



الهيئة العامة للمعلومات
GENERAL INFORMATION AUTHORITY

Seventh National Human Development Report 2025

Human Development in the Digital Era

Executive Summary

Towards a sustainable digital future that places the Libyan citizen at the center of development, safeguards cultural identity, and enhances knowledge & innovation



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➤ Source of the Report Cover Design

Consistent with the report vision on the “Digital Era”, the cover has been designed utilizing generative artificial intelligence techniques. This approach symbolizes the integration of Libya's national identity with the prospects of digital innovation, and conveys our commitment to advancing a smart and sustainable future.

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Preparation and General Supervision:

This executive summary was prepared under the supervision of an independent editorial board composed of distinguished national experts and professionals. It reflects fruitful collaboration between the General Information Authority and the United Nations Development Programme (UNDP), with technical and advisory support from the Human Development Report Office in New York and the Regional Bureau for Arab States in Amman.

Editorial Board and Research Team:

The editorial board, in cooperation with the research and advisory team, assumed responsibility for establishing the methodological framework, developing the scientific and analytical content, and ensuring the quality and objectivity of outputs, in line with international standards for preparing human development reports in the digital era.

Statistical Partnership:

This work draws upon the digital and statistical foundations provided by the Bureau of Statistics and Census, serving as the principal national partner in supplying and validating national statistical indicators.

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Executive Summary of the Seventh National Human Development Report – Libya 2025: Human Development in the Digital Era).

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This release constitutes a concise executive summary highlighting the principal indicators of the Seventh National Human Development Report 2025. It is intended as a comprehensive statistical and analytical reference for policymakers and researchers. The full national report will be issued separately at a later date.

Disclaimer:

The views and analyses presented in this report are the product of research and community consultations conducted by the independent editorial board. They do not necessarily reflect the official policies of the international partner organizations.

➤ **Design and Production**

Eng . Fadwa Abdul Latif furawei

Eng . Abdul Hakim Mohammed Al-fard

➤ **Translated by**

Dr. Kamal Taher Furgani - Translation & Language Consultant

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➤ Statement of the General Information Authority

Amidst the profound transformations shaping the path of the Libyan state, and at a time when the world is racing toward unprecedented digital horizons, the Seventh National Human Development Report 2025, entitled "Human Development in the Digital Era", emerges as a strategic compass to illuminate our path toward the future.

At the General Information Authority, we firmly believe that digitalization is not merely a technical option or an institutional luxury, but rather the fundamental driver for empowering Libyan citizens, enhancing their capabilities, and ensuring equitable and transparent access to essential services for every household across the East, West, and South of the country.

Our journey toward digital horizons does not begin in a vacuum; it is rooted in the legacy of the Libyan people, who throughout history have embodied initiative, communication, and adaptability to civilizational change. For centuries, Libyans served as a bridge for human and intellectual exchange between continents. Today, we see that same spirit alive in our younger generations, harnessing modern technologies to serve their communities and reaffirming that Libyan creativity is capable of adapting digital tools to advance our noble developmental goals.

This report has focused methodologically on analyzing the impact of digital transformation on the quality of individual life, and its contribution to bridging developmental gaps and advancing the sectors of education, health, and the national economy. Our ambition extends beyond building technical



infrastructure; we aspire to promote the "digital citizen" who combines the authenticity of history with the modernity of the present, capable of innovation and competition while preserving our social values and enduring national identity.

This national achievement would not have been possible without the concerted efforts of dedicated contributors. We extend special recognition to the steering and advisory committees, the editorial board, and the research leadership & team, whose exceptional diligence ensured rigorous fact finding and analytical precision. We also express our sincere gratitude to all Libyan state institutions that actively contributed by providing data and essential support.

In this regard, we particularly acknowledge with deep appreciation the Bureau of Statistics and Census, as the committed partner that played a pivotal role in supplying the report with comprehensive statistical data and vital indicators. These formed the solid foundation upon which analyses and conclusions were built, exemplifying the highest standards of institutional integration.

We also highly value the strategic partnership and distinguished technical support provided by the United Nations Development Programme

(UNDP) ,together with international experts from UN Headquarters in New York and the Regional Bureau in Amman. Their insights and scientific reviews ensured that our outputs were aligned with the highest international standards.

We present this executive summary to policymakers, researchers, and all citizens of Libya as a roadmap grounded in data and evidence, with the hope that it will inspire the adoption of inclusive digital policies that place the Libyan citizen at the heart of development.

Together, we aspire to a prosperous Libya, connected, forward-looking, and attuned to its era

With God's guidance,

Eng. Abdelbasset Salem Al-Baour

President, General Information Authority

General Coordinator of the Seventh National
Human Development Report



➤ Statement by the United Nations Development Programme (UNDP)

The publication of Libya's Seventh National Human Development Report, entitled "Human Development in the Digital Age," comes at a highly significant moment for the United Nations Development Programme (UNDP) in Libya, as the Programme celebrates fifty years of partnership with Libya and its institutions.

Even during the most challenging periods Libya has experienced over the past five decades, UNDP has remained present on the ground, working side by side with Libyan institutions, stakeholders, and partners. It has provided technical support, expertise, and operational assistance, while also supporting capacity-building efforts and working closely with national and local institutions to improve service delivery and advance human development goals in their broadest sense.

For five decades, UNDP has collaborated with its national counterparts to support development efforts, strengthen institutions, and contribute to building a more inclusive and sustainable future. The Seventh National Human Development Report, "Human Development in the Digital Age," represents a continuation of this partnership at a time when Libya, like many countries around the world, is undergoing profound transformations at both the national and global levels.

For five decades, UNDP has collaborated with its national counterparts to support development efforts, strengthen institutions, and contribute to building a more inclusive This report comes at a pivotal moment in Libya's development journey. As Libya continues its efforts to overcome challenges



related to strengthening institutions, rebuilding trust, and advancing inclusive and sustainable development , it does so within a rapidly changing national and global environment shaped by geopolitical instability, economic volatility, technological transformation, environmental pressures, and accelerating socio-economic changes.

Libya faces these challenges at a time when digitalization, artificial intelligence, and emerging technologies are fundamentally reshaping economies, labor markets, governance systems, and social relations worldwide. As highlighted in recent global human development discussions, while these transformations offer significant opportunities to expand human capabilities, improve quality of life, and enhance well-being, they also carry risks related to inequality, exclusion, privacy concerns, and unequal access to opportunities.

As with previous major transformations in human history, digital transformation is ultimately defined by how societies manage it. The challenge is not whether digitalization will shape the future—it undoubtedly will—but rather how its benefits can be maximized while minimizing associated risks, ensuring that technological progress contributes to sustainable human development for all.

As with previous major transformations in human history, digital transformation is ultimately defined by how societies manage it.

The challenge is not whether digitalization will shape the future—it undoubtedly will—but rather how its benefits can be maximized while minimizing associated risks, ensuring that technological progress contributes to sustainable human development for all.

In this context, selecting digital transformation as the central theme of Libya's Seventh National Human Development Report is both a strategic and forward-looking decision. The report provides an evidence-based analysis of the current state of digital transformation in Libya and examines how this transformation can support national human development, enhance the effectiveness of public institutions, expand opportunities for all, and ensure that no community or region is left behind.

Since the inception of the human development concept, the human development approach has emphasized that development is fundamentally about expanding people's freedoms and choices, enabling them to live dignified lives and achieve their full potential. Economic growth, technology, and institutions are not ends in themselves; rather, they are means to strengthen human capabilities, dignity, and opportunities. In the digital age, this perspective is more important than ever. Therefore, digital transformation should be evaluated not only by the technologies employed but also by its contribution to improving people's lives, reducing inequalities, expanding access to services, and ensuring that no one is excluded.

Accordingly, the central question is not whether digital transformation will shape Libya's future—it already does. The more important question is how this transformation can be directed to

serve people, strengthen public trust, and contribute to inclusive and sustainable human development. Achieving this requires more than isolated digital projects or sector-specific initiatives. It calls for a coherent national vision, effective institutional coordination, supportive legal and policy frameworks, sustained investment in human capacities, digital literacy, and universal access to services.

The report rightly emphasizes that digital transformation must be human-centered. It should encompass young people seeking new skills and employment opportunities, women entrepreneurs building their businesses, persons with disabilities requiring accessible services, students and researchers contributing to knowledge production, and communities in remote and underserved areas that often face the greatest barriers to connectivity and opportunity. A truly people-centered digital transformation is one that expands choices, reduces disparities, and empowers all Libyans to participate effectively in the country's development future

This report is the product of a participatory national process conducted under the leadership of the General Information Authority, with valuable contributions from experts, researchers, universities, academic institutions, and stakeholders from across Libya. UNDP Libya is proud to have supported this process through technical and advisory cooperation and in close coordination with the Human Development Report Office in New York and the Regional Bureau for Arab States in Amman.

I would like to express my sincere appreciation

to the leadership of the General Information Authority, the editorial and research teams, national experts, and all contributors whose dedication and expertise made this report possible. I would also like to thank the Libyan universities that demonstrated remarkable commitment and dedication in hosting consultation sessions and providing valuable insights that enriched the report's analysis and overall content.

We hope that this report will serve as a valuable reference for policymakers, researchers, development practitioners, and institutions working to shape the future of development in Libya. Beyond identifying challenges and opportunities, the report seeks to support informed national dialogue and contribute to shaping a digital transformation pathway that promotes inclusive, sustainable, and human-centered development throughout Libya.

Dr. Sophie Kemkhadze
Resident Representative
United Nations Development Programme
Libya (UNDP)



➤ Introduction

In a world undergoing rapid and unprecedented transformations, humanity today stands at a historic crossroads, where the trajectories of technological progress intersect with the imperatives of human development, together shaping the contours of a new era in which concepts of well-being, capability, and social justice are being redefined. The digital revolution encompassing artificial intelligence, big data, and instantaneous connectivity has produced a developmental reality in which traditional resources alone are no longer sufficient. Instead, digital knowledge and the capacity to harness it have become the cornerstone of building prosperous societies.

Within this context, the concept of human development acquires deeper and broader dimensions. It is no longer limited to improving income levels or expanding access to education and healthcare; rather, it is closely linked to the ability of individuals and communities to access the digital space, actively participate in it, and harness its potential to achieve a dignified and sustainable life. As a source of strength and capability, it relies on governance, equity, social safety nets, and people's effective control over technology to achieve the comprehensive transformation required in shaping patterns of production, education, health, and even social relations themselves.

For Libya, this digital transformation unfolds within a unique national context characterized by both complex challenges and promising opportunities. On one hand, the state faces structural challenges related to rebuilding institutions, achieving

Digital transformation is not merely a technological tool; rather, it is a comprehensive transformative framework that reshapes patterns of production, education, and healthcare, while placing investment in people as both a goal and a means to achieving sustainable development.

economic stability, addressing labour market imbalances, and enhancing the efficiency of essential services. On the other hand, digitalization offers a strategic window through which many constraints can be overcome. Traditional constraints, accelerate the pace of development, and strengthen social inclusion—particularly in light of Libya's youthful demographic composition, which represents a significant asset if effectively harnessed.

This report has been prepared in response to these transformations, with the aim of understanding their diverse dimensions and implications for the Libyan context. It does not merely seek to diagnose the current situation, but rather endeavors to provide an analytical and forward-looking vision that can guide public policies toward more efficient, equitable, and sustainable pathways. The first chapter establishes the conceptual framework of human development by revisiting traditional notions in light of new variables, with a particular focus on the interactive relationship between technology and the expansion of human capabilities. The second chapter examines the role of digital education as the primary gateway to building a knowledge economy and as

a pivotal tool for equipping individuals with future-oriented skills.

Chapter Three explores a critical foundational pillar: digital health by exploring the potential of modern technologies to improve access to healthcare services, enhance efficiency, and reduce disparities across different regions.

The fourth chapter discusses the digital economy, highlighting opportunities for economic diversification, innovation stimulation, and the creation of new jobs aligned with the requirements of the digital age.

In advancing the principles of good governance the fifth chapter focuses on examining how digital governance adopts justice, enhances transparency, and strengthens community participation, thereby contributing to the establishment of a more unified social contract.

Chapter Six addresses the challenges and risks of human development within what is termed the "risk society," where digital risks intersect with traditional challenges such as inequality, unemployment, and institutional fragility.

Chapter Seven is devoted to presenting the general recommendations of the report.

The report concludes with a statistical annex containing indicators and measures of human development in Libya, including the evolution of the Human Development Index and its various dimensions. This annex seeks to provide a scientific database to support policymakers and researchers in understanding overall trends and assessing the impact of development policies.

This report represents an open invitation to reconsider the pathways of human development in Libya in light of digital

transformation through its analyses and insights. It underscores that investment in people both as the ultimate goal and as the means remains the most effective strategic choice for achieving sustainable development. At the same time, it emphasizes that while digitalization offers vast opportunities, it may also deepen existing disparities if not managed through inclusive policies grounded in principles of justice and equity.

Building a brighter developmental future in Libya requires adopting an integrated approach that marries digital empowerment with enhancing human capabilities, and is based on a clear and comprehensive national vision.

Investment in humans is the end and the means; it must remain the most effective strategic option to achieve sustainable development, and to ensure Libya's effective transition into the era of digital knowledge

Accordingly, building a brighter developmental

future for Libya requires the adoption of an integrated approach that combines digital empowerment with the enhancement of human capabilities, anchored in a clear national vision founded on innovation, partnership, and sustainability. This report seeks to contribute to that endeavor, serving as both a knowledge resource and a strategic tool to support the advancement of human development in Libya in the digital era.

Dr. Mohamed Ibrahim Al-Hemali,
Head of the Research Team

➤ **Organizational Structure of the National Team for Preparing the Seventh National Human Development Report**

The Seventh National Human Development Report 2025 is issued within the context of the rapid global transformations that impose both challenges and opportunities on the trajectories of human development. The report seeks to provide an in-depth reading of the various dimensions of development and their implications for the Libyan reality. This effort goes beyond describing the current situation; it aims to construct an analytical and forward-looking vision that supports the orientation of public policies toward greater efficiency, equity, and sustainability, with a focus on expanding individual choices and improving quality of life, grounded in the core pillars of education, health, and the economy.

In this framework, consultations conducted by the national committees responsible for preparing the report with universities, academic institutions, and national experts, as well as coordination meetings with UNDP

experts and the advisory committee resulted in the adoption of the title “Human Development in the Digital Era.”

This title reflects the analytical findings of Libya's developmental reality while aligning with global transformations toward digitalization and its growing role in shaping the future of development.

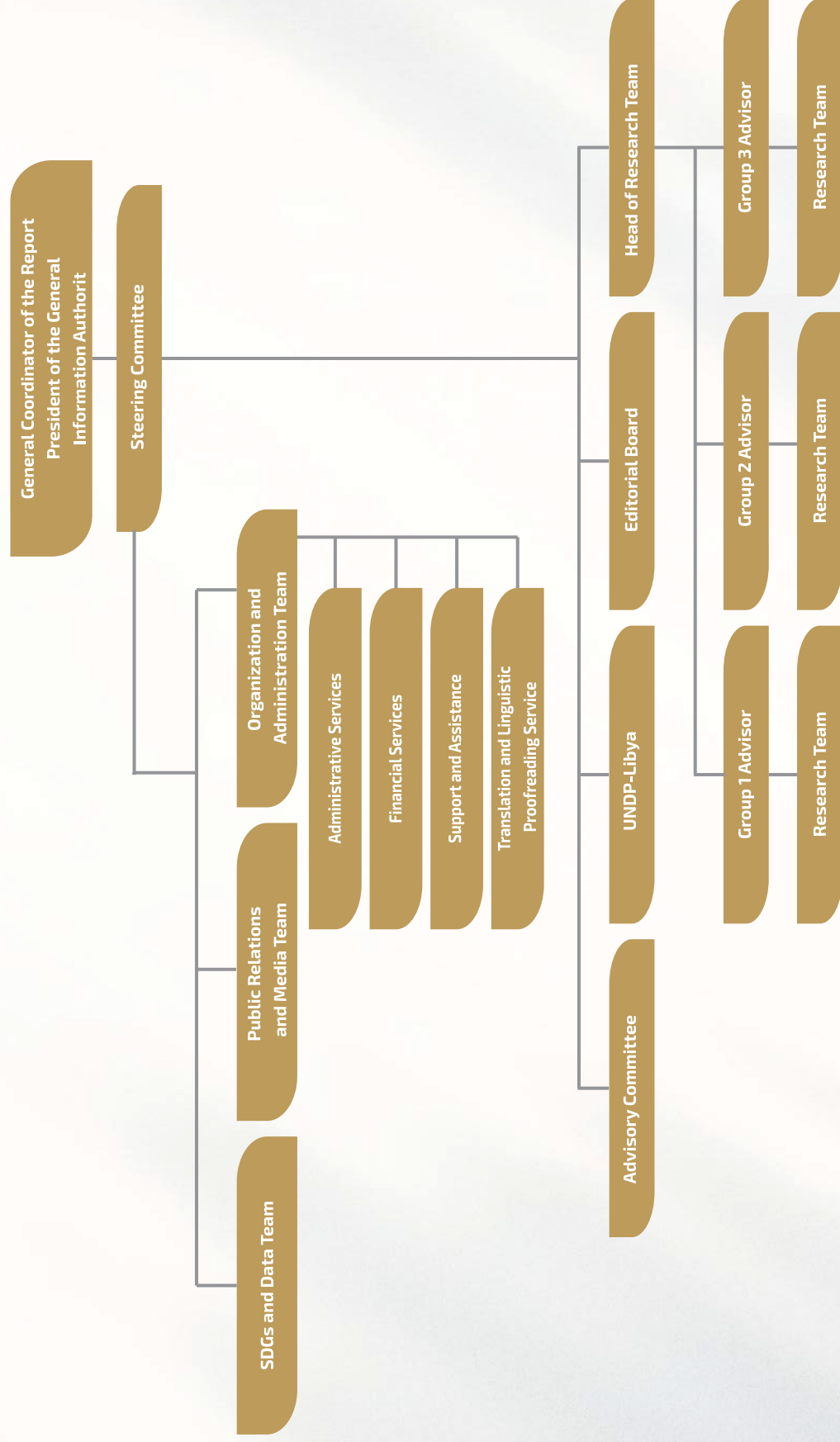
The organizational structure of the national committees for preparing the report was formally adopted, with responsibilities and tasks clearly defined for each team and committee. This reflects a participatory and nationally driven approach to report preparation. Specialized committees were formed, comprising Libyan experts from diverse geographic regions and scientific disciplines, to ensure comprehensive coverage of all aspects of the subject from multiple perspectives.

The General Information Authority adopted a series of organizational decisions (27, 28, 29, 30, 34 of the year 2025) to form the integrated legal and administrative framework for the national committees and work teams supervising the preparation of the 7th National Human Development Report

To guarantee the success of preparing the Seventh National Human Development Report in accordance with the highest professional and scientific standards, the President of the General Information Authority issued five foundational and organizational decisions that constitute the legal, administrative, and technical framework for the report. These decisions, numbered 27, 28, 29, 30, and 34 of the year 2025, serve as the cornerstone for ensuring effective and efficient workflow and achieving the highest quality in the final outputs. They established an integrated legal, administrative, and technical structure, with clearly defined responsibilities and tasks for each team and committee, thereby reinforcing the participatory and nationally inclusive approach underpinning the preparation of this report.

(General coordinator: head of the general information authority. Steering committee, organization & management team, public relation & media team, data & SDGs team, administrative services, financial services, support & assistance, translation & proofreading services, advisory committee, UNDP-Libya, editorial board, head of the research team, group advisor 1, group advisor 2, group advisor 3, research team.

➤ The Organizational Structure of the National Committees for Preparing the Seventh National Human Development Report.



➤ **Timeline Phases**

The work on the Seventh National Human Development Report extends across time stages precisely defined, ensuring proper planning and systematic implementation of all activities and tasks. A comprehensive timeline plan was developed covering the period from the end of 2024 until the launch of the final report in 2026.

These stages include many overlapping and integrated activities, starting from the initial community consultations, passing through the preparation of background research papers, and reaching the technical reviews and final editing.

The timeline shows a logical sequence of activities, where each stage follows the other in a considered manner that ensures the quality of outputs.

The main stages include: the planning and preparation stage, the research and data collection stage, the analysis and drafting stage, the review and auditing stage, and the launching and publishing stage.

The schedule also includes specific periods for consultation with international and local experts, and for conducting broad community consultations in various regions of Libya.

➤ **Stages of Preparing the Report and Follow-up**

Within the framework of governance of issuing the report, the stages of its preparation, its timeline and the mechanism of follow-up were adopted according to the following:



➤ Initial Consultations for Preparing the Seventh Report... A Comprehensive Participatory Approach

The initial consultations for preparing the Seventh National Human Development Report began since the last quarter of the year 2024, out of the belief of the General Information Authority in the importance of the participatory approach in determining the priorities of development. Specialized workshops were organized at Sebha University and Misurata University, two long standing academic institutions representing different geographical regions in Libya. These workshops witnessed wide participation and in depth dialogues about the challenges and opportunities facing Libyan society in the current stage.

The consultations concluded with a clear consensus that digital transformation and digitalization is the issue of the moment, and that it represents an inevitable necessity to keep pace with the accelerating global developments.

These consultations coincided with the issuance of the UN report that addressed artificial intelligence and its impact on human development globally, which strengthened the conviction of the Authority about the importance of choosing a topic connected to global digital transformations while taking into account the specific Libyan context.

Therefore, "Digitalization and its Role in Human Development" was chosen to be the central theme of the Seventh Report, ensuring linkage with the global agenda while responding to local needs.

In April 2025, the General Information Authority

witnessed a series of intensive meetings of the different working teams, with the aim of selecting the main title of the Seventh National Human Development Report.

These consultations came as a natural extension of what emerged from the previous community consultations at universities, where the outputs of those workshops were taken into consideration, and the orientations and priorities highlighted by the participants from academics, experts, and students were analyzed.

These consultations came as a natural extension of what emerged from the previous community consultations at universities, where the outputs of those workshops were taken into consideration, and the orientations and priorities highlighted by the participants from academics, experts, and students were analyzed.

The consultations started from a firm conviction that digitalization and digital transformation are not merely technical options, but rather fundamental drivers of comprehensive and sustainable development in the twenty-first century.

Several proposed titles were reviewed, and the teams discussed the advantages and disadvantages of each, and the extent of their connection to the Libyan reality and to global orientations in the field of human development.

After in depth discussions and constructive dialogues, the teams reached a consensus on choosing the main title of the report (Human Development in the Digital Age), as this title reflects the required balance between ambition and realism, between authenticity

and modernity, and between Libyan specificity and openness to global experiences.

The meetings were distinguished by wide attendance from various disciplines, which enriched the discussion and contributed to shaping a comprehensive and integrated vision regarding the axes that the report will cover.

It was emphasized that the report must be a unifying national document, expressing the aspirations of the Libyan people toward a better future that benefits from the digital revolution to improve quality of life and enhance opportunities for sustainable development.

➤ **Technical Reviews of Background Papers with UNDP Experts**

In the months of November and December 2025, the work on the Seventh National Human Development Report entered a decisive and important stage, namely the stage of specialized technical review of the background research papers that constitute the backbone of the report. A series of intensive scientific sessions were organized, in which a select group of Libyan experts specialized in the fields of human development, digitalization, and information technology participated, alongside international experts from the United Nations Development Programme (UNDP), who possess extensive experience in preparing and reviewing human development reports at the global level.

These technical reviews resulted in a valuable set of observations and recommendations that contributed to improving the quality of the research papers in a tangible way. These observations were integrated into the updated drafts, which strengthened the scientific

foundation of the report and ensured its issuance in accordance with global standards.

This close cooperation between Libyan and international experts represents the spirit of true partnership in building knowledge, and confirms the commitment of the General Information Authority to producing a report that matches its counterparts at the regional and international levels in terms of quality and professionalism.

➤ **First: The Conceptual Framework of Human Development in the Digital Age** **Human First... Human Development in the Digital Age and Artificial Intelligence**

Since the launch of the first Human Development Report in 1990, the Human Development Reports issued by the United Nations Development Programme have constituted a qualitative transformation in global development thought, by shifting the center of attention from economic growth as a final goal, to the human being as the essence of development and its fundamental purpose.

This transformation established a developmental concept based on expanding human choices and enhancing their capabilities, through enabling them to live a long and healthy life, acquire knowledge, and enjoy a decent standard of living the three dimensions upon which the Human Development Index (HDI) is based.

Over more than three decades, the Human Development Reports evolved to respond to accelerating global transformations, moving

from focusing on measuring progress in its traditional limits, to addressing more complex issues related to inequality, environmental sustainability, resilience, demographic changes, and eventually the challenges associated with the digital revolution and artificial intelligence.

This evolution was embodied in the introduction of new and modified indicators, such as the Inequality-adjusted Human Development Index (IHDI), the Multidimensional Poverty Index (MPI) and the Planetary-adjusted Human Development Index (PHDI), which allowed for a deeper reading of developmental progress and its environmental and social boundaries.

In this changing global context, digitalization comes as one of the most transformative forces influencing the trajectories of contemporary human development. Digital transformation is no longer merely a technical process or an update of tools, but has become a structural factor reshaping patterns of production, work, service delivery, and relations between state and society even redefining the very concept of opportunities.

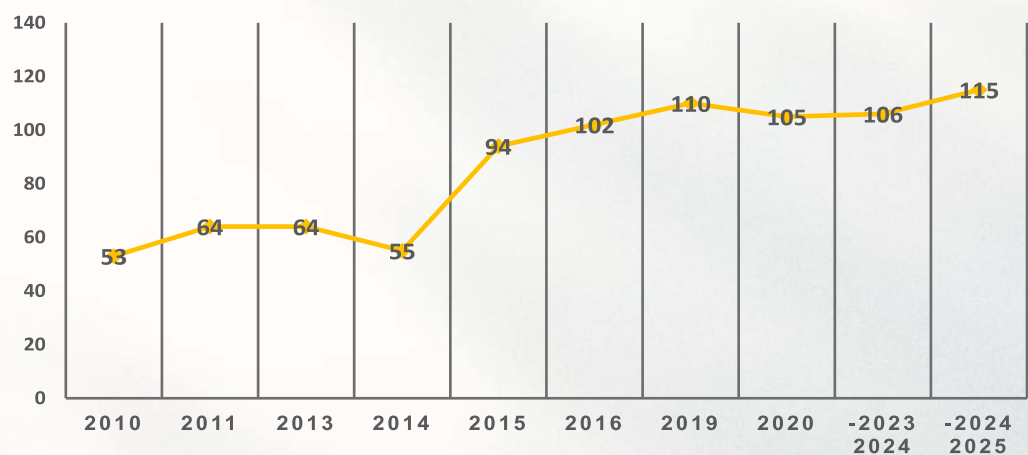
Recent global Human Development Reports affirm that digitalization, if managed within

fair governance frameworks, is capable of accelerating the achievement of human development, expanding access to basic services, enhancing social inclusion, and reducing geographical and social gaps. Yet, conversely, it may exacerbate existing inequalities if regulatory frameworks are absent, readiness levels vary, and access to digital technologies remains confined to certain groups or regions.

In the Libyan case, this discussion acquires a particular dimension, given the intersection of the digital transformation path with a complex national context characterized by accumulated political, economic, and security crises, disparities in development levels between regions, and weak institutional readiness in several vital sectors.

Nevertheless, Libya in recent years shows digital and demographic indicators that provide latent opportunities to redirect the trajectory of human development through digitalization, if properly harnessed within an integrated national vision that places the human being at the forefront of priorities.

➤ **Figure (1): The Evolution of Libya's Rank in the Human Development Index According to the UN**



Human Development Index (HDI) data indicate that Libya remains among the countries classified as having high human development, although its trajectory over the past decade has been marked by fluctuations, influenced by instability and the declining performance of public institutions. According to the 2025 Human Development Report, Libya HDI value stood at 0.721, placing the country 115th globally if the Global Human Development Report were to rely on the same updated data. This discrepancy highlights the importance of strengthening national capacities for data production and analysis, as well as updating data within the relevant international organizations whose datasets are used in calculating countries' Human Development Index.

In contrast, the national measurement based on more recent and detailed local data showed a higher value of the index, reaching 0.765, which raises Libya's ranking to 95 worldwide. This difference reflects the importance of developing national capacities in producing and analyzing data, and the role of national statistics in providing a more accurate reading of the reality of human development, thereby supporting the formulation of evidence-based public policies.

However, reading the Human Development Index in isolation from its environmental dimensions is no longer sufficient in an era of increasing climate risks and planetary pressures. The Planetary-adjusted Human Development Index (PHDI) shows that part of the developmental progress achieved in Libya has come at the expense of the environment, through the rise of

expense of the environment, through the rise of the carbon footprint and the per capita share of resource consumption. This poses a fundamental challenge related to the sustainability of this progress in the long term.

This reality confirms that the trajectory of human development in Libya needs to be redirected, so that it balances between improving human well-being today and ensuring the rights of future generations.

This reality confirms that the trajectory of human development in Libya needs to be redirected, so that it balances between improving human well-being today and ensuring the rights of future generations.

The Seventh National Human Development Report in Libya 2025 starts from a central premise that digitalization represents a strategic tool for redesigning the trajectories of human development not as a technical end in itself, but as a means of empowering the human being and enhancing his capacity for choice and action in an environment characterized by multiple risks. In this framework, the report adopts the approach of "Human First", which views digital transformation as a public good capable of supporting institutional recovery, expanding safe access to services, and strengthening livelihood resilience and enabling individuals to control their future in the age of artificial

The conceptual framework of the report rests on four main drivers that constitute the analytical foundation of its different trajectories. These are: reforming policies and legislations to keep pace with digital transformations; enhancing innovation as a lever for inclusive growth; directing

investments toward sectors with the highest developmental impact; and building the digital capacities of individuals and institutions.

This framework affirms that the success of digital transformation in Libya is conditional upon its ability to reduce existing gaps, strengthen digital justice, and ensure that no group or region is left outside the path of development.

Accordingly, this report does not treat digitalization as a separate sector, but as a horizontal force crossing sectors, influencing education, health, economy, governance, and environment, and together shaping a new trajectory for human development in Libya.

Through this perspective, the report seeks to provide a deep analytical reading of the opportunities and risks of digitalization, linking them directly to human development indicators, in preparation for deriving practical policy implications that support decision-makers in charting a more inclusive and sustainable developmental path.

Through this perspective, the report seeks to provide a deep analytical reading of the opportunities and risks of digitalization, linking them directly to human development indicators, in preparation for deriving practical policy implications that support decision-makers in charting a more inclusive and sustainable developmental path.

Second: Digital Education... Assessing Institutional Readiness and Developing Human Capital

Also education is considered one of the fundamental pillars of human development,

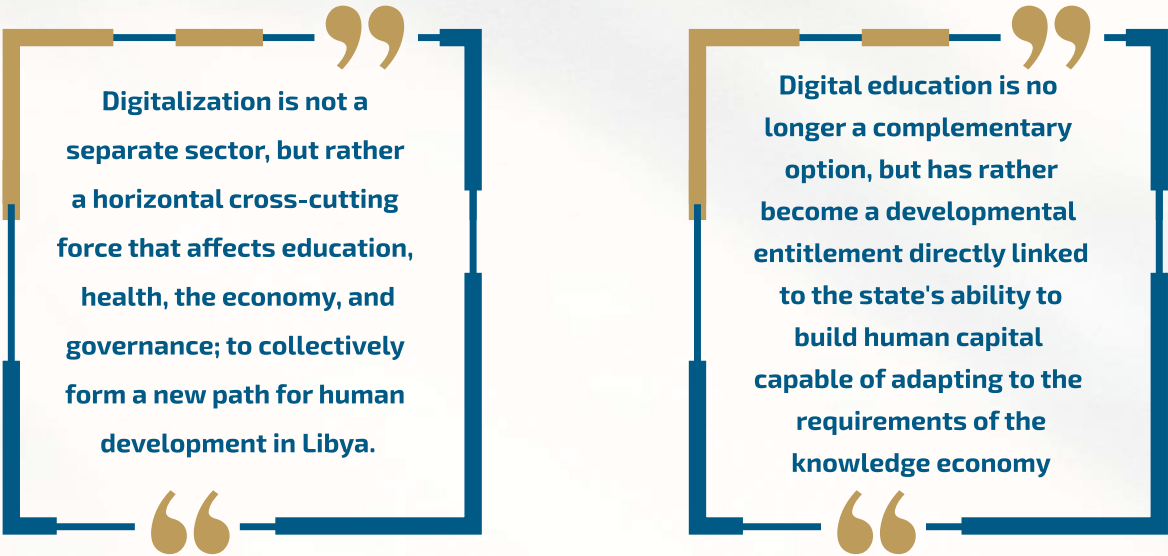
not only as a channel for acquiring knowledge, but as a central tool for expanding individual choices and enhancing their capacities for economic and social participation.

In the context of accelerating digital transformations, digital education is no longer a complementary option or a temporary solution, but has become a developmental entitlement directly linked to the ability of states to build human capital capable of adapting to the requirements of the digital economy and the knowledge society.

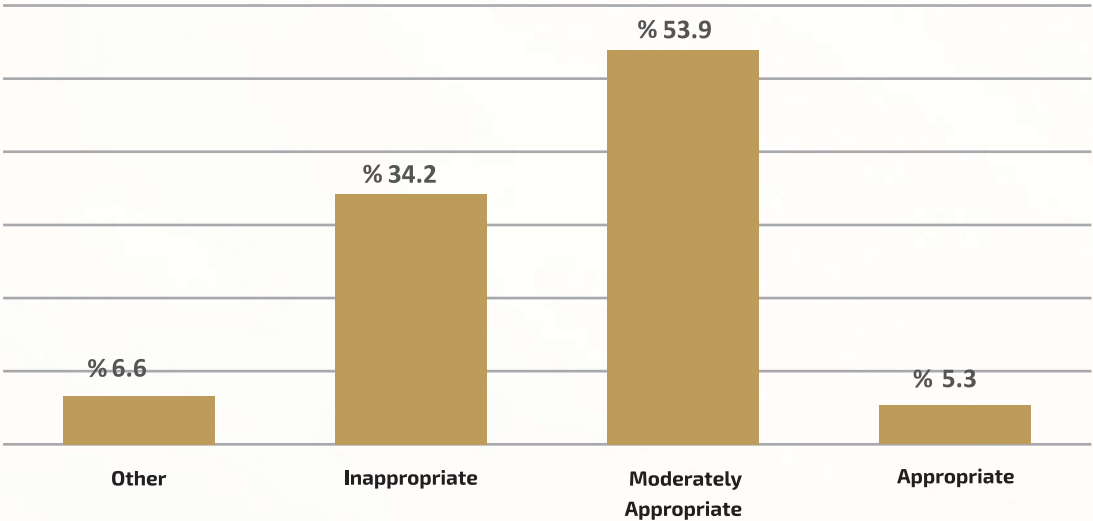
Human Development Reports issued by the United Nations Development Programme affirm that investment in quality and inclusive education represents one of the most effective pathways for strengthening sustainable development and reducing inequalities.

In Libya, the education sector faces a dual challenge: the need to address accumulated structural imbalances, and at the same time to respond to the requirements of digital transformation imposed by global changes and the experience of the COVID-19 pandemic.

The pandemic clearly revealed the fragility of traditional educational systems and showed the limited capacity of educational institutions to ensure continuity of learning during crises, compared to countries that invested early in digital education infrastructure and electronic learning platforms.



➤ **Figure (2): The Extent of Suitability of Curriculum Design for the Application of Digital Education**



The results of the analysis contained in the report indicate that digital transformation in Libyan education is still in its early stages, and is characterized by non-uniformity between institutions and regions.

At the level of curriculum design, the data showed that more than half of the participants in the educational survey. % 53.9 see that the current curricula are not designed in a way that facilitates digital application, which reflects a clear gap between educational content and the requirements of digital education

Also, % 56.6 of participants stated that the prevailing teaching methods do not keep pace with the requirements of digital transformation and rely to a large extent on rote learning, instead of interaction, problem-based learning, and skills building.

At the level of institutional support and digital platforms, the results show that about % 67.1 of participants see that the official entities concerned with education do not provide sufficient subscriptions or support for digital educational platforms, which limits the ability of educational institutions to adopt flexible and

scalable learning models.

Added to this is the weak integration of digital platforms with administrative and educational systems, and the absence of a unified national vision for digital education, which has led to partial and scattered initiatives that do not rise to the level of comprehensive transformation.

Digital infrastructure constitutes one of the most prominent obstacles to digital transformation in education, as many educational institutions, especially in rural and remote areas, suffer from weak internet connectivity, shortage of devices and equipment, and absence of technically equipped classrooms.

This disparity in digital readiness deepens the educational gap between regions, and undermines the principle of equal opportunity in obtaining quality education, which contradicts the essence of the human development approach that is based on "leaving no group behind."

The human element is no less important than infrastructure in ensuring the success of digital transformation. The report shows that the lack of digital competencies among teachers and educational administrations represents a fundamental challenge, as a large proportion of educational staff lack systematic training in the use of digital education tools and learning technology. Likewise, resistance to change, weak digital culture, and the absence of continuous professional development programs are all factors that limit the effectiveness of integrating technology into the educational process.

In contrast, digital education emerges as a strategic opportunity to redefine the function of education in Libya, and to move from a model based on the transfer of knowledge to a model based on empowering the learner. Digital education allows for expanding the scope of access to education, especially for groups facing geographical or social difficulties, supports the concept of lifelong learning, and strengthens digital skills that have become an essential condition for integration into the modern labor market. It also contributes to reducing the gap between educational outputs and economic needs, through the integration of skills such as critical thinking, problem-solving, collaborative work, and innovation.

Digital transformation in education is closely linked to the development of human capital, which constitutes the fundamental driver of economic growth and sustainable development. Countries that invest in inclusive and high-quality digital education are more capable of enhancing productivity, attracting investments, and building a knowledge-based economy. In the Libyan context, this dimension acquires special importance in light of the youthful demographic composition, where youth constitute a large proportion of the population, and they are the most connected to technology and the most capable of employing it in innovation and entrepreneurship if provided with a supportive educational environment.

Accordingly, the results of this chapter indicate that digital transformation in Libyan education

represents a potential developmental lever, but it remains conditional upon structural reforms that include updating curricula, developing teaching methods, strengthening digital infrastructure, building human capacities, and establishing a clear governance and legislative framework for digital education. Adopting an integrated national vision for digital education is considered a fundamental step to ensure that this transformation contributes to improving human development indicators, enhancing educational justice, and building human capital capable of leading the development trajectory in the digital age.

➤ **Third: Digital Health ... Smart Care for a Better Life**

Health is considered one of the essential dimensions of human development, as the improvement of health indicators is directly linked to the ability of individuals to expand their choices and actively participate in economic and social life.

In this framework, digital transformation in the health sector does not represent merely a technical update of services, but constitutes a structural reform that redefines methods of planning, resource management, and health care delivery, thereby enhancing efficiency, equity, and sustainability. Human Development Reports issued by the United Nations Development Programme affirm that investment in digital health constitutes one of the effective pathways to improve the quality of services and reduce health gaps, especially in contexts suffering from geographical and institutional disparities.

In the Libyan case, the data showed relative improvement in a number of basic health indicators during recent years. Life expectancy at birth increased (from 70.8 years in 2020 to 73.5 years in 2025), and a decline was recorded in child mortality rates under five years of age. Maternal care indicators improved, as the majority of births take place inside health facilities and under the supervision of qualified staff. The health infrastructure witnessed a noticeable expansion in terms of the number of hospitals and primary health care facilities, reflecting investment in the geographical coverage of basic services. However, these positive indicators do not conceal the persistence of structural imbalances that affect the quality and fairness of services, especially in peripheral and rural areas.

The data contained in the report reveal the persistence of major health challenges, most notably the increasing burden of non-communicable diseases, the high rates of deaths resulting from road accidents, in addition to challenges related to child nutrition and the spread of unhealthy patterns. The data also show disparities in the completion of vaccination chains, which reflects gaps in follow-up and continuity.

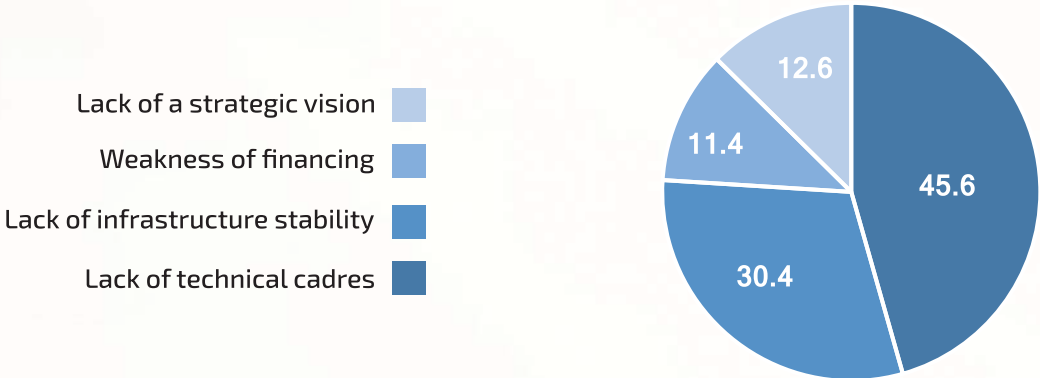
At the financial level, health spending remains limited compared to needs, with heavy reliance on government funding, and a relative rise in direct out-of-pocket spending by citizens, in the context of limited insurance coverage. This reality weakens the financial protection of families and limits the ability of the health system to achieve comprehensive health equity.

In this context, digital health emerges as a strategic tool to address a number of these structural challenges. The integration

of information and communication technology into the health system allows for improving data management, strengthening evidence-based planning, developing epidemiological surveillance systems, and expanding access to health services, especially in areas suffering from shortages of staff or geographical remoteness.

The components of digital health include electronic health records, telemedicine, decision-support systems, mobile phone applications, and platforms for hospital and supply chain management.

➤ **Figure (3): Obstacles of Digital Health Infrastructure**



Nevertheless, the reality of digital health in Libya remains limited and uneven. The results of the field survey, which covered several health institutions, indicate that a considerable proportion of these institutions lack reliable internet connectivity, or basic technical infrastructure such as servers and data centers.

Likewise, the use of specialized health information systems, such as hospital management systems or electronic health records, is still of limited prevalence, and often confined to partial initiatives and not integrated. It is noted that there is no unified national portal that allows citizens to access their health files or book services electronically, which limits patients' benefit from digital transformation.

At the national level, some important digital initiatives have emerged, such as the

adoption of the Health Information System (DHIS2) to monitor health indicators and ,collect data on primary care and immunization in addition to the Immunization Platform launched during the COVID-19 pandemic to register vaccinations and issue electronic .certificates linked to the national number Telemedicine initiatives were also launched in cooperation with international partners, with the aim of facilitating medical consultations and connecting doctors inside Libya and abroad with patients. Despite the importance of these experiences, they remained of limited impact due to weak institutional integration and the absence of a comprehensive national framework for digital health that ensures sustainability and expansion.

Capacity-building of human resources constitutes one of the most prominent challenges facing digital transformation in the

health sector. The results show that only a small proportion of health institutions provide regular training programmes on the use of digital systems, while most training is circumstantial and limited, occurring only when a new system is introduced. Institutions also suffer from a shortage of specialized technical staff, weak incentives, and the absence of clear career paths in the field of digital health. In addition to the limited awareness of issues of data governance, privacy, and information security, despite being essential elements to ensure citizens' trust and the sustainability of digital transformation.

On the other hand, Libya possesses promising opportunities to strengthen digital health, benefiting from its youthful demographic composition, the widespread use of smartphones, and the high rates of internet usage. These factors allow for the adoption of flexible and low-cost digital solutions, such as mobile health applications, cloud services, and telemedicine, enabling technological leapfrogging and bypassing some costly traditional stages.

Building upon and unifying existing experiences within an integrated national vision can also contribute to improving the efficiency of health spending, reducing geographical gaps, and strengthening health equity.

Accordingly, this chapter indicates that digital health represents a fundamental lever for enhancing human development in Libya, but it remains conditional upon institutional reforms that include developing digital infrastructure, building human capacities, improving data governance, and strengthening integration among existing initiatives.

Adopting a comprehensive national strategy for digital health would support the achievement of universal health coverage, enhance the efficiency of the health system, and reduce inequalities in access to services, thereby positively reflecting on human development indicators and reinforcing the human right to health as a fundamental and Indivisible right.

➤ **Fourth : The Digital Economy Toward Better Performance**

The global economy is witnessing a profound structural transformation driven by digitalization, which goes beyond merely introducing technology into existing processes to encompass production patterns, value chains, labour markets, and service delivery mechanisms. Digital transformation is no longer just a supporting factor for growth, but has become one of its main determinants, and a fundamental component of the ability of states to achieve inclusive and sustainable economic development.

Human Development Reports issued by the United Nations Development Programme affirm that employing digitalization in the economy can contribute to raising productivity expanding job opportunities, and strengthening financial inclusion, provided it is managed within policy frameworks that ensure the integration of vulnerable groups and do not deepen existing gaps.

In the Libyan context, digital transformation emerges as a dual opportunity: on the one hand, to address structural economic challenges, and on the other, to redirect the growth trajectory toward more diversified and sustainable paths.

Libya, despite its historical reliance on the oil sector, possesses digital and structural indicators that show relative readiness to transition toward a more inclusive digital economy. The data indicate a noticeable improvement in several indicators related to connectivity and the internet, where the rate of internet penetration among individuals reached about 88.5% at the beginning of 2025, surpassing global and regional averages, with almost full coverage of third and fourth generation mobile networks, and the number of active mobile phone lines rising to nearly twice the population.

This progress in digital infrastructure was partially reflected in Libya's ranking in international indicators, as it recorded a noticeable improvement in the United Nations E-Government Development Index, moving into the category of countries with a high index, advancing dozens of ranks within a short period.

However, this overall improvement conceals clear disparities among the components of the index, as government services still supporting growth only, but it has become one of its main determinants, and a fundamental component in the ability of states to achieve comprehensive and sustainable economic development.

At the level of economic empowerment of vulnerable groups, the report shows that digital transformation carries promising potential to create new income opportunities and facilitate access to markets and services, especially for women, youth, persons with disabilities, and residents of remote areas. Yet these potentials remain constrained by a set of challenges, most notably weak digital skills, varying ability to bear the cost of devices and services, and limited

institutional benefit from digitalization tools.

Survey results indicate that only a limited proportion of institutions actually adopt digital systems, while more than half still operate without genuine integration of digital technologies, which limits the impact of digitalization in raising productivity and creating sustainable job opportunities.

The analysis of the digital economy in Libya shows that the contribution of the communications and technology sector to GDP remains below its latent potential despite progress in connectivity indicators.

Although internet usage rates are high and the cost of digital services has declined relative to income, the adoption of advanced technologies, such as artificial intelligence and data analytics, remains limited within public and private institutions.

The data indicate that only a small proportion of institutions use artificial intelligence applications in practice, while the majority see that weak technical infrastructure and the lack of legislation and skills represent major obstacles to comprehensive digital transformation.

Financial inclusion is one of the areas that witnessed noticeable development in the context of digital transformation. Financial technologies (Fintech) have contributed to expanding access to banking services, increasing the use of electronic payment methods, and the rise in the number of bank accounts, cards, and points of sale.

The data indicate rapid growth in the number of point-of-sale devices, and a doubling of the volume of digital transactions during the

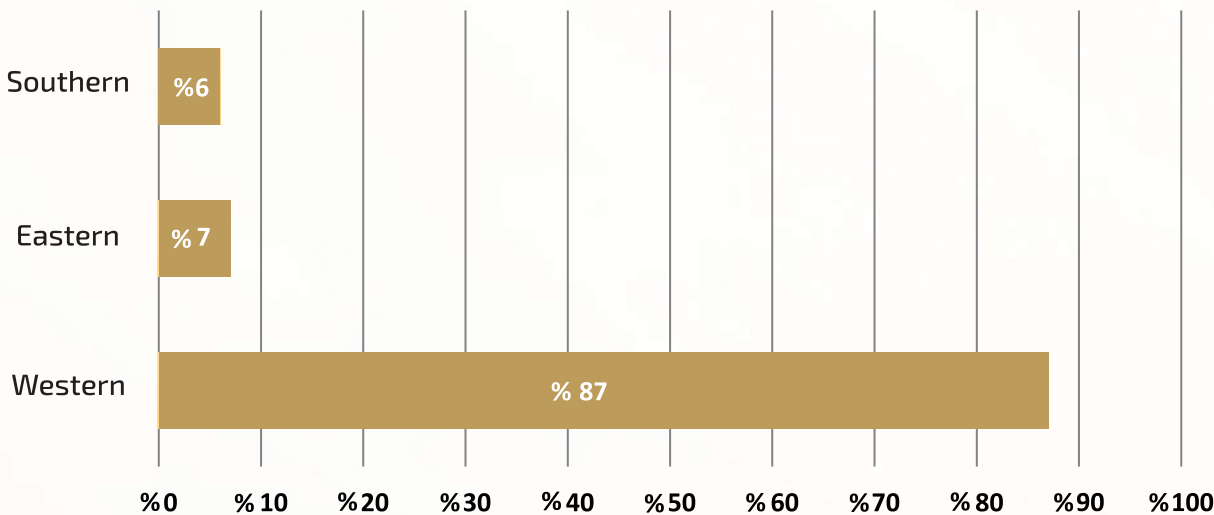
recent period, with a noticeable expansion in the use of mobile banking applications. This transformation contributed to the inclusion of new segments, including non-working women, within the formal financial system.

However, this progress in financial inclusion is still geographically unbalanced, as most digital financial services are concentrated in urban areas, while the eastern and southern regions suffer from weak coverage and lack of supporting infrastructure.

Digital financial services also face challenges related to trust, cybersecurity, and digital financial culture, which limit the maximization of their developmental impact.

The report affirms that the sustainability of digital financial inclusion requires developing the regulatory framework, strengthening consumer protection, and expanding awareness and capacity-building programs.

➤ **Figure (4): The Geographical Distribution of Points of Sale (POS)**



With regard to digital entrepreneurship, the report points to a noticeable expansion in e-commerce and digital platforms, with hundreds of online stores officially registered, and a wide spread of informal entrepreneurial initiatives.

However, this growth collides with the absence of a comprehensive legislative framework for e-commerce, weak financing mechanisms, and complexities of registration and guarantees, which limit the ability of start-ups — especially those led by youth and women — to grow and

sustain the digital skills gap and weak linkage between education and the labor market constitute an additional obstacle to maximizing the impact of digital entrepreneurship in creating qualitative job opportunities.

At the level of the future of jobs, artificial intelligence emerges as a dual-impact factor, carrying opportunities to create new jobs in technology and innovation fields, but at the same time threatening a number of traditional low-skill jobs.

The report indicates that the Libyan economy, under its current structure, is still limited in readiness to fully benefit from artificial intelligence technologies, which raises the risks of widening the skills gap and exacerbating inequality if proactive policies for retraining and capacity-building are not adopted.

Accordingly, this chapter concludes that digital transformation represents a potential economic lever to enhance growth, create job opportunities, and expand financial inclusion in Libya. Yet turning these potentials into tangible developmental impact remains conditional upon structural reforms that include developing digital infrastructure, updating legislative frameworks, building digital skills, and strengthening integration between economic, educational, and financial policies.

Directing digital transformation toward empowering vulnerable groups, reducing regional disparities, and supporting entrepreneurship is considered an essential condition to ensure that the digital economy contributes to improving human development indicators and achieving more inclusive and sustainable growth.

➤ **Fifth: Digital Governance Strengthening Justice, Transparency, and Social Participation**

Digital transformation in contemporary contexts is no longer a neutral technical process, but has become an institutional framework that reshapes the relationship between the state and society, and directly affects the quality of governance, levels of transparency, and possibilities of social participation.

Human Development Reports issued by the United Nations Development Programme indicate that digitalization, when managed within sound governance frameworks, can constitute an effective tool to strengthen accountability, improve the efficiency of public services, and reduce gaps in access to rights and services.

Conversely, digitalization may turn into a factor of exclusion and marginalization if legislation is absent, institutional readiness is weak, and opportunities of access vary between regions and social groups.

Conversely, digitalization may turn into a factor of exclusion and marginalization if legislation is absent, institutional readiness is weak, and opportunities of access vary between regions and social groups.

In the Libyan case, the issue of digital governance acquires special importance, given the structural challenges facing state institutions, the multiplicity of entities supervising digitalization pathways, and the weak integration among government systems.

The report affirms that digital transformation in Libya should not be reduced to automating procedures or converting documents into electronic formats, but must be viewed as a national project to rebuild institutions on the foundations of transparency, efficiency, and accountability, thereby strengthening citizens' trust in the state and achieving tangible impact in their daily lives.

The data contained in the report indicate that Libya possesses an initial base that can be built upon in the path of digital governance, supported by widespread internet use, rapid growth in electronic payment tools, and

relative expansion in the use of government digital platforms. International experiences have shown that digitalization contributes to reducing administrative corruption and improving the efficiency of public spending through tracking operations, linking databases, and limiting duplication.

In the Libyan context, reviews by oversight bodies highlight the importance of digital linkage in uncovering cases of salary duplication, reducing financial waste, and strengthening transparency in the management of public resources, especially in highly sensitive sectors.

Nevertheless, these potentials still collide with clear structural challenges. The path of digital governance in Libya faces weakness in digital infrastructure, particularly in rural areas, where a considerable proportion of institutions suffer from the absence of stable internet connectivity. The report also points to the multiplicity of entities supervising digitalization, the absence of clear mandatory legislation regulating digital governance, and weak coordination among ministries and institutions, which leads to repeated initiatives and lack of integration.

Added to this are the shortage of qualified staff, the limited presence of advanced digital skills within the administrative apparatus, along with resistance to change and weak institutional digital culture.

In this context, digital justice emerges as one of the central concepts in the analytical framework of the report. Digital justice is not limited to the availability of technology, but includes ensuring equal opportunities in access

to digital services, quality of connectivity, network stability, and protection of digital rights, particularly for the most vulnerable groups and regions. The data indicate a clear digital gap between urban and rural areas, whether in terms of internet usage rates, connection speed, or institutional readiness.



This disparity reproduces existing patterns of inequality, as residents of major cities enjoy better opportunities to access digital services, while residents of peripheral areas are forced to bear additional burdens to obtain the simplest services

➤ **Table (1): Indicators of Digital Governance and Digital Transformation in Libya**

Analysis and connection to the strategic axis	Value / Estimate	Index
Enhances society's readiness to adopt digital services and electronic participation	% 72 - %88.5	Internet speared among population
Indicates expansion of the digital market and supports a competitive economy	% 40	Growth of e commerce
Contributes to reducing financial corruption and uncovering false employees	% 300	Growth of electronic payment
Insufficient to support the AI and big data services	10 Mbps	National connection speed
Highlights the importance of adopting a centralized electronic procurement system	1.2 billion dinars	Annual losses due to absence of electronic procurement
Hinders coordination and slows implementation of digital policies	6 entities	Number of government bodies overlapping in digitalization
Shows the need for urgent national training programs	%12	Percentage of public sector employees digitally qualified
Indicates weak societal digital culture	% 60	Percentage of citizens preferring traditional methods
Places pressures on open data security and digital government	High and increasing	Recorded cyber threats (DDoS, Ransomware)
Keeps digitalization within an experimental framework and weakens institutional commitment	No executive regulations	Absence of mandatory digital governance legislation
Leads to duplication of services and weak oversight of identities and entitlements	Ongoing	Absence of integration among government databases

The challenges of digital justice are exacerbated by the limited public spending allocated to digital transformation, and the absence of modern legislation for the protection of data and electronic transactions, which weakens societal trust in the use of digital platforms. The report also points out that the weak digital culture among citizens and institutions reduces the rates of interaction with electronic services, and limits the impact of digitalization in strengthening participation and accountability.

As for digital social participation, the report views it as an extension of active citizenship in the digital age. Digital platforms provide unprecedented possibilities for engaging citizens in evaluating public policies, expressing their opinions, and contributing to the improvement of services, thereby strengthening the legitimacy of public decisions and building a more inclusive social contract.

However, these potentials remain of limited activation in the Libyan context, where many government platforms lack effective interactive mechanisms, and the role of the citizen remains mostly confined to being a recipient of the service, not a partner in its design or evaluation.

The report attaches special importance to the role of youth in strengthening digital governance and social participation; given that they are the group most connected to technology and most prepared to engage in the digital space.

The data indicate that a large proportion of internet and social media users in Libya are youth, and that an increasing number of digital initiatives are led by young people in the fields of innovation, entrepreneurship, and digital services

Yet this demographic energy faces challenges related to weak economic opportunities, high unemployment rates, and the migration of skilled professionals, which limit its ability to contribute sustainably to the path of digital governance.

With regard to cybersecurity and data governance, the report shows that weak legal and regulatory frameworks constitute one of the most prominent risks threatening the path of digitalization. The absence of comprehensive laws for the protection of personal data, weak application of information security standards, and high rates of hacking and cybercrime are all factors that undermine digital trust and limit the readiness of institutions and citizens to use digital services. The report affirms that cybersecurity is no longer merely a technical issue, but has become a sovereign matter linked to protecting the digital assets of the state and ensuring the continuity of public services.

Accordingly, this chapter concludes that digital governance in Libya represents a strategic opportunity to rebuild the state on foundations of greater transparency, efficiency, and justice, but it remains conditional upon adopting a unified national vision, updating the legislative framework, developing digital infrastructure, building human capacities, and strengthening the culture of digital social participation.

Achieving digital justice and ensuring effective social participation constitute two essential conditions for transforming digitalization from a technical tool into a developmental trajectory that strengthens trust between citizen and state, and supports the achievement of comprehensive human development in the digital age.

Sixth: Human Development in the Digital Age...Challenges and Risks

Human development in Libya, as in many countries, faces a new stage characterized by escalating challenges and risks and overlapping crises, in the context of what is known as the risk society. Developmental challenges are no longer confined to their traditional economic or social dimensions, but have extended to include increasingly complex climatic, environmental, demographic, and economic risks.

In light of accelerating digital transformations, these challenges intersect with digitalization pathways, imposing on policymakers the need to rethink prevailing development models, and to link technological progress with risk management and the sustainability of human development.

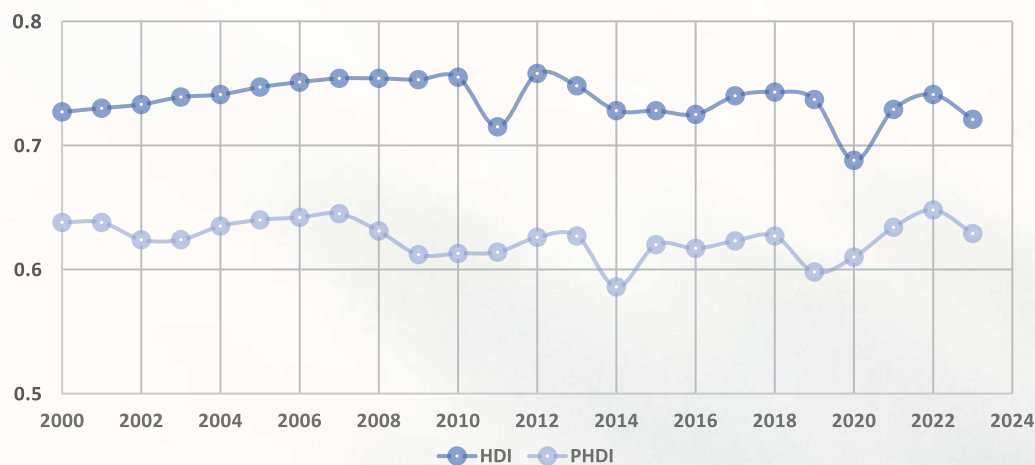
Climate change is considered one of the most prominent challenges directly affecting the

trajectory of human development in Libya. Climate data have shown a noticeable rise in temperatures during recent decades, at a pace exceeding the global average, which has resulted in increased severity of extreme climatic phenomena, such as drought waves and sudden floods.

Storm Daniel in 2023 constituted a stark example of the fragility of environmental and urban infrastructure, and the consequent wide scale human and material losses, including the displacement of tens of thousands of residents, destruction of basic infrastructure, and disruption of health and educational services.

This experience highlights that climatic risks are no longer exceptional events, but have turned into a structural element threatening the stability of human development trajectories.

Figure (5): Human Development Index and Planetary Pressures-Adjusted Human Development Index (PHDI) in Libya (2025/2026)



Climate change in Libya is closely linked to the issues of water scarcity, desertification, and the almost total dependence on oil, which increases the vulnerability of the economy and society to environmental shocks.

In this context, the environmental dimension of the Human Development Index acquires increasing importance, as the Planetary Pressures Adjusted Human Development Index (PHDI) shows a persistent gap between the

developmental progress achieved and the level of environmental sustainability, reflecting that part of the improvement in living standards has come at the expense of the environment and natural resources.

This reality points to an unsustainable developmental trajectory that may, in the medium and long term, undermine the developmental gains achieved, especially in the fields of health and quality of life.

Digitalization intersects with these climatic challenges in a dual-impact manner. On the one hand, digital technologies provide advanced tools for environmental monitoring, early warning, and climate data analysis, thereby strengthening the ability of the state and society to anticipate risks and respond to them.

On the other hand, digitalization contributes to increasing planetary pressure through rising energy consumption, growing electronic waste, and increasing demand for electricity to operate digital infrastructure.

The data indicate a significant rise in per capita consumption of electronic devices and the waste generated from them, in the absence of effective systems for managing electronic waste and recycling, which constitutes an additional environmental and health challenge.

At the demographic level, Libya faces profound transformations affecting the trajectory of human development. On the one hand, the youthful demographic composition represents an important developmental opportunity, as youth constitute a large proportion of the population, and they are the most connected to technology and the most prepared to interact with digitalization tools. On the other hand, this composition produces increasing challenges related to high youth unemployment rates,

weak alignment between educational outputs and labor market needs, and the migration of skilled professionals, which limit the ability to effectively invest in the demographic dividend.

Internal migration and displacement are among the most prominent demographic challenges in Libya. Developmental disparities between regions and weak services in some areas have led to continuous flows of population toward major cities, which contributed to increased pressure on urban infrastructure, the creation of patterns of informal growth, and the deepening of gaps between areas of attraction and expulsion.

Internal displacement resulting from conflicts and natural disasters has further exacerbated the vulnerability of affected groups, reducing their opportunities to access education, health, and employment, thereby negatively affecting human development indicators.

Added to this are the challenges of irregular migration, as Libya has become a country of transit and settlement for a large number of migrants, which imposes additional pressures on public services and infrastructure, and complicates the management of identity, social protection, and human security.

In the absence of integrated digital systems for managing population data and digital identity, the risks associated with social exclusion, poor planning, and weak institutional response increase.

In this context, digitalization emerges as a potential tool to mitigate some of these demographic challenges, through supporting remote work, expanding opportunities for electronic education and training, and

strengthening the local economy in peripheral areas, thereby contributing to curbing the drivers of internal migration and reducing regional disparities.

However, achieving this impact remains conditional upon developing digital infrastructure outside major cities, ensuring equity in access to digital services, and linking digital transformation to balanced regional development policies.

As for economic challenges, the Libyan economy is experiencing deep imbalances in the labor market and at the macroeconomic level, which have been reflected in declining economic indicators and weak policy efficiency. Unemployment is characterized by a structural nature, rising among youth and university graduates, with a skills gap and dominance of the public sector.

The standard of living is also witnessing a decline as a result of reduced real income, rising prices, and weak purchasing power, despite high wages.

Other indicators (poverty, inflation, inequality) are also rising due to monetary and structural imbalances.

In the context of digital transformation, additional economic challenges emerge related to the digital skills gap and weak institutional infrastructure, which increases the need for reforms to strengthen human and economic development.

Digital transformation represents a qualitative shift in various sectors, but it raises complex ethical challenges that touch upon human values, justice, and governance.

Cybercrimes are escalating significantly with

the expansion of technology use, requiring the development of legislation and the strengthening of awareness and digital security. Challenges also emerge in relation to privacy violations, digital exclusion, misuse, surveillance, and algorithmic bias, which deepen social gaps.

Digital transformation contributes to increasing social polarization and spreading misinformation, which threatens social cohesion and requires comprehensive awareness and institutional strategies.

Accordingly, this chapter concludes that challenges constitute a real test for the trajectory of human development in Libya, especially in the digital age.

Technological progress, if not managed within a comprehensive developmental vision, may deepen risks instead of containing them.

Integrating climatic, environmental, demographic, and economic considerations into digital transformation policies, and employing digitalization as a tool to strengthen resilience, early warning, and evidence-based planning, is considered an essential condition to ensure the sustainability of human development, protect its gains, and enable Libyan people to face escalating risks with confidence and adaptability.

➤ **Human Development Index 2025 between Local and International Measurement:**

The table reflects the evolution of the Human Development Index in Libya and its main components during three consecutive Human Development Reports (2018, 2022, 2025), namely the life expectancy index, the education attainment index, and the income index.

Tracking these indicators reveals a trajectory of gradual improvement in the level of human development in Libya during the comparison

period, although this improvement is characterized by a degree of imbalance among the three dimensions of human development.

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Digital transformation represents a qualitative leap, but it poses complex ethical challenges that touch upon human values and justice, which requires developing legislation and protecting privacy to ensure societal cohesion and its digital security.

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Tracking human development indicators in Libya reflects a path of gradual improvement; however , the sustainability of this progress requires achieving a finer balance between the dimensions of health, education, and living standards to ensure the inclusiveness of development.

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➤ **Table (2): Comparison of the Libyan Human Development Index in the Last Three National Reports (2018-2022-2025)**

Year / Report	Life Index (Health)	Human Development Index (HDI)	Income Index	Education Attainment Index
Fifth Report 2018	0.760	0.893	0.498	0.717
Sixth Report 2022	0.787	0.906	0.588	0.760
Seventh Report 2025	0.823	0.803	0.673	0.765

Source: the calculations of the National Team affiliated with the General Information Authority and the Bureau of Statistics and Census

At the level of the overall Human Development Index, the data indicate that it reached 0.717 in the 2018 report, a level that places Libya within the category of countries with relatively high human development. Yet at the same time, it reflects the impact of the political and economic challenges the country experienced during that period.

The index witnessed a noticeable improvement in the 2022 report, reaching 0.760, an increase of 0.043 points, which reflects the beginning of a stage of relative recovery in some social and economic indicators.

This upward trend continued in the 2025 report where the index rose to 0.765. Although the increase between 2022 and 2025 appears limited (0.005 points), it reflects a state of relative stability in the trajectory of human development after years of fluctuations.

As for the life expectancy index (health), it is considered one of the indicators that showed clear improvement during the study period. It rose from 0.760 in the 2018 report to 0.787 in the 2022 report, and then recorded a noticeable leap in the 2025 report, reaching 0.823. This improvement reflects a relative enhancement

in public health indicators and life expectancy at birth, despite the challenges facing the health sector in Libya, such as weak health infrastructure and disparities in services between regions.

Nevertheless, the rise of this index indicates the ability of Libyan society to maintain acceptable levels of basic health care compared to the conditions of instability the country experienced.

With regard to the education attainment index, it recorded 0.893 in the 2018 report, then rose to 0.906 in the 2022 report, which reflects the traditional position that education occupies in Libyan society, where education has remained one of the fundamental pillars of social development for decades.

However, this indicator witnessed a noticeable decline in the 2025 report, reaching 0.803, a significant decrease compared to previous reports.

This decline can be interpreted in light of a set of challenges facing the education sector in Libya, such as the decline in the quality of the educational process, the instability of educational institutions, in addition to the effects of the economic and administrative crises on the continuity of education and its quality. And although the value of the index remains relatively high compared to the rest of the indicators, this decline represents a warning signal that calls for the re-evaluation of educational policies and the strengthening of investment in human capital.

As for the income index, it has continued to represent the weakest link in the structure of human development in Libya during the three

reports. It recorded 0.498 in the 2018 report, a level that reflects the impact of economic fluctuations and the volatility of oil revenues during that period. However, this index witnessed a clear improvement in the 2022 report, reaching 0.588, before achieving a greater leap in the 2025 report, recording 0.676. This improvement reflects a relative improvement in the levels of national income per capita, driven primarily by the improved performance of the oil sector and the rise in public revenues. Nevertheless, the persistence of the gap between the income index and the rest of the indices indicates the existence of a structural imbalance in the Libyan economy, where income levels and economic diversification are still less able to support human development compared to the education and health sectors.

In general, the comparison between the three reports reveals that the trajectory of human development in Libya is characterized by a fluctuating nature but tends toward gradual improvement, as the rise of both the life index and the income index contributed to supporting the overall rise in the Human Development Index, while the education attainment index witnessed a decline in the latest report. These results reflect the nature of the transformations that Libyan society is undergoing within a complex economic and political environment, as human development still depends to a large extent on rentier factors linked to the oil economy, in contrast to a relative decline in some components of sustainable development, foremost among them the quality of education.

Accordingly, maintaining the trajectory of improvement in the Human Development Index in Libya requires the adoption of

integrated developmental policies based on diversifying the economy, improving the quality of education, and enhancing the efficiency of the health system, in a manner that ensures achieving a real balance between the three dimensions of human development, and transforms the current improvement from a circumstantial improvement into a sustainable developmental trajectory capable of enhancing the well-being of the Libyan human being in the long term.

➤ **Integrated Policy Conclusions – Toward a National Integrated Path for Human Development in the Digital Age:**

The analyses contained in this report show that digital transformation in Libya represents a strategic opportunity to redirect the trajectory of human development. At the same time, however, it imposes complex challenges if treated as a technical process separate from the social and institutional contexts.

Human development in the digital age is no longer measured only by the improvement of quantitative indicators, but by the ability of public policies to expand individual choices, reduce gaps, strengthen justice, and build resilience in facing overlapping risks.

The results indicate that digitalization has real capacity to improve the performance of key sectors (education, health, economy, and governance) when integrated within a comprehensive national vision that places the human being at its center.

Yet the persistence of partial approaches, weak institutional coordination, and the absence of modern legislative and regulatory frameworks limit the expected developmental impact of

digital transformation, and may lead to reproducing existing patterns of inequality, especially between urban and rural areas and among different social groups.

In the education sector, the report affirms that digital transformation cannot be limited to introducing platforms or technological tools, but requires redesigning curricula, updating teaching methods, and building the digital capacities of educational staff, thereby moving the educational system from a rote-learning model to an empowerment model.

Investment in digital education is considered a fundamental pillar to strengthen human capital, bridge the gap between educational outputs and labor market needs, and ensure that youth benefit from opportunities of the digital economy instead of becoming a marginalized group.

In the health sector, digital health emerges as a lever to improve efficiency and health equity, through strengthening data-based planning, expanding access to services, and reducing geographic gaps

However, achieving this transformation remains conditional upon developing digital infrastructure, building human capacities, improving data governance, and ensuring privacy protection and information security, thereby strengthening citizens' trust and ensuring the sustainability of health reform.

The report indicates that integrating digital health within a comprehensive national strategy is considered an essential condition to achieve universal health coverage and improve human development indicators.

In the economic field, the results show that

digital transformation and financial inclusion carry promising potentials to enhance growth and create job opportunities, especially for vulnerable groups, through expanding access to financial services, supporting digital entrepreneurship, and developing the knowledge-based economy.

Yet maximizing this impact requires active policies to address the digital skills gap, update regulatory frameworks, and ensure fair geographic distribution of digital infrastructure and services, so that the gains of digitalization do not remain concentrated in specific regions or groups.

With regard to governance, the report affirms that digitalization represents an opportunity to rebuild trust between citizen and state, through strengthening transparency, accountability, and social participation.

However, weak legislative frameworks, multiplicity of supervising entities, and limited digital culture constitute major obstacles to consolidating digital governance and digital justice . The report highlights that ensuring fair access to digital services, protecting digital rights, and strengthening cybersecurity are considered essential elements to transform digitalization from an administrative tool into a comprehensive institutional reform trajectory. These challenges intersect with escalating climatic, demographic, economic, and ethical risks, which cast their shadows on the trajectory of human development in Libya. Climate change, internal displacement, migration, and the migration of skilled professionals represent real tests of the capacity of public policies to achieve sustainable and inclusive development. The report affirms that digitalization, if well

employed, can constitute an effective tool to strengthen early warning, evidence-based planning, and expand opportunities for employment and remote education, thereby contributing to strengthening resilience and reducing the drivers of migration and instability.

On this basis, the report concludes that the success of digital transformation as a lever for human development in Libya requires an integrated national approach built on four interlinked pathways:

- Reforming policies and legislation to keep pace with digital transformations,
- Investing in human capacities and digital skills,
- Directing investments toward sectors with the highest developmental impact, and
- Strengthening digital governance and digital justice to ensure inclusion and that no group is left behind.

Adopting this approach would transform digitalization from a limited technical trajectory into a strategic tool to re-expand the choices of the Libyan people, enhance their well-being, and build a more just and sustainable developmental future in an era where risks and opportunities accelerate alike.

➤ **General Recommendations – Practical Policy Recommendations to Maximize the Impact of Digital Transformation on Human Development**

1. Adopting a unified national vision for human-centered digital transformation

The report recommends that decision-makers adopt a comprehensive national vision for digital transformation that explicitly integrates human development goals within digitalization policies. Digital transformation should not be

reduced to updating procedures or technical infrastructure, but employed as a strategic tool to expand individual choices and improve quality of life. This vision should be based on principles of inclusion, digital justice, and leaving no group behind, linked to clear indicators measuring the impact of digitalization on education, health, income, and social participation.

2 - Updating the legislative & institutional framework governing digital transformation

The report stresses the need to update laws and regulations governing digital transformation, including personal data protection, information security, electronic transactions, and digital identity. It also recommends unifying institutional frameworks supervising digitalization and reducing overlap among entities, ensuring clarity of responsibilities, accelerating implementation, and improving coordination efficiency across sectors.

3 . Systematic investment in building capacities and digital skills

The report recommends giving top priority to building digital capacities, by integrating digital skills into the education and training system, and developing continuous training programs for staff in public sectors, especially education, health, and public administration. Bridging the digital skills gap is considered essential to ensure that youth, women, and vulnerable groups benefit from digital economy opportunities, instead of digitalization becoming a factor of social exclusion.

4 . Expanding digital financial inclusion while reducing geographic disparities

The report recommends strengthening digital financial inclusion as an entry point

to empower vulnerable groups and stimulate economic activity, through expanding electronic payment services and financial technologies, while ensuring fair geographic distribution. It also calls for addressing the gap between urban and rural areas in access to digital financial services, and strengthening citizens' trust and digital financial culture.

5 . Strengthening digital governance and combat corruption

The report emphasizes that digital governance represents a fundamental pillar of digital transformation. It recommends generalizing electronic government procurement systems, linking government databases, and activating digital auditing mechanisms, given their direct impact on strengthening transparency and efficiency of public spending. This pathway contributes to building trust between citizen and state and transforming digitalization into a real accountability tool not merely a service channel.

6. Reducing the digital gap and ensure regional equity

The report recommends adopting targeted policies to reduce the digital gap between cities and peripheral areas, through expanding high-quality internet coverage, obligating telecommunications providers to universal service standards, and supporting digital literacy programs, especially in rural and marginalized areas. This is considered an essential condition to ensure that digitalization does not become a factor deepening inequality.

7 . Integrating digitalization into risk management and climate change policies

The report recommends employing digital technologies in early warning, disaster management, and environmental monitoring, in light of increasing climatic challenges. It also calls for developing a national framework for managing electronic waste, and integrating environmental pressure indicators into the evaluation of the human development trajectory, thereby strengthening its long-term sustainability.

Conclusion

These recommendations affirm that digital transformation in Libya will not achieve its desired developmental impact unless it is managed as a comprehensive national project linking policies, institutions, human capacities, and social justice. Adopting these recommendations would transform digitalization from a limited technical trajectory into a strategic lever for sustainable human development and for building trust between citizen and state.

