

# NiCST

مركز المعلومات الوطني للعلوم والتكنولوجيا  
National Information Center for Science & Technology

**NATIONAL INFORMATION CENTER FOR SCIENCE AND TECHNOLOGY**

## **Strategic Plan**

**2026 – 2028**

*March 2026*

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# 1. Strategic Overview

The Strategic Plan for 2026–2028 constitutes an institutional framework for developing the National Information Center for Science and Technology as a specialized center in the field of scientific data and research and development. The Center operates under the auspices of the Higher Council for Science and Technology, and performs its functions in accordance with its bylaw, which defines its mandates in collecting, analyzing, managing, and leveraging data related to science, technology, and innovation in support of development.

This plan is grounded in the legislative and regulatory framework set forth in Center Bylaw No. 63 of 2021, as well as in the strategic directives issued by the Higher Council, ensuring its alignment with the Center's statutory role and mandates in managing scientific data and developing knowledge. Its preparation observed approved institutional planning methodologies, encompassing internal environment analysis, assessment of institutional maturity, and identification of development priorities for the upcoming phase.

The plan proceeds from an institutional orientation aimed at consolidating the Center's identity as a specialized institution in scientific data and knowledge management, while progressively deepening this role toward a higher level of specialized excellence. The plan does not seek to expand the scope of mandates or perform general governmental executive roles; rather, it focuses on developing institutional depth, improving process quality, and building a sustainable knowledge infrastructure that serves the Kingdom's research and development ecosystem.

Within this framework, developing an integrated national system for managing research data constitutes one of the strategic pillars of this phase, through the establishment of a National Research Data Repository (RDR). The RDR is understood as a scientific infrastructure concerned with preserving, organizing, and managing raw research data produced by researchers in universities and research centers, thereby enhancing the sustainability of this data and its potential utilization in subsequent studies.

The RDR system aims to:

- Promote the systematic and sustainable preservation of research data.
- Organize data accessibility in accordance with controlled access policies that take into account legal and ethical considerations.

- Enable the responsible reuse of data in a manner that enhances its scientific value.
- Support the integration of research data with research and innovation indicators.
- Provide a supportive knowledge base for developing national orientations in research and development.

This orientation represents a long-term investment in the national knowledge infrastructure, whereby the organization of research data contributes to improving the quality of scientific outputs, enhancing the reliability of results, and maximizing the impact of spending on research and development.

The development of research data management is also linked to the principles of Open Science, as an international orientation that promotes transparency and the reproducibility of scientific results within balanced regulatory frameworks that respect privacy and intellectual property. Through developing clear policies for data management and access, the Center contributes to supporting responsible research practices and enhancing the Kingdom's alignment with international trends in scientific knowledge management.

This vision is accompanied by an internal institutional development process that encompasses raising the maturity level of data governance, updating policies and procedures, enhancing information security, and building specialized competencies, in addition to developing the supporting technical infrastructure to ensure sustainability and reliability.

From a regional perspective, consolidating this specialization can form a foundation for enhancing the Center's standing as a specialized institution in the field of scientific data, through adherence to quality standards, exchange of expertise, and promotion of research cooperation, without exceeding the Center's defined statutory role.

Accordingly, the 2026–2028 plan represents a phase for deepening the Center's institutional specialization in scientific data and knowledge management, with strategic priority given to developing the research data system, within a broader framework aimed at supporting research and development and enhancing its developmental impact in the Kingdom.

## 2. Introduction

Over the past two decades, the world has been witnessing a fundamental transformation in the role of data in supporting scientific research and decision-making, where the ability to manage, analyze, and leverage data has become an essential element in building a knowledge-based economy. Scientific excellence is no longer measured solely by the number of publications, but rather by the efficiency of managing scientific data, linking it, analyzing it, and deploying it in the development of policies and innovation.

In this context, the importance of a specialized national institution emerges—one concerned with collecting, analyzing, managing, and leveraging data related to science, technology, and innovation to serve the goals of research, development, and advancement. The National Information Center for Science and Technology comes within this framework as a specialized entity operating under the auspices of the Higher Council for Science and Technology, within its defined statutory mandates.

The 2026–2028 plan reflects an institutional orientation toward deepening the Center's role in managing scientific data and enhancing the quality of knowledge outputs, with priority given to developing an integrated system for managing raw research data, as one of the fundamental elements of the national scientific infrastructure.

Developing a National Research Data Repository (RDR) represents a practical step along this path, aiming to support universities and research centers in preserving and organizing their data according to clear standards, thereby enhancing its sustainability and potential utilization in subsequent studies. This orientation does not aim to interfere in the management of research institutions, but rather to provide a specialized national framework that enhances data quality and its potential for utilization.

This plan also comes in light of international orientations toward enhancing Open Science practices, which call for transparency and data accessibility within balanced ethical and legal controls. Developing the research data management system contributes to aligning the Kingdom with these trends, while taking into account national privacy and the protection of sensitive data.

At the institutional level, the current phase represents an opportunity to enhance the maturity of data governance within the Center, develop policies and procedures, build specialized competencies in data management and analysis, and modernize the supporting technical infrastructure.

Through this path, the plan seeks to enhance the Center's institutional specialization and develop its capacity to produce added knowledge value that supports the Higher Council for Science and Technology in performing its functions, and contributes to improving the quality of research and development and its developmental impact in the Kingdom.

### 3. Strategic Analysis

Strategic analysis represents the foundation upon which the 2026–2028 plan has been built. It aims to assess the Center's position within the national knowledge ecosystem, to understand its institutional capabilities, and to identify the internal and external factors influencing its development trajectory in the upcoming phase. This analysis rests on three main components: a structural analysis of the Center's position within the national knowledge ecosystem, a SWOT analysis, and a stakeholder analysis, to ensure the formulation of realistic strategic orientations that are consistent with the Center's mandates and specialized role.

#### 3.1 The Center's Strategic Position within the National Knowledge Ecosystem

The National Information Center for Science and Technology constitutes a central pivot in the national knowledge ecosystem. Illustrative Figure (1) shows the Center's position within this ecosystem, where it occupies the intermediary layers of data, information, and analysis, and performs a specialized role in linking, analyzing, and integrating knowledge.

This position reflects a number of important institutional characteristics:

- The Center's positioning as an analytical and organizational specialized entity, rather than a comprehensive executive body.
- Its ability to aggregate scientific data from multiple sources and link them within a unified analytical environment.
- Its contribution to transforming data into knowledge that supports scientific planning and decision-making related to research and development, thereby enhancing the development of an integrated national scientific information base that serves the needs of research and development.
- Its role in enhancing integration among governmental bodies, universities, and research centers.



Figure1 : The center's location within the national knowledge map

This positioning represents a key element, as it endows the Center with a natural ability to develop specialized scientific databases and enhance knowledge integration among sectors, within a clear statutory framework and under the auspices of the Higher Council for Science and Technology.

### 3.2 Internal and External Analysis (SWOT Analysis)

Based on a review of the legislative framework, the Center's institutional reality, and the needs of national sectors, the most prominent internal strengths and weaknesses were identified, in addition to the external opportunities and challenges affecting the Center's development trajectory during the period 2026–2028.

## First: Strengths

- The existence of a clear legal and regulatory framework that defines the Center's mandates and supports its national role.
- The Center's possession of high-level institutional support that enhances its ability to perform its functions.
- The Center's positioning at the heart of the national knowledge ecosystem, enabling it to access various data sources.

- The availability of specialized analytical and knowledge competencies within the Center in the fields of data and scientific research.
- Extended cooperative relationships with universities, research institutions, and the local and international scientific community.

## **Second: Weaknesses**

- The need to strengthen specialized human competencies in the fields of artificial intelligence and deep data analysis.
- Limited sustainable financial resources compared to the breadth of required national tasks.
- Lack of complete data integration among different national institutions.
- The need to develop more advanced technical infrastructure commensurate with the volume of national data.

## **Third: Opportunities**

- The national orientation toward digital transformation and building unified national data and knowledge systems.
- The growing national need for evidence-based analysis to support public policies.
- The existence of global and regional interest in supporting data and knowledge initiatives, opening opportunities for funding and international partnerships.
- The availability of distinguished academic human resources that can be engaged in the Center's initiatives.
- The widening demand for intelligent analytical tools to enhance the quality of governmental decision-making.

## **Fourth: Threats**

- The multiplicity of entities working in the field of data without full governance coordination.
- The slowness of bureaucratic procedures in developing capabilities or attracting specialized competencies.
- Cybersecurity risks associated with managing sensitive national data.
- Economic pressures that may affect the sustainability of funding for national initiatives.

- Weak data culture in some institutions, which limits the adoption of advanced knowledge solutions.

### 3.3 Implications of the Strategic Analysis (Reading SWOT Results)

The SWOT analysis shows that the Center possesses a stable institutional base that qualifies it to deepen its specialized role in scientific data, and that its position within the national knowledge ecosystem endows it with a distinctive analytical and organizational capability that can be built upon during the upcoming phase.

The analysis also shows the need to focus efforts during 2026–2028 on:

- Developing specialized human competencies.
- Gradually modernizing the technical infrastructure.
- Enhancing data governance.
- Improving institutional integration.

As for the available opportunities—particularly in light of the national orientation toward the systematic use of data in supporting planning and decision-making—they enable the Center to enhance its institutional impact through developing more advanced analytical tools and building thoughtful partnerships that contribute to expanding the utilization of scientific data.

This also requires developing specialized training programs that enhance the capabilities of staff and partners in data management and advanced analysis, thereby ensuring the sustainability of institutional development and raising the level of knowledge maturity.

Collectively, this orientation forms the logical basis for formulating the strategic orientations for the upcoming period.

### 3.4 Stakeholder Analysis

The Center's success depends on an extensive network of national and international partners who represent an essential component of the knowledge ecosystem. Stakeholder analysis includes identifying the roles of entities, their needs, and the extent of their influence on the achievement of the Center's objectives.

Main categories of stakeholders:

### **Governmental Institutions**

Including ministries, statistical institutions, and regulatory bodies.

Roles: Providing data, cooperating in analysis, supporting research and development-related initiatives.

### **Universities and Research Centers**

Representing a primary source of scientific and research knowledge.

Roles: Sharing research data, academic cooperation, providing experts, supporting national studies.

### **Private Sector**

Particularly companies working in data, computing, and digital transformation.

Roles: Providing technical solutions, supporting innovation, developing analytical platforms, investment partnerships.

### **International and Regional Institutions**

Such as UN organizations and global research bodies.

Roles: Technical and financial support, sharing expertise, building national competencies, knowledge transfer.

### **Scientific Community, Media, and Societal Knowledge**

Including researchers, academics, think tanks, and media institutions.

Roles: Producing knowledge, spreading data culture, supporting transparency, enhancing national dialogue.

Stakeholder analysis highlights the importance of building balanced partnerships, enhancing institutional trust, and clarifying roles to ensure the sustainability of strategic initiatives. Tracking Jordanian scientists inside and outside the Kingdom is also one of the important dimensions in supporting national research planning, and developing an updated database of scientific production and specialized expertise is a supportive element for enhancing knowledge integration.

## **3.5 Strategic Analysis Matrices for the Internal and External Environment**

The following analytical matrices represent a detailed extension of the results of the SWOT analysis and institutional analysis previously presented. They aim to provide a systematic and in-depth reading of the institutional and national factors that affect the Center's capabilities and strategic role. These matrices help identify the positions of strength and weakness with greater precision, linking them to related institutional axes, while also clarifying external opportunities and threats within their national and international contexts.

This level of structural analysis supports the process of formulating strategic objectives and the major orientations of the plan, as it enables the conversion of descriptive results into practical indicators that can be built upon when developing work programs, identifying intervention priorities, and designing the initiatives to be implemented during 2026–2028. This approach also ensures the plan's consistency with the Center's actual needs, and with national trends in digital transformation, building a knowledge-based economy, and enhancing the effectiveness of the governmental apparatus.

These matrices thus constitute a clear reference tool for drawing up policies and identifying development paths, and provide a solid knowledge base to ensure that subsequent objectives and programs are a direct reflection of the in-depth strategic analysis.

First: Internal Analysis

Table (1): Detailed analysis of internal strength and weakness factors

| Institutional Axis                 | Strengths                                                                                                       | Weaknesses                                                                                                                      |
|------------------------------------|-----------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|
| Legislative & Regulatory Framework | Clear Center bylaw defining functions and authorities. High-level institutional support from the parent entity. | Need to develop clearer executive policies and procedures to facilitate practical application.                                  |
| Human Resources                    | Availability of staff with expertise in data, knowledge, and scientific research.                               | Shortage of advanced competencies in deep analysis and artificial intelligence; difficulty attracting specialists.              |
| Financial Resources                | Basic annual funding supporting operational continuity.                                                         | Lack of sustainable and diversified funding sources; limited capacity to adopt large-scale projects.                            |
| Technical Infrastructure           | An existing technical base that is scalable.                                                                    | Need for more advanced technical infrastructure commensurate with the volume of national data and advanced analysis mechanisms. |

|                                  |                                                                   |                                                                                               |
|----------------------------------|-------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|
| <b>Institutional Integration</b> | Strong relationships with universities and research institutions. | Weak integration of national databases; absence of a cross-sector data unification mechanism. |
| <b>Internal Operations</b>       | Formal organizational structure.                                  | Need to develop unified procedures for data governance and knowledge management.              |

Second: External Analysis

Table (2): Detailed analysis of external environment factors: Opportunities and Threats

| National/International Axis       | Opportunities                                                                                                                                             | Threats                                                                                                                       |
|-----------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------|
| <b>Digital Transformation</b>     | National orientation toward digital transformation and building unified national data and knowledge ecosystems.                                           | Multiplicity of entities working in the data field without coordination may cause duplication and weakness in implementation. |
| <b>Evidence-Based Policy</b>      | Growing national need for evidence-based analysis to support public policies.                                                                             | Slowness of bureaucratic procedures in developing capabilities or attracting specialized competencies.                        |
| <b>International Partnerships</b> | Existence of global and regional interest in supporting data and knowledge initiatives, opening opportunities for funding and international partnerships. | Cybersecurity risks associated with managing sensitive national data.                                                         |
| <b>Academic Human Resources</b>   | Availability of distinguished academic human resources that can be engaged in the Center's initiatives.                                                   | Economic pressures that may affect the sustainability of funding for national initiatives.                                    |
| <b>Smart Analytics Demand</b>     | Wide demand for intelligent analytical tools to enhance the quality of governmental decision-making.                                                      | Weak data culture in some institutions, limiting adoption of advanced knowledge solutions.                                    |

3.6 Strategic Analysis Summary

The results of the strategic analysis confirm that the Center possesses real potential to strengthen its institutional role in scientific data management, provided that focus is directed toward developing internal capabilities, particularly in the fields of artificial intelligence and advanced analytics, improving institutional integration, and consolidating data governance. The external environment offers promising opportunities in light of the national drive toward digital transformation and evidence-based policy,

while requiring that cybersecurity risks and bureaucratic challenges be managed strategically and proactively.

## 4. Strategic Framework

The strategic framework constitutes the conceptual reference from which the 2026–2028 plan proceeds. It defines the general direction for developing the National Information Center for Science and Technology during the upcoming phase. This framework reflects a balance between the institutional development ambitions, the Center's statutory mandates, and the requirements of the national environment in the fields of science, technology, data, and knowledge.

The framework is based on defining a clear vision, a specific mission, guiding institutional values, and directing pillars to ensure the consistency of objectives and programs with the Center's specialized role.

### Vision

*"To be a nationally specialized center in the management and analysis of scientific data, and in building an integrated scientific and technological database, pioneering the deployment of knowledge to support scientific research, decision-making, and knowledge-based development."*

### Mission

*"Developing and managing an integrated scientific and technological data system, based on the efficient collection, analysis, and management of data, building reliable information bases, and strengthening cooperation and capacity building, in support of the Higher Council for Science and Technology and contributing to the achievement of economic and social development."*

### Core Values

The Center's institutional identity is anchored in a set of values that guide its conduct, performance, and interaction with partners:

#### Transparency

- Enhancing access to knowledge and improving the quality of information circulation.

#### Institutional Integration

- Operating within an interconnected national ecosystem among governmental, academic, and private entities.

### **Innovation**

- Developing analytical tools and modern knowledge solutions based on data and analysis to support research and development.

### **Excellence and Quality**

- Adherence to international standards in data collection, analysis, and knowledge production.

### **National Responsibility**

- Supporting development policies and directing knowledge to serve national priorities.

### **Sustainability**

- Building knowledge systems capable of evolution and renewal over the long term.

## **Strategic Pillars of Building and Implementing the Strategy**

The plan rests on four main pillars forming the methodological basis for development during 2026–2028, as illustrated in Figure (2). These four pillars adopted as the methodological basis for building the strategy are:

### **First Pillar: Building on Achievements in the Data and Information Sector**

By leveraging previous experiences, reinforcing successes, and expanding the scope of knowledge work to be more comprehensive and impactful.

### **Second Pillar: Focusing on the Science, Technology, and Knowledge Sector**

Including supporting scientific research, developing national knowledge, and linking knowledge analysis to public policies.

### **Third Pillar: Building Partnerships and Supporting Specialized Institutions in the Data and Knowledge Sector**

Through strengthening cooperation with ministries, universities, research centers, and international institutions to ensure integration and exchange of expertise.

### **Fourth Pillar: Monitoring and Overseeing Implementation and Ensuring Commitment**

Through adopting continuous monitoring and evaluation mechanisms, measuring performance, and ensuring the quality of outputs and the achievement of the expected impact.

These pillars form the reference framework for formulating the strategic objectives and work axes, and ensure that the plan is founded on realistic bases, implementable, and consistent with national orientations.



*Figure 2: Foundations for Building and Implementing the Strategy*

## General Strategic Orientations

Based on the vision, mission, and pillars, the strategic orientations for 2026–2028 are defined within five main tracks:

### First: Developing the Management of Scientific Databases and Information

Improving the management of data related to science and technology, enhancing its integration and quality, and developing scientific information bases that serve the needs of research and development.

### Second: Deepening Knowledge Analysis and Supporting Scientific Planning

Developing advanced analytical tools to produce indicators and reports that support the Higher Council and decision-makers.

### Third: Enabling Scientific Research and Tracking National Competencies

Strengthening the monitoring of scientific production, tracking Jordanian scientists inside and outside the Kingdom, and linking research data to national priorities.

**Fourth: Building Institutional and National Capacities**

Developing specialized training programs in data management and analysis, contributing to raising the readiness of related entities to adopt modern practices in data and knowledge management.

**Fifth: Strengthening National and International Cooperation**

Expanding partnerships and exchanging expertise, and benefiting from best global practices in scientific data management.

**Sixth: Keeping Pace with Artificial Intelligence and Modern Knowledge Trends**

Artificial intelligence and modern knowledge trends are among the most prominent drivers reshaping the landscape of data management and scientific research globally. Therefore, the plan commits to keeping pace with these trends through three axes:

| Axis                                      | Philosophy / Orientation            | Target Applications                                                                                                                       |
|-------------------------------------------|-------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------|
| First: Leveraging Artificial Intelligence | AI in data management               | Automating data collection, classification and organization, detecting inconsistencies, and automatically producing composite indicators. |
| Second: Open Science Principles           | Open Science (FAIR Principles)      | Applying FAIR principles (Findable, Accessible, Interoperable, Reusable) in managing research data and the RDR.                           |
| Third: Advanced Data Sciences             | Advanced analytics and data science | Developing interactive data dashboards, future foresight models, and scientific text analysis tools (NLP).                                |

*The application of these orientations takes into account the ethical considerations of artificial intelligence use, data privacy protection, and ensuring transparency in automated analysis models, in accordance with nationally and internationally approved regulatory frameworks.*

**The Importance of the Strategic Framework in Guiding the Plan**

This framework contributes to:

- Clarifying the Center's specialized identity.
- Ensuring alignment with its statutory mandates.

- Defining institutional development priorities for 2026–2028.
- Linking future activities to national objectives in the fields of science, technology, and development.

This framework represents the launch point for formulating the strategic objectives and executive programs that will be presented in Chapter Five.

## 5. Strategic Objectives and Work Axes

This chapter represents the operational framework that defines what the National Information Center for Science and Technology seeks to achieve during 2026–2028, within the scope of its specialized mandate in managing and analyzing scientific data, supporting research and development, and enhancing knowledge integration.

The strategic objectives have been designed to ensure their clarity, measurability at the strategic level, and alignment with the strategic framework and results of the institutional analysis, without deviating from the Center's statutory role.

### 5.1 Strategic Objectives

#### **Strategic Objective One: Developing Scientific Data Management and Building Integrated Information Bases**

This objective focuses on enhancing the Center's ability to collect data related to science, technology, and innovation, improving its organization and quality, and building integrated scientific information bases that serve the needs of research and development.

- Improving the integration of scientific data between partner institutions.
- Developing data governance standards and procedures.
- Gradually updating the technical infrastructure to support specialized analysis.
- Providing information to relevant entities within clear regulatory frameworks.

#### **Strategic Objective Two: Strengthening Knowledge Analysis and Supporting Scientific Planning**

This objective focuses on creating a knowledge-based research environment, enabling researchers, academic institutions, and decision-makers in the fields of science and technology to benefit from data and advanced analysis. This includes:

- Developing advanced analytical tools for producing indicators and scientific reports.
- Supporting analytical studies with multi-disciplinary dimensions.
- Linking knowledge analysis to national research priorities.
- Developing mechanisms to assess the impact of programs and policies related to science and technology.

### **Ensuring Alignment with National Research Priorities Issued by the Higher Council**

This objective requires the existence of an explicit mechanism ensuring that the Center's analytical outputs are aligned with the national research priorities approved by the Higher Council, and includes:

- Classifying analytical outputs in accordance with the national research priorities approved by the Higher Council, to ensure that every report or study issued by the Center addresses a knowledge need related to these priorities.
- Preparing an annual alignment matrix showing the relationship between the Center's five programs and national research priorities, to be submitted to the Higher Council within periodic reports.
- Monitoring knowledge gaps: identifying research priority areas that lack adequate data or updated analyses, and directing the Center's capacity to address them.
- Submitting periodic reports to the Higher Council showing the degree of alignment between the Center's operational ecosystem and the national research agenda, with improvement recommendations.

### **Strategic Objective Three: Enabling the Research Environment and Tracking National Competencies**

This objective focuses on supporting scientific research through enhancing the knowledge environment, monitoring scientific production, and tracking Jordanian scientists inside and outside the Kingdom. This includes:

- Developing an updated database of researchers and scientific production.

- Strengthening the link between national expertise and the Kingdom's research needs and development.
- Supporting the dissemination of research knowledge and facilitating access to it.
- Enhancing integration between research data and institutional analysis.

**Strategic Objective Four: Building Institutional and National Capacities in Data Management and Analysis**

This path aims to raise the level of institutional maturity in scientific data management, and to enhance the readiness of partners to benefit from advanced analysis.

- Developing specialized training programs for Center staff and partners.
- Spreading the culture of data management and knowledge governance.
- Strengthening skills in advanced analysis and the use of modern technologies.
- Developing procedural guides and internal work standards.

**Strategic Note: The Temporal Horizon for Capacity Building**

It should be noted that building institutional and national capacities in the field of scientific data management and advanced analysis cannot be considered a task fully achievable within a single plan cycle (2026–2028). The level of development achievable during this period depends on several factors, most notably: the academic qualifications of staff, the current professional level, and the nature of the required specializations such as artificial intelligence, data sciences, and advanced statistical analysis.

Accordingly, the plan adopts a graduated approach based on successive phases:

| Phase             | Target Level                                     | Timeframe | Focus and Priority                                                 |
|-------------------|--------------------------------------------------|-----------|--------------------------------------------------------------------|
| First: Foundation | Operational readiness in data management         | 2026–2027 | Basic qualification and identification of skills gaps.             |
| Second: Deepening | Advanced proficiency in digital analysis         | 2027–2028 | Deepening specialization in analytics and artificial intelligence. |
| Third: Excellence | Institutional leadership in knowledge management | Post-2028 | Excellence and developing specialized national cadres.             |

*This requires that subsequent strategic plans include a clear continuity in the capacity building path, with training programs adapted according to the results of the performance assessment conducted at the end of each phase.*

### **Strategic Objective Five: Strengthening National and International Cooperation and Ensuring Institutional Sustainability**

This objective focuses on building an effective network of partners to support the data and knowledge ecosystem in Jordan, and includes:

- Developing strategic partnerships with ministries, universities, and research centers.
- Strengthening cooperation with relevant regional and international institutions.
- Exchanging expertise and adopting best global practices.
- Diversifying sources of support and ensuring the sustainability of institutional initiatives.

## **5.2 Strategic Work Axes**

Work axes represent the framework that translates the objectives into major development tracks, without going into executive details.

### **First Axis: Developing the Scientific Data System**

Focuses on improving data management, building integrated information bases, and enhancing quality and governance.

### **Second Axis: Deepening Knowledge Analysis**

Concerns developing analytical tools and producing indicators and reports supporting scientific planning.

### **Third Axis: Supporting the National Research Environment**

Focuses on tracking Jordanian scientists, and enhancing integration between scientific production and national needs.

### **Fourth Axis: Developing Institutional Capacities**

Concerns building competencies, developing training programs, and improving internal procedures.

### **Fifth Axis: Strengthening Partnerships and International Cooperation**

Includes expanding the partner network and developing a sustainable cooperation environment locally and internationally.

### **Integration between Objectives and Axes**

The design of objectives and axes has been such that they are consistent with the vision and mission, aligned with the Center's statutory mandates, integrated in the collection, analysis, and management of data and knowledge, measurable at the strategic level, and achieving a gradual institutional impact within 2026–2028. These objectives form the basis that the program system, indicators, and monitoring mechanisms in the next chapter will be built upon.

## **6. Strategic Program Portfolio**

The Strategic Program Portfolio represents the programmatic framework that translates the strategic objectives into organized work packages at a high level, without going into operational details or executive plans. This portfolio forms the link between the strategic framework for the Center and the initiatives and projects that will be developed within the executive plan for 2026–2028.

The portfolio has been designed so that:

- Supporting the strategic objectives adopted in Chapter Five.
- The scope of each program is clear and overlaps between programs are avoided.
- Achieving a tangible institutional impact within the Center's mandates.
- Providing a flexible framework that allows for gradual development.
- Aligning the programs with the needs of partners and related entities.

### **Strategic Program One: National Data and Knowledge Infrastructure Program**

This program aims to develop an integrated and sustainable infrastructure for managing scientific and research data at the national level, and to support the Center's role in building an integrated national knowledge base. The program includes:

- Developing and managing the National Research Data Repository (RDR).
- Developing data quality standards, classification mechanisms, and governance frameworks.
- Building a national database of scientific indicators and research outputs.

- Linking national data bases and enhancing integration between institutions.
- Supporting data accessibility within appropriate regulatory and legal frameworks.

Expected Impact: Improving the quality and reliability of available scientific data, and enhancing its integration between national institutions.

## **Strategic Program Two: Scientific Research Support and Advanced Analysis Program**

This program aims to deepen the Center's analytical role in converting data into knowledge supporting the Higher Council for Science and Technology and decision-makers in science and technology-related fields. The program includes:

- Supporting analytical and evaluative studies of national impact.
- Providing statistical and cognitive analytical tools for research.
- Strengthening the link between research outputs and national needs.
- Enabling research groups' access to specialized data and information.
- Supporting multi-disciplinary studies related to national priorities.
- Developing methodological frameworks for assessing the impact of programs and policies related to science and technology.

Expected Impact: Improving the quality of analytical outputs and enhancing their use in supporting decisions and related policies.

### **Modern Technologies and Tools Targeted in the Program**

This program targets the deployment of a wide spectrum of modern tools and technologies that enhance the quality of analysis and expand the scope of produced knowledge, including:

- Artificial Intelligence and Machine Learning tools: For discovering patterns in large research databases, forecasting scientific trends, and automating the classification of scientific production.
- Natural Language Processing (NLP): For analyzing Arabic and foreign scientific texts, and extracting knowledge from research reports and publications.
- Interactive Data Dashboards: For presenting indicators and reports in an interactive visual form that facilitates their use by decision-makers.
- Research Network Analysis: For mapping scientific cooperation, identifying influential cadres, and monitoring links between national research institutions.

- FAIR Principles in Data Management (Findable, Accessible, Interoperable, Reusable): To ensure the quality of managed data and the possibility of deploying it in multiple analyses.

*The Center commits to deploying these tools in accordance with responsible AI principles, including: transparency in analytical models, avoiding bias in data, and ensuring the interpretability of results for the end user.*

### **Strategic Program Three: Research Environment Support and Tracking National Competencies Program**

This program focuses on enhancing the knowledge environment supportive of scientific research, and tracking the production of Jordanian scientists inside and outside the Kingdom. The program centers on:

- Developing an updated database of researchers and scientific production.
- Linking national expertise with the Kingdom's research needs and development.
- Supporting the dissemination of research knowledge and facilitating organized access to it.
- Enhancing integration between research data and institutional analysis.

Expected Impact: Strengthening the integration between national scientific production and national research needs and requirements.

### **Strategic Program Four: Capacity Building in Data Management and Analysis Program**

This program aims to enhance institutional and human readiness in data management, analysis, governance, and artificial intelligence, and to build the capacities of Center staff and the related national entities. The program includes:

- Designing and implementing specialized training programs in data management and analysis.
- Developing procedural guides and internal work standards.
- Spreading the culture of data management and knowledge governance.
- Assessing the level of data management maturity in cooperating entities and providing recommendations.

Expected Impact: Raising the level of institutional efficiency and improving data management and knowledge governance practices.

### **Program Implementation Mechanism through Successive Time Cycles**

Given that qualifying specialized cadres in the fields of artificial intelligence, data analysis, and knowledge governance may take several years depending on the qualifications and professional levels of staff, this program is designed according to three cumulative levels:

- Level One — Basic Readiness: Intensive training programs to raise operational efficiency in data management and ensure compliance with governance standards, targeted during 2026–2027.
- Level Two — Advanced Specialization: Deepening skills in statistical analysis and artificial intelligence and Open Science tools, with developing clear career tracks for distinguished cadres, targeted during 2027–2028.
- Level Three — Sustainability and Excellence: Building internal institutional capability that manages continuous development operations and trains a new generation of specialists, targeted in subsequent plans post-2028.

The implementation mechanism includes:

- Conducting an annual assessment of the cadre maturity level and updating development tracks according to its results.
- Coordinating with national universities to provide complementary educational tracks to professional training.
- Building partnerships with international centers of excellence in data and artificial intelligence to import and localize expertise.
- Adopting an independent external evaluation mechanism to measure the actual impact of capacity building programs at the end of each phase.

### **Strategic Program Five: National and International Partnerships Program**

Institutional cooperation is an essential element in the success of the Center's strategy, and this program aims to strengthen the network of national and international partnerships in data and scientific research-related fields. The program includes:

- Strengthening cooperation with universities and research centers.
- Building international relationships with data and scientific research supportive organizations.
- Supporting joint knowledge projects at the regional and international levels.
- Diversifying sources of support and ensuring the sustainability of institutional initiatives.

**Expected Impact:** Achieving comprehensive national knowledge integration, and providing global resources and expertise that contribute to strengthening the national data and knowledge ecosystem.

### **Program Interconnection Methodology and Objectives**

The program portfolio is characterized by a high capacity for integration, as each program contributes to achieving more than one strategic objective. This interconnection ensures:

- Alignment between the vision and programmatic work.
- Integration of data collection, analysis, and knowledge management.
- Strengthening institutional sustainability.
- Facilitating the transition to the executive plan and performance indicators.

### **Outputs of the Strategic Program System**

The strategic programs are expected to contribute to:

- Improving the management of scientific and research data and its integration.
- Developing more accurate and reliable analytical outputs.
- Enhancing the tracking of national competencies and scientific production.
- Raising the level of institutional readiness in data management and analysis.
- Expanding the partnership network and strengthening institutional operational sustainability.

## **7. Partners and Strategic Governance Ecosystem**

The partners and strategic governance ecosystem represents one of the fundamental elements for the success of the 2026–2028 plan's implementation, as the performance of the National Information Center for Science and Technology depends on the degree of integration and coordination with national and international entities related to data and scientific research.

The Center works within a cooperative institutional network, where each partner performs a specific and complementary role, ensuring the quality of data, the accuracy of analysis, and the effectiveness of knowledge outputs, within the scope of its statutory mandates and under the auspices of the Higher Council for Science and Technology.

This chapter focuses on identifying the main categories of partners, clarifying their roles, and presenting the governance mechanisms that organize the relationship between them and the Center.

7.1 The Importance of Partnerships in Implementing the Strategic Plan

The Center implements its strategic programs based on a cooperative model that relies on:

- Providing data from trusted national sources.
- Participating in analysis and producing specialized knowledge.
- Supporting the exchange of expertise between institutions.
- Strengthening the coordination between national entities related to science and technology.

Partnerships are considered a critical element in ensuring the quality of outputs and the sustainability of initiatives, as they contribute to expanding the knowledge base, enhancing data reliability, and strengthening the effective use of data in institutional work.

7.2 Main Partner Categories and Their Roles

The Center deals with a diverse group of partners that can be classified within the following categories:

1. The Higher Council for Science and Technology

It represents the strategic reference for the Center, provides the general direction and ensures the alignment of its work with national priorities in the fields of science and technology.

Alignment Mechanism with National Research Priorities

The Higher Council for Science and Technology's approved national research priorities constitute the primary strategic reference for the Center, and a primary source for directing the priorities of its work. To ensure that the Center's programs and outputs are systematically and continuously aligned with these priorities, the following operational mechanism is adopted:

| Procedure                    | Mechanism                                                                                                                                         | Frequency                         |
|------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|
| Absorbing Council Priorities | Absorbing the national research priorities approved by the Higher Council and translating them into operational guidelines for the five programs. | Annually — beginning of each year |

|                                      |                                                                                                                                                                                                 |                            |
|--------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|
| Program Alignment Report             | Preparing a program alignment report showing the extent to which national priorities are reflected in the Center's analytical and data outputs.                                                 | Semi-annually              |
| Supporting Council with Gap Analysis | Supporting the Higher Council with gap analyses: comparing approved national research priorities with actual scientific production and available data.                                          | Quarterly                  |
| Comprehensive Strategic Assessment   | A comprehensive strategic assessment of the extent of the Center's contribution to supporting national priorities, and reviewing alignment in preparation for building the next strategic plan. | End of each strategic plan |

*This institutional alignment produces added value for the Higher Council; as the Center becomes a trusted provider of data and analyses necessary for drawing national research policies and assessing their impact.*

## 2. Ministries and Governmental Institutions

Including sectoral ministries and regulatory institutions.

Roles:

- Defining national needs from data and knowledge.
- Providing reliable sector-based data.
- Cooperating in preparing studies and analyses.
- Benefiting from the Center's outputs in developing policies and plans.

## 3. Data Producing Institutions and Statistical Bodies

Including national entities responsible for producing official and specialized data.

Roles:

- Providing data according to national standards.
- Enhancing data quality and documentation.
- Supporting the integration between data bases.
- Participating in developing quality standards.
- Participating in open data initiatives.

## 4. Universities and Research Centers

Representing a primary source of scientific and research data.

Roles:

- Cooperating in analytical studies.
- Sharing research data according to agreed frameworks.
- Supporting the development of research indicators.
- Contributing to joint knowledge initiatives.

## 5. Information Users

Including governmental institutions, researchers, and decision-makers.

Roles:

- Defining their knowledge needs.
- Using produced data in planning and assessment.
- Strengthening the culture of evidence-based utilization.

## 6. Supporting Entities

Such as regional and international organizations with links to data and scientific research.

Roles:

- Providing technical and consultative support.
- Building capacities.
- Supporting the financing of knowledge initiatives.
- Strengthening international knowledge exchange.

## 7. Media Institutions

Including national and community media entities.

Roles:

- Disseminating knowledge and communicating the Center's analytical outputs to the community.
- Raising awareness of the value of data.
- Supporting public dialogue on national knowledge issues.

## 8. Center Leadership and Internal Work Units

Including technical, analytical, and administrative units.

Roles:

- Strategic planning and coordination.
- Managing data collection and analysis operations.
- Ensuring the quality of data and outputs.
- Strengthening internal and external coordination.

Illustrative Figure (3) represents an integrated model of the partner ecosystem and the role of each category in implementing the Center's strategic plan, and illustrates the nature of the interactive relationship between these categories.

### 7.3 Participatory Governance Mechanisms

The plan's implementation governance relies on a set of organizational mechanisms that ensure the clarity of roles, coordination of efforts, and monitoring of performance, including:

- Agreements and Cooperation Protocols: To organize data exchange and define the responsibilities of parties.
- Joint Committees and Work Groups: Including representatives from related entities to support technical coordination and analysis.
- Periodic Meetings with Stakeholders: To review progress and update priorities.
- Institutional Monitoring and Evaluation System: To measure the level of achievement and periodically review performance.
- Continuous Coordination with Statistical Entities: To ensure data quality and integration.

#### Partner Linking Mechanism with the Performance Indicators System

To ensure the effectiveness of governance and its translation into measurable performance, an organized reporting model is adopted that links each category of partners to the performance indicators relevant to its role, as follows:

| Partner Entity                           | Report Frequency          | Output Type                  | Receiving Entity                    |
|------------------------------------------|---------------------------|------------------------------|-------------------------------------|
| National Information Center              | Quarterly                 | Strategic performance report | Board of Directors / Higher Council |
| Ministries and Governmental Institutions | Quarterly                 | Executive progress report    | Higher Steering Committee           |
| Universities and Research Centers        | Monthly                   | Detailed indicators report   | Center Director                     |
| Statistical and Supporting Entities      | Continuous / Upon Request | Sector data and indicators   | Internal Work Teams                 |

Reports sent to each entity are designed according to its knowledge needs without overwhelming it with operational details that exceed the scope of its role. This mechanism also enables the Center to receive regular feedback that is deployed in improving programs and adjusting priorities.

This governance model is based on the principle of partnership and integration, without constituting a supervisory or guardianship framework over other entities.



Figure 3: The Partnership System in Strategic Plan Implementation

## 7.4 The Impact of Governance and Partnerships on Strategy Implementation

The partners and governance ecosystem contributes to:

- Strengthening the reliability and quality of data.
- Improving the effectiveness of analysis and knowledge production.
- Facilitating access to information within approved frameworks.
- Supporting integration between national entities related to science and technology.
- Strengthening the sustainability of strategic programs.

Partnerships thus form an enabling framework for the Center's work, and contribute to enabling it to perform its specialized role within a cooperative national ecosystem.

## 8. Knowledge Framework for Evidence-Based Policy

The Knowledge Framework for Evidence-Based Policy constitutes one of the key elements that the Center's strategic plan is based upon. This framework reflects the Center's role as an analytical and knowledge institution that supports policy-making and planning in the fields of science and technology, based on reliable data and accurate analyses.

### The Concept of Evidence-Based Policies

Evidence-based policies refer to decision-making processes that rely on systematic data analysis and reliable knowledge, rather than on mere estimates or partial information. This approach ensures:

- The accuracy of policy decisions and their alignment with actual needs.
- The ability to measure the impact of policies and assess their effectiveness.
- Transparency and accountability in decision-making processes.
- Continuous improvement based on results and lessons learned.

### The Center's Role in the Policy Production Cycle

The Center contributes to the policy production cycle through four basic stages:

- Data collection and management: Collecting reliable data from multiple national and international sources.

- Analysis and interpretation: Converting raw data into actionable knowledge through advanced analysis.
- Knowledge production: Preparing reports, studies, and indicators that support decision-making.
- Disseminating and sharing knowledge: Ensuring the accessibility of knowledge to decision-makers and stakeholders.

## Components of the Knowledge Framework for Policy Support

The knowledge framework consists of four interconnected components:

### First: Knowledge Infrastructure

Including integrated scientific databases, the National Research Data Repository (RDR), national scientific production indicators, and researcher tracking systems.

### Second: Analysis and Production Tools

Including statistical analysis systems, artificial intelligence and machine learning tools, data visualization platforms, and scientific mapping tools.

### Third: Knowledge Products

Including analytical reports and policy briefs, science and technology indicators, research priority mapping, and evaluation and impact assessment studies.

### Fourth: Dissemination and Sharing Mechanisms

Including electronic portals and dashboards, periodic reports to stakeholders, workshops and scientific conferences, and cooperation with media and academic community.

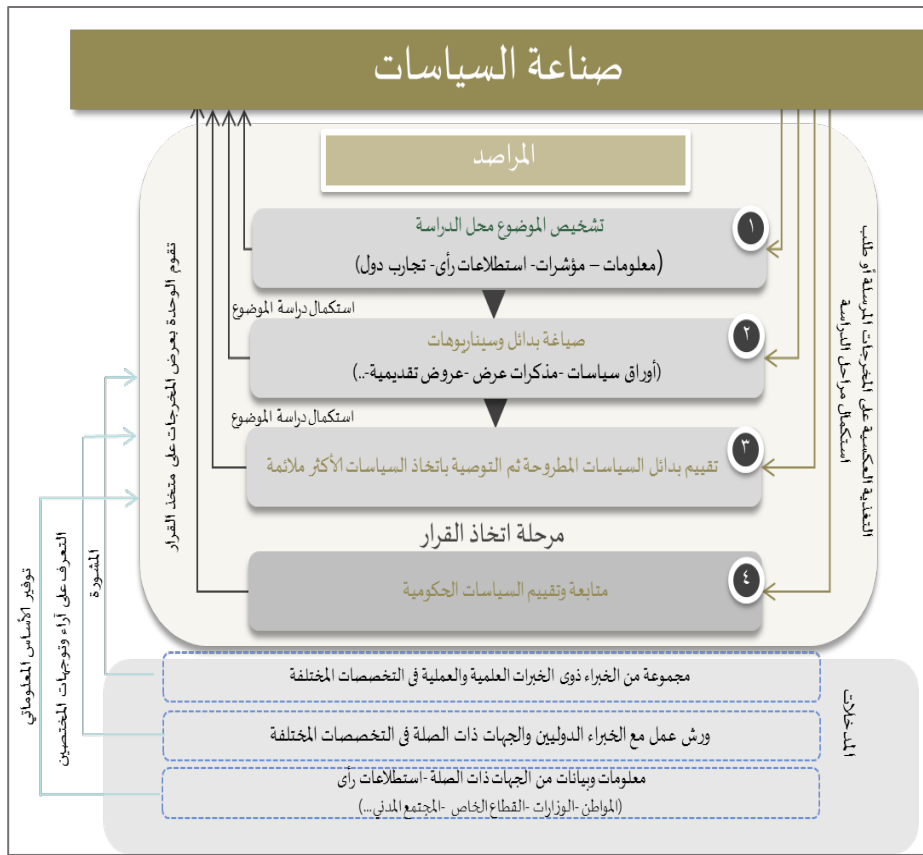


Figure 4: The Evidence-Based Policymaking Model

## The Impact of the Knowledge Framework on National Policies

The knowledge framework contributes to improving decision-making quality by:

- Providing reliable and updated evidence that supports the formulation of national research and development policies.
- Enabling performance monitoring and the assessment of the effectiveness of programs and national initiatives.
- Supporting the alignment of national research priorities with national development needs.
- Enhancing coordination between stakeholders through sharing data and knowledge.

## The Relationship between the Knowledge Framework and Strategic Programs

The knowledge framework is closely linked to the strategic programs, where:

- Program One (National Data Infrastructure) provides the data base for the framework.

- Program Two (Research Support and Advanced Analysis) produces the core knowledge products.
- Program Three (Research Environment Support) enriches the framework with data on researchers and scientific production.
- Program Four (Capacity Building) ensures the sustainability of the framework through specialized competencies.
- Program Five (National and International Partnerships) expands the scope of the framework and enhances its quality.

## **9. Monitoring, Evaluation, and Quality Assurance Framework**

### **(Monitoring & Evaluation Framework)**

The monitoring, evaluation, and quality assurance system is an essential element in enhancing the effectiveness of implementing the 2026–2028 Strategic Plan, as it represents an institutional framework for measuring progress, reviewing performance, and continuously improving knowledge outputs.

The role of monitoring and evaluation is not limited to measuring results, but extends to include supporting institutional learning, enhancing the efficiency of resource use, and ensuring the alignment of programs with the Center's strategic objectives and the relevant national orientations.

#### **9.1 Objectives of the Monitoring and Evaluation System**

The monitoring and evaluation system aims to:

- Regularly monitoring the implementation of the five strategic programs.
- Measuring the level of progress toward achieving the strategic objectives.
- Improving the quality of operations and knowledge outputs.
- Strengthening transparency and accountability within the Center.
- Enhancing integration between the Center and national partners.
- Providing continuous feedback for developing annual and executive plans.

#### **9.2 Principles of the Monitoring and Evaluation System**

The system is based on a set of institutional principles, including:

- **Objectivity:** Adopting reliable and neutral data in the measurement process.
- **Continuity:** Implementing monitoring and evaluation operations periodically.
- **Quality:** Adherence to approved standards in data collection and analysis.
- **Accountability:** Supporting institutional transparency and responsibility for results.
- **Learning and Improvement:** Using evaluation results to continuously improve performance.

### 9.3 Components of the Monitoring and Evaluation System

The monitoring and evaluation system consists of three main components:

#### First: Executive Performance Monitoring (Performance Monitoring)

This aims to measure the progress in implementing strategic programs through quantitative and qualitative high-level indicators, and includes:

- The efficiency of implementing activities related to each program.
- The level of cooperation between institutional partners.
- The extent of adherence to the overall time schedules of the plan.
- The level of progress in developing knowledge and analytical tools.

#### Second: Strategic Impact Evaluation (Strategic Impact Evaluation)

Focuses on measuring the long-term impact for the plan on:

- The quality of available data and its reliability.
- The effectiveness of evidence-based public policies.
- The level of national knowledge maturity.
- Strengthening the national ecosystem of scientific research and knowledge analysis.
- Developing national capacities in data management and analysis.
- Supporting the national digital governance ecosystem.

Evaluation is implemented periodically (annually and over the medium term).

#### Third: Quality Assurance (Quality Assurance)

Aims to verify the quality of:

- Data collection and processing operations.

- Knowledge analysis and scientific outputs.
- Reports and studies issued by the Center.
- Analysis tools and methodologies used.

Internationally approved data quality standards may be referenced where appropriate to the nature of the Center's work.

### 9.4 Strategic Monitoring Indicators (High-Level KPIs)

Without going into operational details, strategic indicators are classified into the following categories:

#### Data and Knowledge Quality Indicators

- Level of reliability of data used in analysis.
- Expansion of the scope of integration of data sources.

#### Research and Analysis Indicators

- Number of analytical outputs related to national priorities.
- Level of institutional utilization of reports and studies.

#### Public Policy Support Indicators

- Number of initiatives or policies supported by knowledge analysis.
- Level of satisfaction of beneficiary entities.

#### Capacity Building Indicators

- Number of training programs implemented.
- Improvement in the level of institutional readiness in data management.

#### Partnerships and Cooperation Indicators

- Number of value-added cooperation agreements.
- Level of data sharing between partners.

#### KPI Linkage Table: Programs, Phases, and Responsible Departments

The following table shows the direct link between each strategic indicator and the program it belongs to, the targeted timeframe for measuring it, and the department responsible for monitoring it:

| Program                                     | Strategic Indicator                                                   | Timeframe      | Responsible Department      |
|---------------------------------------------|-----------------------------------------------------------------------|----------------|-----------------------------|
| B1: National Data Infrastructure            | Level of data reliability and integration among partner institutions  | 2026 — Ongoing | Data & Intelligent Analysis |
| <b>B1: National Data Infrastructure</b>     | Number of data sources integrated in the RDR system                   | 2026–2027      | Data & Intelligent Analysis |
| B2: Research & Advanced Analysis            | Number of analytical outputs related to national priorities           | 2026 — Ongoing | Projects & Communication    |
| <b>B2: Research &amp; Advanced Analysis</b> | Level of institutional utilization of reports and studies             | 2027–2028      | Projects & Communication    |
| B3: Research Environment Support            | Volume of Jordanian researcher database and update rate               | 2026–2027      | Data & Intelligent Analysis |
| <b>B3: Research Environment Support</b>     | Level of beneficiary satisfaction and number of supported initiatives | 2027–2028      | Projects & Communication    |
| B4: Capacity Building                       | Number of training programs and level of institutional readiness      | 2026 — Ongoing | Projects & Communication    |
| B5: National & International Partnerships   | Number of cooperation agreements and level of data sharing            | 2026 — Ongoing | Projects & Communication    |

*These indicators are reviewed quarterly and their results are submitted to the honorable Board of Directors in accordance with the reporting mechanism defined in Chapter 7.3.*

## 9.5 Periodic Monitoring Operations

Periodic operations include:

- **Follow-up reports every quarter:** On general progress in programs.
- **Comprehensive annual reports:** Including performance analysis and improvement recommendations.
- **Joint evaluation meetings:** With ministries, universities, and supporting entities.
- **Review of priorities:** According to national developments.

### Quarterly Reports to the Board of Directors

Providing the Board of Directors with regular quarterly reports is a fundamental governance commitment that enables members to fulfill their oversight responsibilities and regularly monitor the progress of the strategic plan implementation. These reports are submitted to the honorable Board in accordance with the following mechanism:

| Report Type                  | Timing                           | Main Content                                                                                                                              |
|------------------------------|----------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------|
| Quarterly Performance Report | March, June, September, December | Executive summary of the five programs' performance, achievement level versus target, key challenges and corrective actions.              |
| Comprehensive Annual Report  | End of each year                 | Comprehensive analysis of strategic performance indicators, comparison with annual plan, development recommendations for the coming year. |
| Emergency Reports            | Upon Need                        | Any major developments or risks requiring the Board's immediate notification outside the periodic schedules.                              |

*Each quarterly report is designed to present to the Board a clear and concise picture that enables it to make the necessary decisions, without going into operational details that exceed the scope of its governance role. The preparation of these reports is entrusted to the Monitoring and Follow-up Unit under the supervision of the Center Director.*

## 9.6 Independent External Evaluation

To enhance transparency and improve performance, an independent external evaluation can be conducted periodically to review:

- The level of progress in implementing the plan.
- The quality of outputs.
- The overall institutional impact.

This evaluation aims to provide developmental recommendations, not to be merely supervisory. This type of evaluation helps improve the Center's credibility at the national and international levels.

## 9.7 The Role of Monitoring and Evaluation in Developing the Future Plan

This system enables the Center to:

- Modify strategic programs according to developments.
- Improve the performance of institutional units.
- Strengthen the long-term sustainability of the plan.
- Direct resources more effectively.

This system makes the Center able to adapt to changes and continuously develop the level of its knowledge and institutional maturity.

## **9.8 Cybersecurity and Data Protection**

Cybersecurity and data protection are a fundamental pillar for ensuring the sustainability of the Center's operations and the reliability of its outputs, as the Center handles sensitive scientific and research national data of high sensitivity. The SWOT analysis identified cybersecurity as an external threat, but addressing it goes beyond responding to threats to building a solid institutional security culture that ensures the safety, confidentiality, and accessibility of data to authorized entities.

### **9.8.1 Context and Justifications**

The Center handles multiple categories of sensitive data in the course of its work, including: raw research data from universities and scientific centers, national statistical data, researchers and national competency information, as well as the results of analytical studies and reports directed to governmental entities. These data collectively form a national knowledge asset of great importance that requires systematic institutional protection.

### **9.8.2 Cybersecurity Principles at the Center**

The Center's cybersecurity framework rests on three complementary core principles:

- Confidentiality: Ensuring data access is restricted to authorized entities only, according to clear classification policies.
- Integrity: Protecting data from unauthorized modification and ensuring its accuracy and reliability.
- Availability: Ensuring continuous access to data and services for concerned entities when needed.

### **9.8.3 Data Classification and Risk Management**

Data handled by the Center is classified according to three sensitivity levels, governing access mechanisms and applicable protection protocols:

| Risk Level | Threat                                                                                                   | Proposed Procedure                                                 |
|------------|----------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------|
| High       | Sensitive raw research data, personal information of researchers, data shared with governmental entities | Full encryption, restricted access, periodic review of permissions |
| Medium     | Internal analytical reports under preparation, unpublished aggregated statistical data                   | Permissions limited to the relevant team, audit logs               |
| Low        | Published outputs, open data under the approved Open Science policy                                      | Public accessibility according to approved regulatory frameworks   |

9.8.4 Security Procedures and Controls

First: Technical Protection

- Adopting standard encryption protocols to protect data during transfer and storage.
- Implementing Role-Based Access Control (RBAC) policies.
- Conducting periodic backup of sensitive data according to defined schedules.
- Activating intrusion detection systems and monitoring unusual activities.
- Ensuring regular updates of software and systems to mitigate security vulnerabilities.

Second: Governance and Policies

- Developing a comprehensive institutional information security policy approved by senior management.
- Defining clear roles and responsibilities in cybersecurity management within the Center.
- Preparing an incident response plan for identifying, managing, and recovering from security incidents.
- Conducting periodic cybersecurity risk assessments and updating procedures accordingly.
- Coordinating with national entities concerned with cybersecurity within approved legislative frameworks.

Third: Building Awareness and Capabilities

- Organizing periodic awareness and training programs for staff in cybersecurity and data protection.
- Including cybersecurity requirements within partnership agreements with cooperating institutions.

- Raising the awareness of partners and data-providing entities about data protection requirements and their responsibilities.

9.8.5 Legislative Compliance and Privacy Protection

The Center commits in its handling of data to the applicable national legislative and regulatory frameworks, particularly those related to privacy protection and personal data. This includes:

- Compliance with national legislation related to data and information protection.
- Applying Data Minimization principles — collecting only the necessary minimum.
- Anonymizing personal data in cases of aggregate analysis or public accessibility.
- Documenting the consent of data-providing entities on the terms of their use and processing.
- Committing to Open Science principles while preserving intellectual property rights and protecting sensitive data.

9.8.6 Security Monitoring Indicators

The following cybersecurity indicators are added to the strategic indicators system (Chapter 9.4):

| Compliance rate with the approved security policy             | Quarterly   |
|---------------------------------------------------------------|-------------|
| Number of security incidents reported and their response rate | Monthly     |
| Percentage of staff trained in cybersecurity                  | Annual      |
| Results of periodic security vulnerability assessments        | Semi-annual |
| Level of partner compliance with data protection requirements | Annual      |

*This security framework represents an institutional commitment to protecting the trust that partners place in the Center when they share their data and information with it, and strengthens the Center's standing as a trusted national entity in managing scientific data.*

## 10. Organizational Structure

The organizational structure is a key enabling element for ensuring the ability of the National Information Center for Science and Technology to implement its vision and strategic objectives for 2026–2028. The existence of a clear and flexible organizational structure is a foundation for enhancing institutional efficiency, controlling the distribution of roles, and achieving integration between technical and administrative functions.

This structure relies on the nature of the Center's specialization in collecting, analyzing, and managing data in the fields of science and technology, supporting the national outputs with analytical outputs, building partnerships, and developing the relevant capacities.

### 10.1 High-Level Organizational Structure

The Center adopts a high-level organizational structure that reflects its basic strategic functions and consists of the following levels:

#### 1. Governance Level

##### Board of Directors

The Board takes charge of setting the general directions, approving policies, adopting the strategic plan, and monitoring the Center's overall performance in accordance with the approved system.

##### Center Director

Responsible for implementing the strategic plan, leading the management team, overseeing the quality of outputs and the management of partnerships, and ensuring compliance with the Center's governance and standards.

#### 2. Strategic Support Level

##### Strategic Planning and Quality Unit

Oversees performance monitoring, quality assurance, development of performance indicators, and preparation of reports.

##### Projects and Communication Management

Responsible for managing projects and partnerships, coordinating with external entities, and supporting institutional and scientific communication.

### **3. Core Technical Level**

#### **Data and Intelligent Analysis Management**

The central technical unit responsible for managing scientific and research data, developing analytical tools, and producing knowledge outputs.

## **10.2 Justifications for Adopting the Organizational Structure**

The organizational structure is based on a set of strategic foundations, most importantly:

- Focusing the technical work within a specialized unit that ensures the quality of data and analysis.
- Separating strategic support from core technical work to enhance institutional efficiency.
- Flexibility in managing projects and partnerships within a dynamic environment.
- Enabling institutional monitoring and evaluation at all levels of work.

## **10.3 The Relationship between the Organizational Structure and Strategic Objectives**

Each strategic objective is linked to the relevant organizational unit:

- Objective One (Data Management): Data and Intelligent Analysis Management.
- Objective Two (Knowledge Analysis): Data and Intelligent Analysis Management + Projects Management.
- Objective Three (Research Environment): Data Management + Projects Management.
- Objective Four (Capacity Building): Projects Management in coordination with the Center Director.
- Objective Five (Partnerships): Projects and Communication Management.

## **10.4 The Role of the Organizational Structure in Enabling Strategy Implementation**

The organizational structure contributes to:

- Ensuring the clarity of roles and responsibilities in implementing programs.
- Supporting coordination between technical and administrative teams.

- Enabling institutional performance monitoring at the program level.
- Facilitating the management of national and international partnerships.
- Ensuring continuity of operations and sustainability of institutional development.

## Conclusion

This 2026–2028 strategic plan represents a comprehensive institutional framework that enhances the ability of the National Information Center for Science and Technology to perform its functions in collecting data, analyzing it, managing knowledge, and leveraging it to support research and development, within a clear institutional vision and well-defined strategic priorities.

The plan focuses on three main axes: developing the national infrastructure for scientific data management, strengthening the Center's analytical capabilities in producing evidence-based knowledge, and building the institutional capacities necessary to ensure the sustainability of this role.

Through the implementation of this plan, the Center aspires to strengthen its role as a specialized national reference in scientific data management and knowledge analysis, within a cooperative national ecosystem that includes the Higher Council for Science and Technology, universities, research centers, and national and international partners.

The Center is committed to implementing this plan with transparency, institutional responsibility, and a focus on continuous improvement, to ensure the achievement of the intended strategic impact in supporting the Kingdom's national research and development system.