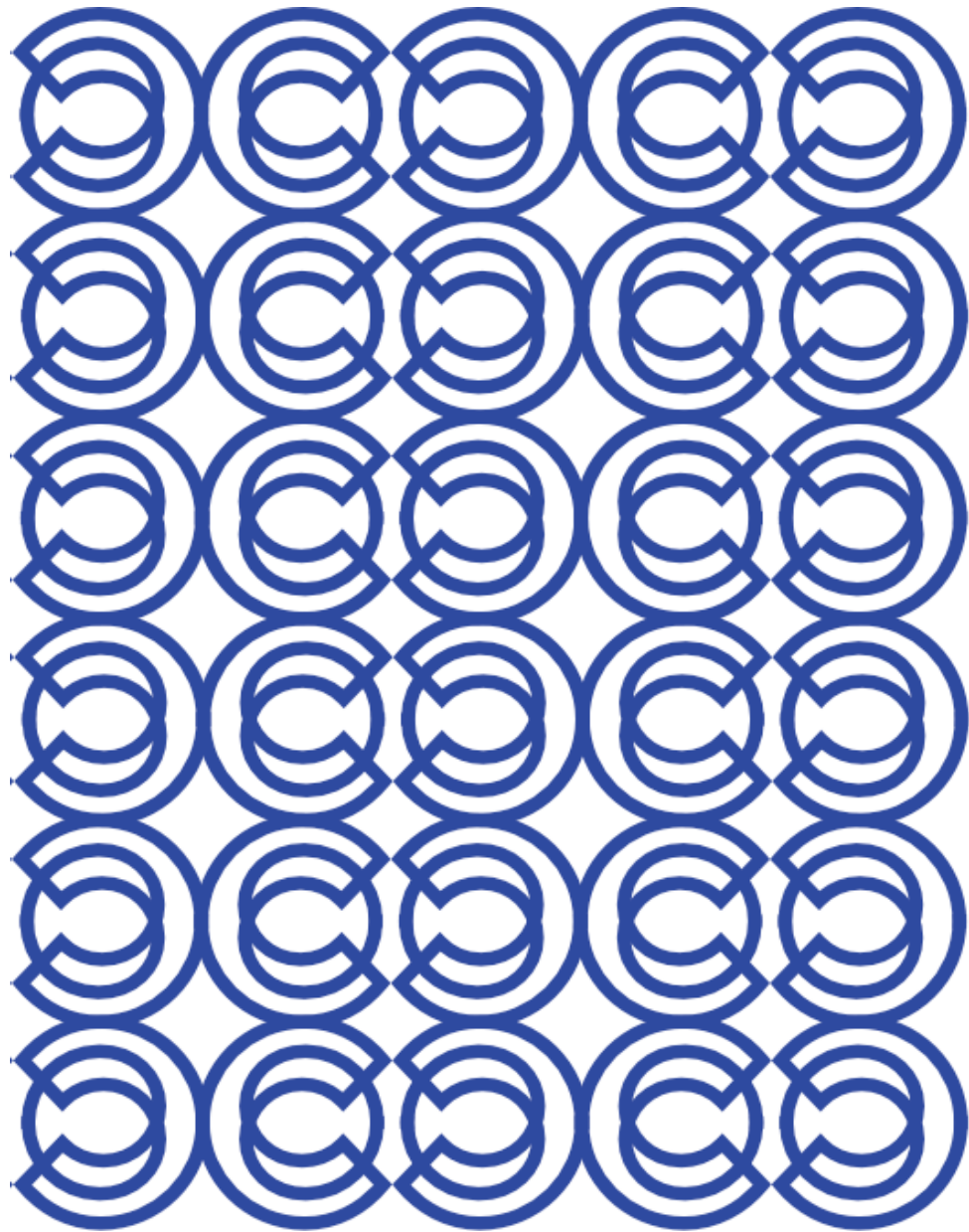




MINISTRY OF HIGHER EDUCATION, RESEARCH AND INNOVATION

NATIONAL STRATEGIC PLAN FOR RESEARCH AND INNOVATION 2023-2032

April 2023



1. Background and challenges

**2. Overview of the National Strategic Plan
for Research and Innovation 2023-2032**

3. Next steps

BACKGROUND AND CHALLENGES



During a high-level meeting with the academic community on Thursday April 7, 2022, the President of the Republic of Senegal asked the Minister of Higher Education, Research and Innovation to **implement the 13 decisions** adopted at the conclusion of the meeting. Concerning decision no. 9, the Head of State stressed the importance of **making research and innovation (R&I) catalysts for Senegal's industrialization**. To this end, the Head of State invited the Minister to **finalize, before June 30, 2022, the national strategic plan for R&I**, including the establishment of a National Research Fund and a **National Research and Innovation Council**.

His Excellency, Mr. Macky SALL
President of the Republic of Senegal,
Council of Ministers, April 13, 2022

The National Strategic Plan for Research and Innovation was crafted in collaboration with stakeholders in Senegal's R&I ecosystem.

Steps	1 Anchoring and launching the mission	2 Mapping challenges, issues and opportunities	3 Developing the strategy and action plan
Duration	2 weeks	2 weeks	4 weeks
Activities	1.1. Alignment on terms and conditions 1.2. Setting up of a steering committee 1.3. Assessment of national and sectoral socio-economic development challenges and objectives 1.4. Mapping of key stakeholders to be consulted 1.5. Analysis of existing documents 1.6. Update of the proposed analytical approach	2.1. Review of the mapping of R&I initiatives 2.2. Evaluation of existing R&I proposals 2.3. Analysis of barriers to implementation 2.4. Benchmark of new R&I trends and their use cases 2.5. Prioritization of R&I needs and opportunities	3.1. DGRI internal and external diagnostic 3.2. Benchmarking government R&I models 3.3. Development of a Theory of Change 3.4. Development of the strategic plan 3.5. Development of an implementation plan 3.6. Conceptualization of a governance and monitoring and evaluation framework 3.7. Facilitation of a validation workshop
Deliverables	<ul style="list-style-type: none"> • Launch report 	<ul style="list-style-type: none"> • Diagnostic report • Prioritized R&I needs 	<ul style="list-style-type: none"> • Strategic plan • Implementation plan

The DGRI is responsible for coordinating and harmonizing research and innovation activities, and pooling resources.

RESEARCH AND INNOVATION are fundamental to all nation-building projects, as a catalyst for sustainable development and prosperity.

The DGRI assists the Ministry in implementing research and innovation policy through its four departments:



Through its four departments, the DGRI pursues five main missions:

1. Strengthen links between the various components of the national research system in order to promote synergies;
2. Promote the dissemination and use of research results;
3. Promote research;
4. Help set up a system for funding research activities and diversify funding resources;
5. Promote a culture of science and technology.

Strong institutions are essential for the development of research and innovation ideas.

Four main groups of players in the R&I value chain have been identified:



Government institutions

- Ministries
- Government agencies



Academic and research institutions

- Universities
- Higher education institutions
- Research institutes
- National Academy of Technical Sciences



Socio-economic world

- Industry
- Private and public companies
- Incubators and accelerators
- Informal sector



Development partners

- NGOs
- Technical and Financial Partners
- Donors

There are a many players involved in ideation. The existence of a law to guide R&I would enable alignment of objectives between players and the creation of synergies to achieve targets.




Findings from field visits: April - July 2021.

SITES	THEMATICS	RESOURCES
UAM	Animal biology, Plant biology, Biotechnologies; Agro-physiology, Microbiology, Agricultural innovation Economics, Management, Finance Town and country planning Mining, Geology, Geotechnics Hydrology, Hydrogeology, Geomatics, Marine-littoral geology Computer science, Mathematics Physics, Chemistry, Biochemistry Food hygiene and safety Remote sensing, spatial analysis and climate change Process engineering, Climatology, Environment, Biodiversity and Climate Change; Agri-food and food safety Innovative teaching and technology Social sciences; Human and animal health	<p>➤ STATUS</p> <ul style="list-style-type: none"> ▪ Infrastructure ▪ Budget ▪ FIRST, PAPES ▪ Study trips & prizes ▪ Equipment → <p>➤ OTHER</p> <ul style="list-style-type: none"> ▪ Research grants ▪ Financial partners ▪ Donors & Cooperation ▪ National competitive funds ▪ Shareholders' equity ▪ Fundraising ▪ PPP
IRESSEF		
Institut Pasteur de Dakar		
ITA		
CIRAD		
UADB		
USSEIN		
UCAD		
UASZ		
+ Oil palms		
IRD		
CRES; CSE		
UGB and oil palms		
UIDT TH & EPT		
Private institutions received at La Sphère		
UVS		
ANAQ-SUP		
CFS		
CFRC		
Ministry of Health		
ISRA (online)		

- 14 doctoral schools
- 2348 lecturers
- 546 researchers
- Others: Ministries; Employers; donors; AUF; ARSN; INP; CODESIRIA; CEREEQ; CIS

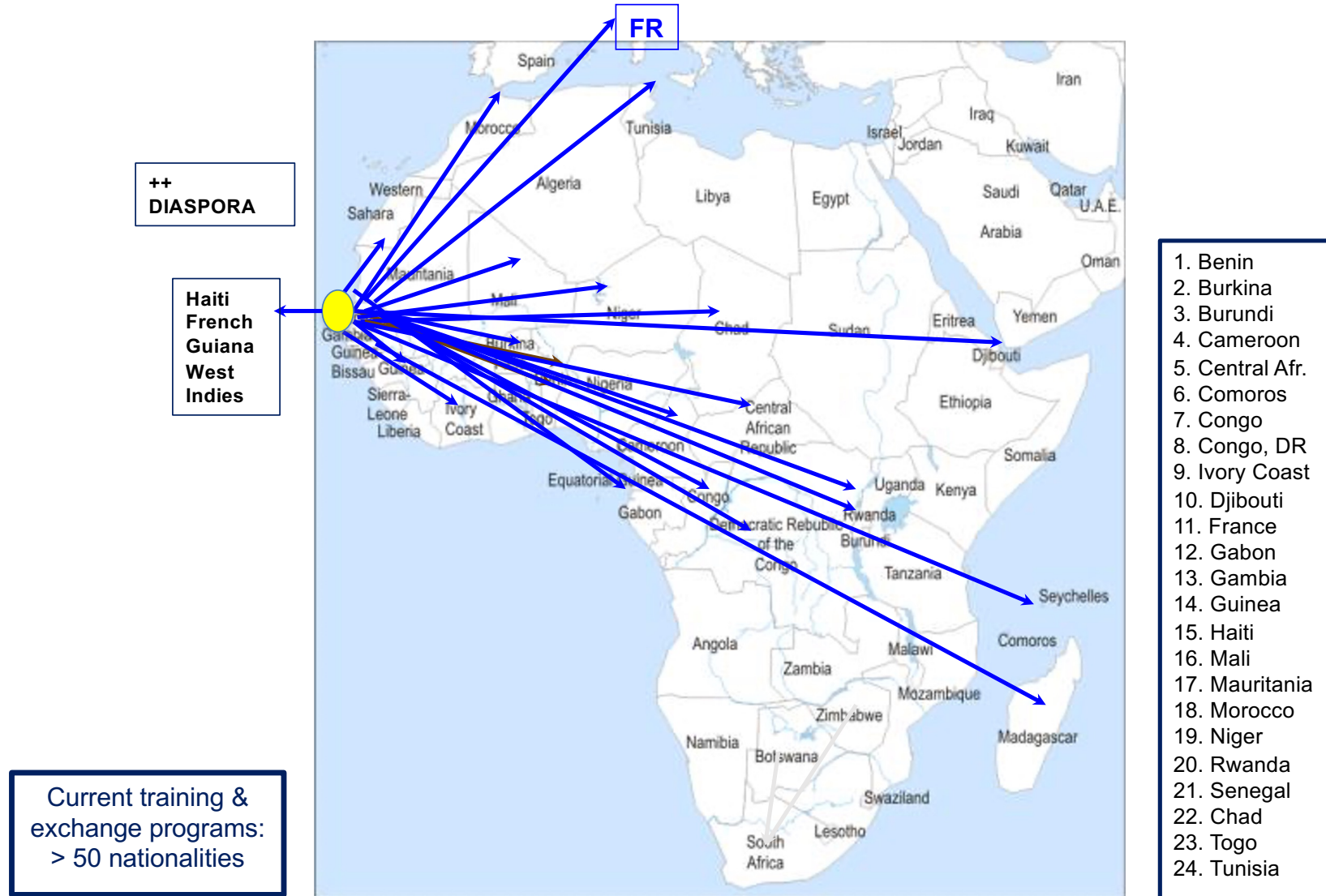
- **Supercomputer:** 10 billion;
- 2 scanning and transmission **electron microscopes:** 800 million;
- In progress: Lab equipment: 52 billion

Recommendations for promoting R&I.

 STRENGTHS	 WEAKNESSES	 OPPORTUNITIES
<ul style="list-style-type: none"> ▪ Political will ▪ Universities and other R&I institutions ▪ Quality human resources ▪ Senegalese creative genius ▪ International standard for certain laboratories 	<ul style="list-style-type: none"> ▪ Equipment ▪ Financing ▪ Compartmentalization of teams and resources ▪ Weak contacts between R&I, industry and private sector ▪ Meeting national and local needs 	<ul style="list-style-type: none"> ▪ Senegal: Hub and lighthouse ▪ Diaspora ▪ Inventive youth ▪ Senegal Digital ▪ Cooperation: multilateral and bilateral

- **National Strategic Plan for Research and Innovation (2023-2032)**
- **National Council for R&I:**
 - **National Research and Innovation Fund**
 - **National Observatory for R&I:**
 - **1-Health:** Human and animal health
 - **ANEP:** Agriculture; Nutrition, Livestock; Fisheries
 - **4E:** Water; Energy; Environment; Space
 - **SEEDD:** Societies; Economy; Education; Law; Development
 - **STII:** Sciences; Technologies; Engineering, Innovation
- **Biennale for R&I in Africa** → *Forum; Fair; PPP; Vulgarization; Communication*

The impact of Senegal's universities since 1917.



OVERVIEW OF THE NATIONAL STRATEGIC PLAN FOR RESEARCH AND INNOVATION 2023-2032

Four pillars guide Senegal's choices and priorities around industrial development between now and 2035.

1

DEVELOPMENT OF TECHNOLOGY- AND INNOVATION-INTENSIVE INDUSTRIES

- Strengthen positioning in the digital economy.
- Create a high value-added manufacturing cluster around assembly and fabrication industries.
- Ensure the development of high-quality, competitive creative products and services.

2

INDUSTRIAL PROCESSING OF MINERAL RESOURCES AND HYDROCARBONS

- Develop mineral and hydrocarbon processing units.

3

RAW MATERIALS PROCESSING (agricultural, forestry and fishing)

- Develop the competitiveness of Senegalese industry and its productive capacity in the processing of agricultural, forestry and fishery raw materials.

4

INDUSTRY DEVELOPMENT PHARMACEUTICAL AND PHARMACOPOEIA

- Increase local coverage of national demand for pharmaceutical products.

The Senegalese government's ambition is to accelerate economic recovery, notably through the Adjusted and Accelerated Priority Action Plan (PAP 2A), with R&I emerging as a lever likely to create added value and generate the desired growth.

The vision, mission, impact and five strategic pillars of the PSNRI 2023-2032.



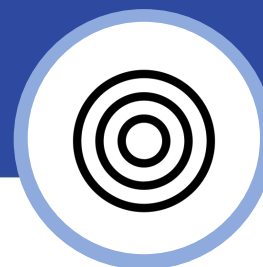
VISION

- Make R&I a catalyst for sustainable development, industrialization and entrepreneurship for an emerging Senegal by 2035.



MISSION

- Create an R&I environment underpinned by inclusive governance.



IMPACT

- **1^{er}** most attractive **market** in West Africa, with over **600 billion FCFA** of funds invested.
- Increase in the global innovation index from 23.3 in 2021 to **30 in 2032**.
- Reduce the **75%** gap between research and the market to convert inventions into products.



STRATEGIC PILLARS

- Federative and inclusive **governance** with an adapted organization.
- Substantial and appropriate **funding throughout the R&I value chain**.
- Dedicated and inclusive **human capital**, with expertise aligned with sector priorities.
- **Promoting** a facilitating and stimulating environment.
- **Digital technology** as an accelerator of economic transformation.

Five strategic priorities have been identified to guide the choices and priorities for R&I development up to 2032.

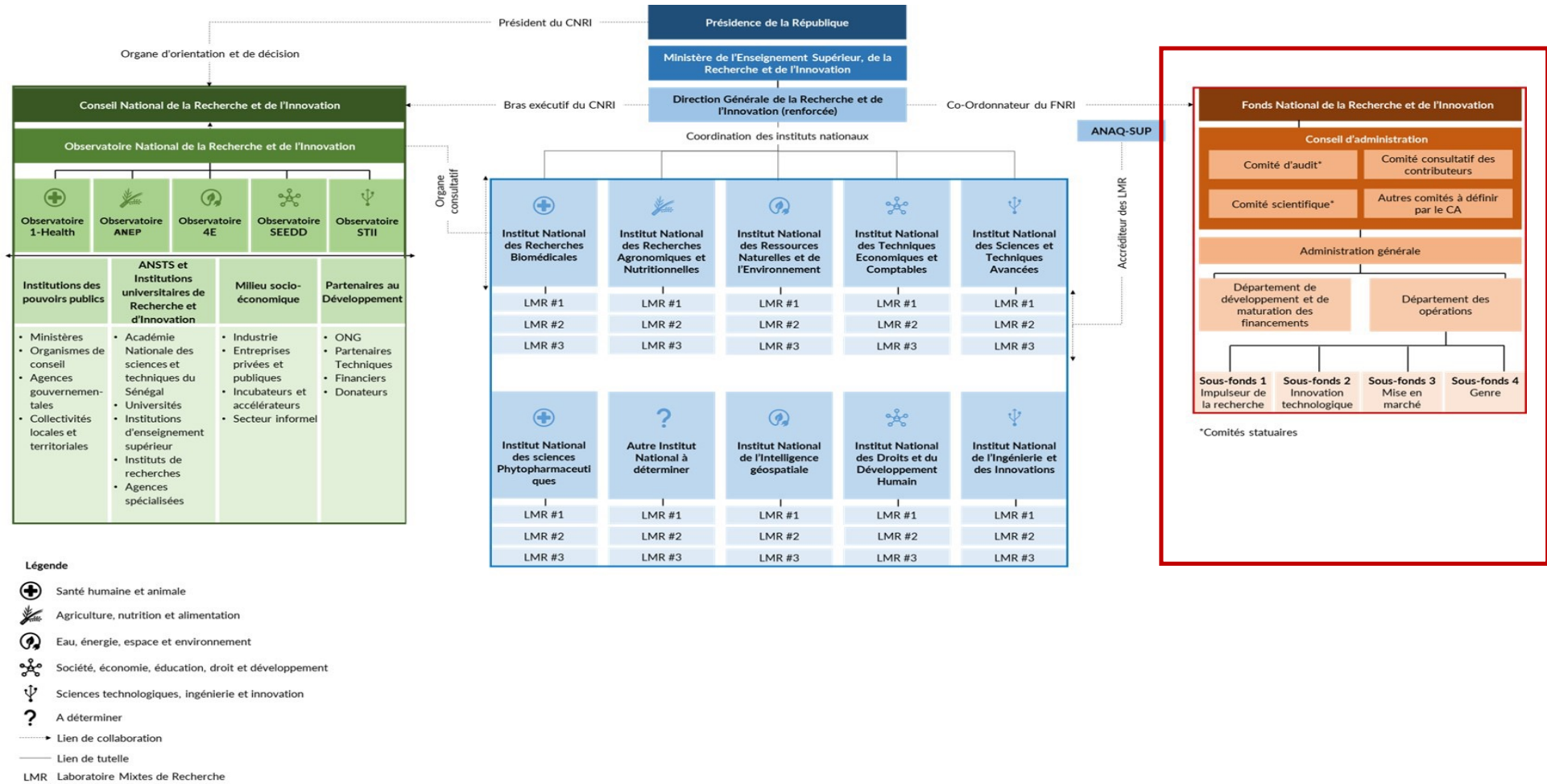
Strategic priorities	Federative and inclusive governance with an adapted organization.	Substantial and fit-for-purpose funding throughout the R&I value chain.	Dedicated and inclusive human capital , with expertise aligned with sector priorities.	Promotion of a facilitated and stimulating environment.	Digital technology as an accelerator of economic transformation.
Activities	<ul style="list-style-type: none"> ▪ Establish the National Council for Research and Innovation (CNRI). ▪ Review and strengthen the General Directorate for Research and Innovation (DGRI). ▪ Establish the National Observatory for Research and Innovation (ONRI). ▪ Enact the R&I Orientation Act. 	<ul style="list-style-type: none"> ▪ Create a National Research and Innovation Fund. ▪ Set up an organizational and governance framework for the FNRI. ▪ Create sub-funds for systemic R&I financing. ▪ Develop a resource mobilization strategy and organize an international roadshow. ▪ Set up a system for collecting financial information on funds mobilized for R&I. 	<ul style="list-style-type: none"> ▪ Strengthen the pre-school and primary school curriculum. ▪ Promote scientific series in secondary schools. ▪ Strengthen collaboration between the private sector and universities. ▪ Enhance career pathways for teaching and research staff. ▪ Promote the inclusion of women. ▪ Create the Virtual University of the African Diaspora. 	<ul style="list-style-type: none"> ▪ Develop and run an R&I marketplace. ▪ Launch the Start-up Act by signing implementing decrees. ▪ Modernize intellectual property law. ▪ Install dedicated infrastructure and equipment to strengthen laboratories. ▪ Organize the Biennale for Research and Innovation in Africa. 	<ul style="list-style-type: none"> ▪ Finalize the Cité du savoir, with its digital park to attract local and international companies. ▪ Promote R&I as a factor in technical progress. ▪ Continue Senegal's space program. ▪ Create a platform for innovative e-government solutions.

For each strategic priority, well defined and quantified objectives are proposed for 2032.

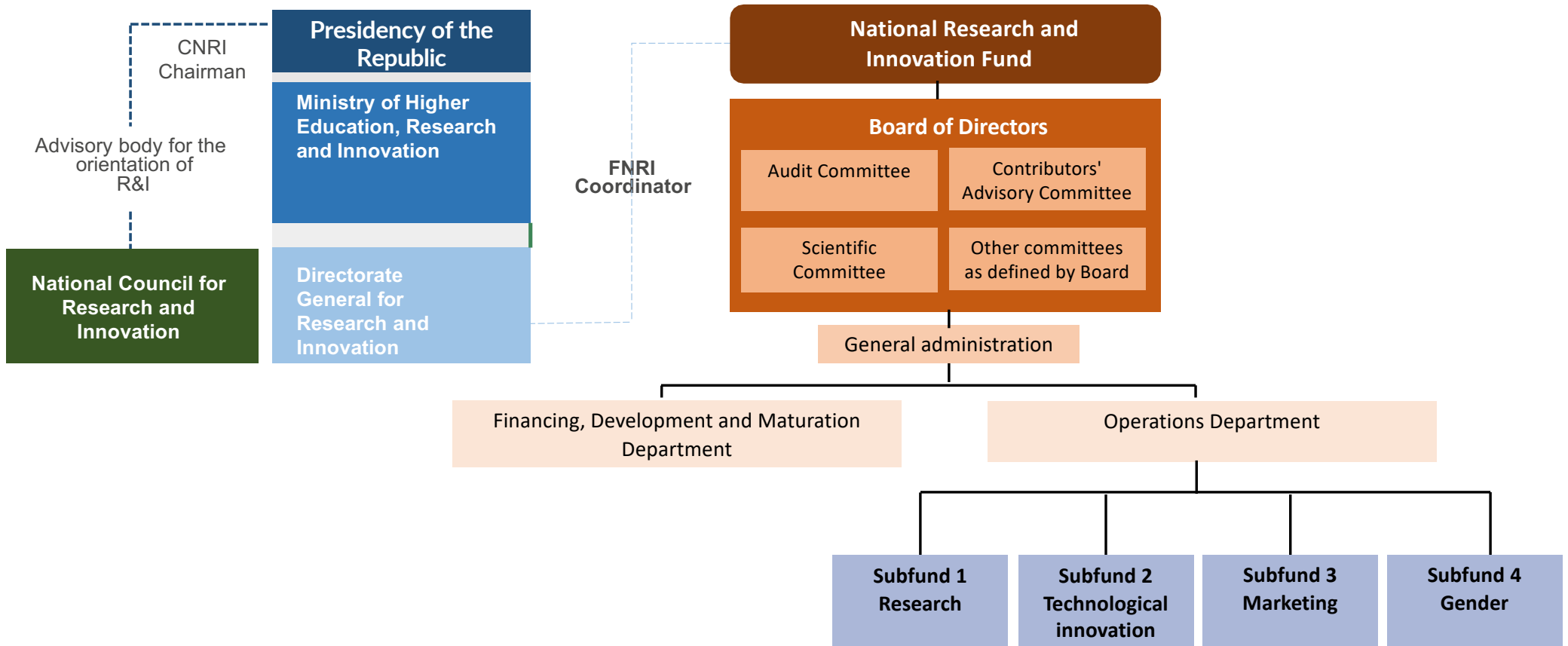


• Sources: National Strategic Plan for Research and Innovation 2023-2032

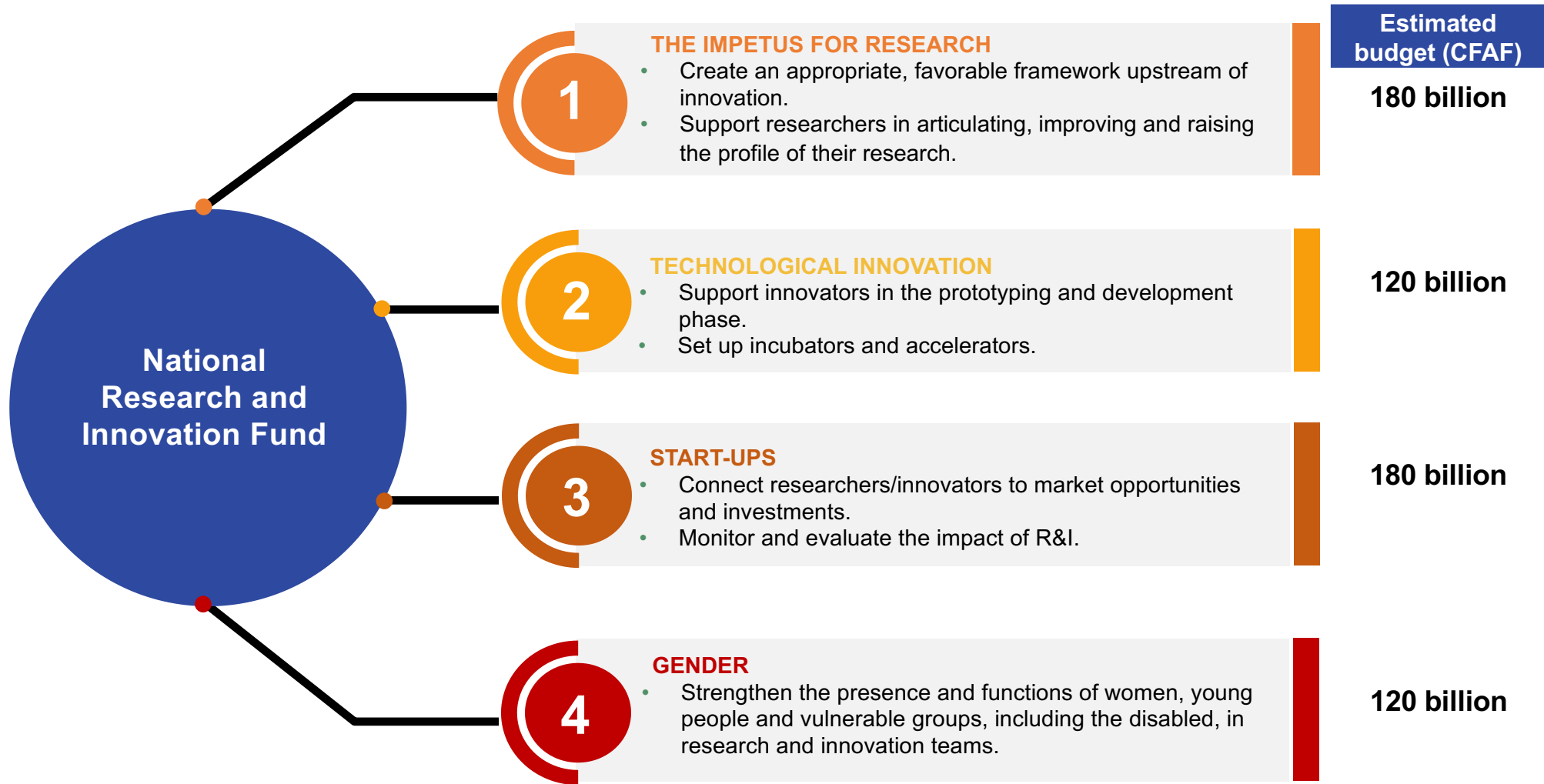
A new R&I governance structure is proposed to facilitate synergies between ecosystem players, and thus foster better integration of the R&I value chain.



Substantial, innovative funding will be provided through the National Research and Innovation Fund (FNRI).

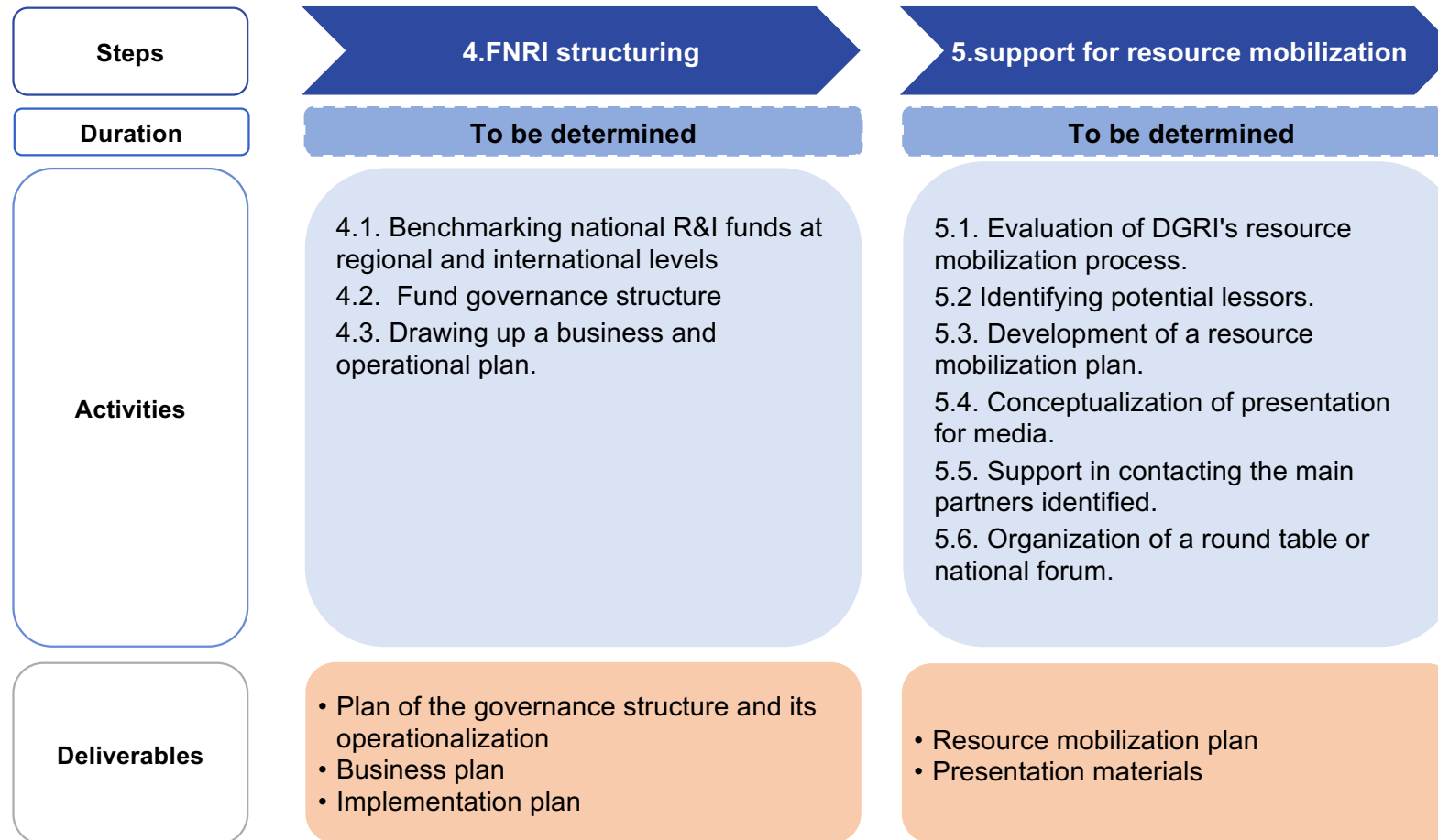


The FNRI will be made up of four sub-funds designed to meet the following needs in R&I in Senegal.

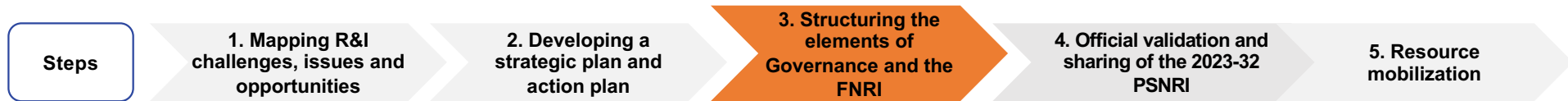


NEXT STEPS

The next steps in the project aim to achieve the goal of mobilizing by 2027.



The next stage will involve further structuring of the FNRI.



Definition of governance structure, coordination and control mechanisms

1. A benchmark of regional and international funds to identify best practices. We will analyze the strategic positioning, the financial products/services offered and their coordination and control mechanisms.
2. On the basis of the benchmark and the PSNRI 2023-2032, we will make recommendations concerning the fund's structuring, resource mobilization and investment strategy, and financing arrangements.
3. We will also support the definition of an institutional and organizational framework (operating rules, management and communication tools, etc.) for effective and sustainable management of the fund.

Budget estimate

1. A projection of the resources required for each sub-fund.
2. An estimate of the fund's operating costs - this covers all expenses such as salaries, rent, supplies, miscellaneous services, etc.

Deliverables

- Governance structure and its operationalization
- Business plan
- Implementation plan

The task now is to mobilize the resources needed to start implementing the plan.



Internal and external diagnostics

- Identification and assessment of the various resource mobilization mechanisms within the DGRI.
- Identification of partners with whom the DGRI could mobilize additional resources. We will map their typology, sectors of intervention and funding arrangements.

Drawing up a resource mobilization plan

- Development of a resource mobilization plan adapted to the operating models of the various funding agencies. Our plan will consider different methods of resource mobilization, such as the organization of a roundtable or a national forum on innovative financing.
- The plan will also include the human, financial and technical resources required for resource mobilization activities.

Engagement of partners

- Conceptualization of presentation materials to be used for resource mobilization (e.g. PowerPoint presentation, concept notes, etc.).
- Support to the government in engaging potential donors. This includes helping to identify key people within institutions, and supporting the organization of national fora or roundtables.

Deliverables

- Resource mobilization plan
- Presentation materials

PSNRI highlights.

Governance

- Enact an R&I orientation law.
- Approve the decree creating the National Council for R&I.
- Set up the National Observatory for R&I.
- Restructure the DGRI into three departments and strengthen its human, financial and technical capacities.

Resource mobilization and allocation

- Approve the draft decree for the creation of the FNRI, which has already been drawn up.
- Create the National Fund, set up the organizational framework and launch financial and technical resource mobilization activities.
- Activate the National Fund's sources of financing in the form of government budget allocations, contributions from the economic sector, etc.

Strengthening the ecosystem

- Set up an interministerial committee with the ministries in charge of higher education and R&I, education, training and professional insertion to strengthen R&I educational programs.
- Finalize infrastructure projects to support R&I, such as the Cité du Savoir, science and technology parks, etc.
- Develop platforms for exchanging information on opportunities for financing and value-add R&I activities.

Three actions are to be carried out in the short term by the Government, via MESRI, with the support of partners, to initiate the implementation of activities planned in the PSNRI 2023-2032.

1



Approve the draft decree creating the CNRI and FNRI.

2



Create the CNRI and the FNRI, and set up the organizational framework, coordination and control mechanisms.
+ the 5 Inclusive Observatories

3



Activate FNRI funding sources such as the state transfer budget, with a powerful initial endowment, private-sector contributions, etc.

Mobilize additional resources from partners.