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Report No: PAD5459

INTERNATIONAL BANK FOR RE&CONSTRUCTION AND DEVELOPMENT

PROJECT APPRAISAL DOCUMENT

ON A

PROPOSED LOAN

IN THE AMOUNT OF
US$150 MILLION

AND A PROPOSED GRANT
IN THE AMOUNT OF US$50 MILLION
FROM THE GLOBAL PARTNERSHIP FOR EDUCATION FUND

TO THE

REPUBLIC OF ANGOLA

FOR A

TERTIARY EDUCATION, SCIENCE, AND TECHNOLOGY PROJECT
AS PHASE 1 OF THE MULTI-PHASE PROGRAMMATIC APPROACH
WITH AN OVERALL FINANCING ENVELOPE OF US$550 MILLION

November 15, 2023

Education Global Practice
Eastern and Southern Africa Region

CURRENCY EQUIVALENTS

(Exchange Rate Effective October 31, 2023)

Currency Unit =	Angolan Kwanza
AOA 836 =	US$1
US$1.31 =	SDR 1

FISCAL YEAR
January 1 - December 31

Regional Vice President: Victoria Kwakwa
Regional Director: Daniel Dulitzky
Country Director: Albert G. Zeufack
Practice Manager: Muna Salih Meky
Task Team Leaders: Peter A. Holland, Natasha De Andrade Falcao, Daniel Nogueira-Budny

ABBREVIATIONS AND ACRONYMS

CCDR	Country Climate and Development Report
CE	Citizenship Engagement
CNIC	National Center for Research and Science (*Centro Nacional de Investigação Cientifica,* CNIC)
CPF	Country Partnership Framework
E&S	Environment and Social
EMIS	Education Management Information System
ESCP	Environmental and Social Commitment Plan
ESMP	Environmental and Social Management Plan
ESSA	Environmental and Social Systems Assessment
FM	Financial Management
FUNDECIT	Foundation for Scientific and Technological Development (*Fundação para o Desenvolvimento Científico e Tecnológico)*
GBV	Gender Based Violence
GHG	Greenhouse Gas
GPE	Global Partnership for Education
GRM	Grievance Redress Mechanism
HCI	Human Capital Index
HEI	Higher Education Institution
HEMIS	Higher Education Management Information System
IFR	Interim Financial Reports
IFSA	Integrated Fiduciary Systems Assessment
IGAE	General Inspectorate of State Administration *(Inspecção Geral da Administração do Estado)*
INAAREES	National Institute of Evaluation, Accreditation, and Recognition in Tertiary Education (*Instituto Nacional de Avaliação, Acreditação e Reconhecimento de Estudos do Ensino Superior)*
INDC	Intended Nationally Determined Contribution
IPF	Investment Project Financing
ISCED	Teacher Training Institutions *(Instituto Superior de Ciências da Educação)*
LIBES	Higher Education White Paper *(Livro Branco de Educação Superior)*
LMS	Learning Management System
MED	Ministry of Education
MESCTI	Ministry of Higher Education, Science, Technology, and Innovation *(Ministério do Ensino Superior, Ciência, Tecnologia e Inovação)*
MPA	Multiphase Programmatic Approach
MOOC	Massive Open Online Course
NREN	National Research and Education Network
PAD	Project Appraisal Document
PDI	Institutional Development Plan (*Planos de Desenvolvimento Institucional*)
PDN	National Development Plan *(Plano de Desenvolvimento Nacional)*
PDO	Project Development Objective
PFM	Public Financial Management
PforR	Program-for-Results Financing
PLR	Performance and Learning Review
POM	Program Operational Manual
PPA	Project Preparation Advance

PrDO	Program Development Objective
QA	Quality Assurance
R&D	Research and Development
RBA	Results Based Agreements
SCD	Systematic Country Diagnostic
SDG	Sustainable Development Goals
SEA/SH	Sexual Exploitation and Abuse and Sexual Harassment
SORT	Systematic Operations Risk-rating Tool
SSA	Sub-Saharan Africa
STEER	Steering Tertiary Education, Toward Resilient Systems that Deliver for All
STEM	Science, Technology, Engineering, and Mathematics
TTIs	Teacher Training Institutions
UNFCCC	United Nations Framework Convention on Climate Change

TABLE OF CONTENTS

DATASHEET

BASIC INFORMATION

Project Beneficiary(ies)	Operation Name		
Angola	Tertiary Education, Science, and Technology Project (TEST)		
Operation ID	Financing Instrument	Environmental and Social Risk Classification	
P179154	Investment Project Financing (IPF)	Moderate	

Financing & Implementation Modalities

[✓] Multiphase Programmatic Approach (MPA)	[ ] Contingent Emergency Response Component (CERC)
[ ] Series of Projects (SOP)	[ ] Fragile State(s)
[ ] Performance-Based Conditions (PBCs)	[ ] Small State(s)
[ ] Financial Intermediaries (FI)	[ ] Fragile within a non-fragile Country
[ ] Project-Based Guarantee	[ ] Conflict
[ ] Deferred Drawdown	[ ] Responding to Natural or Man-made Disaster
[ ] Alternative Procurement Arrangements (APA)	[ ] Hands-on Expanded Implementation Support (HEIS)

Expected Approval Date	Expected Closing Date	Expected Program Closing Date
11-Dec-2023	31-Dec-2028	
Bank/IFC Collaboration		
No		

MPA Program Development Objective

MPA FINANCING DATA (US$, Millions)

MPA Program Financing Envelope	0.00

Components

Component Name	Cost (US$)
Component 1. Improve the quality of incoming students	100,000,000.00
Component 2. Improve the quality of programs in strategic priority areas	85,000,000.00
Component 3. Strengthen capacity in management, monitoring, and evaluation	15,000,000.00

Organizations

Borrower:	Republic of Angola
Implementing Agency:	Ministry of Higher Education, Science, Technology, and Innovation

MPA FINANCING DETAILS (US$, Millions)

MPA Financing Envelope:	0.00
of which Bank Financing (IBRD):	0.00
of which Bank Financing (IDA):	0.00
of which Other Financing sources:	0.00

PROJECT FINANCING DATA (US$, Millions)

Maximizing Finance for Development

Is this an MFD-Enabling Project (MFD-EP)?	No
Is this project Private Capital Enabling (PCE)?	No

SUMMARY

Total Operation Cost	**200.00**
Total Financing	**200.00**
of which IBRD/IDA	**150.00**
Financing Gap	**0.00**

DETAILS

World Bank Group Financing

International Bank for Reconstruction and Development (IBRD)	150.00

Non-World Bank Group Financing

Trust Funds	50.00
Global Partnership for Education Fund	50.00

Expected Disbursements (US$, Millions)

WB Fiscal Year	2024	2025	2026	2027	2028	2029
Annual	8.02	25.00	27.00	35.00	48.48	56.50
Cumulative	8.02	33.02	60.02	95.02	143.50	200.00

PRACTICE AREA(S)

Practice Area (Lead)

Education

Contributing Practice Areas

Climate Change; Governance; Digital Development; Health, Nutrition & Population

CLIMATE

Climate Change and Disaster Screening

Yes, it has been screened and the results are discussed in the Operation Document

SYSTEMATIC OPERATIONS RISK- RATING TOOL (SORT)

Risk Category	Rating
1. Political and Governance	Substantial

2. Macroeconomic	Moderate
3. Sector Strategies and Policies	Moderate
4. Technical Design of Project or Program	Moderate
5. Institutional Capacity for Implementation and Sustainability	Substantial
6. Fiduciary	Substantial
7. Environment and Social	Moderate
8. Stakeholders	Moderate
9. Overall	Moderate
Overall MPA Program Risk	

POLICY COMPLIANCE

Policy

Does the project depart from the CPF in content or in other significant respects?

[ ] Yes [✓] No

Does the project require any waivers of Bank policies?

[ ] Yes [✓] No

ENVIRONMENTAL AND SOCIAL

Environmental and Social Standards Relevance Given its Context at the Time of Appraisal

E & S Standards	Relevance
ESS 1: Assessment and Management of Environmental and Social Risks and Impacts	Relevant
ESS 10: Stakeholder Engagement and Information Disclosure	Relevant
ESS 2: Labor and Working Conditions	Relevant
ESS 3: Resource Efficiency and Pollution Prevention and Management	Relevant
ESS 4: Community Health and Safety	Relevant
ESS 5: Land Acquisition, Restrictions on Land Use and Involuntary Resettlement	Not Currently Relevant
ESS 6: Biodiversity Conservation and Sustainable Management of Living Natural Resources	Not Currently Relevant

ESS 7: Indigenous Peoples/Sub-Saharan African Historically Underserved Traditional Local Communities	Not Currently Relevant
ESS 8: Cultural Heritage	Not Currently Relevant
ESS 9: Financial Intermediaries	Not Currently Relevant

NOTE: For further information regarding the World Bank's due diligence assessment of the Project's potential environmental and social risks and impacts, please refer to the Project's Appraisal Environmental and Social Review Summary (ESRS).

LEGAL

Legal Covenants

Sections and Description
The Borrower, through the MESCTI, has adopted the Program Operational Manual in form and substance satisfactory to the Bank.
The Borrower, through the MESCTI, has established the Project Team under terms and conditions acceptable to the Bank (including key staff as per Section I.B1(a)(i) of Schedule 2 to the Legal Agreement).

Conditions

Type	Citation	Description	Financing Source

I. STRATEGIC CONTEXT

1. **Angola is at a crossroads, with great potential for economic prosperity hindered by low levels of human capital and vulnerable to climate shocks.** The TEST 10-year program helps Angola make the most of its demographic advantage, securing the foundations for learning and repositioning the education sector to equip future generations with the skills to combat climate change and boost economic development.

A. Country Context

2. **Among Africa's largest economies, Angola has a historic opportunity to make the most of its human capital.** The country exited a five-year recession in 2021, owing to rising oil prices and recovery of non-oil sectors post COVID-19. The economy expanded 3 percent in 2022, and growth is estimated to be around 1 percent in 2023. Around a third of the population lives in poverty (less than US$2.15 per day as per the updated international poverty line), enduring high rates of unemployment and a rising cost of living. The Human Capital Index (HCI) score of 0.36[1] is among the lowest in the world, below the Sub-Saharan Africa (SSA) average (0.40). The total fertility rate of 6.2 children per woman is the second highest in the world (after Niger), and the adolescent fertility rate is also among the highest in the world, with 143 girls (15-19 years) per 1,000 becoming mothers in their adolescent years, compared to the SSA average of 98.[2] Tertiary education has a central role in social mobility through equal educational opportunities for all, especially marginalized groups like women, and children from low-income communities.[3]

3. **The Government of Angola (GoA) has recently endorsed a National Development Program (*Plano de Desenvolvimento Nacional*, PDN) 2023–2027 centered on human capital, infrastructure, and economic diversification.** Despite a political commitment to diversify the economy, the country remains dependent on oil and gas, which account for 95 percent of exports. The sector saw a drop in productivity from a peak of 1.9 million barrels per day in 2008 to 1.2 million in 2022. It is predicted to decline further as low-cost reserves are exhausted. Moving forward, economic diversification will be key to reduce the effects of oil price volatility. The PDN 2023-2027 prioritizes investments in agriculture, transportation, water, and alternative energies, all requiring a generation of labor market entrants with a specialized set of skills, knowledge, and know-how.

4. **This five-year plan will be carried out in the context of the climate crisis, which is already demonstrating devastating effects for the country.** More than 10 percent of the population (3.8 million people) had insufficient food in 2021, and 1.2 million people live in conditions of water scarcity. Economic losses due to the adverse impact of climate change on agriculture alone are estimated to cost the economy about US$100 million per year.[4] As emphasized in the Country Climate and Development Report (CCDR) for Angola, achieving sustainable economic development is inextricably linked to strengthening its resilience to the climate crisis.[5]

[1] This value indicates that a child born in Angola today will only reach 36 percent of his or her potential productivity as an adult.
[2] World Bank (2023). Good Jobs for Angolan Youth: Opportunities, Challenges, and Policy Directions. Washington: DC.
[3] Salmi (2017). The Tertiary Education Imperative: Knowledge, Skills, and Values for Development. Boston and Rotterdam: Brill Publishers.
[4] World Bank (2022). Angola Country Climate and Development Report. Washington: DC.
[5] Ibid.

Boosting the country's human capital is one of the five pathways to climate resilience, massively scaling up adaptation skills and preparing workers for the green economy. Central to this is improving Angola's climate research capacity in the areas of science, technology, engineering and math (STEM).

5. **Reforming the country's investments in its human capital will equip Angola with the workforce needed to respond to the national goals for economic diversification as well as the digital and green transitions.** Angola's young age structure, with 48 percent of the population under the age of 15, represents a significant potential for a demographic dividend, whereby the productivity gains from a low dependency ratio result in an economic boon to the country. Angola has yet to make the most of this potential, however, as 56.7 percent of youth (ages 15-24) are unemployed (compared to 30.2 percent overall unemployment). Triggering this dividend requires labor force entrants with relevant job-oriented skills. Fundamentally, it requires a revamping of the teacher preparation eco-system, the country's main constraint to learning. Given the growing need to respond to climate crises, skills for the green economy are poised to be in ever-increasing demand across sectors, requiring the scaling up of existing programs addressing climate change, and developing trainings in new areas for further economic expansion.

6. **The same is true for other sectors that will be the source of tomorrow's innovation for Angola, such as resilient infrastructure, the next generation of sustainable agriculture and food production, and digital development.** Africa's digital economy is poised to reach US$180 billion by 2025 (up from US$115 billion in 2020), accounting for 5.2 percent of the continent's GDP.[6] Digital skills to leverage these opportunities are expected to rapidly increase in demand by 2030, representing over 230 million jobs, resulting in a US$130 billion investment opportunity in digital skilling.[7] This generational shift presents an opportunity to introduce policies that attract women to sectors that have traditionally been male dominated, thereby helping to close the gender employment and pay gap. Women in Angola have worse labor market outcomes than men in terms of employment, wages, and job quality,[8] and are underrepresented in higher education, especially the STEM fields.

7. **Quality tertiary education is vital for equipping Angolans with the skills needed to meet the demands of today and drive innovation for tomorrow.** Tertiary education systems are central to the social and economic transformations necessary to achieve sustainable and equitable development. Strategically designed and effectively implemented investments in tertiary education are crucial for countries to develop their talent and leadership pipeline; generate and apply knowledge to resolve local, regional, and international challenges; and participate in the knowledge economy.[9] Tertiary education supports knowledge-driven economic growth by: (a) training a qualified and adaptable labor force, including high-level scientists, professionals, technicians, teachers, civil servants, and business leaders; (b) generating new knowledge through basic and applied research; and (c) providing a platform for accessing existing stores of global knowledge and adapting it to local use. Universities are uniquely placed to integrate and create synergy among these three dimensions.[10]

[6] Google and IFC (2020). e-Conomy Africa 2020: Africa's US$180 billion Internet economy future.
[7] International Finance Corporation (2019). "Digital skills in SSA: Spotlight on Ghana." Washington: DC.
[8] World Bank (2023). Good Jobs for Angolan Youth: Opportunities, Challenges, and Policy Directions. Washington: DC.
[9] World Bank (2022). "Steering Tertiary Education: Toward Resilient Systems that Deliver for All". Washington: DC.
[10] Salmi, J. (2017). The Tertiary Education Imperative: Knowledge, Skills, and Values for Development. Boston and Rotterdam: Sense / Brill Publishers.

B. Sectoral and Institutional Context

8. **The Angolan higher education sector is a young system developing quickly.** With a Gross Enrollment Rate (GER) of 8.7 percent (2021), the sector consists of 85 Higher Education Institutions (HEIs) (27 public and 58 private) and serves 315,000 students of which approximately 40 percent (125,000 students) are enrolled in public institutions. These institutions employ 11,400 faculty, 40 percent (4,600 faculty) of which teach in public institutions and the rest (60 percent) in the private sector. A large share of this faculty (63 percent) is part-time (31 percent in public and 85 percent in private). Women make up only 37 percent of the student population and 25 percent of faculty in public higher education institutions.[11] The largest share of enrollments falls within business, administration, and law programs (33 percent) and teacher training programs (22 percent). To date, no programs are officially accredited as the national accreditation agency has just begun its operations. The University of Agostinho Neto is the flagship institution within the sector and the only institution to offer doctoral programs. It currently enrolls 21,000 undergraduates, 3,000 master's degree, and 169 doctoral students.

9. **The GoA has committed to dramatically increase its investment in the higher education sector to enable its transformation, from 0.39 percent of GDP in 2022 to 1.5 percent by 2027.** In 2022, the Government spent approximately US$194 million (89 billion Kwanza) on tertiary education, less than half of the authorized budget for the sector, and the vast majority of which went to salaries.[12] Fundamental reforms in the sectoral governance and institutional management are required to make the most of these additional resources.

10. **The Ministry of Higher Education, Science, Technology, and Innovation of Angola (MESCTI) has developed a bold vision for sweeping changes in the sector.** MESCTI is currently finalizing a ten-year strategy for higher education (*Livro Branco do Ensino Superior*, LiBES). This strategy has been developed through a consultative process, bringing together key stakeholders including higher education institutions (HEIs), the academic and scientific community, civil society, regional and international experts. The LiBES sets out an ambitious plan to expand access, improve quality, and strengthen research with the aim of ensuring that Angola can take advantage of the opportunities emerging from the digital, green, and blue transitions.

Challenge 1. Poor student preparation[13]

11. **Demographic pressures, combined with chronic underfinancing of education, have left Angola further from achieving education for all, affecting the pipeline of students entering HEIs.** The result is a severe shortage of classrooms and teachers to absorb children across the various levels of education. Poor learning from primary through upper secondary severely limits the readiness of incoming tertiary level students. To return to 2011 levels of coverage, Angola would need more than 200,000 additional teachers over the next 10 years, implying an increase from 10,000 graduates to 25,000 graduates per year (accounting for attrition). Expansion aside, programs must be substantially improved to ensure those teachers are prepared to deliver high quality learning in the classroom.

[11] Angola Ministry of Higher Education, Science, Technology, and Innovation (MESCTI), 2023.
[12] MESCTI, 2023 and World Bank, 2023. Accessed here: https://data.worldbank.org/indicator/NY.GDP.MKTP.CD?locations=AO
[13] Although access challenges are pervasive throughout Angola, the MESCTI has committed to expanding tertiary education supply through domestic financing. As such, the access agenda will be limited to teacher training institutes under this phase of the MPA.

12. **Weak selection standards, outdated curricula, and poor quality of instruction in teacher training institutes contribute to future teachers who are unprepared for the classroom.** Teachers are the most important factor affecting learning in schools.[14] Well-prepared teachers have a much larger impact on students than lesser prepared ones.[15] However, in Angola as elsewhere, the teacher training system does not attract strong applicants or train teachers effectively.[16] Teachers thus lack the required skillset and knowledge to be successful in the classroom: only six percent of teachers are able to correctly respond to at least 80 percent of student assessment questions for the grade they are teaching when they were tested on the same.[17] Classroom observations reveal that 87 percent of teachers score "unsatisfactory" or "very unsatisfactory" in their pedagogical practices.[18] As a result, learning poverty is high in Angola: two-thirds of children in grade three cannot read an age-appropriate text.[19]

13. **To fulfill the vision of producing well-qualified teachers, the pre-service teacher training ecosystem needs to be transformed through curriculum reform, quality instruction from trainers, and modern infrastructure**. The GoA has recently adopted its Teacher Training Reform 2023-2028 plan to consolidate the governance of the teacher training system under MESCTI. Most Teacher Training Institutions (TTIs) are housed in extremely poor infrastructure, with unreliable electricity and water, limited access to the Internet, and poor libraries. The digital infrastructure is especially bad, rendering it difficult to equip teachers with the competencies they will need to prepare students for Angola's digital future.

14. **This agenda is supported by Angola's development partners.** Given the fundamental role that scaling up the supply of quality teachers plays in addressing Angola's education crisis, the Global Partnership for Education (GPE), per GoA request, has secured US$50 million from the GPE Multiplier Fund in co-financing.

Challenge 2. Low quality of instruction and lack of industry-relevance of curricula

15. **The recent rapid expansion of HEIs was driven by private providers, with little quality control.**[20] The higher education Gross Enrollment Rate (GER) grew from 6 percent in 2014 to 8.7 percent in 2021, below the average of 9.8 percent of Sub-Saharan Africa (SSA).[21] Higher education enrollments have grown from 221,000 in 2014 to 315,000 in 2021, 60 percent of which has been absorbed by the private sector,[22] where the total number of HEIs grew from 11 in 2010 to 57 in 2022 (Figure 1).

[14] World Bank. (2017). World development report 2018: Learning to realize education's promise. The World Bank.

[15] Ibid.

[16] Ibid.

[17] MED. (2022). Service Delivery Indicators. Luanda, Angola.

[18] MED. (2022). TEACH: Application of classroom observations in Angola. Luanda, Angola.

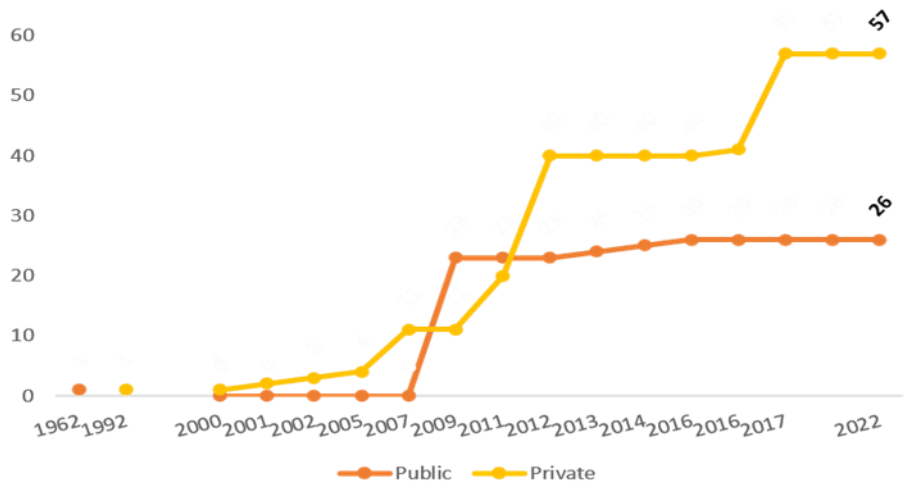
[19] MED. (2022). Early Grade Reading Assessment. Luanda, Angola.

[20] The National Institute of Evaluation, Accreditation, and Recognition in Tertiary Education (*Instituto Nacional de Avaliação, Acreditação e Reconhecimento de Estudos do Ensino Superior, INAAREES*) has a mandate for developing and enforcing quality assurance mechanisms throughout the sector. However, it is a young institution that has only recently started to operate.

[21] World Development Indicators, DataBank, World Bank, 2023.

[22] State of the Nation speech by President of the Republic of Angola. October 2022

Figure 1. Rapid Expansion of Private HEIs in Angola



Source: Statistical Yearbooks 2014 – 2022

16. **High repetition rates and low graduation rates reduce the sector's capacity for absorbing new students and translate into wastage of limited resources**.[23] HEI students take on average 7 years to complete 5-year programs. This internal inefficiency calls into question the quality of preparation and the admission standards upon entry into tertiary education. Lack of academic support for students as well as the high cost of attending higher education, not sufficiently alleviated by financial aid, further contribute to steep dropout rates. Removing such obstacles to student achievement can reduce repetition and dropouts, increase graduation rates, and free up spaces to absorb more students, particularly from traditionally underrepresented groups.

17. **Instruction is further hindered by inadequate equipment and insufficient digital infrastructure.** Few public HEIs have well-equipped laboratories for practical scientific instruction. Most campuses in Angola have spotty internet connectivity. In contrast to its regional peers such as Mozambique and South Africa, Angola lacks a National Research and Education Network (NREN), limiting the higher education sector's ability to leverage the potential of digital infrastructure and technology. This inhibits the collective bargaining power of tertiary education institutions to connect campuses to affordable, reliable broadband, and hampers the capacity for academic collaboration, high-quality research, and access to the global research network.

18. **Poor conditions also impede the country's ability to participate in regional and South-South research networks and opportunities.** Economic diversification is predicated not only on a skilled workforce but also on a dynamic research system to promote innovation, improve productivity, and solve problems that will accelerate the achievement of the Sustainable Development Goals (SDGs) and the fight against climate change. African researchers receive less than 1 percent of climate research funds studying African contexts.[24] This inequitable financing perpetuates the gaps in research capacity between institutions in countries such as Angola and their Northern counterparts. Angola also ranks well below regional comparators in the production of scientific

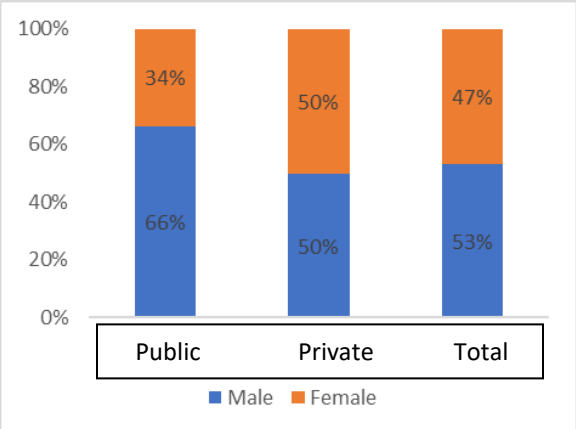
[23] World Bank (2023). Analytics and Policy Dialogue for Higher Education Strategy Development in Angola. Washington: DC.
[24] World Bank (2023). Analytics and Policy Dialogue for Higher Education Strategy Development in Angola. Washington: DC.

research, with only 19 scientific researchers per 1,000,000 inhabitants, as compared to 43 in Mozambique, and 472 in South Africa. Angola's National Center for Scientific Investigation (*Centro Nacional de Investigação Cientifica*, CNIC) and Foundation for Scientific and Technological Development (*Fundação para o Desenvolvimento Científico e Tecnológico*, FUNDECIT) are underfunded, lack research and development partnerships, and do not have policies in place to attract top African talent, including from the Angolan diaspora.

19. **There is a disconnect between university and industry, with tertiary education graduates unprepared to compete for highly skilled jobs while the private sector is unable to find the requisite skilled workers.** The curricula in existing sectors have not adapted to changing requirements due to recent shifts in technology and climate change. This is especially true in agriculture, energy, transport, and water, four sectors critical to Angola's economic development and for climate adaptation. Preparing students for the digital economy requires them to be digitally competent, but the curricula have not evolved to develop these skills. Only 11 percent of students in tertiary education graduate in STEM courses, well below comparator countries like South Africa (18 percent). For all these reasons, Angola's tertiary education sector needs to better prepare students with the skills and competencies needed by the private sector or for self-employment.

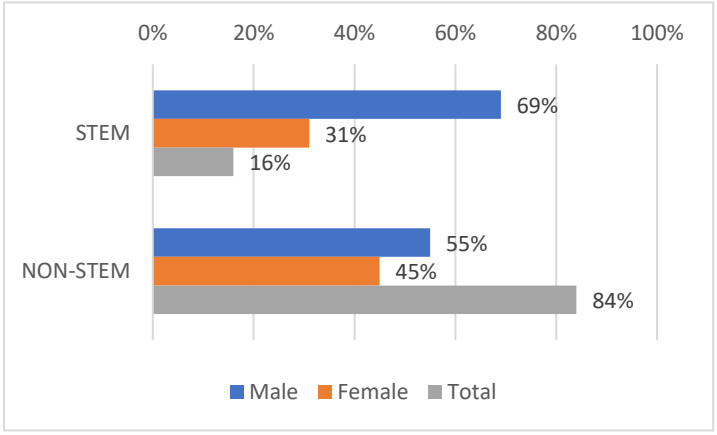
20. **Critically, the public tertiary education system also suffers from gender imbalances at all levels – students, faculty, and leadership positions.** While there is gender parity in enrollments in private HEIs, public universities enroll two men for every woman (Figure 2). To make matters worse, women are awarded only 34 percent of all scholarships for public higher education, thereby perpetuating this gender gap. Within the STEM sectors, the enrolment gap is even greater, as women make up only 31 percent of students (Figure 3).[25] This gender gap is more acute in academic staff composition, where women account for only 21 percent of faculty in tertiary education and are substantially underrepresented among teachers at the secondary level, with twice as many male teachers as female teachers. Stakeholder consultations reveal that social norms continue to promote traditional roles for women that do not require advanced education. These inequities also exist regionally: while Luanda Province has 27 percent of the population, it accounts for 56 percent of enrollments.

Figure 2. Proportion of first year students enrolled in undergraduate degrees in HEIs, by gender, 2018



Source: Statistical Yearbook 2019, MESCTI

Figure 3. Share of students enrolled in STEM and non-STEM courses by gender, 2019



Source: UIS-UNESCO, 2018

[25] Angola MESCTI, 2019.

Challenge 3. Limited management capacity for sector and institutional governance

21. **Governance and management weaknesses are evident at both the sectoral and institutional levels.** At the sectoral level, there is a dearth of data to inform policymaking. This includes performance indicators to identify sectoral problems and hold HEIs accountable to serving their students and society. This absence of governance mechanisms also extends to monitoring data on student outcomes and labor market results to provide feedback loops to HEIs. Governance systems for approving new curricula, fostering partnerships with industry (including regionally and globally), and ensuring stewardship of the sector across multiple stakeholders are largely theoretical. At the institutional level, management capabilities must be strengthened to improve operational processes and resource management. HEIs are unable to execute the entirety of their budgets due to cumbersome financial management (FM) rules. Improvements in the operational processes of HEIs are required to ensure effective use of forthcoming investments. This includes changes to scholarship rules, reforms in management practices (e.g. to simplify and accelerate the approval of new courses), and systemic public financial management (PFM) upgrades for a smoother flow of funds.

C. Relevance to Higher Level Objectives

22. **The Program supports Angola in its goals of achieving economic diversification and climate resilience.** Achieving these inexorably linked outcomes reflects the World Bank's expanded mission to "create a world free of poverty on a livable planet" and the Evolution Roadmap. Specifically, the operation aligns with the new Country Partnership Framework (CPF) under preparation to boost Angola's human capital. The Program is also aligned with the Eastern and Southern Africa Education Business Plan 2023-2030 that envisions that all children in Eastern and Southern Africa have the education and skills to realize their potential and contribute to the development of the region.

23. **The Program directly supports each of the three pillars of Angola's PDN 2023-2027, serving as a fundamental building block to Angola's plans for investing in its human capital (pillar 1).** Second, and relatedly, it will greatly contribute to the economic diversification that the plan envisions (pillar 3). Third, it supports infrastructure upgrades (pillar 2), most notably modernizing TTIs, as well as overhauling the digital infrastructure throughout the sector, and building an NREN.

24. **This financing is part of a larger package of World Bank support to the PDN 2023-2027.** The Program was prepared in tandem with the Human Resources for Health Project (P180631), with two concrete areas of synergy (undergraduate instruction, and quality assurance mechanisms)[26] and the First Green, Resilient, Inclusive Growth and Diversification Development Policy Operation (P179512). Second, the Program's support to broadband connectivity and digital skills complements the pipeline Digital Acceleration Project (P180693), which will provide last-mile connectivity to municipal-level public institutions and strengthens digital skills for public servants. Third, the Program builds on the investments in improving learning in basic education, and in

[26] First, this Program will enhance the undergraduate preparation in the sciences that serve as pre-medical training for students eventually pursuing graduate studies in health (financed under the health project). Second, it supports the introduction of quality assurance mechanisms to ensure that the faculties of medicine are providing acceptable levels of instruction.

closing gender gaps in secondary education that the Girls' Empowerment and Learning for All Project (P168699) seeks to achieve.

25. The Program is consistent with Angola's Nationally Determined Contribution (NDC). Angola submitted its Intended NDC in 2015, laying out the implementation of the country's responsibilities for climate change response. In November 2020, Angola ratified the 2015 Paris Agreement to United Nations Framework Convention on Climate Change (UNFCCC). Angola's NDC commits unconditionally to reducing greenhouse gas (GHG) emissions by 14 percent by 2025 relative to a business-as-usual trajectory, or about 15.4 Mt CO2e. This operation supports that mitigation strategy by ensuring that infrastructure investments are climate smart and use the most energy efficient construction materials and implement passive cooling, solar and other energy saving measures. In addition to supporting Country Climate and Development Report (2022) recommendations, the project contributes to the NDC by investing in climate curricula to improve the awareness, preparedness, and skills of students and new entrants into the labor force (e.g., environmental and social specialists) to work in green jobs and to be more resilient to extreme as well as long term climate events.

D. Multiphase Programmatic Approach (MPA)

Rationale for Using MPA

26. **The MPA offers four distinct advantages over other financing instruments. First, the operation is timed to support two inter-linked long-term government strategies.** The first of these is the PDN 2023-2027, which seeks to diversify Angola's economy through transforming its human capital and unlocking the potential of the green and blue economies. The GoA is also reinventing its higher education and science and technology sectors through its White Paper on Higher Education 2023-2033 (*Livro Branco de Educação Superior*, LiBES).

27. **Second, this MPA seeks to tackle complex challenges that take time to resolve.** The structural change at both the sectoral governance and institutional levels requires an iterative approach of diagnosing, planning, implementing, evaluating, course correcting, and scaling up. At the sectoral level, the establishment of governance mechanisms (such as quality assurance systems or results-based financing instruments) requires securing the foundational elements from which to broaden and deepen reforms. This is also true at the institutional level, which requires sequenced waves of support, starting with building management capacity, and then consolidating gains to ensure lasting change. At the program and course level, tightening links between employers and HEIs to make the latter more responsive to labor market needs requires a course design cycle that sequences assessments, pilots, and scaling, using an iterative approach with built-in feedback loops.

28. **Third, a longer time horizon allows for greater ambition and impact.** This investment will succeed when the Angolan economy has more graduates that are enabling the country's strategic priority sectors to thrive, as measured by labor market outcomes. Committing to these ultimate outcome-level indicators is only possible with a time horizon that allows for the full implementation of the reform. The consistency and predictability of World Bank support that the MPA uniquely provides assures all parties of a commitment to investing in the requisite activities to achieving these targets over the long-term.

29. **Finally, the MPA's programmatic approach aligns development partners around a long-term agenda, thereby crowding-in financing and making individual investments more impactful.** The joint planning process around the LiBES unifies the policy dialogue of key partners such as the European Union, the African Development Bank, UNICEF, and the Foreign Commonwealth Development Office (FCDO). Where previously each actor had an isolated investment that sought to help with one siloed part of the education system, the programmatic and long-term view of the MPA fosters a bigger-picture approach, allowing for synergies, complementarities, and the reduction of duplication. This is exemplified by the GPE's co-financing of this operation to support the transformation of teachers in Angola.

Program Results Chain

30. **The Program Results Chain is motivated by the overarching necessity to improve human capital outcomes that will help accelerate economic development and strengthen climate resilience.** Figure 4 illustrates the results chain of the MPA. The program-level outcomes capture the two elements of the Program Development Objective: (i) the number of graduates employed in the STEM areas; and (ii) the quality of the graduates as measured through the proportion of accredited programs.

31. **The Program outcomes are predicated on the PDO-level outcomes of each phase.** Phase 1[27] outcomes are that Angola's HEIs have been transformed to serve its economy and its students (# of HEIs transformed through RBAs, # of HEIs connected to the NREN), the sector has become more equitable (gender parity), skills for climate resilience are being developed (# of new climate programs), and the TTIs are preparing a new generation of high performing Angolan teachers. Underpinning the PDO-level outcomes are the activities and outputs that remove the bottlenecks and introduce incentives to foster results at the sectoral, institutional, and programmatic levels.

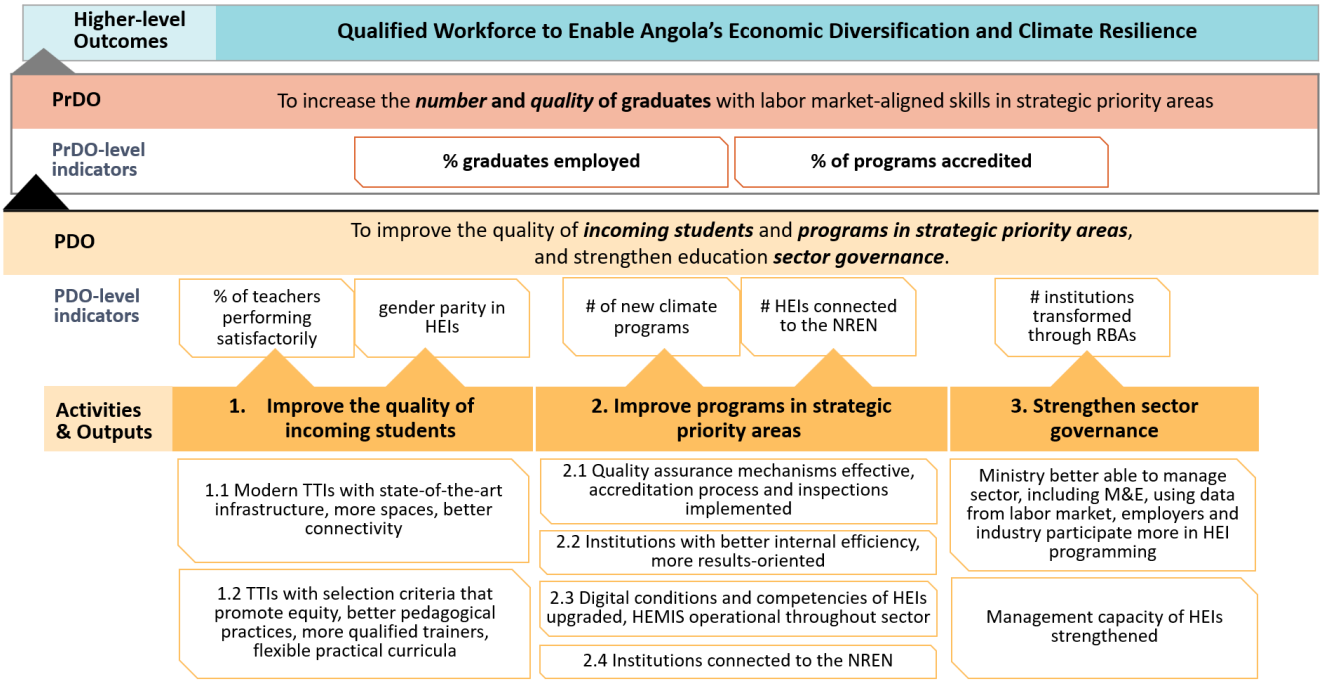
Program Development Objective (PrDO) with Key Program DO Indicators

32. The Program Development Objective is to increase the number and quality of graduates with labor market-aligned skills in strategic priority areas. The proposed Key Program Indicators are:

a. *Increase number of graduates:* Percentage of graduates in strategic areas employed in their areas of training (Percentage). [28]
b. *Improve the quality of graduates:* Proportion of evaluated academic programs accredited by INAAREES (Percentage).[29]

[27] The Phase 2 and Phase 3 would be overlapping, prepared in 2026/2027 as lessons from Phase 1 emerge.
[28] Strategic priority sectors are those identified in the PDN 2023-2027 and the CCDR: agriculture, energy, transport, and water (all of which require people with skills in the STEM areas), and the priority sectors of education and health.
[29] INAAREES accreditation process includes international representation.

Figure 4. Results Chain



Program Framework

33. **The Program's framework embraces a vertical approach with a first phase that establishes the foundations upon which subsequent phases can build and replicate.** Under Phase 1 (TEST), reforms will be introduced in the areas of sectoral governance, institutional management, and programmatic design. Phase 2 (SCALE) will scale actions in two ways: i) replicate to a second wave of institutions/provinces; and ii) scale activities in programmatic areas within each HEI. As this is the World Bank's first operation with MESCTI, Phase 1 follows a traditional approach, using Investment Project Financing (IPF). The IPF would introduce results-based agreements between MESCTI and the HEIs. This results orientation under Phase 1, along with the established data systems, will enable Phase 2 to move to the Program-for-Results (PforR) instrument. Phase 3 (REPLICATE) would provide subsequent financing for extending the approach further afield.

Learning Agenda

34. **The Learning Agenda enables an iterative and adaptive approach to the MPA (Table 1).** Analytic work will be conducted to inform future actions both in terms of thematic areas and operational modalities. With regard to focus areas, learning activities will tighten the relationship between private sector demand and skills supply in areas strategic to scaling-up climate skills and economic diversification. In terms of operational modalities (Figure 5), Phase I will build a mechanism to capture early lessons from the results-based agreements with the view of further scaling up this mechanism for institutional support in future phases.

Figure 5. Program Framework

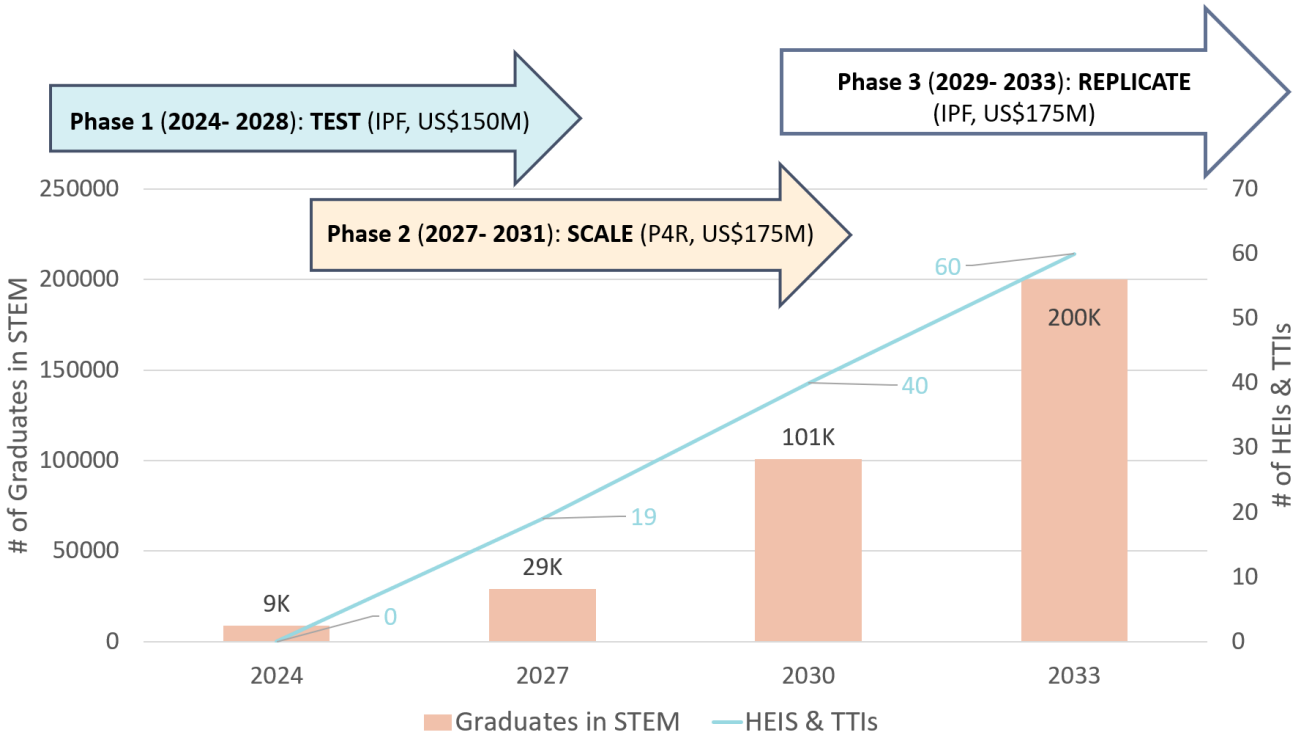


Table 1. Research Questions and Methods for the Learning Agenda

Key Policy Questions	Indicative Methodology, and Estimated Cost	How Filling the Knowledge Gap will Support the PrDO
How can we provide HEIs with the feedback from industry to ensure courses are relevant for industry?	- Focus group discussions with employers in strategic sectors - Labor Market Observatory (US$100,000)	Making curricula industry-relevant requires timely information from employers. These curricular improvements are the necessary precursor to improving job-relevant skills and increasing the pipeline of qualified workers under Phase 2.
Are QA mechanisms resulting in graduates with skills for the labor market?	- Tracer studies / Impact evaluation (US$500,000) - Process evaluation (US$20,000)	Understanding whether and how the strengthening of INAAREES is leading to better industry-aligned programs will inform scaling under future phases.
Is the curricular reform and instructional support in TTIs resulting in better teaching?	- Classroom observations (US$30,000)	Instructional practices of faculty in teacher training institutions needs to improve for teaching practices of graduates entering primary grade classrooms to improve. Understanding the impacts in the classroom of this reform will inform adaptation under Phase 2.
Are stronger reduced barriers for women in STEM increasing uptake?	- Data collection and analysis through HEMIS (US$300,000)	If effective, the structures put in place to reduce barriers for women will reduce the gender gap at the faculty and student level.
Are the incentives to improve internal inefficiency under the RBAs improving graduation rates?	- Data collection and analysis through HEMIS (US$300,000) - Process evaluation	Building an understanding of successful interventions that improve internal inefficiency within HEIs is key to improve equitable access and increase the number of qualified of labor-market entrants.

Phase #	Project ID	Sequential or Simultaneous	Phase's Proposed DO*	IPF or PforR	Estimated IBRD Amount (US$ million)	Estimated Other Amount (US$ million)	Estimated Approval Date	Estimated Environmental & Social Risk Rating
Phase 1	P179154	Simultaneous	To enhance the quality of higher education entrants, improve programs in strategic priority areas, and strengthen education sector governance and management.	IPF	150.00	50.00 (GPE)	December 20, 2023	Moderate
Phase 2	TBD	Simultaneous	TBD	PforR	350.00	TBD	December 20, 2027	Moderate
Total	P179154	Sequential	To increase the number and quality of graduates with labor market-aligned skills in strategic priority areas.		500.00	50.00		
				Revised Financing Envelope				
				Board Approved Financing Envelope				

II. PROJECT DESCRIPTION[30]

A. Project Development Objective

(i) PDO Statement

35. To improve the quality of incoming students and programs in strategic priority areas, and strengthen education system governance.

(ii) PDO Level Indicators

36. **The Project aims to achieve the following results:**

i. Proportion of females as percentage of new students enrolled in public higher education institutions
ii. Proportion of teacher training graduates performing satisfactorily in classroom observations
iii. Percentage of academic programs created/revised that include climate-relevant curricula
iv. Proportion of public HEIs connected to the NREN
v. Number of HEIs transformed through RBAs.

B. Project Components

Component 1. Improve the quality of incoming students in higher education (US$100 million, including US$50 million IBRD financing and US$50 million GPE grant)

Subcomponent 1.1: Expand access to high quality pre-service teacher training (US$90 million, US$40 million GPE)

37. The subcomponent will expand the supply of effective, quality assured pre-service teacher training through investments in critical infrastructural and facility upgrades targeting TTIs that are outside of Luanda, to promote geographic equity and create a pipeline of quality teachers in areas of Angola with the greatest need as well as priority TTIs that have been under-financed and need refurbishing; through: (a) technical assistance; and (b) infrastructure investments to refurbish, equip and expand TTIs.

Subcomponent 1.2: Enhance quality of instruction and teacher preparation programs (US$10 million GPE)

38. The subcomponent will enhance the quality of instruction and preparation in teacher training institutions through: (a) technical assistance for regulatory and policy reforms, institutional collaboration between MESCTI and the Ministry of Education (MED), improvement of curricula, levelling programs, effectiveness of faculty and digital and pedagogical skills to face the current learning crisis and enhancement of the teacher's entrance examination process, gender parity and recruitment activities to attract the most promising candidates, particularly female candidates; and (b) scholarships and stipends to said candidates.

[30] For a more detailed project description, see Annex 1.

Component 2. Improve the quality of programs in strategic priority areas (US$85 million, IBRD financing)

Subcomponent 2.1: Strengthen quality assurance mechanisms (US$10 million)

39. The subcomponent will help strengthen the technical and regulatory capacity of INAAREES at the sectoral and institutional levels through capacity-building activities including technical assistance for establishing internal processes and supervision for: (a) assembling accreditation bodies; (b) communicating on the quality assurance mechanisms in an accessible way; and (c) modernizing standards and timelines for assessments and accreditation (such as the self-assessments for HEIs, independent external evaluations of programs and faculty qualifications).[31]

Subcomponent 2.2: Improve quality of instruction, equitable access, and industry relevance of programs in strategic priority areas (US$50 million)

40. The subcomponent will enhance academic program relevance to meet the skills needs of the industry, equip labor market entrants with the skills to make traditional sectors more prepared to thrive in an increasingly digitized global economy, and mitigate the impact of climate change while fostering stronger linkages between higher education institutions and the private sector to ensure greater alignment between demand and supply and better prepare Angola's youth to become tomorrow's innovators, entrepreneurs, and leaders. The subcomponent will support: (a) participation of industry representatives in curriculum reform committees of HEIs; (b) internships for students; (c) participation of professionals from firms as visiting professors; (d) regular surveys of employers and alumni to seek feedback on the quality and relevance of programs; (e) institutional development plans for HEIs; and (f) joint applied research initiatives with industry. This will be implemented with a focus on addressing gender disparities (actions to increase enrolment of female students; positive discrimination measures in favor of academically qualified female students; and adequate retention measures with Scholarships and Stipends, psychological and academic support) to increase the chances of success of female students, through technical assistance, equipment, RBA Transfers, Scholarships and Stipends, Operating Costs and Training.

Subcomponent 2.3: Digitalize service delivery in higher education and build digital competency (US$10 million)

41. The subcomponent will digitalize service delivery in HE to improve efficiency and quality and create the enabling environment within HEIs for digital acceleration by upgrading the physical and digital installations necessary to allow HEIs to leverage online pedagogy and learning materials, as well as ensuring a regularly updated higher education HEMIS with robust data for planning and evidence-based decision-making, through Training, technical assistance, equipment, works and Operating Costs.

[31] The proposed Program's digital interventions will all adhere to good international practice in terms of cybersecurity and data protection standards and measures. All support to digital platforms and systems will meet and practice cybersecurity standards. All data collected, processed, and shared will be done in accordance with good international practice and in compliance with Angola's 2011 Data Protection law. These interventions (sub-component 1.4) will complement the proposed interventions under the pipeline digital project (P180693), which aims to strengthen the legal and regulatory environment for Angola's digital economy by strengthening the country's nascent cybersecurity function and through building the capacity of the Data Protection Agency (*Agência de Protecção de Dados*).

Subcomponent 2.4: Establish a National Research and Education Network (NREN) and upgrade university networks

(US$15 million)

42. The subcomponent will establish the NREN to connect Angola's HEIs to affordable, reliable, highspeed broadband internet and thus boost the country's capacity to conduct research online, expand the use of technology in higher education and facilitate pedagogical and research resources among interconnected institutions, allowing for the establishment of collaborative platforms, and enabling sharing of applications and services specific to education and research communities, through technical assistance and consultancies, infrastructure upgrades, equipment, training, and operating costs (including communication costs and membership fees), as well as network equipment and campus Wi-Fi networks (including reliable power sources) for HEIs and other relevant institutions.

Component 3. Strengthen capacity in management, monitoring, and evaluation (US$15 million IBRD financing)

43. The component will support investments in building the management capacity of HEIs and of MESCTI to strengthen the governance of the higher education system, planning, and monitoring, and evaluation activities in order to better coordinate the sector and hold actors accountable, including data collection, analysis and publication, evidence-informed policymaking and sector progress monitoring toward sectoral targets, better budget execution, practical solutions on resources' visibility and predictability, strengthened public FM and procurement, and improved budget transparency, through technical assistance, Training and Operating Costs.

44. The component will support Project implementation through, inter alia: (a) implementing environmental and social framework, FM, procurement, monitoring and evaluation, and capacity building requirements for the Project; (b) carrying out audits, financing Training and Operating Costs, and the acquisition of goods to build up the necessary internal capacity of the staff in the Project Team; (c) carrying out data collection and improving systems to track Project results including gender analysis and surveys; and (d) carrying out citizen engagement, Project communications, and stakeholder coordination activities.

C. Project Beneficiaries

45. **The Project beneficiaries are students, faculty of higher education institutions, management teams of HEIs, and sector management more generally.** With regard to students, more than 150,000[32] students will directly benefit from investments under Phase 1. This includes at least 75,000 women. An additional 3.2 million students will benefit through improved teaching at primary and secondary education levels. Faculty at HEIs (including TTIs) will benefit through upgrades in working conditions, such as improved connectivity to the Internet, more reliable electricity, and more favorable teaching and learning conditions. This will especially be true for those faculty teaching at universities that will benefit from RBAs. Management teams at HEIs will benefit from the technical assistance provided under Component 3, specifically with regard to the preparation of PDIs, and increased autonomy in the case of HEIs benefiting from RBAs (under component 2.2). For the MESCTI, beneficiaries include the civil servants and policymakers that will benefit from the technical assistance and capacity building activities embedded throughout the Program.

[32] 69,000 STEM graduates, 90,000 students benefiting from NREN, and 26,000 TTI graduates, plus other direct beneficiaries under 2.1 and 2.3.

D. Rationale for Bank Involvement and Role of Partners

46. **Education has a fundamental role in boosting human capital, which in turn drives growth and reduces poverty.** Education is the quintessential public good. Greater educational attainment correlates with economic growth, greater health outcomes for the population, and greater civic mindedness. For Angola, more and better teachers trained through the Program will bring stronger foundational learning throughout the system. More qualified graduates from the country's faculties of medicine will translate into higher quality health service delivery. Greater investments in research and development are prerequisites for driving innovation and pioneering the response to complex challenges like climate change. Finally, these investments will also help deliver on the climate adaptation agenda. As per the CCDR, helping Angola adapt to the changing climate requires new skills in existing sectors (e.g., agriculture, water), as well as new sectors (e.g., renewable energies).

47. **The World Bank's value added to Angola's education sector takes the form of knowledge services, convening services, and financial support.** The World Bank is the global leader in financing tertiary education, with more than five decades of experience helping clients expand and improve their tertiary education systems. An example is the recent 2022 flagship report - Steering Tertiary Education, Toward Resilient Systems that Deliver for All (STEER) - that identifies policies that can promote a resilient recovery.[33] The World Bank's convening power will crowd in partners and financing, helping Angola to learn from peers and leaders, and leveraging additional financial support to the sector. Finally, the World Bank is Angola's largest financing partner in the education sector, with a financial support of more than US$300 million since 2013, mainly in the areas of improving teaching, learning assessments, infrastructure, and girls' education.

E. Lessons Learned and Progress on Learning Agenda

48. **The analytical work program[34] completed in 2023 has generated several lessons that have been incorporated into this operation.** First, the GoA strategic objectives for expanding education supply to satisfy the ever-increasing demand cannot be achieved without the participation of the private sector. However, rapid expansion of the private sector must be accompanied by quality assurance mechanisms that ensure that the growth does not come at the cost of quality. Second, although scholarships are a common policy tool for increasing access to tertiary education institutions, in Angola they perpetuate the inequalities in the system. As such, policy recommendations have been made for targeting scholarships to reduce inequalities. Finally, data is not being used to inform market relevance of programs offered. This operation has several actions that seeks to tighten the linkages between industry and the HEIs.

49. **Finance systems must be reoriented toward results.** The analytical work has shown that public higher education institutions in Angola are underfunded and lack a modern governance framework. The proposed results-based approach will bring additional resources linked to the careful preparation of institutional development plans and improvement measures to raise the quality and relevance of programs. The RBAs have been informed by Bank experiences showing positive results in the Middle East, East Asia, South Asia, and Latin America and the Caribbean regions.

50. **Severe gender gaps persist in STEM programs, and among secondary and tertiary level teachers.** A series of

[33] World Bank (2022). "Steering Tertiary Education: Toward Resilient Systems that Deliver for All". Washington: DC.

[34] World Bank (2023). Angola Higher Education Analytics and Policy Dialogue. Washington: DC.

complementary measures have been proposed to address this through financial and non-monetary interventions, reflecting international experience and positive results obtained in World Bank-supported operations in South Asia and in the Africa Region, notably the African Centers of Excellence projects, that have resulted in significant improvements in gender balance in postgraduate education, including STEM programs.

51. **Teacher preparation programs are most effective when they are grounded in the classroom realities that their students will eventually be experiencing.** Successful programs prioritize the development of strong content knowledge and pedagogical expertise, so that teachers effectively convey subject matter to diverse learners. Second, they incorporate extensive and high-quality classroom experiences to provide aspiring teachers with valuable real-world classroom exposure. A national Memorandum of Understanding (MoU) between MED and MESCTI will ensure future teachers have considerable practical training in classrooms. The adoption of the TEACH classroom observation tool will also help systematize the focus on the classroom experience.

52. **The Project benefits from the World Bank's extensive experience supporting NRENs throughout Africa, including Mozambique, Kenya, and South Africa**. NRENs have proven instrumental in promoting collaboration and knowledge sharing among educational and research institutions across the continent. The establishment of robust NRENs has also encouraged capacity building and skills development in information and communication technology (ICT), fostering digital literacy and enabling users to harness digital tools. Most importantly, the successful implementation of NRENs in Africa underscores the importance of sustainable funding models, strong governance structures, and regional collaborations to ensure the long-term viability and effectiveness of these networks in supporting education and research initiatives.

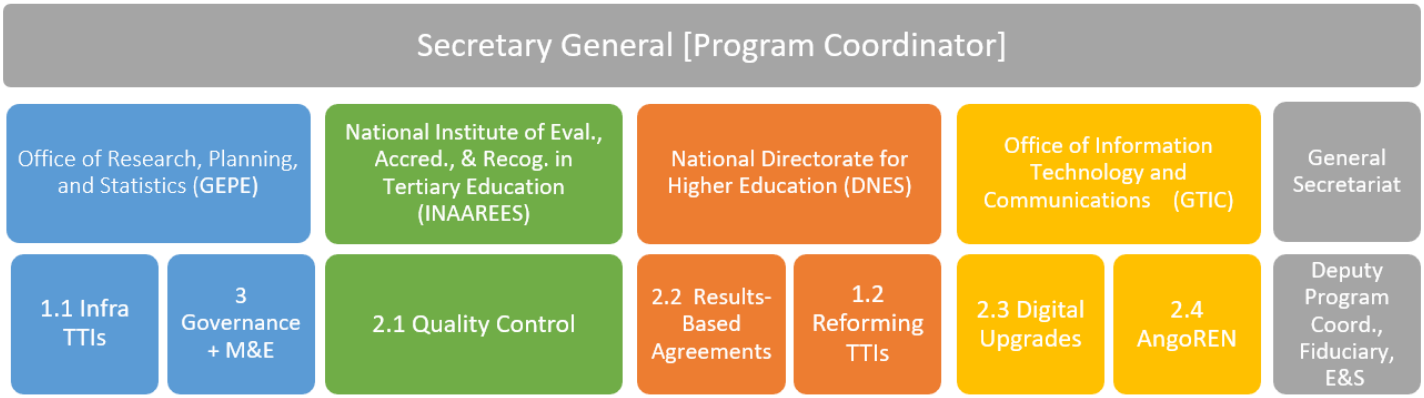
III. IMPLEMENTATION ARRANGEMENTS

A. Institutional and Implementation Arrangements

53. **The proposed Program will be implemented by the MESCTI which will be responsible for the Program's overall governance, technical operationalization, and fiduciary management.** The Program will be housed in the General Secretariat of MESCTI, with the Secretary-General serving as Program Coordinator. Each Component falls under the responsibility of a MESCTI Directorate. Under the ongoing US$6 million Project Preparation Advance (PPA), specialists have been recruited and trained to ensure compliance with World Bank procedures. This includes a Deputy Program Manager, a Financial Management Specialist, a Procurement Specialist, and an Environmental Specialist and a Social Development Specialist (see Figure 5).

54. **The Program Operational Manual (POM) guides implementation for all interventions under each Component.** The POM is structured by Program components, detailing the policies and procedures, roles and responsibilities, and expected results for all activities under the Program. Dedicated chapters cover the topics of FM, procurement, environmental and social risk management (including the Grievance Redress Mechanism), and overall monitoring and evaluation. The POM is reviewed and updated as needed, as the MESCTI learns from operational experience and needs to course correct. The POM must be satisfactory to the World Bank, and as such must be submitted to the Bank for its no objection prior to effectiveness.

Figure 5. Implementation Arrangements



B. Results Monitoring and Evaluation Arrangements

55. **The MPA features robust M&E systems that monitor and report on results at different levels of the system.** The sector's Higher Education Management Information System (HEMIS) will be modernized (Component 3), since most HEIs do not report on basic sector data in a timely way. The NREN will go a long way in guaranteeing that institutions have reliable access to the internet, a common reason for the delays in timely reporting of data. Along with the updated HEMIS, a technical assistance program is under implementation to strengthen institutional management, starting with the ministry itself. A central component to the data management TA is the introduction of performance metrics at the institutional and individual levels, which serve to underpin the results-based agreements between HEIs and the MESCTI.

56. **Embedded in the learning agenda is a multi-pronged approach to evaluation.** First, process evaluations are integrated into the activities for Components 1.1, 1.2, and 2.2 to see how operational processes for supporting HEIs and TTIs can be strengthened. Second, longer-term evaluations of outcomes and impacts are built-in to the higher education system itself, including tracer studies that will inform where graduates ultimately end up, and how they fare in the labor market.

C. Sustainability

57. **The investments under this Program have the following three dimensions of sustainability.** First, the operation is fiscally sustainable because investments in higher education generate high returns on investment,[35] as the increases in human capital and productivity result in greater rents to the Government through economic growth and higher tax levies. Second, the actions are technically sustainable because the investment upgrades in the institutions will last generations, and are paired with maintenance budgets through the RBAs, to ensure that the investments are well cared for. Third, the activities are operationally sustainable as they build up the management capacity such that the strengthened institutions (whether HEIs or at the sectoral level through MESCTI and INAAREES) would be able to perpetuate good management practices. Phase 2 builds on these foundations, such that the Program-for-Results Financing (PforR) could leverage the achievements of these institutions. Phase 3 scales up investments through a subsequent IPF.

[35] ROI is highest at the tertiary education level, and Africa has the highest ROI on tertiary education of all regions worldwide (Arnhold and Bassett, 2022).

IV. PROJECT APPRAISAL SUMMARY

A. Technical, Economic and Financial Analysis (if applicable)

58. **A cost-benefit analysis suggests that even under conservative assumptions, TEST will yield high returns.** Gains in student learning are expected to translate into future higher earnings in the labor market. According to assessment conducted by African Development Bank[36] based on data from the Household Survey 2018 (*Inquérito Sobre Despesas, Receitas e Emprego em Angola*, IDREA), the rate of return to schooling is correlated to the level of education. The assessment observed that workers with lower secondary education have a rate of return of 48 percent, upper secondary level of education has a rate of return of 96 percent. The highest rate of return was observed for individuals with completed level of higher education at 276 percent. The returns are slightly higher for women with upper level of secondary education (91.6 percent) than for men (85.83 percent). The cost-benefit analysis quantifies these private monetary returns of improved education for project beneficiaries and assesses them against the US$200 million financing envelope under Phase 1. To derive the estimated future wage premium, the team leveraged available data from the latest Labor Force Survey and existing evidence on the returns to education. Based on assumptions about the number of beneficiaries and their expected entry into the labor market, the estimated net present value (NPV) is US$1,740.3 million with an Internal Rate of Return (IRR) of 16.3 percent. The sensitivity analysis yields an NPV range of US$197 million-US$8,900 million, with an IRR between 9.2 and 23.2 percent.

59. **The cost-benefit analysis does not capture intangible benefits and social externalities.** The long-run benefits of strengthening education at the systems level in alignment with international best practice cannot be fully quantified. In the long run, better student learning may contribute to improvements in health outcomes and reductions in crime. As such, the results of the cost-benefit analysis represent a conservative estimate and do not fully capture the full range of benefits expected under the Program.

60. **Paris Alignment.** The operation is aligned with the goals of the Paris Agreement (PA) on both mitigation and adaptation. The MPA supports Angola in achieving its climate resilience goals as outlined in the PA.

- **Assessment and reduction of adaptation risks:** A climate and disaster risk screening and the PA assessment has been carried out. The main climate and disaster risks in Angola include heavy rainfalls and flooding as well as droughts caused by increases in temperatures. These climate events may pose some risks to Program activities, potentially affecting infrastructure in flood-prone areas and school environments susceptible to heat waves. The Program will manage the climate and disaster risks through targeted adaptation measures. In fact, this operation follows directly from the Angola CCDR, specifically implementing recommendations under Pathway 5 - Boost human capital and foster a culture of climate-preparedness. This will reduce any potential climate risks to acceptable levels. Specifically, the Program activities aim to reduce climate vulnerability and build resilience of the population by preparing students and teachers to cope with climate change-induced shocks through climate relevant curricula and awareness trainings. All infrastructure activities will be compliant with the building's guidance outlined in the Urban Toolkit, specifically that the local building codes have energy performance standards equivalent to Level 1 EDGE Certification, or otherwise meet the criteria for step M2.

[36] Cravo, T. A., Elsa, N., & Jacinto, P. (2022). Determinants of Labor Market Outcomes in Angola.

• **Assessment and reduction of mitigation risks:** Furthermore, an assessment of the operation's activities found no potential negative impacts on the countries' transition to a low greenhouse gas emission development pathway. The Program works directly to help Angola diversify away from an oil-dependent economy, hereby centrally supporting the country's efforts toward meeting its NDC targets to reduce GHG emissions. Also, all activities financed through the operation feature on the list of universally aligned activities for mitigation. The only area of the Program design that is not universally aligned involves infrastructure activities (TTI rehabilitation and construction). This infrastructure is expected to be low risk, i.e., the facilities supported by the Program will be fully electrified and grid connected. Design and construction will leverage the use of energy-efficient technologies to reduce GHG emissions where possible, using energy-saving measures such as solar systems and energy-saving bulbs. Facilities will be equipped with ventilation systems and well-insulated walls and windows to minimize energy losses. The Program will follow best practices in purchasing the most energy efficient equipment available where feasible. Overall, the new construction is not expected to lead to a lock-in to a carbon-intensive system or prevent the transition to lower-carbon alternatives. In addition, the Program will prioritize a more strategic investment in skills that will enable entrants into the labor force to have green jobs and those which are in line with Angola's climate and development goals. This is a critical part of Component 2 of the Program.

B. Fiduciary

(i) Financial Management

61. **Overall, FM was assessed as adequate with residual risk rated Substantial.** The FM assessment was carried out in accordance with the Bank Guidance - Financial Management Manual for World Bank Investments Project Financing Operations, issued on September 7, 2021. The objective was to determine whether MESCTI has acceptable FM arrangements to ensure: (i) the Project funds are used only for the intended purposes efficiently and economically, (ii) the preparation of accurate, reliable, and timely periodic financial reports, and (iii) safeguarding of the assets of the Project. MESCTI will implement the project using existing MESCTI FM policies systems and personnel. MESCTI has experience in managing other donor-funded projects. To mitigate the FM risks, the following FM actions shall be implemented to ensure the existence of adequate FM arrangements throughout the project implementation period: (i) recruit a qualified and experienced Financial Management Specialist and appoint two staff of the Ministry to be fully dedicated to project implementation; (ii) recruit an internal auditor and appoint staff of the Ministry to be fully dedicated to project implementation, (iii) World Bank shall conduct an FM and disbursement training on bank requirements and procedures for the FM staff and other Project officials, (iv) prepare the POM; (v) acquire and install computerized accounting software, and carry out user training; and (vi) no later than six months after Project effectiveness recruit the external auditors. The residual risk is expected to be Substantial once the risk mitigation measures are implemented. See Annex 1 for details.

62. **FM and disbursement arrangements have been agreed upon.** The Project funds, expenditures, and resources will be accounted for using automated accounting software. The Project will make use of reimbursement, advances, and direct payment disbursement methods for IBRD. The Project Team will prepare quarterly single unaudited interim financial reports (IFRs) covering all project funds and expenditures and provide such reports to the World Bank within 45 days of the end of each calendar quarter. The financial statements will be audited annually, and the audit report (covering all Project funds and expenditures) will be submitted to the World Bank no later than six months after the end of each financial year.

(ii) Procurement

63. **Procurement procedures.** Procurement under the project will be carried out in accordance with the World Bank's 'Procurement Regulations for IPF Borrowers' (Procurement Regulations) dated November 2020, 'Project Procurement Strategy for Development'. The Project will also be subject to the WB's Anticorruption Guidelines, dated October 15, 2006, revised in January 2011, and as of July 1, 2016, and other provisions stipulated in the Financing Agreement. The Project uses the Systematic tracking of Exchanges in Procurement (STEP) to plan, record, and track procurement transactions. A Procurement Strategy for Development (PPSD) document has been prepared by the Borrower and approved by the Bank.

64. **Procurement arrangements.** The procurement arrangements for the PPA will transition to the implementation of TEST, with the procurement specialist continuing to carry out their functions.

65. **PPSD summary.** The borrower prepared the Project Procurement Strategy for Development (PPSD). The World Bank provided the necessary support and guidance to the borrower in preparing the PPSD. Considering the complexity of the project, a simplified PPSD was prepared.

66. **Procurement capacity.** Procurement activities will be carried out by the General Secretariat at the MESCTI. The team comprises a dedicated procurement specialist hired for the Program, along with a civil servant. Capacity strengthening actions would be required, including: (a) recruitment of qualified procurement assistant; (b) knowledge of procurement regulations; and (c) procurement of works. The POM will have procurement and contract management sections, and clearly establish internal approval processes and information sharing to keep procurement decisions as much as possible at the operational level.

67. **The procurement residual risk associated with the project, considering mitigation measures mentioned in the previous paragraph, is Substantial.**

C. Legal Operational Policies

Legal Operational Policies	Triggered?
Projects on International Waterways OP 7.50	No
Projects in Disputed Area OP 7.60	No

D. Environmental and Social

68. **Environment and social risks are Moderate.** The scale of investments to be supported under the Program range from small (installation of digital infrastructures) to medium scale (expansion and rehabilitation works). The proposed activities are not expected to generate significant adverse risks and impacts, diverse or unprecedented on the environment nor humans. Under Component 1.3, the project supports digital infrastructure facilities, including securing reliable power sources (for example, through solar panels) and rehabilitation of computer labs and related installations. Such activities are also likely to have minimal impacts since activities will be implemented within existing facilities or

existing right-of-way.

69. **The proposed infrastructure investments associated with these activities may generate direct and indirect adverse impacts related to:** (i) management of waste during the construction phase, (ii) occupational health and safety issues to contracted workers, (iii) nuisances related to air, noise and dust emissions; including an increased generation of electronic waste. However, such risks and impacts are expected to be medium scale, reversible, of limited duration (construction phase) and site-specific. Potential social risks are related to the distribution of the project benefits and social inclusion issues, especially relating to women (student and teachers) and other vulnerable groups (such as persons with disabilities) and equal access to opportunities in teaching, learning, research, and funding in higher education. As some civil works are anticipated under the project, and labor influx related to construction activity, some interactions between the project workforce and community members presenting potential sexual exploitation and abuse/sexual harassment (SEA/SH) risks are anticipated. Furthermore, interactions between instructors and (female) students may result in some risk relating to SEA/SH. The SEA/SH risk rating shall be assessed again once specific project locations are known.

70. **Overall, Program activities are not expected to have significant adverse impacts, diverse or unprecedented on the environment and/or affected people at this stage.** In order to manage environmental and social risks associated with the project, the Borrower is preparing an Environmental and Social Management Framework (ESMF) including a SEA/SH Prevention and Response Action Plan as annex. The ESMF will provide an overview of the Program and its components, the applicable legislative and regulatory frameworks, and policies, as well as an overview of the baseline conditions and a summary of key anticipated environmental and social impacts. It further provides mitigation and monitoring measures and an environmental and social (E&S) screening tool for assessing and classifying impacts at sub-project level and provides guidance for the preparation of a sub-project level environmental and social impact assessments and preparation of sub-project specific Environmental and Social Management Plans (ESMPs), sub-level project specific Occupational Health and Safety Plans (OHSP), Traffic Management Plans (TMPs) as well as Chance find procedures during the implementation phase. In addition, an Environmental and Social Commitment Plan (ESCP), and a Stakeholder Engagement Plan (SEP) have been prepared, consulted upon in Luanda and other Angolan cities, and disclosed in-country through the MESCTI website on October 16, 2023.

71. **The Program has mainstreamed into its design a longstanding capacity building program to address Environmental and Social Risk Management (ESRM) capacity constraints.** Under the PPA, a needs assessment is underway to identify gaps and areas of expansion across HEIs in the ESF areas. The outcome of the assessment will inform the development of a cross-disciplinary curriculum in ESRM tailored to country that would allow HEI to produce experts fit for purpose for supporting development programs/projects. In addition, at least one dedicated Environmental Specialist and a one Social Specialist will be hired through a competitive process under the PPA. The E&S specialists will be responsible for the oversight of environmental and social aspects of the project, and will be essential in supporting the design and adoption of capacity building program in the E&S risk management (ESRM) including in the drafting of the environmental and social risk management instruments.

72. **Gender-Based Violence.** Addressing gender-based violence (GBV) including Sexual Assault and Sexual Harassment (SE/SH) within higher education is a core activity of this Program. Activities are supported by the Project to understand the contextual drivers leading to GBV/SE/SH in HEIs. Institutional capacity is being developed to address GBV within the sector. Component 3 includes activities to strengthen the capacity of MESCTI for risk mitigation, prevention, and response to GBV, including developing and implementing protocols that strictly penalize GBV/SE/SH in the short-term. Proposals

from HEIs for funding from MESCTI within the Project under Component 2.2 will be required to identify activities to address the gender gap including addressing GBV/SE/SH and making HEIs safer for women. Component 1 supports activities that build awareness of teacher trainees on GBV/SE/SH within schools and communities and align these training with prevention and response mechanisms. This includes 'Know Your Rights' training to promote awareness of legal rights and empower survivors of GBV/SE/SH including connecting them to support services. In this way, the Program supports the GoA in its efforts to eliminate GBV/SE/SH from schools. The Program will develop a Code of Conduct and related procedures to address any GBV/SE/SH issues. The grievance redress mechanism (GRM) will also address GBV/SE/SH related concerns, particularly for female beneficiaries. For further actions, see Annex 1.

73. **Climate Change**. The Program addresses climate vulnerabilities and enhances resilience across all components, aligned to CCDR recommendations. The Program has been screened for climate risks. All infrastructure activities will use climate risk assessments and resilient design measures to inform actions (e.g., drainage improvements for flood control, solar panels for electricity supply). Bidding documents will require the use of locally sourced climate resilient material and designs. With regard to climate skills, the RBAs will finance the development of courses in areas of climate adaptation across priority sectors such as water, transportation, agriculture, and renewable energy. Finally, curricula at HEIs and TTIs will be made to be responsive to climate change, including preparing climate-conscious teachers.

74. **Citizen Engagement (CE)**. Citizens have been engaged through a series of learning exchanges and a study tour conducted for higher education leaders across the public and private sectors of Angola. Consultations were held to understand challenges and opportunities within the sector that informed the preparation of the Program. CE will continue to be an integral part of Program activities by leveraging consultations, collaboration, and GRMs. Moreover, periodic beneficiary consultations will be implemented to promote overall accountability and responsiveness to beneficiaries and a GRM will be setup to raise and address concerns from beneficiaries and other stakeholders. An indicator has been included in the results framework that tracks CE.

V. GRIEVANCE REDRESS SERVICES

75. ***Grievance Redress.*** Communities and individuals who believe that they are adversely affected by a project supported by the World Bank may submit complaints to existing project-level grievance mechanisms or the Bank's Grievance Redress Service (GRS). The GRS ensures that complaints received are promptly reviewed in order to address project-related concerns. Project affected communities and individuals may submit their complaint to the Bank's independent Accountability Mechanism (AM). The AM houses the Inspection Panel, which determines whether harm occurred, or could occur, as a result of Bank non-compliance with its policies and procedures, and the Dispute Resolution Service, which provides communities and borrowers with the opportunity to address complaints through dispute resolution. Complaints may be submitted to the AM at any time after concerns have been brought directly to the attention of Bank Management and after Management has been given an opportunity to respond. For information on how to submit complaints to the Bank's Grievance Redress Service (GRS), visit http://www.worldbank.org/GRS. For information on how to submit complaints to the Bank's Accountability Mechanism, visit https://accountability.worldbank.org.

VI. KEY RISKS

76. **The Systematic Operations Risk-rating Tool analysis rated the overall risk for the proposed Project as moderate.** This rating is based on the current country context and improved governance following the change of leadership in the ruling party in 2017, and reelection in September of 2022 in a tightly contested general election. The main risks are associated with political and governance changes, based on discontinuities in the reform agenda, and the institutional capacity, as this is the first World Bank financial support to higher education in Angola. Stakeholder risks around the NREN (given high state involvement in the telecommunications sector) are partially mitigated by the fact that UbuntuNet will be doing the tendering. There may be some challenges to build capacity to comply with World Bank procedures.

77. **Political and governance risks are substantial.** Many reforms were implemented during the first mandate of the current government; however, social and economic hardships persist. While the new government defines its priorities in the next PDN 2023 – 2027, some discontinuity in the reform agenda may emerge. The President has shown resolve to implement reforms and fight corruption; however, growing pressure from civil society and within the ruling party may reduce his capability to secure the political support to continue executing reforms. To feed into the policy dialogue over the second presidential mandate of the current administration and to encourage continuity of policy directions, the World Bank is preparing a new CPF which will give regular opportunities to engage in-depth with the Government regarding the new priorities and objectives and mitigate the risks of political misalignment.

78. **Institutional capacity for implementation and sustainability risk is rated substantial.** The Government has introduced stricter regulations on the use of public financing and execution of contracts in the public sector. The establishment of the General Inspectorate of State Administration (*Inspecção Geral da Administração do Estado,* IGAE) has the mandate to carry out internal administrative control of the public administration through inspection, auditing, supervision, control, inquiry and investigations of all bodies, agencies, and services of the direct and indirect administration of state assets. This risk is mitigated through additional technical and operational support being hired into the MESCTI to enhance implementation capacity in accordance with World Bank norms and procedures. Finally, there is a risk that the financial support newly being provided to HEIs not be sustained beyond the life of the Project. This is mitigated by the crowing-in or donors like the GPE, and through the longer time horizon of the MPA, which will give the country more time to increase its allocations to the HEIs from sources of public financing.

79. **Fiduciary risks are considered substantial.** This is the first World Bank-funded Project to be managed by MESCTI, and as such there is some risk that compliance with fiduciary processes will be difficult. This risk is mitigated through the fac that the Ministry has experience implementing African Development Bank (AfDB) projects, which follow similar procedures to those of the World Bank. The risk is also mitigated through dedicated fiduciary staff have been recruited with regards to FM, procurement, and ESF-related activities. FM processes are fairly standard, following international best practices. Procurement under the Project will be carried out in accordance with the WB's Procurement Regulations for IPF Borrowers for Goods, Works, Non-Consulting and Consulting Services, dated November 2020, and as amended over the time. The Project will be subject to the WB's Anticorruption Guidelines, will use STEP, and has prepared a PPSD (approved by the World Bank), all instruments that strengthen the client's ability to comply with fiduciary aspects of the Project, and mitigate the associated risks.

VII. RESULTS FRAMEWORK AND MONITORING

PDO Indicators by PDO Outcomes

Baseline	Period 1	Period 2	Period 3	Period 4	Period 5	Closing Period
Increase number of graduates in strategic priority areas						
PrDO-Level Indicator 1: Percentage of graduates in strategic areas employed in their areas of training (Percentage)						
Jan/2022	Jan/2024	Jan/2025	Jan/2026	Jan/2027	Jan/2028	Dec/2033
70%	71%	72%	73%	74%	75%	80%
➢Percentage of male STEM graduates employed in their areas of training (Percentage)						
Jan/2022	Jan/2024	Jan/2025	Jan/2026	Jan/2027	Jan/2028	Jan/2033
75.37%	76%	77%	78%	78.5%	79%	82.5%
➢Percentage of female STEM graduates employed in their areas of training (Percentage)						
Jan/2022	Jan/2024	Jan/2025	Jan/2026	Jan/2027	Jan/2028	Jan/2033
59.42%	60%	61%	62%	63%	67%	75%
Improve the quality of graduates						
PrDO-Level Indicator 2: Proportion of evaluated academic programs accredited by INAAREES (Percentage)						
Jan/2022	Jan/2024	Jan/2025	Jan/2026	Jan/2027	Jan/2028	Dec/2033
0	0	20%	20%	30%	30%	30%
Enhanced Quality of Higher Education Entrants						
PDO Level Indicator 1: Proportion of females as percentage of new students enrolled in public higher education institutions (Percentage)						
Jan/2022	Jan/2024	Jan/2025	Jan/2026	Jan/2027		Dec/2028
37	39	41	43	45		47
PDO Level Indicator 2: Proportion of teacher training graduates performing satisfactorily in classroom observations (Percentage)						
Jan/2022	Jan/2024	Jan/2025	Jan/2026	Jan/2027		Dec/2028
32	32	35	35	35		50
Improved Programs in Strategic Priority Areas						
PDO Level Indicator 3: Percentage of academic programs created/revised that include climate-relevant curricula (Percentage)						
Jan/2022	Jan/2024	Jan/2025	Jan/2026	Jan/2027		Dec/2028
0	11	17	23	29		41

PDO Level Indicator 4: Proportion of public HEIs connected to the NREN (Percentage)						
Jan/2022	Jan/2024	Jan/2025	Jan/2026	Jan/2027		Dec/2028
0	0	0	55 (15)	66 (18)		74 (20)
Strengthened Sector Governance and Management						
PDO Level Indicator 5: Number of HEIs transformed through RBAs (Number)						
Jan/2022	Jan/2024	Jan/2025	Jan/2026	Jan/2027		Dec/2028
0	0	0	3	3		6

Intermediate Indicators by Components

Baseline	Period 1	Period 2	Period 3	Period 4	Closing Period
Component 1. Improve the quality of incoming students					
Percentage of women benefiting from incentives (scholarships) at ISCED (Percentage)					
Jan/2022	Jan/2024	Jan/2025	Jan/2026	Jan/2027	Dec/2028
34	35	38	42	45	50
Number of teachers graduating from TTIs (Number)					
Jan/2022	Jan/2024	Jan/2025	Jan/2026	Jan/2027	Dec/2028
6268	6500	7000	8000	12500	16000
Percentage of female students training to be teachers at TTIs (Percentage)					
Jan/2022	Jan/2024	Jan/2025	Jan/2026	Jan/2027	Dec/2028
36	38	40	42	44	46
Number of STEM teachers graduating from TTIs (Number)					
Jan/2022	Jan/2024	Jan/2025	Jan/2026	Jan/2027	Dec/2028
1926	2000	2500	3000	4000	5000
Teachers recruited or trained (Number) CRI					
Jan/2022					Dec/2028
6268					16000
➢Number of teachers trained (Number) CRI					
Jan/2022	Jan/2024	Jan/2025	Jan/2026	Jan/2027	Dec/2028
6268	6500	7000	8000	12500	16000
Component 2. Improve the quality of programs in strategic priority areas					
Percentage of programs evaluated by INAAREES (Percentage)					
Jan/2022	Jan/2024	Jan/2025	Jan/2026	Jan/2027	Jan/2028
0	10	20	40	80	90

Number of approved PDIs (Number)					
Jan/2022					Dec/2028
0					28
Percentage of courses created in collaboration with employers (Percentage)					
Jan/2022					Dec/2028
0					80
AngoREN Institutional Structure set up (consortium) (Yes/No)					
Jan/2022					Dec/2028
No					Yes
Average years to complete an undergraduate degree (Text)					
Jan/2022	Jan/2024	Jan/2025	Jan/2026	Jan/2027	Dec/2028
7	7	7	6	6	5
Average years to complete STEM undergraduate degree (Text)					
Jan/2022	Jan/2024	Jan/2025	Jan/2026	Jan/2027	Dec/2028
6	6	6	5	5	5
Average years to complete undergraduate degree at TTIs (Text)					
Jan/2022	Jan/2024	Jan/2025	Jan/2026	Jan/2027	Dec/2028
7	7	6	6	5	4
Gross Enrollment Rate (Percentage)					
Jan/2022	Jan/2023	Jan/2024	Jan/2025	Jan/2026	Dec/2028
8.7	9	10	11	12	12.5
STEM Gross Enrollment rate (Percentage)					
Jan/2022					Dec/2028
0.30					0.40
Component 3. Strengthen capacity in management, monitoring, and evaluation					
HEI Funding Model reformulated (Yes/No)					
Jan/2022					Dec/2028
No					Yes
Number of public HEIs with digitized academic management systems (Number)					
Jan/2022					Dec/2028
0					90
Functional Partnerships Dashboard (Yes/No)					
Jan/2022					Dec/2028
No					Yes

Monitoring & Evaluation Plan: PDO Indicators by PDO Outcomes

Increase number of graduates in strategic sectors	
PrDO-Level Indicator 1: Percentage of graduates in strategic areas employed in their areas of training (Percentage)	
Description	Percentage of STEM graduates employed, in their field of training, 9 months after completing the course.
Frequency	Annual
Data source	Tracer studies
Methodology for Data Collection	Surveys of graduates to establish the percentage of which are gainfully employed within 9 months of graduating from their programs of study.
Responsibility for Data Collection	GEPE
Improve the quality of graduates	
PrDO-Level Indicator 2: Proportion of evaluated academic programs accredited by INAAREES (Percentage)	
Description	Percentage of academic programs evaluated by INAAREES that receive at least a level "B" accreditation level by INAAREES. As per INAAREES guidelines, external evaluations by INAAREES include at least one international evaluator in each team of 5 evaluators.
Frequency	Annual
Data source	Higher Education Statistical Yearbook
Methodology for Data Collection	According to the protocols of INAAREES for conducting external evaluations.
Responsibility for Data Collection	INAAREES
Enhanced Quality of Higher Education Entrants	
PDO Level Indicator 1: Proportion of females as percentage of new students enrolled in public higher education institutions (Percentage)	
Description	Proportion of females as percentage of new students enrolled in public higher education institutions.
Frequency	Annual
Data source	Higher Education Statistical Yearbook
Methodology for Data Collection	SIISIES
Responsibility for Data Collection	GEPE
PDO Level Indicator 2: Proportion of teacher training graduates performing satisfactorily in classroom observations (Percentage)	
Description	Proportion of teacher training graduates performing satisfactorily in classroom observations, as per the "Classom Instruction" rubric of the TEACH instrument.
Frequency	Every 3 years
Data source	Application of TEACH
Methodology for Data Collection	TEACH (Classroom Observations) applied to classrooms that have new graduates from TTIs that have benefited from the TEST Program.
Responsibility for Data Collection	MED/GEPE
Improved Programs in Strategic Priority Areas	
PDO Level Indicator 3: Percentage of academic programs created/revised that include climate-relevant curricula (Percentage)	
Description	Academic programs created/revised that include climate-relevant curricula. Climate-relevant curricula can be inserted through: i. The curriculum harmonization process (for TTIs); ii. The approval process for new courses (DNES); iii. Annual reports from RBAs.
Frequency	Annual
Data source	DNES
Methodology for Data Collection	Through the curricular harmonization process, the approval process for new programs, and the annual reports from the RBAs.
Responsibility for Data Collection	DNES
PDO Level Indicator 4: Proportion of public HEIs connected to the NREN (Percentage)	
Description	Proportion of public HEIs connected to the NREN. While the NREN is open to private and public institutions alike, and may be extended to institutions beyond HEIs, this indicator specifically measures the connection of public HEIs to the NREN.
Frequency	Annual
Data source	Project Reports

Methodology for Data Collection	Surveys with HEIs
Responsibility for Data Collection	GTICI
Strengthened Sector Governance and Management	
PDO Level Indicator 5: Number of HEIs transformed through RBAs (Number)	
Description	Number of HEIs transformed through RBAs. To be considered transformed, an HEIs must have achieved at least 50% of the agreed results in its RBA, based on its institutional development plan.
Frequency	Annual
Data source	Project Reports summarizing RBA reports.
Methodology for Data Collection	Surveys with HEIs
Responsibility for Data Collection	DNES

Monitoring & Evaluation Plan: Intermediate Results Indicators by Components

Component 1. Improve the quality of incoming students in higher education	
Percentage of women benefiting from incentives (scholarships) at ISCED (Percentage)	
Description	The number of women in their first-year of study benefiting from incentives (scholarships or other stipends) at ISCED as a proportion of the overall number of first-year students benefiting from incentives (scholarships or other stipends).
Frequency	Annual
Data source	GEPE
Methodology for Data Collection	As per protocols for the Statistical Yearbook
Responsibility for Data Collection	GEPE
Number of teachers graduating from TTIs (Number)	
Description	Number of teachers graduating from TTIs. TTIs include both ISCEDs and Pedagogical Schools.
Frequency	Annual
Data source	GEPE
Methodology for Data Collection	As per protocols for the Statistical Yearbook
Responsibility for Data Collection	GEPE
Percentage of female students training to be teachers at TTIs (Percentage)	
Description	Number of female students as a proportion of the total number of students training to be teachers at TTIs. TTIs include both ISCEDs and Pedagogical Schools.
Frequency	Annual
Data source	GEPE
Methodology for Data Collection	As per protocols for the Statistical Yearbook
Responsibility for Data Collection	GEPE
Number of STEM teachers graduating from TTIs (Number)	
Description	Number of STEM graduate teachers at TTIs. STEM fields defined according to the UNESCO definitions.
Frequency	Annual
Data source	GEPE
Methodology for Data Collection	As per protocols for the Statistical Yearbook
Responsibility for Data Collection	GEPE
Teachers recruited or trained (Number) CRI	

Description	The number of annual graduates of TTIs (ISCEDs and Pedagogic Schools). Increases in this indicator over time reflect improvements in the efficiency of the programs, and the expansion of the supply of student-teacher spaces in the TTIs.
Frequency	Annual.
Data source	GEPE
Methodology for Data Collection	As per protocols for the Statistical Yearbook
Responsibility for Data Collection	GEPE
Number of teachers trained (Number) CRI	
Description	The number of annual graduates of TTIs (ISCEDs and Pedagogic Schools). Increases in this indicator over time reflect improvements in the efficiency of the programs, and the expansion of the supply of student-teacher spaces in the TTIs.
Frequency	Annual
Data source	GEPE
Methodology for Data Collection	As per protocols for the Statistical Yearbook
Responsibility for Data Collection	GEPE
Component 2. Improve programs in strategic priority areas	
Percentage of programs evaluated by INAAREES (Percentage)	
Description	Number of programs in HEIs that have been evaluated by INAAREES, according to their protocols for external evaluations.
Frequency	Annual
Data source	INAAREES
Methodology for Data Collection	As summarized in Project Reports by the Project Team in the General Secretariat of MESCTI.
Responsibility for Data Collection	INAAREES
Number of approved PDIs (Number)	
Description	Number of PDIs that have been prepared by HEIs and have been approved by the corresponding authority. Approved PDIs serve as the basis for which RBAs would be negotiated with selected HEIs.
Frequency	Annual
Data source	GEPE
Methodology for Data Collection	As summarized in Project Reports by the Project Team in the General Secretariat of MESCTI.
Responsibility for Data Collection	GEPE
Percentage of courses created in collaboration with employers (Percentage)	
Description	Number of new courses as a proportion of overall new courses that were developed as a result of consultations with employers in the public and private sectors. The indicator applies equally to public and private HEIs.
Frequency	Annual
Data source	DNES
Methodology for Data Collection	SIISIES
Responsibility for Data Collection	DNES
AngoREN Institutional Structure set up (consortium) (Yes/No)	
Description	The design of the AngoREN Institutional Structure (consortium) has been approved and rendered active through the enactment of corresponding legislation/regulatory procedures.
Frequency	Annual
Data source	GTICI/SG

Methodology for Data Collection	As per Project Reports and supporting regulatory documents
Responsibility for Data Collection	GTICI/SG
Average years to complete an undergraduate degree (Text)	
Description	Average number of years that students take to complete an undergraduate degree, from first-year to graduation.
Frequency	Annual
Data source	GEPE
Methodology for Data Collection	As per protocols of the Statistical Yearbook.
Responsibility for Data Collection	GEPE
Average years to complete STEM undergraduate degree (Text)	
Description	Average number of years that enrolled students take to complete an undergraduate degree in the STEM areas (as defined by UNESCO), from first-year to graduation.
Frequency	Annual
Data source	GEPE
Methodology for Data Collection	As per protocols of the Statistical Yearbook
Responsibility for Data Collection	GEPE
Average years to complete undergraduate degree at TTIs (Text)	
Description	Average number of years to complete an undergraduate degree at TTIs (ISCEDs and Escolas Pedagogicas), from first year to graduation.
Frequency	Annual
Data source	GEPE
Methodology for Data Collection	As per protocols of the Statistical Yearbook
Responsibility for Data Collection	GEPE
Gross Enrollment Rate (Percentage)	
Description	Gross Enrollment Rate of Tertiary Education as calculated according to UNESCO definitions.
Frequency	Annual
Data source	GEPE, working from official enrollment statistics, and official Angolan population statistics from INE.
Methodology for Data Collection	As per protocols of the Statistical Yearbook
Responsibility for Data Collection	GEPE
STEM Gross Enrollment rate (Percentage)	
Description	Gross Enrollment Rate of Tertiary Education in STEM areas, as calculated according to UNESCO definitions.
Frequency	Annual
Data source	GEPE, working from official enrollment statistics, and official Angolan population statistics from INE.
Methodology for Data Collection	As per protocols of the Statistical Yearbook
Responsibility for Data Collection	GEPE
Component 3. Strengthen Capacity in Management, Monitoring, and Evaluation	
HEI Funding Model reformulated (Yes/No)	
Description	Approved reform to the HEI funding model, as agreed with MINFIN.
Frequency	Annual
Data source	SG
Methodology for Data Collection	The Republic of Angola's Legal Covenants

Responsibility for Data Collection	SG
Number of public HEIs with digitized academic management systems (Number)	
Description	Number of public HEIs with academic management systems that use digitized approaches to data management.
Frequency	Annual
Data source	GEPE
Methodology for Data Collection	As summarized in Project Reports
Responsibility for Data Collection	GEPE
Functional Partnerships Dashboard (Yes/No)	
Description	A partnership is defined as active when it has at least one completed partnership dashboard activity. The dashboard has been defined in the POM.
Frequency	Annual
Data source	GEPE
Methodology for Data Collection	As summarized in Project Report
Responsibility for Data Collection	GEPE

ANNEX 1: Detailed Project Description, Implementation Arrangements, and Support Plan

COUNTRY: Republic of Angola
Tertiary Education, Science, and Technology Project (TEST)

A. Detailed Project Description

Table A1.1. Components and Financing

Component	Amount
Component 1. Improve the quality of incoming students in Higher Education	US$100 million, of which US$50 million from GPE
Component 2. Improve the quality of programs in strategic priority areas	US$85 million
Component 3. Strengthen capacity in management, monitoring, and evaluation	US$15 million
Project Preparation Advance of US$6 million (spread across components)	
Total	**US$200 million**

Component 1. Improve the quality of incoming students (US$100 million, US$50 million from GPE)

1. **Responding to the education crisis in basic education requires overhauling the existing teacher preparation ecosystem**, to improve student learning outcomes and increase the number of prepared students progressing through to tertiary education. This component will modernize and upgrade the infrastructure of TTIs (subcomponent 1.1) and improve the curricular programming and teaching (subcomponent 1.2).

Subcomponent 1.1: Expand access to high quality pre-service teacher training (US$90 million)

2. **This subcomponent will expand the supply of effective, quality assured pre-service teacher training through investments in critical infrastructural and facility upgrades.** Investments will target TTIs that are outside of Luanda, to promote geographic equity and create a pipeline of quality teachers in areas of the country with the greatest need. Second, TTIs that have been traditionally chronically under-financed and need refurbishing will be prioritized.

3. **Activities under this component start with technical assistance to carry out the needs assessments and project designs under the PPA, followed by infrastructure investments to refurbish and expand TTIs.** Assessments and architectural designs for infrastructure upgrades will be undertaken for each selected TTI to identify the specifications required for increasing spaces and modernizing the facilities that enable teaching and learning, with a view of equipping centers with digital infrastructure and gender inclusive designs. The needs assessment will undertake a detailed analysis and recommend upgrades and other enabling conditions needed within TTIs. Works may include expansion or improvements in physical spaces (e.g., classrooms spaces, STEM/computer laboratories, libraries, restrooms), equipment (e.g. furniture), teaching and learning tools, digital infrastructure (e.g. computers, stable Internet connectivity, learning management systems) and other enablers (e.g. electricity). Each site will have site-specific Environmental and Social Management Plans (ESMPs) developed, as well as construction supervision contracts.

Subcomponent 1.2: Enhance quality of instruction and teacher preparation programs (US$10 million)

4. **Enhancing the quality of instruction and preparation in teacher training institutions requires actions at the level of legislation, curriculum, institution, and individual.** At the legislative level, changes will be introduced to the Teacher Preparation Decree to relax some of the requirements that currently distort the focus on teaching skills (such as the preparation of a final thesis). Second, the relationship between the TTIs and their surrounding basic schools will be tightened through an agreement at the national level between MESCTI and MED. This will lead to improvements at the level of the curriculum, with more practical elements being introduced within teacher training so that more time is spent in the classroom acquiring effective pedagogical skills. Similarly, the acquisition of digital skills by students will require changes geared toward ensuring that the pipeline of teachers can carry out basic tasks with the degree of complexity and autonomy needed to impart foundational digital skills in their classrooms. At the level of institutions, technical assistance will be provided such that teacher trainers are better able to carry out their mandates with a focus on addressing Angola's learning crisis. Finally, at the level of the individual, better screening instruments will be applied to ensure that the right candidates enter the teacher profession ex-ante, including an update to the entrance examination process, and enhanced recruitment activities to attract the most promising candidates[37]. Remediation or levelling programs will also be considered to help correct gaps in academic capacity and learning readiness from prior levels of education. Such support services at the individual level aim to reduce constraints and amplify access, particularly for female candidates.

5. **Activities under this component include technical assistance to advise on needed changes to the curricula, training activities to improve the effectiveness of faculty, and operational costs.** Faculty of TTIs will be supported to obtain the necessary credentials and skills, including digital skills, to better prepare student teachers for the classroom. This involves ensuring graduates are better able to develop adequate pedagogical skills, build digital competencies, use basic technology for teaching and learning and build awareness of the impact of climate change. Incentives will be provided to the most promising candidates to eliminate barriers to accessing or completing TTI programs, particularly for female candidates (for instance, scholarships or grants), thereby facilitating stronger incoming cohorts at TTIs. Capacity building and aligned support for MESCTI and Ministry of Education (MED) will be carried out to support activities that improve quality of instruction and programs (e.g., improving gender parity in incoming cohorts and faculty; curriculum update including practical training in schools; upgrading faculty skills; strengthen incoming cohort of graduates possibly through updating recruitment policies). The Project will finance technical assistance activities and operational costs (e.g., updated guidance, updated curriculum, operational manuals, policies).

6. **This subcomponent will create 10,000 teacher training spaces in Angola, resulting in an additional 100,000 graduates (over ten years) that are better prepared for the classroom, as well as expanded access for women within TTIs.** This increased capacity in pre-service preparation of teachers is the starting point to address the twin crises in Angola's pre-tertiary education: i) the out-of-school children crisis, and ii) the learning crisis. TTI graduates will be equipped with practical classroom experience during their pre-service training and a sharp focus on how to support students to learn. The improvement in the quality of graduates will be measured through the application of a locally adapted version of the TEACH classroom observation tool embedded within the course of the teacher preparation programs which robustly measures teacher pedagogical skills. As a precondition to improving the stock of digital skills in Angola (starting with its education sector), its teachers will also graduate from the refurbished TTIs with the skills and abilities ready to accompany their future students in their learning, including digital learning. Improved digital

[37] These activities will be carried out in parallel with the support to teacher policies under the Girls' Empowerment and Learning for All Project (P168699).

competency of teacher graduates will increase their access to resources, increase the efficiency in administrative tasks and expand the use of basic technology for teaching and learning in classrooms.

Component 2. Improve the quality of programs in strategic priority areas (US$85 million)

7. **Achieving Angola's sustained economic development requires system strengthening to build effective quality assurance, modern and agile governance, professional management, using digital interventions.** This component will strive to improve the capacity of the HEIs to deliver high quality programs and make them more responsive to the needs of the labor market and students. Four subcomponents with associated activities will be undertaken to: (i) strengthen quality assurance mechanisms; (ii) expand access to higher education in priority areas including STEM, green skills, and digital skills; (iii) establish a National Research and Education Network (NREN) that will bring HEIs faster, more reliable, and more affordable broadband internet; and (iv) digitalize service delivery including upgrading and institutionalizing the use of a comprehensive Higher Education Management Information Systems (HEMIS) and build digital competencies.[38]

Subcomponent 2.1: Strengthen quality assurance mechanisms (US$10 million)

8. **This subcomponent strengthens the technical capacity of the National Institute for Assessment, Accreditation and Recognition of Higher Education Studies (INAAREES) at the sectoral and institutional levels.** At the *sectoral* level, the management and regulatory capacity of INAAREES will be strengthened. Capacity building activities include technical assistance to establish internal processes such as for contracting supervision, assembling accreditation bodies, and communicating the governing framework of the quality assurance mechanisms in an accessible way. Technical assistance for revising the regulatory framework around accreditation, such that the system features both incentives and sanctions as consequence of compliance/non-compliance, will also be included. At the *institutional* level, the subcomponent will finance the technical assistance to modernize standards and timelines for assessments and accreditation, starting with self-assessments for HEIs, followed by independent external evaluations of programs and faculty qualifications. Eligible expenditures to carry out the above set of activities include consultancy services for external evaluators, operational costs to cover travel, computers and other office equipment, and transportation for INAAREES to fulfill its regulatory mandate.

9. **Strengthening the QA mechanism and the capacity of INAAREES will increase the number of recognized educational offerings and the quality of programs and instruction across the sector.** Revising and accelerating the accreditation process will lead to a greater number of relevant programs, courses, certifications, and micro credentials offered within higher education as well as increased uptake of the same. Strengthened assessment, evaluation, and inspection capacity will result in improved quality and curricular relevance of these programs, including broadening the evidence base for how accreditation improves labor market outcomes (through an impact evaluation). Better data management would result in enhanced regulatory and management capacity of INAAREES.

[38] The proposed Program's digital interventions will all adhere to good international practice in terms of cybersecurity and data protection standards and measures. All support to digital platforms and systems will meet and practice cybersecurity standards. All data collected, processed, and shared will be done in accordance with good international practice and in compliance with Angola's 2011 Data Protection law. These interventions (sub-component 1.4) will complement the proposed interventions under the pipeline Digital Project (P180693), which aims to strengthen the legal and regulatory environment for Angola's digital economy by strengthening the country's nascent cybersecurity function and through building the capacity of the Data Protection Agency (*Agência de Protecção de Dados*).

Subcomponent 2.2: Improve quality of instruction, equitable access, and industry relevance of programs in strategic priority areas (US$50 million)

10. **This subcomponent seeks to enhance academic program relevance to meet the skills needs of industry.** New areas of study include those that equip labor market entrants with the skills to make traditional sectors (e.g., agriculture, transport, water, or energy) more prepared to thrive in an increasingly digitized global economy, and those that focus on equipping students for helping Angola adapt to or mitigate the impact of climate change. Fostering stronger linkages between HEIs and the private sector will ensure greater alignment between demand and supply and better prepare Angolan youth to become tomorrow's innovators, entrepreneurs, and leaders. Measures to achieve strengthened linkages with industry include: (i) participation of industry representatives in curriculum reform committees of HEIs; (ii) internships for students; (iii) participation of professionals as visiting professors, surveys of employers and alumni to seek feedback on the quality and relevance of programs; and (iv) joint applied research projects with industry.

11. **A focus will also be placed on actions addressing the gender disparity within these institutions.** Interventions for this purpose include: (i) outreach actions to increase enrolment of female students; (ii) positive discrimination measures in favor of academically qualified female students; and (iii) adequate retention measures (scholarships, psychological and academic support) to increase the chances of success of female students. To support this, analytical work is ongoing under the PPA to better understand the drivers of gender inequality and inform actions to address obstacles for women in accessing and completing higher education. This includes actions to make schools safer, implementing a policy of zero tolerance toward School-Related Gender-Based Violence (SRGBV).

12. **The specific operational modalities for achieving the above objectives would be reflected in institutional development plans, to be drafted by HEIs.** Institutional development plans (*Planos de Desenvolvimento Institucional*, PDIs) will be prepared, with technical assistance from the MESCTI. While HEIs will be given the autonomy to design the best plan contextualized to their institution, the ultimate results to be achieved will be selected from a pre-defined menu of options (e.g., create X new programs, increase pedagogical innovations, increase student retention, or close gender gaps by Y%), with targets to be negotiated between HEIs and MESCTI, to be financed through Results-Based Agreements (RBAs) signed between MESCTI and participating HEIs.

13. The Results-Based Agreements (RBAs) will be competitively awarded. They will support progress toward the following objectives aligned with each HEI's institutional development plan:

i. Correcting disparities, especially through increased female participation in STEM programs and higher proportion of female faculty;
ii. Creating new programs based in areas of persistent scarcity (such as E&S specialists) and future needs linked to the national agenda for economic diversification, digital transition, green economy, and blue economy;
iii. Reinforcement of research capacity through higher qualifications of the academic staff and the establishment of centers of excellence, preferably of an interdisciplinary nature;
iv. Strengthening of technology transfer capacity and commercialization of university applied research applications;
v. Increase in internal efficiency to optimize the use of available resources and reduce the proportion of students dropping out or repeating;
vi. Modernization of governance and management to bring increased flexibility and efficiency; and
vii. Resource diversification through, e.g., fundraising, consultancies, research contracts.

14. **To be eligible, interested HEIs will be required to prepare an IDP.** Expenditures that are eligible under the RBAs will include: (i) consulting expenses; (ii) workshops and training courses; (iii) scientific equipment, software, and minor works; (iv) scholarships (e.g., for training PhD students); and (v) operating costs (e.g., travel expenses).

Subcomponent 2.3: Digitalize service delivery in higher education and build digital competency (US$10 million)

15. **This subcomponent will work to digitalize service delivery in higher education to improve efficiency and quality.** This component will create the enabling environment within Angola's HEIs for the country's digital acceleration. This includes upgrading the physical and digital installations necessary to allow HEIs to leverage online pedagogy and learning materials. As well as ensuring a regularly updated higher education HEMIS with robust data for planning and evidence-based decision-making. In terms of capacity-building, HEI faculty and staff will be trained in digital competencies to use digital platforms and teach courses in these areas. Finally, the subcomponent will also support the analytical work and technical assistance to further digital transformation in the higher education sector, such as developing the concept for Angola's first virtual university network as a measure to expand access and reduce barriers to tertiary education particularly for women and other marginalized groups.

16. **Activities under this subcomponent include technical assistance, small works, training, and operational costs**. Activities to digitalize service delivery include: (i) an assessment (to be financed under the PPA) to understand the current capacity and needs of HEIs in terms of maintaining computer labs and digital platforms (including operational budgets and licensing costs, to ensure sustainability); (ii) small works to finance new and/or upgrade existing digital centers at HEIs; (iii) upgrading of the higher education HEMIS (including training and change management); (iv) development and implementation of a targeted, needs-based, digital skills training program for HEI faculty and staff (using existing online content); (v) development and implementation of a digital skills-focused up- and re-skilling program for MESCTI staff (including monitoring program); and (vi) conceptualizing Angola's first virtual university network (including feasibility study and proof of concept). This may also include innovative, just-in-time capacity building like training on leveraging technologies like ChatGPT to improve the effectiveness and efficiency in daily tasks. Small works will be limited to refurbishment of existing installations, such as for stabilizing electricity and adequate installations of digital facilities and equipment within select HEIs. Financing surrounding the HEMIS will be organized into two categories. The first category would aim to upgrade the higher education sector HEMIS to collect more and robust data as well as support the interoperability of this data across difference application within the HEMIS. The second category of financing will aim to build capacity of MESCTI technicians to collect, analyze, and use data for decision-making.

Subcomponent 2.4: Establish a National Research and Education Network (NREN) and upgrade university networks (US$15 million)

17. **This subcomponent will establish an NREN in Angola to connect Angola's HEIs to affordable, reliable, highspeed broadband internet and thus boost the country's capacity to conduct research online and expand the use of technology in higher education.** NRENs facilitate pedagogical and research resources among interconnected institutions, allowing for the establishment of collaborative platforms, and enabling sharing of applications and services specific to education and research communities.

18. **Activities under this subcomponent will include technical assistance and consultancies, infrastructure upgrades, training, and operational costs to set up AngoREN and support upgrades to HEIs' local networks.** Activities for the establishment of AngoREN include: (i) a feasibility study (financed under the PPA) to inclusively define the management and financing structure of AngoREN including the education or non-profit institution that will host the

NREN; (ii) support for the establishment of AngoREN (including limited financial support for technical and managerial staff); (iii) pre-payment on behalf of HEIs for international and national connectivity to connect participating HEIs (for 10-15 years); (iv) network equipment and campus Wi-Fi networks (including reliable power sources) for a select number of HEIs; (v) technical training and capacity building for technicians to run and maintain AngoREN; and (vi) membership fees to the regional NREN network (UbuntuNet Alliance).

19. **This component will secure affordable, reliable, high-speed broadband connectivity to participating HEIs (taking advantage of cost savings through bulk purchases and by establishment of a buyer's club), greatly expanding coverage to students and faculty.** To ensure that Angola's HEIs can take advantage of the benefits that an NREN offers, investments in HEIs' local networks and computer labs will also take place. Besides connectivity, a connection to the regional and international NREN community will also allow for a wide range of shared educational and research services, including open educational resources, learning management systems, and massive open online courses (MOOCs). Amplified access to broadband connectivity will act as an enabler for strengthening the digital competency of faculty, staff, and students of HEIs as well as MESCTI staff, ultimately benefiting at least 20 HEIs in Phase 1 (representing about 90,000 students).

Component 3. Strengthen capacity in management, monitoring, and evaluation (US$15 million)

20. **This component will invest in building the higher education systems and management capabilities of MESCTI and the HEIs to strengthen sector governance.** The priority systems targeted for strengthening are data management (collection, analysis, publication, and dissemination) and public FM (budgetary planning, financial flows, execution, and reporting), in line with the open budget transparency initiative.[39] On the data management side, in addition to the HEMIS that will be integrated throughout the sector (Component 2.4), a Partnerships Dashboard[40] measuring the operational effectiveness of the agreements with industry will be developed to monitor the progress of the partnerships, focusing on results. The management capabilities are the planning, monitoring, and evaluation activities to better coordinate the sector and hold actors accountable. Combined with the data systems, this will enable a greater results-focus throughout the sector, more evidence-based policymaking, especially with regard to information feedback loops that allow HEIs to be more oriented to strategic priority areas.

21. **Activities under this component include technical assistance, training, and operational costs.** With regard to strengthening the financial and project management capacity of MESCTI, consultants would be hired to help develop and strengthen operational manuals for managing the higher education sector. Management capacity of HEIs will be strengthened through the provision of technical assistance to upgrade the management skills of HEI administrators, including in environmental and social areas.

B. Institutional and Implementation Arrangements

22. **In contrast to most operations in Angola, the proposed Program's implementation arrangements will be embedded in the structures of the MESCTI rather than housed in a Project Implementation Unit.** The MESCTI will be

[39] https://internationalbudget.org/

[40] Examples of indicators of the robustness of the partnerships could be the number of internships conducted; number and impact factor of scientific papers published as a result of applied research projects with the firm (including joint publications between university researchers and professionals within firms); number of patents developed as a result of applied research projects; number of new programs designed jointly with firms or thoroughly re-developed; number of professionals teaching courses; number of professors doing practical work within firms; and/or duration of the partnership.

responsible for the overall good governance, technical implementation, and fiduciary management of the Program. Coordination will be run out of the General Secretariat, with the Secretary-General serving as Program Coordinator. Each Component falls under the responsibility of a MESCTI Directorate.

23. **The General Secretariat will assure the overall coordination of Project implementation.** Led by the Secretary General of Higher Education, the General Secretariat will house the fiduciary team that is responsible for developing and enforcing the POM for implementation, where the policies and procedures of the Program will be detailed, following the World Bank guidelines. The Secretary General will serve as overall Program Coordinator, with the support of a Deputy Program Coordinator, a consultant hired specifically for this under the PPA. In addition to regular planning and monitoring meetings, the responsibilities of the General Secretariat will be to ensure the full integration of Program activities into the regular programming of the MESCTI. The responsibilities of each of the technical departments in Figure A1.1 will be further detailed in the POM, such as being tasked with carrying out all the activities relating to their subcomponents, such as preparing the annual operational plan, preparing terms of reference, participating in evaluation committees, overseeing consultants/works, submitting budgets for covering operational costs, and contributing to project reports as required.

24. **With regard to FM and Procurement, specialists will be hired to support the fiduciary team within the General Secretariat.** The specialists will serve the dual function of being ultimately responsible for ensuring compliance with the POM and World Bank procedures, as well as training existing staff to be able to carry out their functions according to World Bank rules. The World Bank FM and procurement teams in Luanda will support these latter functions closely.

25. **The Environmental and Social Risk Management team will also act under the General Secretariat ensuring that the project implementation is materially consistent with ESF requirements.** An Environmental Specialist and a Social Development Specialist will be recruited using PPA funds. These specialists will be responsible for overseeing the project's E&S aspects and ensuring that the project implementation is materially consistent with ESF requirements. Theys will also play a critical role in supporting the design and implementation of a longstanding capacity-building program to address ESRM capacity constraints in Angola.

26. **The Office of Research, Planning, and Statistics (*Gabinete de Estudos, Planificação, e Estatística*, GEPE) is responsible for implementing Components 1.1 and 3.** GEPE will be responsible for the liaison with the TTIs on all the activities relating to Component 1.1. This includes overseeing the selection process of the TTIs, recruiting the firms that will be responsible for the design, the supervision (including environmental and social management plans), and the works themselves. This includes drafting and approving all related TORs for the works, and other technical inputs to the procurement of these activities (in close collaboration with the procurement team). For Component 3, the GEPE will be responsible for collecting, analyzing, and disseminating all data for the sector, including the development of the sectors' HEMIS, and ensuring that HEIs are connected to the HEIs and have the capabilities needed to operationalize it. The GEPE will also be responsible for deploying technical assistance to HEIs to strengthen their policies and processes and strengthen their management capabilities.

27. **The National Directorate for Higher Education (*Direcção Nacional de Educação Superior*, DNES) is responsible for implementing Components 1.2 and 2.2.** For Component 1.2, the DNES is responsible for introducing and carrying out the curricular reforms, in collaboration with the TTIs. DNES will also be responsible for the MOU with the MED that ensures students at TTIs have a practical training secured in a school during their degree. For 2.2, the DNES will be entrusted with carrying out the selection process of the HEIs to benefit from the RBAs, in accordance with the criteria and processes laid out in the operational manual. Crucial to this role will be the negotiation of the RBAs, and the close monitoring of implementation to hold HEIs accountable for results.

28. **The INAAREES is responsible for implementing Component 2.1, and all associated activities to the accreditation and quality control processes.** The Director-General of the INAAREES assumes overall responsibility for carrying out the activities of relating to the quality control processes, including setting protocols for self-evaluation, external evaluations, and accreditation. Linkages between INAAREES and the fiduciary team under the GS will be particularly important to ensure that the POM is being implemented, especially with regard to fiduciary elements.

29. **The Office of Information Technology and Communications (*Gabinete de Tecnologías de Informação e Comunicaçoes*, GTIC) is responsible for implementing Components 2.3 and 2.4.** For Component 2.3, implementing activities will imply objective selection and prioritization of activities as per the POM for digital connectivity, installation of the HEMIS, and associated capacity building activities of HEI faculty and staff. This includes all activities relating to the NREN under Component 2.4, from negotiating the design of the governance of the network to drafting the TORs for the feasibility study/proof of concept, as well as the implementation of the works themselves.

30. **The General Counsel will support the development and implementation of the Project's Grievance Redress Mechanism, specifically to address SEA/SH and SRGBV related complaints, liaising with the Social Development Specialist.** The Project's GRM will replicate the existing GRM housed at the MED. There will be a strong focus on school-related Gender-Based Violence (SRGBV), building on the mechanisms and protocols of the Girls' Empowerment and Learning for All Project (P168699). This includes know your rights training, a communication campaign around the GRM, and the declaration of a zero-tolerance approach to GBV, with accompanying measures at the school level (e.g. school GBV focal points, communication materials, etc). The General Counsel will liaise with the Social Development Specialist, and together they will work closely with the GEPE to ensure that SRGBV information and data is appropriately collected and managed to protect survivors. Among the SRGBV actions under the responsibility of the Social Development Specialist are:

- **Baseline Information.** Collect data on the prevalence and nature of SGBV on the campuses of HEIs through a baseline survey.
- **Incident Reporting.** Ensure that HEI management is promoting the GRM, and are informed of all grievances being submitted, as per protocols in the POM.
- **Monitoring.** Conduct regular surveys to assess the continuing prevalence of SRGBV, the outcomes or reported cases, and the perceptions of students and staff.
- **Awareness and Training.** Conduct SRGBV awareness campaigns and training workshops. Undertake pre- and post-assessments of the effectiveness of these activities.
- **Support Services.** Measure the use and effectiveness of counseling, medical assistance, and legal support for survivors of SRGBV.
- **Accountability.** Publish regular reports on the progress of the HE system as a whole and the results of each HEI to enhance transparency and accountability.
- **Benchmarking.** Compare SRGBV data and progress across HEIs and with national statistics on SGBV to assess how well each institution is performing relative to others.

31. **The POM guides implementation for all interventions under each Component.** The POM is structured by Program Component, detailing the policies and procedures, roles and responsibilities, and expected results for all activities under the Program. Dedicated chapters cover the topics of FM, procurement, E&S risk management (including the Grievance Redress Mechanism), and overall monitoring and evaluation. In addition to the results framework, the M&E chapter details the methodologies, frequencies, data sources, and responsibilities for calculating indicators. The POM is reviewed and

updated as needed, as the MESCTI learns from experience and corrects course. The POM must be satisfactory to the Bank, and as such must be submitted to the Bank for its no objection. It is the responsibility of the MESCTI to develop and enforce the POM.

Financial management arrangements

32. **The overall FM residual risk was assessed as substantial.** All critical risks were identified and appropriate mitigation measures to address the risks were proposed. The table below summarizes the most critical project risks and their mitigating measures.

Table 1: Risk and proposed mitigation measures

Risk	Risk Mitigating Measures Incorporated into Project Design	Conditions for Effectiveness (Yes/No)	Residual Risk
Inherent risk	—	—	**H**
Country level. PFM system: Weaknesses in the budget execution, internal controls, capacity development, general oversight, limited execution of audit revisions, and shortage of human resources may negatively impact the implementation of the project.	The Government is committed to implementing PFM reforms and improving governance. The World Bank and other donors are supporting the country's reforms. Development partners including the World Bank continue to support governance and institutional capacity building.	No	H
Entity level. Management capacities of monitoring and enforcement are considered weak.	MESCTI will recruit a qualified and experienced FMS and appoint two staff experienced accountants from the minister to be fully dedicated to the implementation of the project. MESCTI staff have adequate experience and competence. MESCTI has experience in implementing other donor-funded projects.	No	S

Risk	Risk Mitigating Measures Incorporated into Project Design	Conditions for Effectiveness (Yes/No)	Residual Risk
Project level. Performance on core aspects such as accounting, financial reporting, and auditing is poor.	MESCTI will create and adopt a POM where aspects like accounting, financial reporting, and internal controls will be defined. MESCTI will recruit a qualified and experienced FMS and appoint two dedicated experienced accountants from the minister to be fully dedicated to the implementation of the project. The FMS will be based within the ministry and will be responsible for the training of the civil servants on the Bank FM procedures. MESCTI will also recruit an experienced internal auditor and appoint one staff from the minister to be fully dedicated to the implementation of the project. The Internal auditor will be based within the ministry and will be responsible for the training of the civil servants.	Yes	M
Control Risk			S

Risk	Risk Mitigating Measures Incorporated into Project Design	Conditions for Effectiveness (Yes/No)	Residual Risk
Budgeting. Weak budgetary execution monitoring may lead to budgetary under/overruns or inappropriate use of project funds. The project may fail to prepare a realistic annual budget.	The FM manual will spell out the budgetary control arrangements (preparation, approval, execution, and monitoring procedures) to ensure appropriate budgetary oversight. The project coordination will ensure compliance with appropriate budgetary planning and oversight. The IFR will include an analysis/explanation of the budget execution. The Bank will review the draft budget as well as the quarterly IFR and provide comments.	No	S

Risk	Risk Mitigating Measures Incorporated into Project Design	Conditions for Effectiveness (Yes/No)	Residual Risk
Accounting. Reliable and accurate information is not provided to inform management decisions and ensure effective accountability of project funds.	MESCTI will purchase an automated accounting package to account for project transactions and issue timely and quality financial reports. MESCTI will recruit a qualified and experienced FMS and appoint two dedicated experienced accountants from the minister to be fully dedicated to the implementation of the project. World Bank shall conduct an FM and disbursement regular training on requirements and procedures for the FM staff and other officials in the project.	No	M

Risk	Risk Mitigating Measures Incorporated into Project Design	Conditions for Effectiveness (Yes/No)	Residual Risk
Internal control. Noncompliance with internal control activities such as project expenditures authorization and proper supporting documentation.	MESCTI will create and adopt a POM where aspects like accounting, financial reporting, and internal controls will be defined. MESCTI will also recruit an experienced internal auditor and appoint one staff from the minister to be fully dedicated to the implementation of the project, and they will continuously review the adequacy of internal controls and make recommendations to improve the controls.	Yes	S

Risk	Risk Mitigating Measures Incorporated into Project Design	Conditions for Effectiveness (Yes/No)	Residual Risk
Funds flow. The failure of commercial banks to make payments in foreign currency may negatively impact the implementation of project activities, mainly payment to service providers/consultants abroad.	A designated account in US$ will be opened at a commercial bank acceptable to the World Bank and expected to make payments to local suppliers and other service providers. Another payment method, direct payment, and reimbursement will be available to facilitate payments. The project will make use of Direct payment. The World Bank team will also provide timely support to MESCTI including training on the use of the Client Connection to ensure timely submission of withdrawal requests.	No	S
Financial reporting. The project may not be able to produce the financial reports required promptly to facilitate project monitoring and management.	The project will acquire an accounting software package, which is deemed adequate for preparing timely and quality financial reports. Comments provided by the World Bank on the quarterly reports will help improve the quality.	No	M

Risk	Risk Mitigating Measures Incorporated into Project Design	Conditions for Effectiveness (Yes/No)	Residual Risk
Auditing. Audit reports are often delayed. The project may experience difficulties implementing audit recommendations Management letters are long-winded and identified issues are not quantified, making it difficult to ascertain if these are material enough to qualify the audit report.	An independent and qualified external audit firm will be hired to conduct the annual financial statement audit. The World Bank will monitor audit reports submission compliance, follow up on implementing Management Letter recommendations, and quarterly monitoring of the audit action plan. The ToR of the External Audit Review and shortlist will be validated by the World Bank.	No	M
Governance and accountability. The possibility of corrupt practices, including bribes, misprocurement, misuse of funds, and so on, is a critical issue.	Robust FM arrangements (including a comprehensive annual audit of project accounts, Bank FM supervision including review of transactions, and asset verification) are designed to mitigate the fiduciary risks in addition to the project's overall internal control systems.	No	S
OVERALL FM RISK	—	—	**S**

Note: H = High, S = Substantial, M=Moderate

Specific Financial Management Arrangements

Staffing

33. **The MESCTI Administrative and Finance Department, within the General Secretary is currently staffed with seven FM personnel.** MESCTI will recruit a qualified and experienced FMS and appoint two experienced accountants from

the ministry to be fully dedicated to the implementation of the project. The FMS will be based within the ministry and will be responsible for the training of the assigned staff (civil servants) on the Bank FM procedures. World Bank shall conduct an FM and disbursement regular training on bank requirements and procedures for the FM staff and other officials in the project.

Budgeting

34. **MESCTI follows the national annual general state budgeting procedures.** The General Secretary who holds the department of Administrative and Finance, prepares annual budgets and submits the proposed budgets to the Minister of MESCTI, who then submits to the Minister of Finance for approval. In addition, MESCTI - Department of Administrative and Finance prepares monthly management reports comparing the budget with actual performance and holds meetings with the Head of the Department to evaluate the monthly performance. The Head of the department conducts monitoring of the budget throughout the year and recommends additional required action to address variances.

35. **Budgeting arrangements will be documented in the POM, including the procedures for detailed budget preparation, execution, and monitoring in the FM section of the POM.** They will prepare annual budgets based on the annual work plans and the approved procurement plan. The project will also be responsible for producing variance analysis reports comparing planned with actual expenditures every quarter. The periodic variance analysis will enable the timely identification of deviations from the budget. These quarterly variance analysis reports will be part of the IFRS that will be submitted to the World Bank on a quarterly basis. The budget preparation and monitoring of budget execution will be described in the FM section of the POM, and formats for annual budget and monitoring reports.

Accounting

36. MESCTI uses the Integrated State Financial Management System (SIGFE), which is a computerized system operated by the Ministry of Finance to record, control, and account for all the financial, budgetary, accounting, and asset management operations in real-time. The chart of accounts integrated into the system follows out-to-date "Cash basis" accounting standards and delays in the availability of the system are reported by the minister's staff.

37. The MESCTI will account for funds, expenditures, and resources of the proposed project using automated accounting software. The basis of accounting will be Financial Reporting on Cash Basis. This accounting software will be programmed to facilitate the recording of the project's financial transactions and the production of reliable financial reports required to monitor and effectively manage project implementation progress. Accounting software will be purchased and installed within three months after effectiveness. The accounting system is to be configured to produce both standardized and customized reports as required by the World Bank.

Funds Flow and Disbursement Arrangements

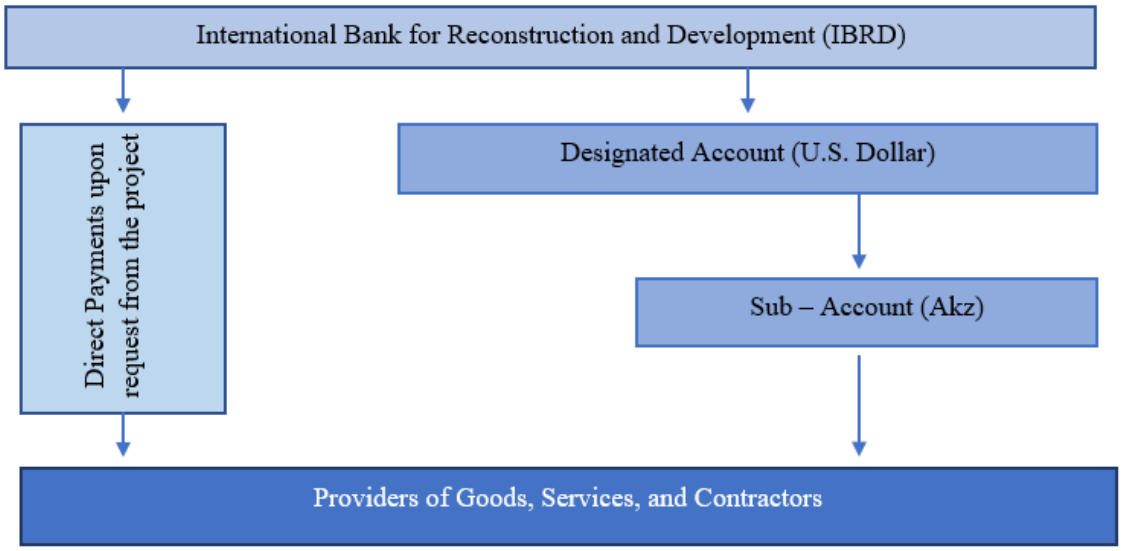
38. **Funds will flow from the World Bank to a Designated Account to be opened and managed by the project (Figure A1.1).**

39. **Funds in the DA will be used to finance eligible project expenditures in accordance with the Financing Agreement and the Disbursement and Financial Information Letter (DFIL).** Disbursing the funds through direct payments, reimbursement, and particular commitments disbursement methods will also be available. Details are included in the DFIL. From the DA, UCC will: (i) make payments for foreign consultants and suppliers of goods and services; and (ii) transfer funds to the DA sub-account in local currency to facilitate payments of local eligible project expenditures. The figure below depicts the fund's flow mechanism for the project activities to be financed under the various disbursement methods.

40. **An advance will be made to the Designated Account at the effectiveness of the Loan.** The MESCTI will use the IFR-based disbursement method. The advance will cover project expenditures for six months as indicated in the initial six-month cash flow forecast in the IFR. After every subsequent quarter, the project will submit IFRs which will include a cash flow forecast for the following 6-month period. The cash request at the reporting date will be the amount required for the forecast period as shown in the approved IFRs less the balance in the Designated Account at the end of the quarter.

41. **Request for reimbursements will be supported by IFRs.** The option of disbursing the funds for large payments through direct payments from the Loan account will also be available. Withdrawal applications for such payments will be accompanied by relevant supporting documents such as copies of the contract, contractors' invoices, and appropriate certifications. All FM staff from the project will register to use the World Bank client connection.

Figure A1.1 Flow of Funds Mechanism



Internal Control

42. **The Government internal audit, the *Inspecção-Geral do Estado* (IGE) is the control and supervisory body of the Public Administration.** The IGE is responsible for exercising control in the areas of budgetary discipline, economics, finance, assets, and material resources in accordance with the principles of legality, regularity, and sound financial management. The last audit carried out was more than 5 years ago.

43. MESCTI will recruit an experienced internal auditor and appoint one staff from the minister to be fully dedicated to the implementation of the project, and they will continuously review the adequacy of internal controls and make recommendations to improve the controls. The team will apply a risk-based approach to fulfill its role and will be required to conduct an annual review of adequacy and adherence to internal controls and risk management framework of the project and a copy of the report be submitted to the World Bank.

44. Business and internal control processes will be documented in the finance and administrative procedures manual that will be integrated into the POM. The FM procedures should include institutional arrangements, budget and budgetary control, disbursement procedures and banking arrangements, receipt of goods and payment of invoices, internal control procedures, accounting system and transaction records, reporting requirements, and audit arrangement. The project shall apply the policies, procedures, and practices in these manuals to ensure that funds of the project are utilized for intended purposes.

Financial Reporting

45. The MESCTI will be required to prepare quarterly interim unaudited financial reports (IFRs) and submit the reports to the World Bank not later than forty-five days after the end of each semester. The contents of these reports shall consist of statements of (i) sources and uses of funds, (ii) uses of funds by project components and activities, (iii) Designated accounts Activity Statements, and (iv) contracts subject to/ and not subject to the World Bank's prior review.

Auditing

46. The project financial statements will be included and audited by the project-appointed external auditors as part of the project's annual financial statements. The project cumulative receipts, expenditures, and closing cash balances shall be disclosed in a note in the project's annual financial statements, commencing with the fiscal year in which the first withdrawal will be made. The annual financial statements shall be prepared in accordance with the accrual-based International Public Sector Accounting Standards and audited by project-appointed external auditors using International Standards for Supreme Audit Institutions. A copy of the project audited annual financial statement and management letter will be submitted to the World Bank not later than six months after the end of the fiscal year.

47. The management letter shall contain the external auditor's assessment of the internal controls, accounting system, and compliance with financial covenants in the Loan Agreement, suggestions for improvement, and management response to the letter. The Audit - Terms of Reference will be developed, agreed upon between the project and external auditors, and cleared by the World Bank to ensure the adequacy of the scope of the audit.

Agreed Actions

48. The following are the agreed actions to further strengthen the project FM arrangements.

	Description of the action	Responsibility	Due date
1	Staffing FM: (i) Recruit a qualified and experienced Financial Management Specialist, and (ii) appoint two staff of the Ministry to be fully dedicated to project implementation. Staffing internal audit: (i) recruit an internal auditor and (ii) appoint staff of the Ministry to be fully dedicated to project implementation.	MESCTI World Bank	Three months after the effectiveness
2	Internal Control: Create the Program Operational Manual (POM)	MESCTI	By effectiveness
3	Accounting: Acquire computerized accounting software.	MESCTI	Three months after the effectiveness
4	Funds flow: Open a project-designated account.	MESCTI	Three months after the effectiveness
5	External Auditor: No later than six months after project effectiveness recruit the external auditors.	MESCTI	No later than six months after the

			project's effectiveness

Supervision Plan

49. FM supervision will involve (a) a review of the semi-annual interim unaudited financial reports, (b) a review of annual audited financial statements, and (c) one project implementation supervision every six months at the project implementing agency.

Procurement Arrangements

50. **Applicable procedures.** Procurement of input-based (procurable) items under the project will be carried out in accordance with the World Bank's 'Procurement Regulations for IPF Borrowers' (Procurement Regulations) dated September 2023, and as amended over time. Moreover, the 'Guidelines on Preventing and Combating Fraud and Corruption in Projects Financed by IBRD Loans and IDA Credits and Grants', dated July 1, 2016; and other provisions stipulated in the Financing Agreement.

51. **Assessment of national procedures.** The Angola Procurement Law no 41/20 approved December 23, 2020. Despite recent improvements, the World Bank has decided that the Angola Procurement Law will not apply for procurement under this project. Therefore, World Bank's 'Procurement Regulations for IPF Borrowers' (Procurement Regulations) referred above will apply for all procurement under this Project.

52. **Procurement arrangements and Institutional Capacity.** Procurement activities will be carried out by the General Secretariat at the MESCTI. The team should comprise a dedicated procurement specialist hired for the Program, along with a civil servant. This will be the first World Bank funded Project that will be managed by Ministry of Higher Education, Science, Technology and Innovation, but the Ministry has experience implementing African Development Bank (AfDB) projects. To strengthen capacities within the Ministry, a specific procurement training plan will be prepared and implemented through the implementation of the project.

53. **Procurement Strategy for Development.** Considering the nature of the project activities, a simplified PPSD is being prepared with the support from the World Bank. The PPSD presents how procurement activities will support the development objective of the project and deliver the best value for money under a risk-based approach. In addition, the PPSD includes the rationales for procurement decisions including the selection of the approach to market and procurement methods.

54. **Frequency of procurement reviews and supervision.** The World Bank's prior and post reviews will be carried out during the implementation. The World Bank will carry out implementation support missions every six months and annual post-procurement reviews; the standard post-procurement reviews by World Bank staff should cover at least 20 percent of contracts subject to post review. The World Bank may also conduct an independent procurement review at any time until two years after the closing date of the project.

55. **Training, workshops, and conferences.** Training (including training material and support), workshops, and conference attendance will be carried out based on an approved annual training and workshop/conference plan. A detailed plan providing the nature of training/workshop, number of trainees/participants, duration, staff months, timing, and estimated cost will be submitted to the World Bank for review and approval before initiating the process. The appropriate methods of selection will be derived from the detailed schedule. After the training, beneficiaries will be

requested to submit a brief report indicating what skills have been acquired and how these skills will contribute to enhance his/her performance and contribute to the attainment of the project objective.

56. **Operational costs.** Operating costs financed by the project are incremental expenses, including office supplies, vehicles operation and maintenance, maintenance of equipment, communication costs, and supervision costs (that is, transport, accommodation and per diem). They will be procured using the procurement procedures specified in the POM (administration, finance, and accounting).

57. **Procurement Manual.** Procurement arrangements, roles and responsibilities, methods, and requirements for carrying out procurement under the proposed project shall be elaborated in detail in the Procurement Manual, which will be a section of the POM. The POM shall be prepared by MESCTI and agreed with the World Bank before project effectiveness.

58. **Procurement Risks.** Major risks associated with the implementation of the Project procurement activities are related to the capacity of the MESCTI to comply with Bank's fiduciary requirements; to prepare realistic procurement plan; and adequate use of STEP. Overall, the procurement risks may be summarized as below:

Table A1.1 Procurement risk assessment and mitigation action plan

#	Risk Description	Description of Mitigation	Risk Owner	Timely
1	Potential procurement delays due poor procurement planning and lack of appropriate market analysis.	Careful and prompt procurement planning based on a dynamic market analysis and realistic scheduling advanced preparation of technical specifications or TORs. Periodic review of Scope and cost estimation for alignment with project coordination.	MESCTI	During implementation
2	Lengthy internal procurement reviewing process that may cause the project implementation delays.	Prepare and adopt a project operation manual including a volume on procurement comprising of clear rules, step by step procedures and responsibilities, timeline requirements for procurement activities, actions and decisions, sample documents and evaluation report for small procurements, etc. Adopt operation procedures for project implementation with step-by-step procedures responsibilities and timelines requirements for procurement activities, actions and decisions.	MESCTI	During implementation

#	Risk Description	Description of Mitigation	Risk Owner	Timely
3	Stretched period to evaluation proposals by the evaluation committees may cause project implementation delays	Ensure that the evaluation committee members are invited upfront and have time allocated and appropriate experience / skills in carrying out evaluation processes. Assign a Procurement practitioner to present the criteria and the basic rules of evaluation and document the results in the moment.	MESCTI	During implementation
4	Inadequate contract management and lower-than-required quality of procured solutions	Emphasis and training on appropriate contract management, regular physical inspections by Bank supervision mission	MESCTI	During implementation
5	Governance risks associated with conflict of interest, fraud and corruption, which may adversely affect the efficiency and effectiveness of the project implementation	Enhanced disclosure of procurement information, including publication of the annual procurement plan and a quarterly summary of the contract award information for all procurement packages on project website and "Jornal de Angola" (national newspaper). Establish a procurement complaint handling mechanism consistent with the Government Procurement Rules and World Bank requirements. Require staff involved in procurement to declare their interest and sign a declaration form. Monitoring and reporting on implementation of actions for strengthening transparency and procurement training for project.	MESCTI	During implementation
6	Limited competition by individual consultants	Ensure advertisement locally (newspapers, Jobartis platform, others) and internationally (STEP/UNDB), as well as being proactive to identify potential consultants (ask reference/long lists to the Bank, contact other Lusophone countries, amongst other initiatives)	MESCTI	During implementation

#	Risk Description	Description of Mitigation	Risk Owner	Timely
7	Cost increase	Use price adjustment even if contract timeline is less than 18 months.	MESCTI	During implementation
8	Local currency fluctuations	Project budgeted in hard currency and fluctuation of local currency will be minimum	MESCTI	During implementation
9	Suppliers have difficulties in accessing funding, bank guarantees and foreign currency and there are payment delays that may affect their performance	Provide in bidding documents and contracts for payments in foreign currency, bank transfer instead of letters of credit, bid securing declarations instead of bank guarantees if practicable. The project should however not transfer all risks to itself (be careful with advance payments, require performance security as needed)	MESCTI	During implementation

C. Implementation Support Plan

59. **Implementation Support has already begun, carried out by the World Bank.** The team is led by members in Luanda as well as Washington D.C. The fiduciary team members are all based in Luanda. The team supports the MESCTI daily, both in person, as well as through virtual support.

60. **Overall, the staffing for implementation support would be as follows (Table A1.2 and Table A1.3).** During the first 12 months, it is expected that stronger engagement will be required in terms of M&E and public financial management, specifically to set up the various evaluations and to inform the PFM reforms to enable the evolution toward results-based public financing modalities. Special attention will be paid to monitoring activities at the level of HEIs. The World Bank team will ensure timely, efficient, and effective implementation support to the client. Tables A1.2 and A1.3 provide the implementation support plan and the skills mix required for the project.

61. **Implementation support missions will be carried out at least twice a year to follow up on activities.** This will serve as a dedicated time to systematically review implementation progress and progress toward results. However, given the ease of virtual connections and the preponderance of the team being based in the country office, implementation support will be continuous and in no way limited to missions. Aide-memoires, management letters, and Implementation Status Reports will be filed after each mission.

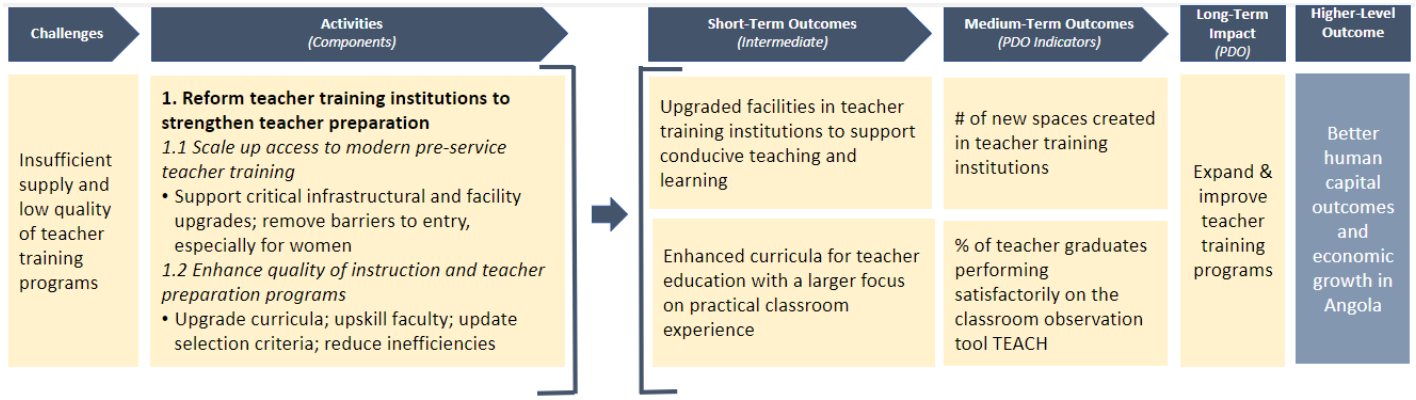
ANNEX 2: Detailed Description of Elements Related to GPE Financing

COUNTRY: Republic of Angola
Tertiary Education, Science, and Technology Project (TEST)

A. Theory of Change

1. **The theory of change for Component 1 identifies the constraints, activities, outputs, and impact sought.** Figure A2.1 illustrates the relationship from identified challenges to final outcomes that the program will achieve.

Figure A2.1. Theory of Change: Transforming Teacher Training in Angola



2. **The identified challenges for teacher preparation consist of constraints both in terms of scale of programs and quality of training offered.** Section B below describes these challenges in greater detail.

3. **The selected activities described in Annex 1 are a direct response to these challenges.** Component 1.1 activities seek to scale up the number of spaces for teacher preparation, primarily through infrastructure activities, as well as policies that will favor the recruitment of women into the teaching profession. Component 1.2 activities will work to reform the existing low quality preparation of teachers, mainly through upgrading the curricula (specifically through introducing more time for honing practical pedagogical methods in the classroom), upskilling teacher trainers in TTIs, and reducing inefficiencies in the system (such as requirements for writing dissertations prior to graduation).

4. **These activities will lead to the following results.** In the short-term, they will produce upgraded facilities that are more conducive to teaching and learning. In the medium-term, they will enable 10,000 more teachers to be trained per year, culminating in 3.2 million children ultimately benefiting from teachers that are higher performing in the classroom. The improved quality of the services delivered in TTIs will make for teachers that are better able to impart learning to these students. In the long-term, such improved teacher training programs will result in generations of Angolan children with higher learning outcomes and more skills. This boost in human capital will ultimately translate into higher productivity and consequently higher economic growth in Angola.

B. Summary of Diagnostics of Shortcomings in TTIs

5. **Transformation of the teacher preparation ecosystem at the tertiary level is crucial to solving the learning crisis at the basic education level.** Teachers are the most important factor affecting learning in schools. Well-prepared teachers have a much larger impact on students than lesser prepared ones and this is truer for developing countries. However, teacher training systems do not attract strong applicants or train teachers effectively. This is especially true in Angola, where recent studies reveal a dramatic learning crisis and an urgent need for action. Two thirds of children in grade three cannot read an age-appropriate text. Furthermore, most teachers do not have the capacity and required skillset to reduce this learning gap, with only six percent able to correctly reply to 80 percent or more of their own assessment questions when tested. Classroom observations also reveal that 86 percent of teachers score "unsatisfactory" or "very unsatisfactory" in their pedagogical practices. Turning this around begins with a transformation of the teacher training ecosystem, which resides at the tertiary level.

6. **Demographic pressures, combined with chronic underfinancing of education, have left Angola further from achieving education for all than ten years ago.** The result is a need for more teachers at all levels of education. Angola's net enrollment rate in primary has slipped from nearly 80 percent in 2011 to 71 percent in 2019. Given demographic pressures, it is likely that this negative trend will continue, affecting the poorest: 52 percent of primary school-aged children in the bottom quintile are not in school. To return to 2011 levels of coverage, Angola would need more than 200,000 additional teachers over the next 10 years, implying an increase from 10,000 graduates to 25,000 graduates per year (accounting for attrition).

7. **The poor quality of instruction in teacher training institutes (TTIs) results in graduates that are unprepared for the classroom.** The country faces concomitant challenges of needing to both scale up supply and revamp the quality of instruction in TTIs. The institutions entrusted with preparing teachers require reforms across four dimensions: i) attracting and selecting the best student teachers, ii) skilling up the professors in the TTIs, iii) reforming the curricula to make it much more classroom-relevant, and iv) substantial infrastructure upgrades to improve the basic conditions. Currently, most students default into the TTIs, in hopes of obtaining a public sector job, resulting in students with low motivation. Second, those responsible for preparing them for Angola's classrooms have an outdated vision of what education should be, preparing them for a future of "chalk and talk". The curriculum followed is very theoretical, with minimal (and often no) application in schools to practice. Finally, to graduate, all students must write a dissertation, a requirement that often serves as a barrier to graduation that can last years.

8. **To fulfill the vision of producing excellent teachers, TTIs need to be upgraded to reflect the importance of the profession.** Most TTIs are housed in extremely poor infrastructure, often buildings re-purposed to be teacher training centers. Institutions are characterized by degrading conditions, unreliable electricity and water, limited access to the internet, and insufficiently stocked libraries. This is especially true with regards to digital infrastructure (see challenge 4), rendering it very difficult to equip teachers with the skills and competencies they will need to in turn prepare students for Angola's digital future.

C. Gender Hardwiring

9. **The program has been designed to tackle specific gender gaps at various levels.** With regards to the technical assistance (TA)provided to TTIs, the terms of reference for designing the TA program include the following elements. First, specific barriers to girls, whether in terms of access, or that constrain their performance in TTIs, will be identified at the institution level. Second, specific strategies for tackling these barriers will be produced at the system-level (e.g., criteria for scholarships) as well as the institution level (e.g., strategies to challenge gender stereotypes or traditional social norms currently being practiced in TTIs).

10. **The program will enhance and universalize approaches that will make HEIs and TTIs safer for girls (and boys).** As outlined in Annex 1, the SRGBV identification and referral system currently in place in partnership with UNICEF under the Girls' Empowerment and Learning for All Project (P168699) will be extended to all higher education institutions, including teacher training institutions. This grievance redress mechanism along with its case management system will help identify, respond to, and refer cases of SRGBV, with the view of ultimately preventing such violence. As per Annex 1, among the SRGBV actions to be carried out are:

- **Baseline Information.** Collect data on the prevalence and nature of SGBV on the campuses of HEIs through a baseline survey.
- **Incident Reporting.** Ensure that HEIs' management are promoting the GRM, and are informed of all grievances being submitted, as per protocols in the POM.
- **Monitoring.** Conduct regular surveys to assess the continuing prevalence of SRGBV, the outcomes or reported cases, and the perceptions of students and staff.
- **Awareness and Training.** Conduct SRGBV awareness campaigns and training workshops. Undertake pre- and post- assessments of the effectiveness of these activities.
- **Support Services.** Measure the use and effectiveness of counseling, medical assistance, and legal support for survivors of SRGBV.
- **Accountability.** Publish regular reports on the progress of the HE system and the results of each HEI to enhance transparency and accountability.
- **Benchmarking.** Compare SRGBV data and progress across HEIs and with national statistics on SGBV to assess how well each institution is performing relative to others.

D. Sustainability

11. **The program will enhance teacher training programs via the strengthening of policies and support the implementation of key strategies.** An improved practice system under the pre-service teacher training program will equip future teachers with the necessary skills, knowledge, and attitudes needed to effectively manage classrooms and better engage with students in the classroom. A combination of better prepared teachers with the perspective of access to specialized training tracks for different areas of teaching (i.e., early childhood education, special education, subject-specific teaching) offered via the scholarships' program is expected to motivate teachers to fulfill their responsibilities and potentially reduce absenteeism.