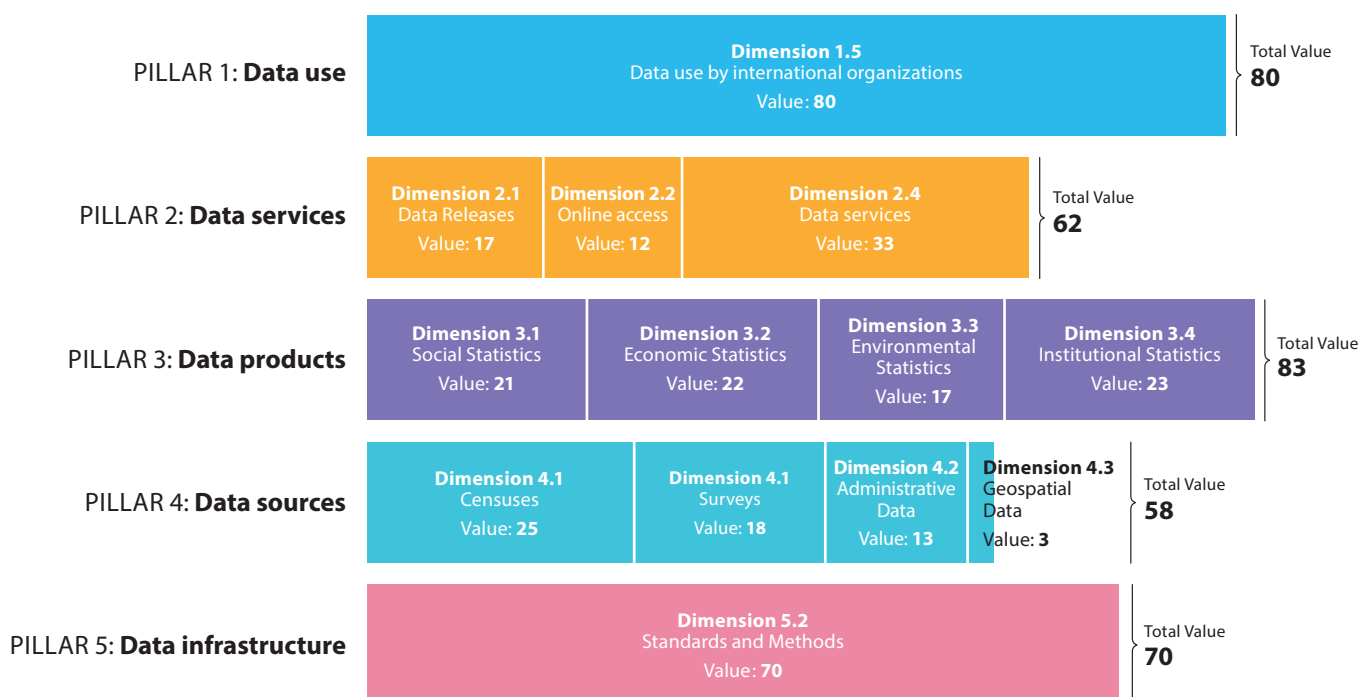
guideline to follow, although it also mentions that private organizations are not bound to follow this manual. A guideline for domestic cloud computing is being prepared and targets companies in Bangladesh. However, the lack of robust local cloud infrastructure makes it challenging for industries, like banking, to store data, resulting in many companies keeping their customer data in foreign clouds.

Although Bangladesh has the extensive National Data Center Guidelines 2020,⁷⁹ it has been suggested that the Bangladesh Data Center Company Limited⁸⁰ and the Bangladesh Computer Council⁸¹ develop a policy for AI-driven cloud computing specifically (i.e. cloud computing that leverages cloud infrastructure to power AI applications in particular, such as GPU-powered cloud computing capabilities to develop local large language models) to address current gaps and challenges. Furthermore, improved local cloud infrastructure and encryption technology as well as collaboration with international cloud providers are required.

Statistical performance

Bangladesh has a score of 70.8 in the World Bank’s Statistical Performance Indicators, which places it in the third quintile globally.⁸² In data products, defined as the availability of data for the 17 UN SDGs, Bangladesh scores 83 points, as follows: 21 points in the dimension of social statistics, 22 in economic statistics, 17 in environmental statistics, and 23 in institutional statistics. Moreover, Bangladesh scores 58 points in data sources and 70 points in data infrastructure.⁸³

Figure 11: Statistical Performance Index of Bangladesh



Source: World Bank Group

Bangladesh has a draft framework for consistent data management, which should be extended to law, policy, strategy and guidelines. There is also a Statistics Act (Government of Bangladesh, 2013b), which mainly moderates the activities of the Bangladesh Bureau of Statistics.

⁷⁹ https://ndc.bcc.gov.bd/?page_id=405

⁸⁰ <https://bdcl.gov.bd/>

⁸¹ <http://analytics.bcc.gov.bd/>

⁸² <https://www.worldbank.org/en/programs/statistical-performance-indicators>

⁸³ <https://www.worldbank.org/en/programs/statistical-performance-indicators/explore-data>

CHAPTER 7

Developing a national multistakeholder roadmap

Overview of the stakeholder engagement process

A National Steering Committee was formed for the RAM evaluation in Bangladesh, co-chaired by the Secretary of the ICT Division and the Head of Office and UNESCO Representative to Bangladesh, and including representatives from the government, private sector, academia and civil society organizations (CSOs). The committee convened **three** times to provide strategic guidance throughout the process.

In addition to secondary research, the RAM exercise also included qualitative data and insights in the form of seven focus group discussions (FGDs) and nineteen key informant interviews (KIIs). However, the RAM could not fully achieve gender balance among the consulted stakeholders. The stakeholders' discussion focused on two main areas: 1. the indicators of the RAM; and 2. ways to develop effective AI governance and a thriving AI ecosystem in Bangladesh to benefit everyone.

Findings from desk-based research complemented by these comprehensive stakeholder consultations informed the diagnosis of Bangladesh's AI landscape as outlined in the preceding chapters. Further analysis of the AI ecosystem highlighted both challenges and opportunities that have been outlined in the sections below, along with potential ways to address the challenges identified.

Main AI actors in Bangladesh

The ICT Division of the Ministry of Posts, Telecommunications and Information Technology primarily handles AI governance in Bangladesh. Other key institutions, such as the Cabinet, and the Ministries of Law, Public Administration, and Home Affairs, are also involved as needed. Governance efforts rely on a multi-ministry approach, with vetting processes and steering committees that include representatives from various ministries.

Another important actor is Aspire to Innovate (a2i), a special programme for the digital transformation of Bangladesh, located within the ICT Division and the Cabinet Division. a2i has successfully streamlined public service delivery in Bangladesh for many years through digital transformation and innovation. It was launched in 2007 and is funded by the UNDP, the Gates Foundation and the Government of Bangladesh.

AI governance in Bangladesh

Challenges

- **Erosion of trust in governance.** Public scepticism of previous government initiatives may affect the acceptance and implementation of new regulatory measures.
- **Limited stakeholder engagement.** Current regulatory drafts have not involved academia, the private sector, CSOs and representatives from local communities sufficiently, leading to a lack of diverse perspectives and expertise in policy formulation.
- **Need to strengthen data protection and cybersecurity measures.** While progress is being made, the absence of robust data protection and cybersecurity frameworks poses challenges to ensuring effective regulation and accountability. Strengthening these measures is essential, particularly in

addressing emerging risks such as AI-enabled cyber threats, which are expected to grow in scale and complexity.

- **Lack of frameworks for procurement of AI systems.** Currently, there are no specific laws or standardized policies governing the procurement of AI systems, which may result in varying practices and challenges in ensuring consistent and accountable implementation.

Opportunities

- **Development of comprehensive AI policies.** The ongoing development of a national AI policy presents an opportunity to establish clear regulations.
- **Incorporation of AI ethics.** Establishing regulations focused on ethical AI practices, including the UNESCO Recommendation on the Ethics of Artificial Intelligence (UNESCO, 2022), can foster public trust and confidence in the AI sector.
- **Integration of international standards.** Aligning national and local regulations with international standards can enhance the credibility and effectiveness of AI governance in Bangladesh.
- **Diversity and transparency in data collection:** Data collection in a transparent manner, particularly focusing on data in Bengali and minority languages, would foster greater trust in AI among Bangladesh's diverse population, promoting inclusive and equitable AI development.

Institutionalizing AI governance in Bangladesh

Challenges

- **Reform of previous government structures and policies.** The interim government formed in Bangladesh in August 2024 is taking on many complex national priorities, with AI governance being one of the areas requiring continued attention and coordination.
- **Need for an independent data protection and cybersecurity authority.** Bangladesh currently lacks a dedicated authority to oversee data protection and cybersecurity, which limits coordinated enforcement, accountability, and public confidence in these areas.
- **Need for specialized institutions for AI.** There is a lack of dedicated multistakeholder institutions focused on AI, especially at local levels, to enhance capacity for localized research and data collection, and the development and implementation of local AI solutions.

Opportunities

- **Creation of a national multistakeholder committee on AI.** A multistakeholder steering committee can enhance collaboration between the government, academia, the private sector and local communities, leading to more comprehensive and inclusive AI policies.
- **Establish an independent data protection and cybersecurity authority.** An independent authority dedicated to data protection and cybersecurity would enhance regulatory oversight, ensure compliance with international standards, and build public trust in AI systems and digital technologies in Bangladesh.
- **Create specialized institutions for AI development.** Establishing dedicated institutions focused on AI research, development and education in Bangladesh would foster innovation and enhance local expertise tailored to the country's unique setting.
- **Develop AI strategies for local communities.** Targeted AI strategies at local levels would enable communities to leverage AI technologies effectively to address specific local challenges.

Creating AI knowledge and competencies in Bangladesh

Challenges

- **Limited awareness and understanding.** There is need for greater awareness and understanding of AI technologies, including ethics, risks, data privacy and responsible AI, among government officials, the private sector and the public.
- **Digital divide.** Various forms of digital divide in Bangladesh, where marginalized communities lack access to electricity, technology and internet, can limit their ability to benefit from AI advancements.
- **Gender gap.** The gender gap in technology education, particularly in science, technology, engineering and mathematics (STEM) fields, is exacerbated by harassment and abuse in digital spaces, and poses a significant challenge to capacity-building efforts in technology and AI.
- **Resource constraints.** Many institutions face budgetary limitations that hinder the development and implementation of comprehensive capacity-building initiatives.

Opportunities

- **Public awareness campaigns.** Conducting awareness campaigns can educate the public about AI technologies, fostering a more informed population. Such campaigns could include online learning platforms, which require electricity and connectivity, to overcome the digital divide.
- **Investment in educational initiatives.** There is an opportunity to develop targeted educational programmes and workshops, at all levels, that focus not only on AI technology but also on AI ethics, data protection and responsible AI deployment.
- **Bridging the gender gap.** Female participation in such educational programmes can be enhanced by addressing the barriers that hinder women's access to AI and digital skills training.
- **Development of multilingual AI solutions.** AI systems that are inclusive of minority languages would not only enhance accessibility for diverse populations but also promote cultural preservation and representation in the digital space.

Conclusion

The opportunities and challenges described above lead to the following conclusions:

1. Need for comprehensive AI frameworks

Establishing regulatory AI frameworks, which include ethical guidelines and risk assessments, is essential to addressing the challenges of dual-use technologies and innovation, and to ensuring that AI development aligns with the societal values and needs of Bangladesh.

2. Awareness and education initiatives

Raising awareness about AI technologies and their benefits as well as their risks is essential and can foster public trust.

3. Investment in capacity building

Investing in education and training programmes will help bridge the skills gap, empowering individuals and organizations to effectively engage with AI technologies.

4. Focus on inclusion

Prioritizing the inclusion of women as well as local and marginalized communities in multilingual AI initiatives is crucial to promoting equitable access to technology and enhancing overall well-being.

5. Addressing infrastructure gaps

Creating more comprehensive digital public infrastructure by overcoming silos and with a special focus on rural areas is vital to forming an enabling environment for AI development and investment throughout Bangladesh.

6. Encouraging collaboration and innovation

Public-private partnerships, international collaborations, and government incentives and support for start-ups can stimulate innovation and attract investment in the AI sector, driving economic growth.

7. Sustainability considerations

Integrating sustainability into AI development by aligning with the United Nations Sustainable Development Goals will ensure that technological advancements contribute to positive environmental and social outcomes.

CHAPTER 8

Policy recommendations

This section specifies recommendations for the effective development of Bangladesh’s AI ecosystem, in line with UNESCO’s Recommendation on the Ethics of Artificial Intelligence (UNESCO, 2022), inferred from the opportunities outlined in Chapter 7, and categorized in three dimensions:

1. Regulation
2. Institutional framework
3. Capacity building

Table 6: Overview of the recommendations

Dimension	Recommendation	Lead institution	Timeframe	Priority
Regulation	Finalize an inclusive and enabling national AI policy	Information and Communication Technology Division, Ministry of Posts, Telecommunications and Information Technology; the Cabinet	2025-26	High
	Strengthen the Personal Data Protection Ordinance and the Cyber Security Ordinance	Ministry of Law, Justice and Parliamentary Affairs; Information and Communication Technology Division, Ministry of Posts, Telecommunications and Information Technology	2025-26	High
	Develop comprehensive AI procurement policies	Bangladesh Public Procurement Authority; Information and Communication Technology Division, Ministry of Posts, Telecommunications and Information Technology	2025-26	High
	Update the Right to Information Act	Ministry of Law, Justice and Parliamentary Affairs; Ministry of Information and Broadcasting; Information and Communication Technology Division, Ministry of Posts, Telecommunications and Information Technology	2025-26	High
	Strengthen diversity and responsibility in data collection	Information and Communication Technology Division, Ministry of Posts, Telecommunications and Information Technology; Ministry of Planning; Ministry of Social Welfare; Ministry of Women and Children Affairs; Ministry of Local Government; Bangladesh Bureau of Statistics	2026-28	Medium

Dimension	Recommendation	Lead institution	Timeframe	Priority
Institutional framework	Establish a central office for AI governance	Information and Communication Technology Division, Ministry of Posts, Telecommunications and Information Technology; Ministry of Planning; the Cabinet	2025-27	High
	Establish a national multistakeholder steering committee on AI	Information and Communication Technology Division, Ministry of Posts, Telecommunications and Information Technology; the Cabinet	2025-27	Medium
	Establish an independent data protection and cybersecurity authority	Ministry of Law, Justice and Parliamentary Affairs; Information and Communication Technology Division, Ministry of Posts, Telecommunications and Information Technology; National Cybersecurity Agency	2026-27	High
	Establish a committee for a certification programme for AI vendors	Information and Communication Technology Division, Ministry of Posts, Telecommunications and Information Technology; Bangladesh Public Procurement Authority	2026-27	Medium
	Develop and curate datasets in Bengali and minority languages	Ministry of Cultural Affairs; Information and Communication Technology Division, Ministry of Posts, Telecommunications and Information Technology	2026-30	Medium
	Enhance community-level institutions for AI learning and inclusion	Information and Communication Technology Division, Ministry of Posts, Telecommunications and Information Technology; Ministry of Local Government; Ministry of Primary and Mass Education; Ministry of Education	2026-30	Medium

Dimension	Recommendation	Lead institution	Timeframe	Priority
Capacity building	Enhance general public awareness of AI	Information and Communication Technology Division, Ministry of Posts, Telecommunications and Information Technology; Ministry of Social Welfare; Ministry of Youth and Sports; Ministry of Local Government	2026-28	Medium
	Develop AI-focused curricula, with special emphasis on uptake by girls and women	Ministry of Education; Information and Communication Technology Division, Ministry of Posts, Telecommunications and Information Technology; University Grants Commission	2026-30	High
	Invest in reskilling and upskilling for a future-ready workforce	National Skills Development Council; Ministry of Labour and Employment; Information and Communication Technology Division, Ministry of Post, Telecommunication and Information Technology; Bangladesh Technical Education Board; Ministry of Education; Bureau of Manpower Employment and Training	2026-30	Medium
	Encourage sustained investments in AI research, development and infrastructure	Information and Communication Technology Division, Ministry of Posts, Telecommunications and Information Technology; University Grants Commission; Bangladesh Computer Council	2026-30	Medium

Regulation

Finalize an inclusive and enabling national AI policy

The policy should include components on ethics and human rights, aligned with the UNESCO Recommendation on the Ethics of Artificial Intelligence and its ten core principles laying out a human-rights-centred approach (UNESCO, 2022). In addition to focusing on ethics and human rights, the policy should emphasize the protection of Bangladesh's cultural and linguistic diversity to ensure that AI systems reflect local nuances and values.

To promote responsibility and inclusion, the policy should be developed through broad stakeholder participation – bringing together representatives from government, academia, civil society, the private sector and local communities in its development and implementation. The AI policy should also address concerns around discrimination in AI practices, accessibility, transparency and accountability, especially for AI systems deployed by the government.

The AI policy should require human rights risk assessments for all high-risk AI systems, building on a comprehensive study of sensitive sectors for AI deployment, such as facial recognition in law enforcement and predictive analytics in healthcare. These assessments must evaluate systems for proportionality, bias, fairness, security vulnerabilities, data privacy compliance and grievance redressal before they are deployed, and be supported by independent oversight to ensure transparency in algorithmic decision-making.

Provisions for strategic investments in and incentives for financing AI research and development should also be incorporated in the policy, with a focus on expanding digital public infrastructure, such as interoperable data systems, high-performance computing facilities and innovation hubs. Encouraging private sector participation beyond Dhaka, particularly in non-urban regions, will further decentralize AI innovation.

Additionally, the policy should prioritize investment in human capital, including through accessible education, technical training, upskilling of professionals in AI and related fields, and creating pathways to jobs, to ensure a steady supply of skilled talent to drive AI adoption and innovation in Bangladesh.

The AI policy should address the environmental implications of AI, including energy consumption, e-waste generation and carbon footprint, to ensure sustainable and eco-friendly AI development and deployment as far as possible.

Most importantly, the AI policy should be designed as a living framework, adaptable to technological advancements and changing socio-economic contexts. Integrating this national policy with other strategies and guidelines for AI adoption and deployment is important to ensure coherent and effective implementation across sectors.

- **Lead Institutions:** Information and Communication Technology Division, Ministry of Posts, Telecommunications and Information Technology; the Cabinet
- **Time frame:** 2025-2026
- **Priority:** high

Strengthen the Personal Data Protection Ordinance and the Cyber Security Ordinance

A balance between data privacy and open data sharing is essential to enhancing the availability of local AI training data. This is well reflected in UNESCO's guidelines for Member States on how to open their data sustainably and how to build pertinent capacities and an open-data-driven culture (UNESCO, 2023b).

In Bangladesh, the Personal Data Protection Ordinance and the Cyber Security Ordinance should be strengthened to promote both data protection and responsible data use. These laws should mandate the appointment of data protection officers in organizations, encourage data privacy education in academic curricula, and establish clear transparency requirements and enforcement mechanisms.

The Personal Data Protection Ordinance should provide robust safeguards against unfiltered access to personal data for AI training, thus ensuring privacy, safety and dignity. It must establish strong mechanisms for informed consent, oversight and redress, while protecting citizens from unwarranted surveillance.

The Cyber Security Ordinance should consider current and emerging AI risks based on a comprehensive, evidence-led approach, while also ensuring accountability and accessible grievance redressal mechanisms. Currently, the Ordinance's definition of fraud in cyberspace includes disinformation, spoofing, cloning and faking agents (e.g. fake citizen IDs and deepfakes); but going forward, it must also recognize the gendered dimensions of online harm, incorporating measures to prevent harassment, abuse and stalking of women, and to promote safer and more inclusive digital environments.

Beyond establishing a general data protection framework, there is an opportunity to strengthen the legislative environment around high-risk AI applications such as public facial recognition. Introducing clear, purpose-based guidelines and safeguards for these technologies would help prevent potential misuse and reinforce public trust in AI. A proportional, precautionary, human-rights-based approach can ensure that innovation proceeds responsibly while upholding democratic values and individual freedoms.

- **Lead institutions:** Ministry of Law, Justice and Parliamentary Affairs; Information and Communication Technology Division, Ministry of Posts, Telecommunications and Information Technology
- **Time frame:** 2025-2026
- **Priority:** high

Develop comprehensive AI procurement policies

To ensure the effective and ethical integration of AI technologies within the operations of the Government of Bangladesh, it is essential to develop comprehensive AI procurement policies that address both technical and ethical dimensions. These policies should establish clear guidelines for the procurement process, including criteria for vendor certification, and redress and compensation measures that emphasize data privacy, security and ethical considerations.

A key component of this framework should be a requirement for vendors to undergo independent audits by nationally certified bodies before being considered for government contracts. The resulting audit reports – confirming adherence to ethical standards on fairness, bias and security – should form a standard part of procurement submissions. This process would help ensure accountability and reinforce good practices in the design and deployment of AI systems used in public administration.

Additionally, the procurement framework should facilitate collaboration between government agencies, academia, civil society organizations and the private sector to ensure that AI systems are not only efficient but also culturally and contextually appropriate for Bangladesh. By prioritizing transparency and inclusivity in procurement, the government can build trust among stakeholders and promote responsible use of AI technologies that align with national interests and societal values.

- **Lead institutions:** Bangladesh Public Procurement Authority; Information and Communication Technology Division, Ministry of Posts, Telecommunications and Information Technology
- **Time frame:** 2025-2026
- **Priority:** high

Update the Right to Information Act

To strengthen transparency and accountability in AI governance, the Right to Information (RTI) Act should be updated to align with international standards. The reform should expand the scope of accessible information, improve compliance and reporting mechanisms, and facilitate public participation in oversight processes. It should also integrate provisions ensuring proactive disclosure of data on AI systems deployed by public authorities, including their purpose, scope and safeguards.

By incorporating these measures and aligning with global best practices, the updated RTI framework can enhance public trust, ensure responsible AI deployment, and uphold the rights and interests of all citizens of Bangladesh.

- **Lead institutions:** Ministry of Law, Justice and Parliamentary Affairs; Ministry of Information and Broadcasting; Information and Communication Technology Division, Ministry of Posts, Telecommunications and Information Technology
- **Time frame:** 2025-2026
- **Priority:** high

Strengthen diversity and responsibility in data collection

The accurate reflection of Bangladesh's sociocultural and linguistic diversity is crucial for developing AI systems that serve the entire population equitably. To achieve this, data collection must consciously include content in Bengali and minority languages, ensuring that AI systems are culturally and contextually relevant. Incentives and mechanisms should be introduced to encourage public-private partnerships in data sharing, supporting the creation of diverse, high-quality datasets in de-identified formats from sectors such as finance, health and agriculture. A collaborative, community-driven approach – one that empowers local communities and research institutions to contribute to dataset development – will further promote inclusivity and local ownership.

At the same time, ensuring responsible and transparent data collection is key to fostering public trust in AI systems. Organizations should be required to clearly communicate what types of data they collect, the purposes for which the data are used, and the measures they take to protect individual privacy. Establishing guidelines on informed consent will ensure that individuals understand how their data are used and the implications of sharing data.

Finally, independent oversight mechanisms should be developed to monitor compliance with transparency and privacy standards, safeguarding against misuse of data. By embedding accountability into every stage of data collection, Bangladesh can strengthen public confidence and build an AI ecosystem that is ethical, inclusive and responsive to its cultural and linguistic diversity.

- **Responsible institutions:** Information and Communication Technology Division, Ministry of Posts, Telecommunications and Information Technology; Ministry of Planning; Ministry of Social Welfare; Ministry of Women and Children Affairs; Ministry of Local Government; Bangladesh Bureau of Statistics
 - **Time frame:** 2026-2028
 - **Priority:** medium
-

Institutional framework

Establish a central office for AI governance

To strengthen coordination and ensure effective implementation of AI initiatives across government institutions, Bangladesh may consider establishing a dedicated office for Artificial Intelligence.

While the Information and Communication Technology Division currently leads national efforts on AI governance, more progress can be made by addressing the siloed nature of data management and decision-making across ministries. Establishing a central AI office would help enable a more integrated approach – facilitating cross-sectoral data interoperability and coordinated policy-making. This could lay the foundation for a national decision-support framework that uses AI to draw correlations between domains such as public health, agriculture and the environment, thereby informing evidence-based policies and improving service delivery.

The office should have a clear mandate to promote ethical, transparent and inclusive AI governance. It should maintain strong institutional coordination with existing government entities – ministries, departments and specialized agencies. Its governance structure should be supported by a defined legal framework, measurable indicators for progress, and safeguards for data privacy and human rights.

To support this mandate, the government could also consider developing a ‘national data backbone’ – a secure, federated infrastructure based on shared technical standards, APIs and governance protocols. This would enable the responsible and seamless exchange of anonymized data across ministries, promoting interoperability and data-driven policy-making. By integrating this backbone with the office’s oversight framework, Bangladesh can lay the foundation for the more coherent, efficient and ethical use of AI across government systems.

- **Lead institutions:** Information and Communication Technology Division, Ministry of Posts, Telecommunications and Information Technology; Ministry of Planning; the Cabinet
- **Time frame:** 2025-2027
- **Priority:** high

Establish a national multistakeholder steering committee on AI

To ensure inclusive and accountable governance of AI in Bangladesh, a national multistakeholder steering committee on AI should be established, working in close coordination with the proposed office of AI. The committee should serve as a platform for dialogue, policy guidance and oversight, helping to align AI development with national priorities, ethical principles and societal needs.

The committee should include representatives from government agencies, academia, the private sector, civil society organizations and local communities, reflecting Bangladesh's cultural, social and generational diversity. Its role would be to advise on emerging AI-related risks and opportunities, support the development of ethical and technical standards, and promote public awareness and stakeholder engagement.

A useful precedent is Bangladesh's digital public infrastructure model, which captured citizen perspectives effectively to inform policy-making. Building on this approach, the committee's core functions should include:

- Collaborative policy formulation and monitoring, ensuring that AI governance remains evidence-based and responsive.
- Ethical oversight and risk assessment, with a focus on fairness, safety and human rights.
- Public participation and capacity building, strengthening trust and transparency in the use of AI systems.

By institutionalizing such a mechanism, Bangladesh can establish a robust, participatory governance framework that reinforces the ethical and responsible deployment of AI, while maintaining close collaboration between state institutions and broader societal actors.

- **Lead institutions:** Information and Communication Technology Division, Ministry of Posts, Telecommunications and Information Technology; the Cabinet
- **Time frame:** 2025-2027
- **Priority:** medium

Establish an independent data protection and cybersecurity authority

To strengthen Bangladesh's data protection and cybersecurity landscape, it is essential to establish an independent authority dedicated to these areas. This authority should provide oversight and ensure transparency and accountability; prevent and mitigate AI-facilitated risks and cybercrimes; and protect personal data. It should adopt a forward-looking approach, addressing both current and emerging AI-related risks and threats.

In addition to regulation and enforcement, the authority should develop guidance materials, promote public awareness and collaborate with stakeholders to enhance digital literacy.

The authority should also focus on developing a phased national data-sharing framework in cooperation with relevant stakeholders, prioritizing transparency requirements, user consent, secure storage mechanisms and protection against misuse.

- **Lead institutions:** Ministry of Law, Justice and Parliamentary Affairs; Information and Communication Technology Division, Ministry of Posts, Telecommunications and Information Technology; National Cybersecurity Agency
- **Time frame:** 2026-2027
- **Priority:** high

Establish a committee for a certification programme for AI vendors

A dedicated, expert-led committee that implements a certification programme for AI vendors is essential to ensuring that AI systems deployed in Bangladesh meet both technical and ethical standards. This committee would require vendors to demonstrate compliance with established guidelines before their products were used in sectors such as healthcare, education and other public services.

The certification process would involve a thorough evaluation of the AI systems, focusing on performance benchmarks, reliability and security, thereby mitigating risks associated with untested or poorly designed technologies. In addition to technical criteria, the certification programme would emphasize ethical considerations, including data privacy, consent and transparency. Vendors would need to show that their systems protect user data and comply with relevant laws while minimizing biases in AI algorithms.

The proposed centralized office for AI governance could work in close coordination with this committee to ensure coherence between national policy oversight and the certification process, streamlining compliance and enforcement.

By addressing these ethical dimensions, the programme would promote responsible AI development and usage, fostering public trust in these technologies. The committee, composed of experts from various fields, would oversee the certification process, developing criteria, conducting evaluations and issuing certifications.

- **Lead institutions:** Information and Communication Technology Division, Ministry of Posts, Telecommunications and Information Technology; Bangladesh Public Procurement Authority
- **Time frame:** 2026-2027
- **Priority:** medium

Develop and curate datasets in Bengali and minority languages

To ensure that AI technologies are effectively tailored to the linguistic and cultural context of Bangladesh, it is essential to develop and curate comprehensive datasets in Bengali and minority languages. These datasets would be the foundation for training large language models that better reflect the country's diversity.

Such an initiative will enrich the inclusivity of AI systems and reduce biases that may arise from the predominance of English-language datasets. Rigorous quality assurance processes should be established to ensure the effectiveness of the datasets. Establishing robust quality assurance mechanisms will be crucial to maintaining accuracy and contextual depth – particularly through meticulous data annotation that captures local meanings, idioms and usage. Involving native speakers and linguists in the annotation process will improve the accuracy and relevance of the datasets.

To promote innovation, research and collaboration, the curated datasets should be made accessible to researchers, developers and organizations working on AI technologies under open access or shared access models. This approach would also encourage multiple stakeholders to contribute to the development of culturally grounded AI applications. To support this, a centralized repository for these datasets may also be created, which could facilitate easy access and sharing while maintaining overall data protection standards.

- **Lead institutions:** Ministry of Cultural Affairs; Information and Communication Technology Division, Ministry of Posts, Telecommunications and Information Technology
- **Time frame:** 2026-2030
- **Priority:** medium

Enhance community-level institutions for AI learning and inclusion

At the local level, Bangladesh could strengthen community-based institutions for AI education, innovation and public engagement. These institutions – whether newly established or adapted from existing infrastructure such as digital labs, school facilities or community centres – could serve as focal points for AI training, awareness and capacity development. The proposed centralized office for AI governance could work in close coordination with these local institutions to ensure alignment with national priorities and consistent implementation of ethical and inclusive AI practices across regions.

By creating such hubs for AI education and training, the government can provide essential resources and support to marginalized communities, thereby promoting inclusivity in the digital landscape. Such a collaborative approach would also facilitate knowledge exchange between academia, the private sector and local communities, ensuring that AI solutions are not only innovative but also relevant to the needs and values of the people of Bangladesh.

- **Lead institutions:** Information and Communication Technology Division, Ministry of Posts, Telecommunications and Information Technology; Ministry of Local Government; Ministry of Primary and Mass Education; Ministry of Education
- **Time frame:** 2026-2030
- **Priority:** medium

Capacity building

Enhance general public awareness of AI

Addressing the digital divide, limited knowledge and apprehension surrounding AI is essential to fostering an inclusive, informed and digitally empowered society in Bangladesh.

To achieve this, it is crucial to strengthen public awareness and understanding of AI technologies, with particular emphasis on reaching rural populations, local communities and minority groups. This can be accomplished through comprehensive awareness campaigns that educate the public about the benefits of AI, its applications and its ethical considerations. It is critical that such campaigns be accessible to all, especially to persons with disabilities.

By demystifying AI and highlighting its potential to improve daily life, these campaigns can help alleviate fears and misconceptions, empowering individuals to engage with technology confidently. Besides spreading general awareness, it is also vital to educate communities about data rights and privacy practices. As AI systems rely increasingly on personal data, understanding how to protect one's information becomes critical.

Moreover, grassroots awareness efforts must be culturally sensitive and tailored to the unique needs of different communities. Collaborating with civil society and local organizations can facilitate this process. Online campaigns could be considered, bearing in mind, however, that these require electricity, connectivity and literacy.

- **Lead institutions:** Information and Communication Technology Division, Ministry of Posts, Telecommunications and Information Technology; Ministry of Social Welfare; Ministry of Youth and Sports; Ministry of Local Government
- **Time frame:** 2026-2028
- **Priority:** medium

Develop AI-focused curricula, with special emphasis on uptake by girls and women

Integrating basic technical and ethical education on AI in secondary and higher secondary education is vital to developing foundational knowledge of AI in Bangladesh. This curriculum must also be developed in multilingual form and embedded within larger science, technology, engineering and mathematics (STEM) programmes in tertiary education, especially in non-AI-focused programmes. This requires creating a network of qualified educators, training materials and infrastructure, and digital resources, especially in rural and underserved areas.

A promising model to build upon is the of the Olympiads – successful nationwide competitions in academic fields – which have been popularized in Bangladesh, especially for mathematics and physics.⁸⁴ Similar events for programming and AI, such as hackathons, could also attract and nurture emerging talent from across the country.

Special emphasis should be placed on increasing the participation of girls and women, who are historically under-represented in STEM fields. By integrating AI education into the school curriculum, educational institutions can spark interest in technology among young girls, providing students with the foundational knowledge and skills necessary to pursue advanced studies and careers in STEM disciplines. Such early exposure is crucial to breaking down stereotypes and encouraging girls to envision themselves as future leaders and innovators in technology.

At the tertiary level, universities and colleges should strengthen STEM education through specialized AI programmes that combine technical knowledge with the ethical, social and policy dimensions of technology. Moreover, collaborations with the private sector could enhance the practical relevance of such curricula – for instance, through internships, mentorships and project-based learning opportunities – creating pathways from education to employment opportunities.

- **Lead institutions:** Ministry of Education; Information and Communication Technology Division, Ministry of Posts, Telecommunications and Information Technology; University Grants Commission
- **Time frame:** 2026-2030
- **Priority:** high

⁸⁴ <https://matholympiad.org.bd/> and <https://www.bdpho.org/>

Invest in reskilling and upskilling for a future-ready workforce

To fully harness the benefits of AI while mitigating its potential disruptions on the workforce, Bangladesh must invest in reskilling and upskilling initiatives. Building an AI-ready workforce can reduce the risk of job displacement and create new opportunities for economic growth and development. Training programmes should target government officials, industry professionals and academia, focusing on both technical competencies in AI, and its ethical, legal and social dimensions. The expertise of Non-Resident Bangladeshis could also be leveraged to enrich these initiatives.

A key area of focus should be data annotation and labelling, which represents the foundational layer of the AI economy and offers significant job-creation potential. Establishing relevant institutions and pathways could help train and certify a large workforce for this sector, complemented by public-private training partnerships and a national digital marketplace to connect certified workers with global clients. By positioning Bangladesh as an ethical hub for data annotation, supported by fair labour standards, the country can strengthen its competitiveness in the global AI services market.

To ensure a just transition for displaced workers, establishing dedicated national programmes could provide training allowances, re-employment pathways, and targeted support for sectors vulnerable to automation. Lifelong learning opportunities, guided by institutions such as the UNESCO Institute for Lifelong Learning,⁸⁵ should also be embedded within national training efforts to promote age-inclusive and adaptable workforces.

At the local level, 'training of trainers' mechanisms can amplify the impact of national training programmes by building local capacity. This could also help create a network of 'AI ambassadors' who promote digital literacy and responsible AI use across the country.

Lastly, these efforts should be supported by a gig and platform workers' rights Act, ensuring fair wages, social protections and algorithmic accountability for freelancers and digital workers contributing to Bangladesh's growing AI ecosystem.

- **Lead institutions:** National Skills Development Council; Ministry of Labour and Employment; Information and Communication Technology Division, Ministry of Post, Telecommunication and Information Technology; Bangladesh Technical Education Board; Ministry of Education; Bureau of Manpower Employment and Training
- **Time frame:** 2026-2030
- **Priority:** medium

Encourage sustained investments in AI research, development and infrastructure

To foster a thriving AI ecosystem in Bangladesh, it is essential to invest strategically in AI research, development and innovation, alongside the infrastructure that supports this. Strengthening national research capacity should be a key priority – through competitive research grants, international collaborations, and incentives for industry-academia partnerships. Encouraging applied research that addresses national priorities such as agriculture, healthcare, disaster management and education can help ensure that AI innovation contributes directly to Bangladesh's development goals.

⁸⁵ <https://www.uil.unesco.org/en/unesco-institute>

To complement these efforts, investments in data centres, cloud computing facilities and high-performance computing infrastructure – particularly outside major urban areas – will provide the computational foundation necessary for advanced AI research. Building an integrated and secure digital infrastructure will enhance data sharing, expand local training datasets, and strengthen the country's overall research environment.

To maximize national capacity, Bangladesh should also establish a network of interlinked and decentralized AI Centres of Excellence serving as shared national hubs. These centres should provide credentialed access to computing clusters, curated datasets and collaborative research spaces for innovators across institutions. Such a framework would promote efficiency, prevent duplication and ensure equitable access to technical resources. The proposed centralized office for AI governance could work in close coordination with these centres and relevant ministries to ensure coherence between research priorities, infrastructure planning and national AI policies.

Public-private partnerships should be encouraged to foster knowledge exchange, technology transfer and start-up incubation. Supporting early-stage ventures with funding, mentorship and innovation challenges can help translate research into practical applications, while promoting job creation and entrepreneurship.

As Bangladesh invests in AI research, development and infrastructure, it is essential to consider the environmental impact of such initiatives. This includes assessing the energy consumption and e-waste generation associated with AI systems as well as their alignment with the United Nations Sustainable Development Goals.

- **Lead institutions:** Information and Communication Technology Division, Ministry of Posts, Telecommunications and Information Technology; University Grants Commission; Bangladesh Computer Council
- **Time frame:** 2026-2030
- **Priority:** medium

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