REPUBLIC OF UGANDA

NDPIV HUMAN RESOURCE DEVELOPMENT PLAN 2025/26 - 2029/30

"Building a Skilled, Productive and Competitive Workforce"

National Planning Authority

MARCH 2025

Uganda Vision 2040

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LIST OF ACRONYMS

ACE	Adult and Continuing Education
ADR	Alternative Dispute Resolution
AfCFTA	African Continental Free Trade Area
AI	Artificial Intelligence
AIDS	Acquired Immunodeficiency Syndrome
AJR	Annual Jobs Report
A-Level	Advanced level
ASSR	Annual Scarce Skills Report
ATM	Agriculture, Tourism and Manufacturing
BESSR	Biennial Employment and Skills Status Report
BI	Business Intelligence
CBET	Competence-Based Education and Training
CBO	Community Based Organisation
CIO	Chief Information Officer
COMESA	Common Market for East and Central Africa
COVID-19	Coronavirus Disease 2019
CPD	Continuous Professional Development
CSOs	Civil Society Organisations
DPI	Development Plan Implementation
DPIP	Development Plan Implementation Programme
E&T	Education and Training
EAC	East African Community
EACOP	East African Crude Oil Pipeline
ECCE	Early Childhood Care and Education
ECD	Early Childhood Development
EPR	Employment-to-Population Ratio
ERA	Electricity Regulatory Authority
ESSR	Employment and Skills Status Report
FAO	Food and Agricultural Organisation
FUE	Federation of Uganda Employers
FY	Financial Year
GDP	Gross Domestic Product
HCD	Human Capital Development
HEIs	Higher Education Institutions
HESFB	Higher Education Students Financing Board
HIV	Human Immunodeficiency Virus
HR	Human Resource
HRD	Human Resource Development
HRDP	Human Resource Development Plan
ICT	Information and Communication Technology
ILO	International Labour Organisation
ISCED	International Standard Classification of Education
ISCO	International Standard Classification of Occupations
ISIC	International Standard Industrial Classification
ISS	Institute for Security Studies
IT	Information Technology
ITIS	Integrated Transport Infrastructure and Services
JLOS	Justice, Law and Order Sector
KPI	Key Performance Indicator
LFPR	Labour Force Participation Rate
LG	Local Government
LGWC	Local Government Working Committee
LTD	Limited

M&E	Monitoring and Evaluation
MAAIF	Ministry of Agriculture, Animal Industry and Fisheries
MALGs	Ministries, Agencies, and Local Governments
MDAs	Ministries, Departments and Agencies
MFSC	Micro Finance Support Center
MGLSD	Ministry of Gender, Labour, and Social Development
MKCC & MA	Ministry of Kampala Capital City and Metropolitan Affairs
MoES	Ministry of Education and Sports
MoFA	Ministry of Foreign Affairs
MoFPED	Ministry of Finance, Planning and Economic Development
MoIA	Ministry of Internal Affairs
MoICT&NG	Ministry of Information Technology & Computing and National Guidance
MoPS	Ministry of Public Service
MoWT	Ministry of Works and Transport
MSMEs	Micro, Small, and Medium Enterprises
MTEF	Medium Term Expenditure Framework
MTIC	Ministry of Trade, Industry and Cooperatives
NCDC	National Curriculum Development Centre
NDC	National Defense College
NDPII	National Development Plan Two
NDPIII	National Development Plan Three
NDPIV	National Development Plan Four
NEET	Neither in Employment nor in Education or Training
NEMA	National Environment Management Authority
NGO	Non-Government Organisation
NHRDP	National Human Resource Development Plan
NHRDPF	National Human Resource Development Planning Framework
NLFS	National Labour Force Survey
NPA	National Planning Authority
NPHC	National Population and Housing Census
NRM	National Resistance Movement
NSC	National Steering Committee
NTC	National Teachers Colleges
NTR-U	National Talent Register - Uganda
NTWG	National Technical Working Group
NWSC	National Water and Sewerage Cooperation
O-Level	Ordinary Level
PBA	Programme Based Approach
PDM	The Parish Development Model
PhD	Doctor of Philosophy
PIAPs	Programme Implementation Action Plans
PSCC	Programme Skills Coordination Committee
PSD	Private Sector Development
PSFU	Public Sector Foundation Uganda
PTC	Primary Teachers College
PUJAB	Public Universities Joint Admissions Board
PWG	Programme Working Group
QLFSR	Quarterly Labour Force Status Report
RDP	Regional Development Programme
SACCOs	Savings and Credit Society Organisations
SACMEQ	Southern and Eastern Africa Consortium for Monitoring Educational Quality
SDGs	Sustainable Development Goals
SESEMAT	Secondary Science and Mathematics Instructors
SGR	Standard Gauge Railway
SME	Small and Medium Enterprise

SME	Small and Medium Size Enterprise
SSA	Sub Saharan African
STEM	Science, Technology, Engineering and Mathematics
STI	Science, Technology, and Innovation
TASC	The Assessment and Skills Centre
TVET	Technical, Vocational, Education and Training
UAE	United Arab Emirates
UBOS	Uganda Bureau of Statistics
UBTEB	Uganda Business and Technical Examinations Board
UCC	Uganda Communications Commission
UDB	Uganda Development Bank
UDC	Uganda Development Cooperation
UETCL	Uganda Electricity Transmission Company Limited
UGAPRIV	Uganda Association of Private Vocational Institutions
UIA	Uganda Investment Authority
UK	United Kingdom
UMA	Uganda Manufacturers Association
UNATU	Uganda National Teachers Union
UNCHE	Uganda National Council for Higher Education
UNCST	Uganda National Council for Science and Technology
UNEB	Uganda National Examinations Board
UNESCO	United Nations Educational, Scientific and Cultural Organisation
UNHS	Uganda National Household Survey
UPE	Universal Primary Education
UPOLET	Universal Post Ordinary Level Education and Training
URA	Uganda Revenue Authority
URSB	Uganda Registration Service Bureau
USA	United States of America
USD	United States Dollars
USE	Universal Secondary Education
UVQF	Uganda Vocational Qualifications Framework
UWEP	Uganda Women Enterprise Programme
VET	Vocational Education and Training
WHO	World Health Organisation
YLP	Youth Livelihood Programme

FOREWORD

The NDPIV Human Resource Development Plan is an annexe of the Fourth National Development Plan (NDPIV). It contributes to attaining the Vision 2040 and the 10-fold growth strategy aspirations by providing a detailed roadmap for developing the human resources necessary to realise Uganda's development ambitions. It therefore sets the country on a strategic path towards achieving inclusive growth, full monetisation of the economy, and sustainable socio-economic transformation.

This Plan is developed in line with the National Human Resource Development Framework (NHRDF), approved by Cabinet in 2018. The framework mandates the preparation of five-year Human Resource Development Plans alongside each National Development Plan. The NDPIV-HRDP continues this tradition, responding to the imperative of aligning Uganda's workforce with current and emerging labour market needs.

It builds on the foundation laid by previous plans, particularly the NDPIII-HRDP. This plan contributed to significant progress in poverty reduction, improvements in health and education outcomes, and increased participation in the money economy. For instance, poverty declined from 24.5% in FY2010/11 to 16.9% in FY2023/24, while life expectancy rose to 68.2 years. The share of subsistence households also fell to 33.1%, driven by initiatives such as the Parish Development Model (PDM).

The overarching goal of this Plan is **"to increase the stock of skilled, productive, and competitive human resources."** It sets out four strategic objectives: aligning education and training with labour market needs; reforming and expanding TVET; enabling innovation, entrepreneurship, and employment creation; and strengthening national coordination in manpower planning. It articulates interventions and actions for building skilled, productive, and competitive human resources, with a focus on addressing labour market mismatches in the country.

The effective implementation of this Plan will require coordinated action and unwavering commitment across all sectors. I therefore call upon all stakeholders, including government agencies, the private sector, civil society, cultural and faith-based institutions, and development partners, to actively support this national endeavour.

In conclusion, I extend my sincere gratitude to all who contributed to the development of this plan. I also commend the National Planning Authority for its leadership in steering this process. Together, let us build a future where every Ugandan has the opportunity to thrive through meaningful and productive work.

For God and my Country.

Prof. Pamela Kasabiti Mbabazi (PhD)
Executive Chairperson
National Planning Authority

PREFACE

The NDPIV Human Resource Development Plan is an integral component of the Fourth National Development Plan, rather than a standalone. The plan offers a detailed assessment of the skills and competencies required for the effective implementation of NDPIV and reflects Uganda's commitment to placing its people at the centre of national development. This will be through building a workforce that is skilled, competitive, and responsive to the demands of a rapidly changing world of work.

This Plan is underpinned by the projections from a national human resource model developed by the National Planning Authority. The model utilises the National Manpower and Household Survey data sets from the Uganda Bureau of Statistics. It is aligned with the International Standard Classification of Occupations (ISCO) and the UNESCO International Standard Classification of Education (ISCED) as global standards. These projections identify the country's expected skills and education qualification needs over the next five years across selected programmes.

The Plan has identified skills shortages across all the NDPIV programs for the next five years. The Human Capital Development Programme is expected to take lead in the implementation of the planned interventions to address these shortages. The Universities and other tertiary institutions are expected to realign their enrolment in line with the identified shortages and accordingly develop new academic programs especially for training that is not readily available in the country. Also, the government scholarship system and students' loan scheme should be realigned to address the identified skills shortages in the country.

The goal of this Plan is: "to increase the stock of skilled, productive and competitive workforce." This will be achieved through four strategic objectives: (i) strengthening the alignment of the national education and training system with current and future labour market needs; (ii) reforming and increasing access to Technical and Vocational Education and Training (TVET) to enhance employment and employability of Ugandans; (iii) strengthening an enabling ecosystem for employment creation, entrepreneurship, and innovation; and (iv) enhancing the coordination and effectiveness of manpower planning and development.

The Plan introduces several policy reforms, including the establishment and operationalisation of a National Talent Register for Uganda, a comprehensive review and reform of government sponsorship and students' loan schemes, and the establishment of a National Service Scheme. These measures are designed to enhance equity, efficiency, and the strategic alignment of Uganda's human capital development.

The Plan reflects a shared national vision and was formulated through an extensive stakeholder engagement process. Key stakeholders that provided critical inputs include government entities, academia, the private sector, civil society, and development partners. Its successful implementation is crucial to achieving Uganda's ambitious target of creating 4.4 million new jobs over the next five years.

The National Planning Authority (NPA) reaffirms its commitment to coordinating the implementation of this transformative agenda. We call on all Ugandans and development actors to work in solidarity, leveraging our collective resources, knowledge, and commitment to realise a more equitable and prosperous future. Together, we can unlock Uganda's demographic potential and build a future anchored in human dignity, equity, and prosperity.

For God and my Country.

Joseph Muvawala (PhD)
Executive Director
National Planning Authority

GLOSSARY OF CONCEPTS AND DEFINITIONS

1. **Human Capital** refers to the stock of skills, knowledge and understanding gained by HR through education, training and experience embodied in the ability to perform work to produce economic value. From a broader perspective, human capital encompasses the character, ethics, personality and creativity of a human being.

2. **Human Resource Development Planning Guidelines** provide a step-by-step guide to Ministries, Departments and Agencies (MDAs) and Local Governments (LGs) to support them in developing their respective Human Resource Development Plans. The guidelines aim to ensure that the MDAs and LGs Human Resource Plans are aligned to their respective strategic plans and the 5-year National Human Resource Development Plan (NHRDP).

3. **Human Resource Development Planning** is the HR's perspective of considering short, medium and long-term human resource demand and supply requirements and priorities guided by the national development agenda.

4. **Human Resource** is the human potential that resides in the knowledge, skills and motivation of people with infinite capabilities and has the possibility of beneficial engagement.

5. **International Standard Classification of Education (ISCED)** is the framework used to compare statistics on the education systems of countries worldwide. It is an important tool used to facilitate international comparisons and to benchmark and monitor progress on international education goals.

6. **International Standard Classification of Occupations (ISCO)** is a tool for organising all jobs in an establishment, an industry or a country into a clearly defined set of groups according to the tasks and duties undertaken in the job. ISCO provides a basis for the international reporting, comparison and exchange of statistical and administrative data about occupations.

7. **International Standard Industrial Classification (ISIC)** is the international reference classification of productive economic activities. ISIC provides a set of activity categories that can be utilised for the production of statistics according to activity, i.e., production and national income, economic, demographic, and social statistics.

8. **Labour Market Information System** is a labour market policy instrument that collects, evaluates and provides labour market information to both the labour supply side and the labour demand side. It is designed to reduce the information deficit on the labour market, enhance information flow between job searchers, employers offering jobs and the institutions offering training and qualification programmes.

9. **Labour market** is a composition of systems, institutions, procedures, social relations and infrastructures whereby employees offer to supply labour and employers offer employment opportunities within the existing socio-economic conditions. When the labour market equilibrium occurs, neither labour surplus nor labour deficit is observed in the job market, other factors remaining constant.

10. **Macro Model for Human Resource Projections** is an extension of the National Development Macro-Economic Framework that provides an integrated accounting framework to monitor and produce projections for employment and national human resource requirements in line with the national priorities as articulated in the running National Development Plans.

11. **Manpower** is the total labour force or total number of people above the legal working age that is either working or available for work in a Country at a given time. It is a country's total labour force, including men and women, at a given time. If there are more people within the legal working age bracket than available jobs at any point in time, then the country is said to be facing '*Manpower Surplus*.' Still, if there are more jobs than the available people within the legal working age, the country is said to be facing '*Manpower deficits*.'

12. **National Human Resource Development Plan** refers to the approved and agreed upon strategies, interventions and actions to foster the development of the required HR in line with the national development agenda along the labour market system of the country.

13. **National Human Resource Development Planning Framework (NHRDPF)** is a guide that provides processes, structures, and mechanisms for integrated Human Resource Development Planning in support of the national strategic direction and development planning objectives.

14. **Uganda Vocational Qualifications Framework (UVQF)** is a mechanism that defines; occupational and assessment standards in the world of work, the award of vocational qualifications to learners who meet the set standards implemented under the formal and non-formal education and training. The UVQF in Uganda, is complemented by the principles of competence-based education and training and therefore promotes the skills development programmes in the TVET sub sector through flexible training /learning modules.

15. **Youth not in Education, Employment, or Training (NEET)** provides a measure of youth outside the educational system, not in training and not in employment. It includes discouraged youth workers and those outside the labour force due to disability and engagement in household chores, among other reasons.

EXECUTIVE SUMMARY

A. BACKGROUND

The NDPIV-HRDP 2025/26–2029/30 is one of the components of the Fourth National Development Plan (NDPIV). It builds on the foundations of the first HRDP attendant to the NDPIII, lessons learned, ongoing reforms, and emerging challenges in the labour market and education systems.

It is a national agenda for streamlining human resource development in line with the country's development aspirations expressed in Vision 2040 and the five-year medium-term plans. It reflects the deliberate government efforts to integrate strategic Human Resource Planning into the broader socio-economic transformation agenda of the Country. In addition, the Plan responds to Uganda's evolving demographic and economic landscape, including the need to create 4.4 million new jobs over the NDPIV period.

The plan aligns with both global and regional agendas, reinforcing Uganda's commitment to fostering a skilled and competitive workforce. Globally, the Plan contributes to the United Nations Sustainable Development Goals (SDGs), particularly Goal 4 (Quality Education), Goal 8 (Decent Work and Economic Growth), and Goal 10 (Reduced Inequality). Regionally, the Plan aligns with the Africa Agenda 2063 and the East African Community (EAC) Vision 2050. It prioritises reforms in Technical and Vocational Education and Training, expansion of equitable access to quality education, and enhancement of Labour market responsiveness.

B. APPROACH IN PRODUCING THE NDPIV-HRDP

The Plan was developed through a highly consultative, participatory and evidence-based process. Specifically, the approach involved:

i) **Situational analysis and review of the NDPIII-HRDP.** A comprehensive assessment of the previous HRDP under NDPIII was conducted to identify achievements, gaps, persistent challenges, and lessons learned.

ii) **Labour Market Analysis.** The development of the plan involved the assessment of both the supply and demand sides of Uganda's labour market to establish human resource needs.

iii) **Macroeconomic Human Resource modelling and projections**. Modelling and projections of Human Resources were undertaken to determine the human resource mismatches using the International Standard Classification of Occupations (ISCO) and the International Standard Classification of Education (ISCED).

iv) **Programme Human Resource Needs Mapping**. The human resource needs and mismatches obtained from the macro model were mapped to the 18 NDPIV programmes for easy implementation and follow-up.

v) **Stakeholder Consultations**. Stakeholders were consulted from the inception to the validation of the plan. Through this process, their views and contributions helped in the refinement of the Plan. The key stakeholders engaged included: MDAs, Local Governments, academia, industry players, private sector associations, and development partners. The stakeholder engagements ensured the integration of equity, gender, and inclusivity concerns in the Plan.

C. CONSTRAINTS TO HUMAN RESOURCE DEVELOPMENT IN UGANDA

Human Resource Development (HRD) remains critical to Uganda's socio-economic progress, yet the country continues to face persistent barriers that hinder the effective development and use of its human capital. These constraints fall into three broad areas: labour demand and labour supply side challenges, as well as those stemming from the wider social, economic, and technological context.

i) **On the demand side, job creation is limited by a weak business environment,**

with most enterprises operating informally and failing to grow sustainably. The NDPIV identifies several challenges to the private sector that limit its capacity for job creation. These include: low and declining productivity, high cost of doing business, low survival and transition of MSMEs, limited capacity to access and sustain presence in key markets, and weak organisation and institutional capacity of the private sector. In addition, industrialisation is sluggish, formal job growth is outpaced by the expanding labour force, and Uganda remains ill-prepared for technological shifts such as automation and artificial intelligence.

ii) **From the supply side, the education and training systems face issues of access, quality, and relevance.** Early childhood education remains inaccessible to most, transition rates from primary to secondary school are low, and there is a mismatch between higher education outputs and labour market needs. Technical and vocational education is undervalued, certification is inconsistent, and there is a general lack of alignment between curricula and skills demand. These challenges are compounded by limited investment in research and development, low literacy and numeracy, and inadequate teacher capacity.

iii) **The broader contextual challenges further constrain HRD**. Rapid population growth strains public services and educational infrastructure, while the predominance of informal employment limits access to secure, well-paying jobs. Uganda's reliance on climate-sensitive agriculture increases its vulnerability to external shocks. At the same time, technological change is transforming key sectors more rapidly than the country can adapt, risking greater exclusion for those lacking digital skills or access to new opportunities.

D. STRATEGIC DIRECTION OF THE NDPIV HRDP

The overarching goal of the Plan is: ***"To increase the stock of skilled, productive and competitive human resources in Uganda to meet the country's development needs."***

This is pursued through the theme: ***"Building a Skilled, Productive and Competitive Workforce."***

The strategic objectives of the NDPIV-HRDP are to:

i) Strengthen the alignment of the national education and training system with current and future labour market needs;

ii) Reform and increase access to Technical and Vocational Education and Training (TVET) to enhance employment and employability of Ugandans;

iii) Strengthen an enabling ecosystem for employment creation, entrepreneurship, and innovation,

iv) Enhance the coordination and effectiveness of manpower planning and development.

E. GAME CHANGERS OF THE PLAN

The NDPIV-HRDP has introduced several HRD reforms aimed at enhancing the country's human capital and improving employment outcomes. The proposed reforms are designed to address existing challenges and harness opportunities for sustainable development. The following outlines the key proposed reforms:

i) **Development and Operationalisation of a National Human Resource Development Policy for Uganda.** The policy will serve as a strategic framework to guide the country's efforts in enhancing human capital, addressing employment challenges, and achieving sustainable human resources development.

ii) **Review the approach of allocating government sponsorship and student loan schemes to prioritise scarce skills.** Government sponsorship and school

schemes should be realigned to prioritise fields and skills that are identified as scarce or in high demand. This flexibility ensures that sponsorships are continuously relevant and responsive to changes in the economy.

iii) **Centralising the admission to universities and other Tertiary Institutions.** By streamlining and standardising admissions, the government can enhance fairness, efficiency, and alignment with national development goals. The central authority prioritises admission to programmes and institutions that align with identified skills needs and strategic areas of growth.

iv) **Establishing and operationalising a Uganda National Talent Register (NTR-U) for all professions.** The National Talent Register aims to create a centralised database that captures detailed information about individuals' skills, qualifications, and career experiences across various professions. This centralised approach facilitates better management and utilisation of human capital.

v) **Fast-track the establishment and implementation of a National Service Scheme to engage youth in structured programmes.** The scheme will equip participants with practical skills, enhance their employability, and foster entrepreneurial mindsets. Furthermore, it will promote a sense of discipline, civic responsibility, and national unity by bringing together individuals from diverse regions and backgrounds.

vi) **Reform A-level curriculum to incorporate vocational and competence-based subjects.** By integrating vocational and competence-based education, such as technical training, entrepreneurship, agriculture, health sciences, and information technology alongside traditional academic courses, the reform will ensure that students graduate with both theoretical knowledge and hands-on expertise.

F. IMPLEMENTATION OF THE NDPIV-HRDP

Implementation of the Plan will be undertaken within the Programme-Based Approach (PBA) framework that governs the NDP-IV and will be fully integrated into Programme Implementation Action Plans (PIAPs). Responsibility for implementation will be shared across MDAs, Local Governments, the private sector, training institutions, and development partners. The National Planning Authority (NPA) will lead coordination, in collaboration with the Ministry of Gender, Labour and Social Development (MGLSD) and the Ministry of Education and Sports (MoES).

Institutional coordination will be facilitated through Programme Skills Coordination Committees (PSCCs), Local Government Technical Planning Committees, and the National Steering Committee on Human Resource Development. Tools such as the *Human Resource Development Planning Guidelines* and an implementation toolkit will support the integration of HRD into sectoral and local government planning processes.

G. FINANCING MECHANISMS OF THE NDPIV-HRDP

The financing strategy for the Plan relies on the reprioritisation and efficient use of existing public resources. Implementation will be funded through the Medium-Term Expenditure Framework (MTEF), without the need for new budget lines. The emphasis will be on aligning education, labour, and sectoral programme budgets with the human capital needs identified in the Plan.

In addition to public funds, the Plan encourages leveraging support from development partners, philanthropies, and private sector actors, particularly in areas such as skills infrastructure, technology transfer, and innovation. Mechanisms such as Public-Private Partnerships (PPPs), skills levies, diaspora bonds, and employer co-investment models will be explored to supplement public financing and ensure sustainability.

H. MONITORING AND EVALUATION MECHANISMS

The Plan features a comprehensive Monitoring and Evaluation (M&E) framework aligned with the National Results-Based Management (RBM) system. It includes clearly defined indicators, baselines, and targets that will be monitored at national, sectoral, and local levels. Annual Employment and Skills Status Reports (ESSRs) will track progress on employment creation, training outputs, and labour market integration.

Quarterly Labour Force Status Reports will provide high-frequency updates on labour market dynamics, while biennial mismatch assessments will ensure that skills Development remain aligned with real-time market demands. The operationalisation of the Labour Market Information System (LMIS) and digital dashboards will enhance data-driven planning and reporting. Accountability mechanisms will be reinforced through regular reporting by implementing agencies and the integration of HRD indicators into national performance assessments.

PART 1: BACKGROUND AND LABOUR MARKET CONTEXT

CHAPTER 1: BACKGROUND AND CONTEXT

1.1. Introduction

1. **The NDPIV-Human Resource Development Plan is an extension of the Fourth National Development Plan (NDPIV)**. The Plan builds on the foundations of the National Human Resource Development Plan (NHRDP) for the Third National Development Plan (NDP III). The NDPIV-HRDP is developed in line with the National Human Resource Development Planning Framework (NHRDPF), approved by the Cabinet in 2018. The framework requires that every National Development Plan be accompanied by a corresponding HRDP. The NDPIV-HRDP is anchored on the principles of sustainable industrialisation, wealth creation, employment and inclusive growth. The Plan also aligns with the overarching goal of NDPIV of "*higher household incomes, full monetisation of the economy, and employment for sustainable socio-economic transformation*". The NDPIV-HRDP provides critical insights into building a skilled, productive and competitive human resource, with a focus on addressing labour market mismatches in the country.

1.2. Background

2. **Uganda's economy is undergoing significant structural changes, offering both opportunities and challenges for national development.** On one hand, these changes present avenues for economic growth and employment generation, driven by rapid population growth, urbanisation, and advancements in key sectors such as digital transformation, industrialisation, and extractives. On the other hand, the economy faces persistent challenges, including skills mismatches and relatively high unemployment rates, which hinder the full realisation of these opportunities. These issues underscore the urgent need for strategic human resource development to equip the workforce with the skills and adaptability required to meet evolving labour market demands.

3. **Recognising human capital as a critical driver of economic transformation, notable progress has been achieved with the implementation of the NDPIII-HRDP**. Progress was registered in addressing skills mismatches, strengthening stakeholder collaboration, and promoting sustainable workforce planning. Through aligning workforce development with national priorities, the NDPIII-HRDP contributed to building a more responsive and adaptive human resource development ecosystem. This foundation is crucial for sustaining progress and ensuring that Uganda's workforce is prepared to harness the opportunities presented by ongoing structural changes while mitigating the associated challenges.

4. **Building upon the achievements of the NDPIII-HRDP, the NDPIV-HRDP sets forth a strategic roadmap to further enhance the country's human resource development.** The NDPIII-HRDP served as an inspiration in facilitating advancements in aligning human resource development with programmes and industrial needs. Through concerted efforts and strategic interventions, notable strides in identifying and addressing skills mismatches were made, thereby fostering a more conducive environment for sustainable economic transformation. Additionally, the collaborative endeavours undertaken during the implementation of the Plan enhanced stakeholder engagement and fostered a culture of sustainable human resource development.

5. **Despite the efforts, there are still challenges in attaining comprehensive human resource development which the NDPIV-HRDP seeks to address.** There are persistent challenges such as inadequate access to quality education, skills mismatches, and regional disparities which continue to pose significant hurdles to human resource development. Moreover, the dynamic

nature of the global economy necessitates continuous adaptation and innovation to ensure the workforce remains competitive domestically, regionally and internationally. The formulation and implementation of the NDPIV-HRDP takes cognizance of the pressing need to address these challenges by leveraging lessons learned from past experiences and embracing a forward-thinking approach, the country is poised to build upon the earlier successes and overcome prevailing obstacles. Through strategic coordination, partnerships, targeted interventions, and a commitment to inclusive and sustainable transformation, Uganda remains steadfast in its resolve to unlock the full potential of its human resources.

6. **The NDPIV-HRDP prioritises initiatives aimed at improving equitable access to quality education at all levels.** This includes expanding educational infrastructure, enhancing teacher training programmes, and promoting inclusive educational policies to ensure equitable access for all Ugandans. Further, efforts towards bridging the gap between the skills demanded by the labour market and those possessed by the workforce will be prioritised. This will involve strengthening technical and vocational training programmes, fostering industry-academic partnerships, and promoting lifelong learning opportunities to adapt to evolving market needs. Recognising the importance of regional inclusivity, the plan emphasises targeted interventions to address disparities in human resource development across different regions of Uganda, especially the marginalised communities.

7. **The Plan is underpinned by the principles of excellence in education and training, effective collaboration and commitment to inclusive economic and social transformation.** The Plan aims to optimise investments in education and training to promote efficient resource utilisation and drive Uganda's transition to a skilled, competitive and resilient workforce. This will be achieved through strategic partnerships with government, civil society, the private sector, academia and development partners to leverage resources, share expertise, and maximise impact in advancing human resource development goals.

1.3. Context of the NDPIV-HRDP

8. **The NDPIV-HRDP focus is to accelerate socio-economic transformation through sustainable industrialisation for inclusive growth, employment, and wealth creation.** Human capital development is central to this vision, serving as the foundation for achieving the ambitious objectives outlined in the NDPIV. The NDPIV-HRDP specifically focuses on institutionalising human resource development planning, addressing skills gaps, and aligning workforce capabilities with national priority sectors, including agro-based-industrialisation, tourism and travel, mineral-based industrialisation as well as Science, Technology and Innovation. By fostering an industry-responsive labour force and integrating skilling initiatives, the Plan intends to contribute to the creation of 4.4 million new jobs during the NDPIV period, thus driving productivity, competitiveness, and sustainable development.

9. **This Plan envisions a transformative shift in Uganda's labour force, moving from low-productive to high-productive sectors through a dual focus on expansion and replacement.** The expansion component emphasises creating new jobs in growth-driven industries such as agro-industrialisation, manufacturing, and digital transformation. Simultaneously, the replacement component addresses workforce mobility, retirement, and reskilling to ensure efficient utilisation of existing human capital. This vision incorporates both intra-sectoral transitions, where productivity within sectors like agriculture is enhanced through value addition and mechanisation, and inter-sectoral movements, encouraging the migration of workers from informal, traditional, low-output sectors to formal, industrial and service-based economies.

10. **The conceptual framework underpinning Human Resource Development Planning is based on the building blocks of a functional Labour market**. The labour market is composed of several key building blocks or elements that interact to determine the short-medium- and long-term equilibrium dynamics of this market. These include the labour supply, labour demand, and the social and economic environment, as illustrated in Figure 1.1. Understanding and analysing these building blocks involves assessing current and future trends in labour supply and demand, identifying skills gaps, designing appropriate education and training programmes, formulating labour market policies, and fostering collaboration between government, businesses, educational institutions, and other stakeholders. By aligning human resource development strategies with the dynamics of the labour market, Uganda is poised to enhance productivity, competitiveness, and socio-economic development.

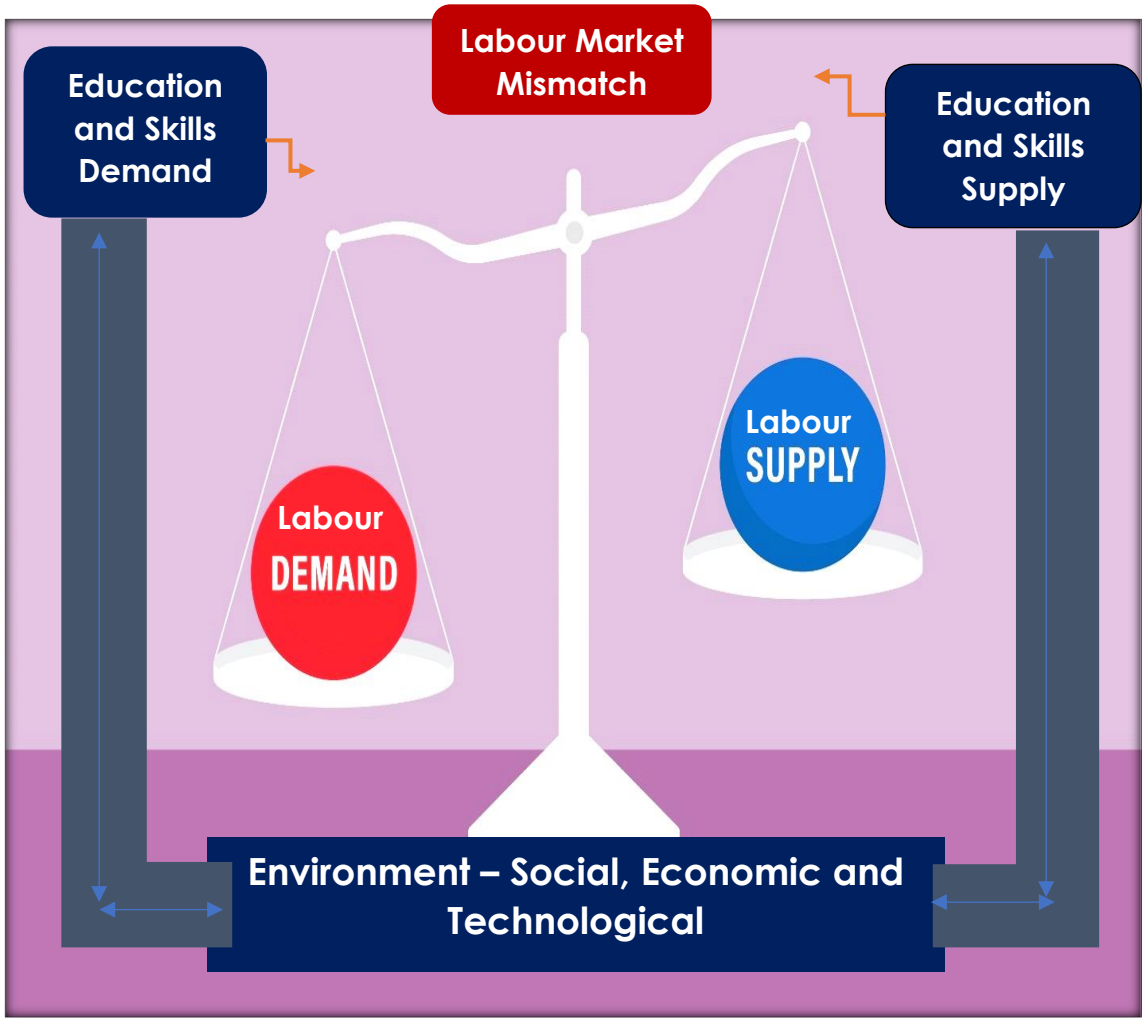
a) Labour Demand Side- Labour Absorptive Capacity

11. **Labour demand relates to the labour absorptive capacity and the ability of the economy to create jobs for its labour force**. Labour absorptive capacity is influenced by various factors, such as the rate of economic growth, the diversification of economic activities, the availability of productive employment opportunities, and the capacity of the education and training systems to equip workers with the skills demanded by the labour market. Specifically, labour demand is the quantity of labour that industries or employers are willing and able to hire at different wage rates within a given period in a specific labour market segment. Labour demand is influenced by the overall health of the economy, the competitiveness of industries, and the demand for goods and services domestically and internationally. Analysing labour demand helps in identifying areas of skill shortages or surplus. The creation of adequate and productive jobs to facilitate a faster transition of the country's labour force into employment requires paying keen attention to factors that influence labour demand.

b) Labour Supply Side- Labour Market Entrants

12. **The labour supply side focuses on the proportion of the working-age population (14-64 years) who are willing and able to work at various wage rates.** It encompasses a wide range of individuals, including those who are currently employed, actively seeking employment (unemployed), and those who are not actively seeking employment but could potentially enter the labour force under the right circumstances. Understanding the composition and characteristics of the labour supply is crucial for matching available skills with the demands of employers. The labour supply also includes labour market entrants and these relate to individuals who are entering the labour market for the first time, usually after completing their education or training cycle. They include recent graduates from educational institutions (high schools, colleges, or universities), individuals dropping out of education and training but have attained the legal working age, individuals transitioning from non-employment (previously not in the labour force) such as retirees and Youths Neither in Employment nor in Education or Training (NEETS) or those actively seeking for employment. Although in Uganda's context, labour supply and labour market entrants are used interchangeably to refer to the same thing, the two concepts refer to slightly different but related aspects of the labour market.

Figure 1.1: Conceptual Framework



Source: NPA

c) Labour Market Mismatch

13. **Labour Market mismatch reflects the misalignment between the supply of and demand for labour in terms of skills, occupations, qualifications, and geographic distribution.** Within this framework, labour market mismatch functions as a mediating variable that influences labour market outcomes, such as unemployment, underemployment, and productivity, regardless of the overall balance in supply and demand. By analysing different dimensions of mismatch (skill, occupational, geographic, and quantitative), the NDPIV-HRDP provides feedback to education and training systems, informs targeted policy interventions, and promotes alignment between educational outputs and labour market needs. This integrated approach enhances the responsiveness of NDPIV-HRDP to dynamic economic demands, ensuring more effective workforce planning, reduced inefficiencies, and improved employment outcomes.

d) Environment – Social, Economic and Technological Factors

14. **The social, economic, and technological environment significantly influences both the supply and demand sides of the labour market.** The environment serves as a bridge between labour market demand and supply, shaping the short-, medium- and long-term labour market equilibrium dynamics. The environment encompasses factors such as the socio-cultural, socio-economic, technological, policy, legal, and regulatory framework, natural environment, and the rapid advancement of Artificial Intelligence (AI). AI, in particular, is transforming the labour market by automating repetitive tasks, enhancing decision-making processes, and creating demand for

new skills and job roles. Recognising the importance of these factors is vital in designing the NDPIV-HRDP. These factors shape the opportunities and challenges faced by both employers and workers, influencing decisions related to hiring, training, wages, career advancement, and the integration of technology and AI-driven solutions into workforce strategies.

1.4. Linkage of the NDPIV-HRDP to Global and Regional Agendas

15. **The NDPIV-HRDP aligns with global and regional agendas, reinforcing Uganda's commitment to fostering a skilled and competitive workforce.** This alignment ensures that Uganda's human capital development initiatives are integrated into global and regional frameworks, advancing inclusive growth and sustainable development. Globally, the Plan contributes to the United Nations Sustainable Development Goals (SDGs), particularly Goal 4 (Quality Education), Goal 8 (Decent Work and Economic Growth), and Goal 10 (Reduced Inequality). By enhancing the quality of education, expanding access to vocational and technical training, and promoting equity in opportunities, the Plan supports the global agenda of eradicating poverty, reducing inequalities, and achieving sustainable economic growth. This alignment underscores Uganda's contribution to global development priorities, ensuring its workforce remains relevant and competitive in the international labour market.

16. **Regionally, the NDPIV-HRDP aligns with the Africa Agenda 2063 and the East African Community (EAC) Vision 2050.** The Agenda 2063 envisions a prosperous and integrated Africa driven by inclusive growth and sustainable development. The Plan focuses on skills development and workforce competitiveness in addition to industrialisation and innovation, thereby positioning Uganda's contribution to the realisation of this agenda. Furthermore, the Plan supports the EAC Vision 2050, which seeks to elevate the region to an upper-middle-income economy through human capital development. By enhancing skills and competencies, the Plan fosters regional integration, cooperation, and economic progress, ensuring that Uganda's workforce actively contributes to East Africa's socio-economic transformation.

1.5. Persistent Constraints to Human Resource Development in Uganda

17. **Uganda faces significant constraints in its labour market, just like many other developing countries.** Understanding these challenges is crucial for designing and implementing effective strategies and interventions to promote inclusive development of the required human resources to propel economic growth and sustainable development. Human Resource Development Planning involves a systematic process of anticipating and addressing human resource needs in alignment with the national strategic goal and objectives. It involves assessing the current human resources, identifying future requirements, and implementing strategies to develop and manage the workforce effectively. Its primary purpose is to ensure that the right people, with the right skills and competencies, are available at the right time to support the achievement of the national vision and strategic development agenda. While efforts have been made to address human resource development-related challenges, a lot still needs to be addressed along the following three strands, as shown in Figure 1.2.

Figure 1.2: Persistent National Human Resource Development Constraints in Uganda

Labour Demand Side Challenges

- Limited job creation in the private sector.
- Rising and persistent youth unemployment.
- Limited robustness of the industrial base
- High level of informality and its rising dominance.
- Vulnerability to External Shocks.
- Limited backward and forward linkages.
- Downturn in economic growth across major sectors.

Labour Supply Side Challenges

- Nonalignment of tertiary institutions funding to national development agenda.
- High population growth rates, putting pressure on the existing education facilities.
- Low quality of education, particularly at the primary and pre-primary.
- Low transition rate from primary to secondary level.
- Perceived inferiority and marginalization of TVET education system.

Social, Economic and Technological Environment Challenges

- Multifaceted nature of climate change.
- Entrenched mindsets, cultural traditions, perceptions, gender biases, and negative attitudes.
- Continued economic disruptions, volatility, and shocks, such as recessions and pandemics.
- Continued economic disruptions, volatility, and shocks, such as recessions and pandemics.
- Economic globalization, alongside outsourcing and offshoring.
- Low domestic revenue generation capacity.

a) Labour Demand Side Challenges

18. **The labour demand of the labour market relates to the absorptive capacity of the economy in terms of its ability to create jobs and absorb or accommodate its labour force effectively**. The labour demand and employment landscape in Uganda is characterised by several challenges stemming from both structural and cyclical factors. Despite efforts to stimulate job creation and foster labour market growth, significant challenges persist, hindering the country's ability to harness its demographic dividend and achieve sustainable development fully. This section explores the key challenges facing employment and labour demand in Uganda:

i) **The private sector, which employs over 80% of Uganda's labour force, struggles to create sustainable jobs due to an unfavourable business environment.** Although Uganda is highly entrepreneurial, 95% of businesses fail within their first year, and over 60% do not survive beyond five years, with an average survival rate of just 4.8 years. Over 50% of entrepreneurs are necessity-driven rather than opportunity-driven, limiting firm growth. High business costs, including lending rates of 18.6% in FY2022/23 (compared to Kenya's 15%), unreliable electricity, expensive transport, and ICT services, further constrain growth. Micro, Small, and Medium Enterprises (MSMEs) face hurdles like stringent credit access requirements and underutilised non-bank financing options such as equity finance. Despite initiatives like PDM, SACCOs and Emyooga, poor coordination among service providers hampers their effectiveness. However, the government has put in place

mechanisms to ensure that the private sector thrives by increasing access to affordable long-term credit through recapitalising the Uganda Development Bank, Uganda Development Corporation and the Micro Finance Support Centre. In addition, the NDPIV prioritises strengthening the private sector's competitiveness to drive growth and job creation.

ii) **Rising and persistent youth unemployment.** In Uganda, youths are persons aged between 18-30 years. The total youth population is estimated at 9.3 million (22% of the total population) and constitutes about 63% of the labour force. The youth population faces disproportionately high rates of unemployment and underemployment. According to the 2021/22 National Labour Force Survey, youth unemployment was estimated at 16.5% and was high among university graduates (21.6%), followed by those in urban areas (19%) and slightly low for those dwelling in rural areas (15%). About 37% of the youths are in employment while 51 percent are Neither in Employment nor in Education or Training (NEETs). Almost all employed youths (9 in 10) are in informal employment including street retailing, bartending, shopkeeping, charcoal burning, taxi driving, sand mining, stone quarrying, lumbering, brick making, fishing and disc jockeying. Even though these jobs are mostly menial, they at least guarantee daily income which is regarded as better than the unpredictable seasonal income from the agricultural sector. To tackle this challenge, the government has put in place interventions which include the Youth Livelihood Programme, the Parish Development Model, the presidential initiative on skilling the youth, and industrial hubs, in addition to creating a conducive environment for the private sector to create more jobs.

iii) **Uganda's economy remains largely agrarian, with agriculture employing 68% of the labour force but contributing only 24.1% to GDP, highlighting the sector's low productivity.** Limited progress in industrialisation and value addition has constrained job creation outside agriculture, with the industrial sector contributing just 27.4% to GDP and employing less than 10% of the workforce. Manufacturing accounts for only 15% of industrial output, and the majority of enterprises operate at a small scale, with over 70% classified as micro or informal businesses. Uganda's exports are predominantly raw materials, with coffee alone accounting for over 19% of export earnings, underscoring limited value addition. To address these gaps, the government has pursued strategic interventions including infrastructure development, technology transfer and setting up industrial parks to foster industrialisation. The government is also promoting tourism, oil and gas and revamping the mining sector to stimulate economic diversification and unlock new employment opportunities.

iv) **The high and rising dominance of informality.** A large proportion of Uganda's economy operates in the informal sector, which is characterised by low productivity, limited job security, and little regulation. The informal sector employs 13.3 million people out of the 15.5 million working population, representing about 85% of total employment. This implies that a large number of the working population are susceptible to labour exploitation. This informalization of the economy diminishes the demand for formal wage employment. However, the government has made efforts to reduce the large informal sector through the Uganda Registration Service Bureau (URSB) by encouraging informal businesses to register, streamlining regulatory processes, and reducing bureaucratic hurdles. In addition, the government is strengthening SMEs, which comprise 90% of Uganda's private sector, through easing access to credit through programmes like the Emyooga and Agricultural Credit Facility, and capitalisation of Micro Finance Support Centre, UDB, and UDC.

v) **The country's economy is vulnerable to external shocks due to its structural composition.** The agricultural sector, which employs 68% of the labour force and accounts for 24.1% of GDP, depends heavily on nature, making the sector more vulnerable to the

adverse effects of climate change. Consequently, the sector is characterised by low productivity, poor quality output, coupled with the exportation of unprocessed and semi-processed products, leaving the economy exposed to fluctuations in global commodity prices. For instance, during the global coffee price decline of 2019, Uganda's export earnings dropped significantly, as coffee constitutes over 19% of total exports. On the other hand, the tourism sector, which contributed 7.7% of the GDP and employed over 667,000 people, faced severe disruptions during COVID-19, leading to job losses and business closures. However, the government has been enhancing resilience through diversification, value addition, and flexible labour market reforms to mitigate these shocks, ensure sustainable peace & security and macroeconomic stability to foster sustainable economic growth and development.

vi) **The growth rate of Uganda's labour force has outpaced the rate of job creation.** Uganda's population growth rate decreased minimally from 3.0% in 2014 to 2.9% per annum in 2024. The working age population (14 – 64 yrs) grew by 7,065,720 persons (4.5%) from 18,090,150 persons in 2014 to 25,155,922 persons in 2024. This increase results in an average annual growth of the working-age population by 706,572 persons. The "Employment and Skills Status Report (ESSR) 2022" indicates that Uganda creates an average of 320,000 new jobs per year. This implies that the additional annual cohorts of the working-age population outpace the number of jobs created by 386,572 people. Amongst the youth, 50.9% (5,250,768) comprise of those who are Not in Education, Employment, not in Training (NEETs). The government, however, has put in place initiatives for job creation, such as; the PDM, YLP, UWEP, Emyooga and skilling initiatives.

vii) **The demand for wage workers in the private sector has not kept up to speed with the growth in the labour force.** Uganda's formal sector which is critical for job creation, is still small and comprises of a large share of small firms providing more jobs compared to large firms. On the other hand, the private sector is largely informal and unable to create sufficient jobs that match the job labour market. Additionally, one in five jobs is created by entrant firms which suffer from barriers to growth and are likely to close down at a young age. Despite all the above constraints, the Global Entrepreneurship Monitor survey identifies Uganda as the country with the most entrepreneurial culture in the world in terms of how business opportunities are viewed and cherished. Uganda has provided strong evidence of how even impoverished and marginalized groups can profit from business opportunities when given a chance. Nevertheless, the government has created business incubation centres to support and nurture young, emerging businesses, particularly Small and Medium Enterprises (SMEs), by providing them with access to shared office space, mentorship, training, networking opportunities, technical assistance, and sometimes potential funding ultimately helping them grow and increase their survival chances in the market; hence reducing on the SMEs high mortality rate and ensure sustainable job creation and fostering private sector development and economic growth.

viii) **The changing nature of work and employment landscape vis-à-vis the country's preparedness.** The integration of technology such as Artificial intelligence and automation is reshaping various industries such as trade, finance, marketing, health care, agriculture, and infrastructure. The use of digital technology has created a global platform-based business that differs from traditional business approaches. For instance, Jumia, Amazon, SafeBoda, Uber, Alibaba, among others, have revolutionised business, trade, distribution, profitability and ultimately the work and employment landscape. While this integration is critical in enhancing productivity, it also poses challenges such as job replacement and displacement of old jobs, and phasing out of carriers for countries that are not prepared however, the government is prioritising technology digitalisation, reviewing the education system to focus on competence-based to adequately prepare the population to leverage on the changing technology, skills profiles thus creating employment opportunities and

ultimately improve income and improve their welfare.

b) Labour Supply Side Challenges

19. **Labour supply-side challenges are due to the obstacles or issues that affect the availability and characteristics of the workforce.** These challenges impact the quantity, quality, and composition of labour available for employment. Despite progress in expanding education and training opportunities, access to quality education and training remains limited, particularly in rural and underserved areas.

i) **The rapid increase in the population of pre-primary school-aged children contrasts starkly with the limited availability of pre-primary education.** In 2020, merely 12% of Uganda's children between the ages of 3 and 5 were enrolled in pre-primary education. To put this into perspective, for every 100 pre-school-aged children, only 12 attended pre-primary education, leaving a significant gap of 88% of children without access to pre-primary education. Adding to this issue is the uneven distribution of existing pre-schools, which tends to favour regions with higher household incomes and levels of urbanisation. Providers of pre-primary education are drawn to areas where families can afford the associated fees. Consequently, this creates a notable disparity in access to pre-primary education, with the majority of excluded children residing in rural areas. Furthermore, the predominant role of the private sector in providing pre-primary services in the country exacerbates this issue. Private providers focus their investments in economically prosperous regions where they can expect a return on their investment. As a result, the majority of economically disadvantaged households, which comprise over 79% of the population, are left out due to the high fees charged by private institutions. Unfortunately, there are no accessible and affordable alternatives for delivering pre-primary education to disadvantaged children.

ii) **Limited alignment of admissions at the tertiary level and the national skills gaps**. According to the State of Higher Education report (2017/18), 63% of total university enrollment was in the already saturated humanities, while only 37% enrolled in STEM disciplines. This, therefore, implies that young people graduating with academic degrees, particularly in social sciences and humanities, are likely to become more irrelevant in the labour market. This contradicts the Government's strategy for increasing enrollment and graduation in STEM disciplines. Besides, there is inadequate budgetary resource allocation to the increasing demand for education services. The Government has undertaken vital policy reforms, including UPE, USE, primary school per parish, secondary school per sub-county, and TVET institution per constituency, all of which bear significant financial resource requirements**.** However, these reforms have not been adequately provided for in terms of financial resources; for example, the share of the Education and Sports Sector budget as a proportion of the National budget has continued to decline despite increasing demand for education services. This has continued to critically impact the implementation of various education policies and reforms.

iii) **The quality of education, particularly at the primary and pre-primary levels, is worrying.** There are various dimensions to this issue, including the safety and suitability of the physical environment, the knowledge and teaching abilities of educators, their training, and the content of early learning programmes. Poor quality in primary education is evident in several aspects, such as low learning outcomes, especially in numeracy and literacy, as well as inefficiencies related to teacher performance and school management. The insufficient number of qualified teachers in government-supported primary schools is particularly troubling, given that teachers are crucial in enhancing the quality of education. Furthermore, high rates of absenteeism among headteachers and teachers exacerbate the efficiency challenges in primary education. Evidence indicates that, on average,

headteachers are absent for at least three days per week, while teacher absenteeism in Uganda is estimated to be between 20% and 30%. On average, a primary teacher is absent for about two days per week. Consequently, a significant portion of the wage bill, around 20% to 30%, is allocated to services that are not delivered due to absenteeism issues.

iv) **The low transition rate from primary to secondary level at 34%.** Despite the increase in the number of pupils enrolled in primary schools, Uganda registers relatively high primary school dropouts. Studies indicate that children drop out of school because they lack food to eat, which affects their learning capacity due to hunger. In the long run, the pupils get fed up with school and eventually drop out. High dropout rates mean that a significant portion of the population does not complete their education. This results in a loss of human capital development, as individuals miss out on acquiring the knowledge and skills needed to contribute effectively to the economy and society. Those who drop out of school often lack the necessary qualifications and skills required for higher-paying jobs. This results in a less skilled and less productive workforce, which slows the pace of economic growth and development. Education is a means to escape poverty. However, high dropout rates perpetuate the cycle of poverty, as individuals who do not complete their education are less likely to secure stable employment and earn a livable income. Such individuals become more vulnerable to exploitation and abuse, including child labour, early marriage, and involvement in illegal activities. This not only harms the individual but also undermines social cohesion and stability.

v) **The high population growth rate of 2.9% exerts pressure on the existing resources and facilities.** This rapid expansion increasingly strains existing resources and facilities, making the attainment of quality education a challenging objective. With the population surge, there arises a greater demand for education across all levels, from primary to tertiary. Consequently, educational institutions come under pressure to accommodate more students, leading to overcrowded classrooms and stretched resources. The strain on educational infrastructure, including schools, classrooms, and teaching materials, results in inadequate facilities, ultimately impacting the quality of education offered. Moreover, the rapid population growth often outpaces the capacity to train and recruit teachers, resulting in shortages of qualified educators. This shortage exacerbates issues related to overcrowded classrooms and compromises the overall quality of education. Additionally, population growth adversely affects access to education, particularly for marginalised groups such as girls, children from low-income families, and those residing in remote areas. Ensuring equitable access to education becomes increasingly challenging as the population continues to grow. To address these challenges effectively, the government of Uganda must allocate sufficient resources to education and training programmes, even in the face of rapid population growth. This requires a delicate balance between investing in education, infrastructure development, healthcare, and other social services to meet the evolving needs of the population.

vi) **Perceived inferiority and marginalisation of TVET in Uganda's education system have hindered increased enrolment in TVET institutions.** TVET in Uganda continues to suffer from negative public perceptions. Although these negative perceptions are slowly changing, many people, including parents and learners, still find TVET unattractive, and it is considered secondary to academic tertiary education programmes. This is particularly so where TVET programmes are perceived as leading to less prestigious career paths, lower prospects for high earnings once employed, or poor prospects for further education and training. Furthermore, whereas low enrolment in TVET is partly explained by the negative attitudes of students and their parents, the subsector is poorly funded, yet is more expensive compared to other subsectors. Other barriers to entry into TVET include tuition fees, an inadequate number of TVET institutions in some regions, and the restrictive academic entry requirements. Yet, the sector mainly serves the poorest segment of the

population, and there is an insistence on restrictive academic entry requirements for basic certificate TVET courses.

vii) **Disruption of learning and skills development due to the prolonged closure of education and training institutions amid the COVID-19 pandemic.** The sudden closure of tertiary and higher education institutions in Uganda as a result of the COVID-19 pandemic significantly disrupted learning and skills development for nearly two years. This disruption has had profound effects on the education and training landscape in the country, impacting students, educators, and the broader workforce. With limited access to in-person classes, practical training, and educational resources, students faced challenges in acquiring the knowledge and skills necessary for their future careers. Additionally, the closure of educational institutions disrupted the continuity of training programmes and professional development opportunities for individuals already in the workforce, hindering their ability to upskill and adapt to changing market demands. The pandemic, besides getting students off-campus, caused universities and other tertiary institutions to suffer significant revenue losses in the form of tuition, accommodation, conferences, and other event-related activities.

viii) **Inadequate certification and standardisation of the different trades at different levels, both in the formal and informal sectors**. In many fields where an excess supply of human resources exists, labour is not certified to meet the international certification standards and requirements. This is coupled with inadequate integration of work-based training into the education and training system in terms of apprenticeship, industrial attachments and internship. Without standardised certification processes, mismatches between the skills taught in educational institutions and those required by emerging sectors will undoubtedly arise. This leads to graduates lacking the necessary skills and knowledge to excel in these industries, hindering their ability to contribute effectively. Besides, certification and standardisation ensure a certain level of quality and competence among workers in specific trades. Inadequate certification and standardisation deter potential investors in emerging sectors like oil and gas, minerals, and the creative industry, among others. Investors often look for skilled and certified workers to ensure the success and sustainability of their investments. Without standardised certification processes, investors may perceive a higher risk in investing in these sectors. Without proper certification processes, there is a risk of inconsistent quality and competency levels among workers.

ix) **Limited alignment of curriculum, teaching and assessment.** Teacher training reforms have not been accompanied by curriculum reforms, nor have proportionate reforms in the assessment accompanied them. For example, whereas the TVET sub-sector is gradually adopting the Competence-based Education and Training (CBET) framework as opposed to the syllabus- or examination-based curriculum, the assessment remains highly staked, theoretical and pen-to-paper. Even where some institutions and teachers/instructors try to follow the competency-based curriculum, the old regime of inspection, which puts pressure on teachers/instructors to teach to the test and on students to pass examinations in disregard of the competencies achieved, persists, leading to teachers bowing to such pressures.

x) **Low quality of the teachers leads to poor learning outcomes.** Curriculum reforms and a new curriculum have not been accompanied by the recruitment of the requisite tutors in government institutions. Instead, tutors who understand the new courses are typically expected to be instructors. This limits the uniform implementation of the new curriculum. As if that was not enough, even where tutors take refresher courses, typically only one tutor goes from each government institution, who is then expected to train their colleagues. This cascading method is inefficient as there is no monitoring mechanism to

examine whether the re-trained tutors trained their colleagues and, if so, whether they achieved success. Furthermore, the re-training of tutors in the new curriculum is restricted to only those in government institutions, ignoring those in private institutions, which benefit only when they employ a re-trained tutor from a government TVET institution. This compromises the uniform implementation of the new curriculum or curriculum reforms, leading to uneven skills among graduates, exacerbated by weak monitoring.

xi) **Low levels of literacy and numeracy impede human resource development.** The low levels of literacy and numeracy significantly hamper human resource development, constraining the country's ability to build a skilled and productive workforce. Low levels of literacy and numeracy limit individuals' access to education, hinder their ability to acquire new skills and diminish their prospects for economic advancement. Individuals with low levels of literacy and numeracy may struggle to grasp technical concepts, follow instructions, or communicate effectively in the workplace. For example, a worker in a manufacturing plant may have difficulty reading safety manuals or understanding numerical data, posing risks to their safety and productivity. This undermines efforts to promote inclusive growth, reduce poverty, and achieve a national development agenda. Illiteracy limits individuals' ability to access education, employment opportunities, and social services, perpetuating cycles of poverty and inequality.

xii) **Inadequate funding of Research and Development.** Research and development distinguish universities from other learning institutions; however, this component has continued to be neglected. For example, about 62.4% and 60.7% of lecturers in private and public universities do not publish articles in international peer-reviewed journals and peer-reviewed local journals, respectively. Moreover, universities and departments do not receive grants to undertake research. This indicates that the production of new knowledge in higher learning institutions, especially private universities, is deficient. Thus, these higher learning institutions hardly produce innovations that tackle societal challenges.

c) Social, Economic and Technological Environment Challenges

20. **The social and economic environment plays a crucial role in shaping the dynamics and outcomes of the labour market, affecting employment, wages, and productivity.** These factors significantly influence both the supply and demand sides of the labour market, acting as intermediaries between labour demand and supply and impacting the equilibrium dynamics. In Uganda, several notable challenges within the social and economic environment must be recognised when developing and implementing a National Human Resource Development Plan (NHRDP). Key outstanding social and economic environment challenges include:

i) **Entrenched mindsets, cultural traditions, perceptions, gender biases, and negative attitudes affect Human Resource Development**. These factors manifest in various ways. Firstly, Traditional gender roles often relegate women to domestic duties, resulting in fewer educational opportunities for them. For instance, in some rural areas, girls are expected to prioritise household chores over schooling, limiting their access to formal education and training. Secondly, cultural norms favour male leadership, leading to the exclusion of women and minority groups from decision-making positions. For example, in many Ugandan organisations, boards and executive teams are predominantly male dominated. Relatedly, women often face discrimination in the workplace, resulting in lower wages and limited career advancement opportunities compared to their male counterparts. This is evident in sectors like agriculture and informal businesses, where women typically receive lower wages for similar work than men. Thirdly, some cultural practices resist modernisation, hindering the adoption of innovative technologies and practices in workforce development. For instance, in traditional agricultural communities, farmers resist adopting new farming techniques due to deeply ingrained cultural practices,

limiting opportunities for skill development and economic growth. Finally, Negative attitudes towards certain professions or educational paths discourage individuals from pursuing careers in specific fields. For example, vocational training programmes are being undervalued due to societal perceptions favouring formal academic education, limiting options for skill development and employment opportunities.

ii) **Uganda's recurring epidemics and pandemics, such as HIV/AIDS, malaria, tuberculosis, and the recent COVID-19, strain the healthcare systems and overload the health workers.** For example, during the COVID-19 pandemic, healthcare professionals faced immense pressure due to the influx of patients, limited resources, and the risk of infection. This increased workload and stress can lead to burnout among healthcare workers, affecting their performance and productivity. Sometimes, health epidemics often necessitate the closure of schools and training centres to curb the spread of infectious diseases. For instance, during the COVID-19 pandemic, schools in Uganda were closed for prolonged periods, disrupting the education and training of students and professionals. This interruption in learning hinders human resource development by delaying skill acquisition and career advancement. Such situations also exacerbate economic challenges, leading to job losses and reduced income for many individuals. During the COVID-19 pandemic, lockdowns and restrictions on movement resulted in widespread unemployment across various sectors of the economy, including tourism, hospitality, and informal businesses. This loss of livelihood undermines the country's human resource development efforts. Health epidemics, such as COVID-19, have had significant psychological effects on individuals and communities. Fear, anxiety, and social isolation are common during outbreaks, leading to mental health challenges among the population. This psychological impact affects human resource development by reducing productivity, increasing absenteeism, and impairing the overall well-being of individuals.

iii) **Human resource development in Uganda faces significant constraints in light of the global dynamics and rapid technological advancements.** Uganda is committed to the achievement of the SDGS and Agenda 2063, which demand a skilled and competitive labour force that is adaptable to the 21st-century industrial revolution. Technological advancements in automation and digitalisation outpace the current education and training systems, creating a skills gap that threatens Uganda's competitiveness. This, coupled with the changes in the global value chains, a shift in consumption patterns and migration trends, makes it difficult for our current labour force to cope with this emerging trend. Addressing these challenges presents opportunities for innovation, industrial growth, and global competitiveness, but failure to act risks deepening inequalities and marginalisation in an increasingly interconnected world.

iv) **Continued economic disruptions, volatility, and shocks, such as recessions and pandemics, significantly affect human resource development**. During economic downturns, businesses face financial constraints, leading to layoffs or hiring freezes. This results in increased unemployment and underemployment rates, limiting opportunities for individuals to gain employment and develop their skills. For example, in Uganda, the COVID-19-induced lockdowns led to layoffs in sectors such as tourism, agriculture, and manufacturing, impacting the livelihoods of many workers and hindering their career advancement. The 2008 global financial crisis, triggered by the collapse of the subprime mortgage market in the United States, led to a worldwide recession. It resulted in a significant slowdown in global economic growth, widespread job losses, and financial market turmoil. In Uganda, this crisis impacted sectors such as tourism, remittances, and exports, leading to reduced investment, job losses, and economic instability. Exchange rate volatilities also have profound effects on Uganda's capacity to develop human resources. For example, Uganda experienced exchange rate volatility during the COVID-19 pandemic, leading to the depreciation of the Ugandan shilling against major currencies. Exchange

rate volatility impacts the cost of imported educational materials, technologies, and training programmes. A depreciation of the Ugandan shilling increases the cost of importing textbooks, educational software, and training equipment, making it more challenging for individuals and institutions to access these resources. Fluctuations in commodity prices, such as oil, coffee, and agricultural products, also impact Uganda's efforts for human resource development. Changes in commodity prices also affect employment levels in sectors like agriculture and mining. For example, a decline in tea and coffee prices leads to reduced demand for labour in the tea and coffee industries, resulting in job losses and unemployment among coffee farmers and workers. This, in turn, affects human resource development by limiting opportunities for skill development and economic empowerment within these sectors.

v) **The absence of a school feeding programme, coupled with inadequate access to nutritional food, clean drinking water, and sanitation facilities, leads to poor learning outcomes.** Many primary school students in Uganda come from low-income families that struggle to provide adequate nutrition. Without a school feeding programme, these students attend school on an empty stomach, leading to malnutrition and negatively impacting their ability to concentrate and learn effectively. For example, in rural areas of Uganda, where poverty rates are high, students may often attend school hungry due to a lack of access to food at home. Inadequate access to clean drinking water and sanitation facilities, especially at primary and secondary levels, also leads to health risks for students. For instance, students get exposed to waterborne diseases due to drinking contaminated water from unsafe sources and a lack of proper hygiene facilities. This not only affects their health but also results in frequent absenteeism, disrupting their education and overall development. The absence of a school feeding programme and inadequate access to nutritional food may contribute to high dropout rates among pupils and students in Uganda, particularly among those from vulnerable communities. For example, students from impoverished backgrounds drop out of school to help support their families or seek employment to meet basic needs, as they are unable to focus on their studies due to hunger and malnutrition. Girls in schools face additional challenges related to menstrual hygiene management due to the lack of proper sanitation facilities. Without access to clean water and sanitation facilities, girls tend to miss school during menstruation, leading to academic setbacks and increased dropout rates. This perpetuates gender disparities in education and limits opportunities for girls to fully participate in the workforce and contribute to Uganda's development.

vi) **Inadequate education and training and supportive infrastructure, coupled with a weak maintenance culture, undermine human resource development**. Many schools in Uganda lack adequate classroom infrastructure, including classrooms, libraries, and laboratories. For instance, overcrowded classrooms with limited seating and inadequate lighting create a suboptimal learning environment, hindering effective teaching and learning experiences. Many Vocational training institutions often lack essential equipment and resources necessary for practical skill development. For example, many technical schools lack the modern machinery and tools required for training students in trades such as carpentry, welding, or automotive repair, limiting hands-on learning opportunities. Where modern machinery and tools are available, the capacity of instructors is wanting. Many schools and training centres lack access to modern information and communication technology (ICT) infrastructure. This limits students' exposure to digital learning resources and hampers their ability to develop essential digital literacy skills needed in the modern workforce. Even where ICT infrastructure exists, unreliable internet connectivity is a common challenge. Poor internet access inhibits access to online educational resources, limits communication with global networks, and restricts opportunities for distance learning and skill development. On the other hand, due to a weak maintenance culture, the existing educational infrastructure often falls into disrepair. For example, lack of regular

maintenance has resulted in leaking roofs in many schools, broken windows, or malfunctioning equipment in schools and training centres, creating safety hazards and impeding the learning process. In some cases, educational facilities remain underutilised or even abandoned due to neglect and disrepair. This results in wasted resources and limits opportunities for students and trainees to access quality education and training programmes.

vii) **The multifaceted nature of climate change presents a formidable challenge to human resource development, particularly in the education sector.** Climate change risks threaten educational infrastructure, disrupt learning environments, and heighten health and safety concerns for students, teachers, and education professionals alike. Extreme weather events, such as heavy rainfall, can significantly disrupt educational activities, leading to school closures and impeding transportation for students and teachers. These disruptions not only affect access to education but also create additional challenges for educators in delivering quality instruction and maintaining a conducive learning environment. Addressing these climate-related challenges is crucial for ensuring the continuity of education and the effective development of human resources in the face of environmental risks. For instance, in 2020, heavy rains caused flooding in various regions of Uganda, damaging school buildings, classrooms, and facilities. This damage disrupts the learning environment, forcing temporary closures and hindering students' access to education. In 2019, widespread floods in the eastern and northern regions of Uganda resulted in the closure of several schools, affecting thousands of students and teachers. Such disruptions interrupt the continuity of education and impede students' academic progress. The rising temperatures and prolonged heat waves in Uganda are likely to lead to heat-related illnesses among students and staff, impacting attendance and academic performance. Additionally, the spread of vector-borne diseases like malaria and dengue fever increases during periods of heavy rainfall, further jeopardising the health of school communities.

viii) **Low domestic revenue generation capacity poses a substantial constraint to human resource development in Uganda.** Uganda's current domestic revenue collection is relatively low compared to other EAC countries. Uganda's tax revenues averaged 13.3 percent of GDP in the past two years of NDPIII Implementation, which is below the Government's medium-term target of 16 percent. This is also below the COMESA average of 15.9 percent and also below other EAC countries, with Kenya at 18 percent, Rwanda at 16 percent, and Tanzania at 14.5 percent. The low domestic revenue generation results in a constrained national budget for education. As a result, the government allocates limited funds to the education sector, leading to underfunded schools, inadequate resources, and poor-quality learning environments. For instance, insufficient funding has led to overcrowded classrooms, shortages of teaching materials in many training institutions, and inadequate infrastructure, hindering effective teaching and learning processes. The inadequate revenue limits the government's ability to invest in teacher training and professional development programmes. Without adequate funding, teachers cannot receive the necessary training, resources, and support to improve their teaching skills and keep up with best practices in education. This results in a lack of qualified teachers and ineffective teaching methods, negatively impacting the quality of education provided to students. Low revenue affects higher education institutions, resulting in limited resources for research and student support services. This leads to overcrowded lecture halls, outdated curricula, and inadequate student services, limiting access to quality higher education and inhibiting the development of a skilled workforce capable of meeting the demands of the labour market.

1.6. Lessons learnt from the NDPIII-HRDP

21. **The NDPIV-HRDP has been informed by lessons drawn from the implementation of the NDPIII-HRDP**. The achievements and challenges encountered during the implementation of the NDPIII-HRDP offered profound lessons that served as guiding inspirations for the formulation of this Plan. The NDPIII-HRDP remarkably improved the harmonisation of human resource development with industry demands. Through collaborative efforts and strategic interventions, significant progress was made in recognising and partially correcting for skills mismatches, thereby creating a more conducive environment for sustainable human resource development. Therefore, the lessons learnt provided direction pointers for developing the NDPIV-HRDP and they include:

i) **Embracing a long-term visionary approach to HRD is critical for raising a resilient and future-ready workforce.** Recognising that training the future-ready workforce is not a short-term endeavour emphasises the importance of having a long-term vision for HRD to address evolving workforce needs effectively. Uganda's strategic HRD vision encompasses investing in early childhood education to establish a robust foundation for lifelong learning. While the immediate objective is to ensure the delivery of quality early education, the enduring benefit lies in nurturing students who are better equipped for success in primary, secondary, and tertiary education, as well as beyond. Furthermore, enhancing the quality of secondary education is identified as a long-term priority for HRD in Uganda. The government undertakes reforms aimed at elevating curriculum standards and enhancing teacher training in secondary schools. While the immediate focus centres on enhancing academic outcomes for students, the enduring impact manifests in heightened accessibility to higher education and heightened workforce preparedness. Recognising the imperative of expanding access to tertiary education to meet the escalating demand for skilled labour, Uganda is committed to this long-term endeavour. While the immediate objective is to bolster enrollment rates, the enduring benefit lies in fostering a more educated and skilled workforce capable of propelling economic growth and fostering development. The National HRD Plan adopts an integrated approach that spans the continuum of education from pre-primary to university levels, acknowledging the interconnectedness of each stage in the educational journey. It emphasises that HRD is a sustained, long-term venture necessitating unwavering investment and dedication from policymakers, educators, and all stakeholders involved.

ii) **Engaging in International cooperation and exchange facilitates knowledge sharing, capacity building, and access to best practices in HRD Planning processes.** Globalisation has increased the interconnectedness of economies and labour markets, making international cooperation essential for HRD -Uganda benefits by tapping into diverse resources and expertise through partnerships. For instance, through collaboration with countries like Namibia and South Africa, Uganda developed its macro model for HR projection, illustrating the benefits of learning from diverse experiences. Learning from successful HRD initiatives worldwide allows Uganda to adapt strategies to its needs. Partnerships also provide technical assistance, enhancing HRD efforts' effectiveness and sustainability. The NHRD plan prioritises partnerships with prosperous HRD-focused nations and organisations, aiming to strengthen alliances, undertake joint projects, and establish knowledge-sharing platforms. Uganda engages in both bilateral and multilateral cooperation initiatives to broaden its perspective. This includes participation in regional forums, forging partnerships with neighbouring countries, and collaborating with global institutions. The plan also provides for exchange programmes and study tours for Ugandan stakeholders to visit countries renowned for exemplary HRD practices, like Singapore, South Korea, and Finland. These experiences offer valuable insights and practical knowledge to inform Uganda's HRD planning and implementation. Overall, international cooperation will enable Uganda to learn from diverse perspectives and approaches,

enhancing its HRD outcomes.

iii) **Early stakeholder engagement in the formulation of the national human resource development plan is crucial for effective manpower planning.** Experience from the implementation of the initial National HRD Plan highlights the effectiveness of collaboration and engagement among various entities, including government agencies, civil society organisations, the private sector, academia, and development partners, mainly when initiated during the planning stages. This proactive approach is crucial for ensuring that policies and interventions are aligned with the distinct needs and priorities of different programmes, sectors and the entire private sector. Engaging a diverse array of stakeholders actively facilitates consensus-building, mobilisation of resources, and the cultivation of a unified vision for human resource development. By harnessing the collective wisdom and expertise of multiple stakeholders, the forthcoming National HRD Plan is poised to garner broader support and enrich both its formulation and implementation processes with a multitude of perspectives and innovative solutions.

iv) **A robust data collection system to inform manpower priority setting is critical**. The experience gained from the first National Human Resource Development (HRD) Plan underlines the critical role of comprehensive data collection and analysis in identifying manpower gaps and tracking progress on education and skills development initiatives. This, in turn, facilitates evidence-based policy formulation and resource allocation. Through the analysis of employment trends, skills demand, and industry growth, the National HRD plan can be precisely adjusted to meet the most immediate needs of the labour market. Data-driven insights empower governments to pinpoint areas where interventions are most needed, whether it involves addressing skill shortages in emerging sectors or ensuring equitable access to education and training for marginalised populations. Further, the utilisation of data analytics enables predictive analysis, allowing governments to anticipate future workforce trends and make strategic plans accordingly. This forward-thinking approach serves to future-proof the HRD Plan, ensuring its continued relevance amidst evolving economic and technological landscapes. By diligently collecting data, monitoring outcomes, and refining strategies and actions based on evidence, the manpower plan can evolve to more effectively meet the evolving needs of the workforce and the economy. This would ensure that resources are allocated efficiently and interventions are targeted effectively, ultimately contributing to the long-term prosperity and competitiveness of the nation.

v) **The HRD landscape continues to be significantly impacted by persistent structural barriers and systemic inequalities, particularly among marginalised segments of the population.** Despite ongoing efforts to tackle issues like limited access to quality education, skills mismatches, and regional disparities, entrenched challenges endure, underscoring the necessity for more tailored interventions and unwavering dedication to social justice and inclusive growth. Recognising these enduring challenges serves as a plain reminder of the extensive and challenging path ahead, requiring a comprehensive approach to dismantling systemic obstacles and promoting equitable human resource development. Consequently, there is a pressing need to devise targeted initiatives and strategies aimed at mitigating disparities and inequities in education, training, and employment opportunities, with a specific focus on marginalised groups such as women, youth, individuals with disabilities, and rural communities.

vi) **Lifelong learning is a crucial cornerstone of human capital development, allowing individuals to continuously acquire new knowledge, skills, and competencies throughout their lives.** Professionals across various fields embrace this concept by engaging in ongoing education and training tailored to their career paths. For example, marketing professionals seeking to stay ahead in their field must actively participate in

seminars focusing on digital marketing trends and pursue online courses in data analytics. Likewise, healthcare professionals are required to undertake regular continuing education courses to maintain licensure and remain abreast of advancements in medical practices and treatments. Similarly, IT professionals recognise the necessity of acquiring new programming languages and enhancing coding skills to remain relevant in the fast-paced tech industry. Entrepreneurs leverage lifelong learning by drawing insights from experienced peers and staying informed about industry trends and best practices. The Plan places significant emphasis on fostering a culture of continuous learning. Employers play a pivotal role in this endeavour and must be encouraged to support their employees' pursuit of lifelong learning through various means. This support can take the form of providing access to educational resources, offering incentives for participation in training programmes, and creating avenues for skill development and career advancement. By prioritising lifelong learning and encouraging employer involvement, the National HRD plan shall lay the ground for equipping individuals with the skills and knowledge necessary to adapt to evolving workplace demands, foster innovation, and drive economic growth.

vii) **Political will and leadership are crucial for driving the HRD agenda in Uganda.** The experiences from the implementation of the NDPIII-HRDP underline the critical significance of government commitment and effective leadership in advancing human capital development initiatives. When political leaders prioritise human capital development and offer sustained support, it often paves the way for successful implementation. The execution of the first NHRD Plan highlighted the potential challenges HRD initiatives may encounter without robust government commitment. Effective leadership emerges as a cornerstone for coordinating resources, nurturing partnerships, and navigating bureaucratic obstacles. The realisation of HRD goals hinges upon the foresight and commitment demonstrated by government leaders. In line with this understanding, the Plan places paramount importance on securing unwavering political commitment at the highest levels of government. Additionally, it emphasises the engagement of citizens, civil society organisations, and other stakeholders in the HRD planning process. Such inclusive approaches foster ownership, transparency, and inclusivity, thereby bolstering the effectiveness and sustainability of HRD interventions. Furthermore, the plan underscores the imperative of strengthening the capacity of institutions responsible for HRD planning, implementation, and monitoring. This involves enhancing institutional capacity, refining governance structures, and enhancing accountability mechanisms to ensure the effective delivery of HRD objectives and actions. This will help create an environment that will advance human capital development in Uganda.

viii) **Promoting employer participation in HRD is crucial for enhancing the effectiveness of training and aligning it with industry needs.** The National HRD plan recognises the significance of employer involvement and collaboration in shaping impactful training initiatives. For instance, companies can incentivise employees by offering financial benefits such as tuition reimbursement or bonuses for participating in training programmes relevant to their roles. For example, a telecommunication company might reimburse employees for completing certification courses in programming languages. This not only motivates employees to improve their skills but also ensures that the training meets the company's specific technical requirements. Fostering partnerships between companies and educational institutions is another critical aspect highlighted in the plan. By collaborating closely with universities and vocational schools, employers can develop customised training programmes tailored to their industry's needs. This collaboration ensures that training initiatives incorporate the latest industry practices and technologies. Looking ahead, the plan aims to ensure that employers from diverse industries understand their unique training requirements. This will promote partnerships between employers and educational institutions to facilitate the development of relevant training programmes.

ix) **Promoting entrepreneurship and self-employment as pathways to economic empowerment and job creation is paramount.** While the NDPII-HRDP acknowledged the importance of entrepreneurship and self-employment, it became apparent that greater emphasis and focus were necessary to realise their potential impact fully. Moving forward, there must be a more robust acknowledgement of the critical role that entrepreneurship plays in driving both job creation and economic empowerment. To achieve this, there should be a concerted effort to invest in comprehensive support systems. These systems should encompass various elements, including access to finance, mentorship, training, and infrastructure, all aimed at fostering a vibrant entrepreneurial culture. The Plan recognises the need for tailored approaches that cater to the specific requirements of diverse entrepreneurs. This includes targeted support for women, youth, rural communities, and those operating in emerging sectors such as renewable energy and technology. The Plan introduces policies and programmes designed to facilitate entrepreneurship education, improve access to finance, provide business incubation services, and establish market linkages. Moreover, there should be a concerted effort to expand access to microfinance, PDM funds, venture capital, and other financial instruments. Concurrently, promoting financial literacy and inclusion remains essential in ensuring that aspiring entrepreneurs can navigate the financial landscape effectively. Through these efforts, Uganda will further solidify its commitment to economic empowerment and job creation, ultimately fostering sustainable development and prosperity for all its citizens.

x) **Public-private partnerships play a crucial role in advancing the HRD agenda.** The collaboration between the government and the private sector in delivering training, employment opportunities, and industry-specific skills development fosters synergy and mutual benefit, making it an indispensable component. Public-private partnerships play a pivotal role in improving access to training and education across diverse sectors. For instance, collaborations between government agencies, educational institutions, and private companies offer scholarships, apprenticeships, and subsidised training programmes. These initiatives bridge the gap between individuals, particularly those from disadvantaged backgrounds, providing them with quality education and training. Consequently, this enhances their employability and contributes to national development. Efforts to align educational curricula with industry needs and emerging trends are also significantly bolstered through collaborative endeavours between public and private entities. Partnerships between universities, technical colleges, and industry associations enable the development of curricula that integrate practical skills and knowledge pertinent to current job market demands, ensuring graduates are well-prepared for the workforce. Furthermore, public-private partnerships facilitate the creation of work-based learning opportunities such as internships, apprenticeships, and on-the-job training programmes. These initiatives not only provide valuable hands-on experience but also address workforce needs in various sectors. The lesson for this national human resource development plan lies in acknowledging the indispensable role of public-private partnerships in advancing HRD goals.

xi) **The dynamic nature of socioeconomic contexts and evolving labour market dynamics illustrate the importance of adaptability and flexibility in manpower planning.** In Uganda, confronting challenges such as technological disruptions, demographic changes, and global economic uncertainties necessitates the ability to adjust strategies, realign priorities, and embrace innovation as pivotal factors for success. The cyclical nature of manpower planning, marked by continuous monitoring, evaluation, and course correction, has empowered Uganda to navigate through turbulent times with agility and resilience. This approach enhances the relevance and effectiveness of the human resource plan amid shifting realities. Therefore, manpower planning must be responsive to changing socioeconomic conditions and labour market trends. By keeping updated on changes in socioeconomic factors and labour market dynamics, the Plan will proactively

prepare the workforce for the forthcoming demands of emerging industries, technological advancements, and demographic transition.

1.7. Rationale of the Plan

22. **The NDPIV-HRDP is formulated to address critical challenges and leverage opportunities in Uganda's human resource landscape.** The Plan addresses Uganda's critical need for a skilled and adaptable workforce to drive economic growth and facilitate the achievement of national strategic goals. By aligning education and training with labour market demands, the Plan seeks to reduce labour market mismatches, enhance productivity, reduce inequality and poverty, and promote inclusive development. Aligned with Uganda's Vision 2040 and the Sustainable Development Goals, the Plan aims to invest in the youthful population to harness the demographic dividend. It will promote innovation, entrepreneurship, and labour market information systems to match supply and demand. Overall, the NDPIV-HRDP is a strategic response to Uganda's human resource developmental challenges, aiming to create a prosperous, equitable, and competitive nation.

1.8. Scope and Coverage

23. **This NDPIV-HRDP comprehensively addresses Uganda's workforce needs across both the public and private sectors.** The plan focuses on the labour market needs across all key programmes, including agro-industrialisation, human capital development, extractive resources, manufacturing, and tourism development among others. It ensures alignment between education and training programmes and labour market demands, targeting diverse sectors to create a skilled workforce that supports both public and private sectors while emphasising support for marginalised groups, including youths, women, persons with disabilities, and workers in the informal sector. The Plan provides a detailed implementation framework with monitoring and evaluation mechanisms, aligning with the fourth National Development Plan (NDPIV). This enhances the plan's contribution to national and global development agendas while fostering a skilled, inclusive, and adaptable workforce across all key development programmes.

1.9. Approach

24. **The development of the NDPIV-HRDP involved a comprehensive approach to address Uganda's workforce development needs.** This approach is grounded in evidence-based planning, utilising data from human resource surveys, labour force surveys, educational statistics, and sectoral studies to identify the critical education and skills gaps. A macro model for human resource projection was employed to generate forecasts of workforce needs. The model was constructed in line with the International Standard Classification of Occupations (ISCO), the International Standard Classification of Education (ISCED), and the International Standard Industrial Classification (ISIC) of all economic activities to provide a robust framework for determining human resource gaps at both the national and programme levels. The plan was developed with the active and participatory engagement of a wide range of stakeholders, including MDAs, LGs, academia, private sector employers, civil society organisations, and development partners who provided valuable inputs for the Plan.

1.10. Structure of the Plan

25. **The Plan is structured into three main parts across eight chapters, each addressing a key component of national human resource development**. These parts and sections are summarised below:

Part I: Background and Labour Market Context

Chapter 1 outlines the background and rationale for the Plan.

Chapter 2 reviews Uganda's education and training landscape.

Chapter 3 examines the current employment landscape.

Chapter 4 analyses labour market mismatches between skills supply and demand.

Part II: Strategic Direction and Human Resource Needs

Chapter 5 presents the Plan's strategic focus, including the overarching goal, theme, objectives, strategies, actions, and reforms.

Chapter 6 details the projected human resource requirements across the 18 programmes of the Fourth National Development Plan (NDP IV).

Part III: Implementation, Monitoring, and Evaluation

Chapter 7 outlines the implementation framework, covering financing strategies, coordination mechanisms, and risk management.

Chapter 8 presents the monitoring, evaluation, and reporting mechanisms, supported by a results framework to track progress and impact.

CHAPTER 2: EDUCATION AND TRAINING LANDSCAPE IN UGANDA

2.1. Introduction

26. **Education and training are a cornerstone of development, playing a crucial role in shaping the future of the citizens and the country's economic progress.** Uganda's education system provides a comprehensive pathway from early childhood to tertiary education, fostering academic and practical skills essential for individual and national development. With growing emphasis on technical and vocational training, it aims to align learning outcomes with labour market demands, nurturing a skilled and employable workforce for sustainable development.

2.2. Structure of the Education System

27. **The formal education system in Uganda, like much of East Africa, has its roots in the region's colonial history.** Introduced by British colonial authorities, the education system initially was designed to serve the interests of the colonial masters and was designed to train the local administrative workforce as well as prepare Ugandans for white color jobs, but not for industrialisation. The colonial education system was meant to make Uganda and the rest colonies exporters of raw materials and importers of finished products with no or limited industrialisation and value addition.

28. **Aligned with the industrialisation and value addition priorities of the Fourth National Development Plan (NDP IV), Uganda is committed to reforming its education and training systems to cultivate a skilled and adaptable workforce that supports the country's industrial agenda.** This Plan emphasises the urgent need for a shift in mindset—from a preference for white-collar employment to greater appreciation for blue-collar and other productive jobs. Ongoing reforms aim to align education with national development objectives and local cultural realities. Key areas of focus include expanding access, improving quality, and reducing socio-economic disparities, demonstrating Uganda's dedication to leveraging education as a catalyst for human capital development.

29. **The Ugandan education system is organised into three main components:** These include Primary, Secondary and Tertiary Education (which includes TVET and universities). Although pre-school is recognised in the education policy, it is not funded by the government, despite being a critical foundation for early cognitive development and human capital development.

2.3. Educational Governance and Policy Framework

30. **Uganda's education governance and policy framework is designed to provide strategic direction, regulatory oversight, and quality assurance for the country's education sector.** The education policy in Uganda is based on clear frameworks and plans, such as Vision 2040, the National Development Plan, the NRM Manifesto, regional and international commitments like the Sustainable Development Goals (SDGs), Agenda 2063, and the EAC Vision 2050. The Cabinet and Parliament are responsible for developing, enacting and executing educational and related policies. The Ministry of Education and Sports spearheads policy development and implementation in collaboration with the Office of the Prime Minister, National Planning Authority, Ministry of Finance, Planning and Economic Development and the relevant Ministries, Departments, and Agencies (MDAs) within the education and skills programme.

31. **The policies and programmes approved by the Cabinet have played a pivotal role in achieving international, regional and national education objectives.** These policies include the Gender in Education Policy of 2008, the Early Childhood Development (ECD) Policy of 2023, TVET Policy 2019, and the National Teacher Policy 2019, among others. The government has also implemented programmes and initiatives including; Universal Primary Education (UPE), Universal

Secondary Education (USE), Universal Post O Level Education and Training (UPOLET), the establishment of a primary school in each parish, a secondary school in each subcounty, a TVET institution in each constituency, the implementation of thematic and lower secondary school curricula, and a public university in each region, among other initiatives. The implementation of Universal Primary Education (UPE) has greatly increased the number of students enrolled at the primary level, from 2.5 million in 1996 to 10.8 million in the academic year 2019/20. At the secondary level, the introduction of Universal Secondary Education (USE) has resulted in an increase in enrollment from 1.2 million learners to 2 million learners in the academic year 2018/19. Critical to note is that UPE and USE don't have a formal policy to implement them.

32. **However, the weak implementation and monitoring of education policies and programmes in Uganda remain a significant challenge.** Gaps in their execution have hindered their effectiveness. Issues such as limited enforcement of the legal framework and implementation, inadequate funding, lack of infrastructure, and insufficient training for teachers undermine the quality of education. Moreover, poor coordination among government bodies, especially the Local Governments, limited community involvement, and corruption exacerbate the situation. Monitoring mechanisms are often under-resourced and lack the necessary rigour to ensure accountability and transparency. Consequently, many initiatives fail to achieve their intended outcomes, leaving substantial disparities in educational access and quality across the country.

2.4. Review of Uganda's Education and Training System

2.4.1 Early Childhood Education

33. **The Education Act of 2008 establishes pre-primary education as the foundational level of the education system.** Pre-primary education is provided by private individuals or agencies for children aged two to five, with financial responsibility resting on parents or guardians. The Government's role includes developing the curriculum, setting minimum standards for infrastructure and facilities, and establishing training guidelines and qualification requirements for teachers. Additionally, all pre-primary schools must be licensed, registered, and regularly inspected to ensure quality and compliance with standards.

34. **Enrollment in pre-primary schools, particularly nursery schools and daycare centers, is rising significantly.** From 2014 to 2017, enrollment in Early Childhood Development (ECD) programmes increased from 433,258 (20.4%) to 608,973 (29.2%). Nursery schools lead with 560,698 enrollments, followed by community-based pre-primary schools (43,756) and daycare centers (2,962). This shift indicates a move away from home-based pre-primary schools, which now serve only 0.26% of pre-primary pupils. Several factors contribute to this trend: parents increasingly recognize the importance of early childhood education and actively advocate for it, understanding its role in their children's development and future success. Further, the growing availability and accessibility of structured pre-primary programmes, like nursery schools and daycare centres, provide more options for parents seeking quality early education.

35. **Despite the progress in expanding early childhood education, significant challenges persist.** These include:

i) **Inaccessibility of ECD and ECCE to approximately 80% of children aged three to five years.** This impedes the ability to children to achieve their utmost capabilities and consequently jeopardises the nation's aspiration to possess a human capital that is suitably trained, healthy, and productive, as emphasised in the Uganda Vision 2040. The current ECCE coverage falls short of the Sub-Saharan average, which stands at 34% for children aged 3-5.

ii) **ECD services are mostly provided by the private sector, which creates policy and strategic challenges.** This dominance makes quality, health, and sanitation requirements difficult to meet in most centres, including Kampala City. In Uganda, ECD services are costly and mostly available in metropolitan areas, limiting access and coverage. Government regulation compels all schools to have ECD centres, but private actors' funding constrains slow progress. Beyond regulation, the government should actively provide ECD services to overcome these impediments. This would fill access and coverage shortages. Additional steps include enforcing quality standards among service providers, training caregivers regularly, and educating parents and stakeholders about ECD. To successfully implement ECD initiatives, stakeholders must increase coordination and intervention.

iii) **Many learners attend pre-primary education in sections annexed to government-aided primary schools, despite these sections often being unlicensed and informal.** The majority of the government-aided primary schools have informally annexed pre-primary sections or have added a special primary one stream (s) to accommodate learners below six years of age**.** Approximately 80% of 224 public primary schools have learners below six years old, with 53% having dedicated Early Childhood Care and Education (ECCE) centers, 9% having special primary one streams, and 18% enrolling underage learners in regular primary one streams. This annexing aims to meet the high demand for pre-primary education, but often results in low service standards. Management and staffing are typically the same as for the primary sections, lacking specially trained pre-primary staff and proper management committees. Additionally, the curriculum and facilities are sometimes unsuitable for young children, significantly constraining the quality of pre-primary education in the country.

iv) **The limited availability of caregivers and poor career prospects in Early Childhood Development (ECD) centres present significant challenges.** The shortage of trained and qualified caregivers undermines the quality of education and care provided to young children during their critical developmental years. This scarcity is exacerbated by the low wages and minimal benefits associated with ECD positions, making the profession unattractive and leading to high turnover rates. Additionally, the lack of clear career progression and professional development opportunities further discourages individuals from pursuing or remaining in ECD roles. As a result, many ECD centres operate with inadequate staff, negatively impacting the learning environment and outcomes for children. Therefore, addressing these issues is crucial to ensure that ECD centres can provide high-quality education and care, laying a strong foundation for the future success of Uganda's children.

2.4.2 Primary Education

36. **Primary education is the second stage of basic education.** In 1997, the Government of Uganda and its partners implemented the Universal Primary Education (UPE) initiative as a means to improve access to primary education, making it a top priority. Subsequently, the country has consistently prioritised expanding access to basic education due to its pivotal role in fostering sustainable economic growth and social transformation. The UPE project sought to eradicate obstacles to education, guaranteeing universal access to schooling for all children. The emphasis on basic education highlights its significance in establishing the basis for further learning and growth, ultimately contributing to the long-term socio-economic advancement of the nation.

37. **The primary sub-sector has registered nearly 11 million learners, of which 7.2 million were enrolled in government primary schools compared to about 3.4 million in the privately-owned schools.** Enrolment is slightly higher for females (5,382,656) than the males (5,304,258). Enrolments in both government-aided and private schools decrease as pupils move from lower classes to upper classes. At the primary level, 20% (approx. 2,500,000) of children between the

ages of 6-12 years are out of school. According to the UNHS (2019/20) 80% of the learners within the above age group are enrolled in primary schools. Compared to 76% of learners of the same age group who were enrolled in primary education by 1988, the country has managed to reduce the percentage of non-enrolled children in primary schools by only 4% over a period of 34 years. Whereas the Ugandan primary school net enrollment compares better to the Sub Sahara African (SSA) average of 78%, Uganda has suffered more from non-enrollment of children over a longer time.

38. **Although there has been progress, primary school education is still facing some fundamental difficulties that undermine its quality.** These issues include:

i) **Despite the increase in enrollment rates, the completion rates are low, leading to a large number of pupils dropping out before finishing their education.** Evidence shows that primary seven completion rates declined by 7% from 67% in 2012 to 60% in 2017. The 60% completion rate implies that 40% of the primary pupils were not able to complete primary seven that year. This completion rate reflects persistently high-class repetition and dropout rates. High repetition rates not only clog the system by increasing Pupil Teacher Ratio and Pupil Class Ratio but also waste the meagre resources available for the education sector as the government spends on the same pupil more than once in the same class.

ii) **Poor learning outcomes in primary schools are a major concern**. Ugandan learners score 397 on a harmonised tests scale, where 625 represents advanced attainment and 300 represents minimum attainment. Regionally, Ugandan learners score below average in the reading assessment and is ranked 9th out of 14 countries participating in the Southern and Eastern Africa Consortium for Monitoring Educational Quality (SACMEQ). In addition, whereas Ugandan children are expected to complete 6.8 years of school, this equates to only 4 years of learning adjusted years of schooling compared to 4.9 years for the SSA average. This implies that whereas learners are spending more years in school, they actually achieve lower quality learning outcomes compared to their counterparts in other countries who have spent the same number of years in school.

iii) **The curriculum assessment practices prioritise preparing students for high-stakes final examinations, which detracts from efforts to enhance learning and teaching methods.** This focus on exams encourages rote memorisation over genuine understanding and hinders the development of critical thinking and problem-solving skills. As a result, students often lack a deep comprehension of the material, and teachers may neglect innovative teaching approaches that foster a more comprehensive educational experience. This exam-centric approach ultimately compromises the quality of primary education.

iv) **The teaching profession in Uganda faces challenges due to low academic and non-academic entry requirements.** Despite efforts by the Ministry of Education and Sports to raise academic standards for Primary Teacher Education programmes, attracting qualified candidates remains difficult. Many admissions to Primary Teacher Colleges meet minimum requirements, but the profession still struggles to recruit suitable applicants, as 49% of trainees lack a genuine passion for teaching. Addressing these issues requires rigorous selection processes that evaluate both academic qualifications and personal attributes to ensure only the most dedicated individuals enter the profession, ultimately enhancing the quality of education in Uganda**.**

2.4.3 Secondary Education

39. **Secondary education prepares learners for work and equips them with critical thinking and problem-solving skills.** It comprises of O-Level, which covers four years with a broad curriculum, and A-Level that lasts for two years with specialised instruction. Currently, 1,982,317 students are enrolled in secondary schools, with 50.4% male and 49.6% female. Enrollment in government schools stands at 764,940, while private institutions enroll 1,217,377 students. Enrollment tends to decrease as students' progress to higher classes, though private institutions maintain more stable numbers from senior one to senior four, and government schools show very low dropout rates at the advanced level.

40. **Despite the fact that secondary education in Uganda has significantly improved, there are still a number of issues that need to be resolved in this subsector, such as:**

i) **A significant proportion of adolescents aged 13 to 18 are not in school indicating persistent gaps in accessibility and participation.** The Secondary level Net Enrollment Ratio is 28% lower than most of the countries within the region (Kenya (51.1%), Burundi (28.3%), and Rwanda (34.1%). Some of the reasons for the persistent gaps in accessing and participating in secondary education include: the limited number of secondary schools; the long distances traveled to schools by learners; school fees and the challenges of early marriages and teenage pregnancies. This underscores the need for continued efforts to address barriers to enrollment and ensure that all eligible students have access to quality secondary education, thereby fostering more inclusive and equitable educational opportunities for Uganda's youth.

ii) **The consistent decline in student enrollment as they progress to higher grades poses a significant barrier to improving Uganda's secondary education.** Enrollment dropped from 347,529 in Senior One to 67,611 in Senior Six in 2017, reflecting a pattern of high dropout rates. A cohort analysis shows that only 39.3% of students transition from Senior Four to Senior Six, with an overall dropout rate of approximately 78.6% from Senior One to Senior Six. High dropout rates are partly due to the commercialisation of secondary education and the annualised terminal examination syndrome, where students failing to meet certain grades are expelled, limiting their educational opportunities. Therefore, addressing these issues requires targeted interventions to reduce repetition and dropout rates, tackling both the commercialisation of education and the factors driving students to leave school prematurely.

iii) **Despite government efforts to improve basic infrastructure, the secondary education sub-sector still faces shortages**. In particular, the shortage of teacher housing and teacher classrooms stands at 50,734 and 7,698 units, respectively, highlighting a pressing need for improvement. Among the critical infrastructure in short supply are classrooms, latrine blocks, libraries, and laboratories. The implication of these shortages is profound, as inadequate infrastructure can hinder effective teaching and learning, impacting the overall quality of education and student outcomes.

iv) **The limited capacity of teachers to implement the revamped lower secondary curriculum undermines the effectiveness of the educational reform.** Although Uganda's curriculum underwent a major update in 2020 to focus on skills and competencies, many teachers are unprepared for this shift. The challenges, such as insufficient training, unclear assessment methods, and limited resources, hinder the effective execution of the new curriculum, as well as the students' ability to gain essential skills and competencies. These gaps prevent the curriculum from fully achieving its goal of fostering deeper understanding and lifelong learning.

2.4.4 Technical and Vocational Education and Training

41. **Uganda's TVET system consists of technical schools, polytechnics, public and private training facilities, and informal training sectors**. Completion of primary or secondary education is a prerequisite for admission to the TVET schools. Informal training, generally in the form of apprenticeship, provides practical skills in trades like mechanics and carpentry, but is unstructured and unregulated. Since 1986, there has been a significant increase in the number of public TVET institutions from 126 in 2012 to 169 in 2020 and corresponding formal enrolment from 34,380 to 95,84. There are more than 600 formal private training providers and 1,000 informal providers who are registered with Uganda Association of Private Vocational Institutions (UGAPRIV). This expansion requires the enhancement of standards and regulations in the unofficial sector to provide high-quality training.

42. **Despite its critical role in workforce development, TVET faces several challenges, which include:**

i) **Low enrollment in TVET.** The growing recognition of vocational skills and the expansion of TVET institutions have not fully translated into higher enrollment figures. The low enrolment in TVET programmes is majorly associated with barriers such as: poor geographical distribution and location of TVET institutions; negative perceptions of TVET; low enrolment for females in Science, Technology, Engineering and Mathematics (STEM) related courses and unfriendly environment for people with special needs. Furthermore, there is uncoordinated admission of students to TVET institutions. There is also low enrolment in TVET institutions due to the high cost of technical training and lack of awareness. The result is that many trainees end up in cheap alternative programmes whose graduates do not acquire the requisite skills relevant to the world of work. TVET delivery remains inadequately funded, fragmented and uncoordinated across the various sectors. This has in part led to under performance in implementation.

ii) **Limited integration of TVET with industry.** A significant challenge in Uganda's TVET system is the limited integration with the different types of industries, which undermines the relevance of vocational training. This disconnect results in curricula that fail to align with current job market demands, leaving graduates with skills that may not meet employer needs. The absence of strong partnerships between TVET institutions and industry further exacerbates the problem, leading to insufficient work-based learning opportunities such as internships and apprenticeships. As a result, TVET programmes struggle to offer practical, hands-on experience, making it difficult for students to transition smoothly into the job market. Improving industry integration is essential for ensuring that TVET graduates are well-prepared and meet evolving job market requirements.

iii) **Inadequate efforts to benefit from external job demands.** There are inadequate deliberate attempts to exploit external demand for a skilled labour force in Technical and Vocational Education and Training (TVET). Nevertheless, countries such as Kenya have capitalized on the opportunity presented by the international demand for skilled workers by establishing mechanisms to connect Kenyan Technical and Vocational Training (TVET) institutions with selected TVET institutions in countries like Germany. This initiative promotes labour migration from Kenya to Germany after students complete their studies. There is a need to deliberately enhance the quality of TVET training in Uganda and thus secure jobs from the external market.

iv) **Most instructors have limited practical experience in TVET training.** There is a shortage of instructors/tutors in TVET who possess both technical knowledge and pedagogical skills, as well as industrial experience, thus a preference for theoretical training. This perpetuates the loss of the proficiency attained by trainees. Consequently,

there has been a lack of substantial improvement in the recruitment and placement of skilled instructors and administrators.

2.4.5 Higher Education

43. **Higher education in Uganda represents the final stage of the formal education system and is essential for driving innovation and economic growth.** It includes institutions accredited by the Uganda National Council for Higher Education (UNCHE) and the Uganda National Council for Science and Technology (UNCST), which offer a range of academic, professional, and vocational programmes. As the number of school-going children has increased due to Universal Primary Education (UPE) and Universal Secondary Education (USE), higher education enrollment has also risen significantly. Enrollment has reached 257,598 students, reflecting a substantial demand for higher education opportunities across universities, technical and vocational institutions, and other diploma-awarding bodies.

44. **Higher education faces several challenges that impede its effectiveness in skill development.** These include;

i) **The number of students in science-related courses remains low despite increasing enrollment in Higher Education Institutions (HEIs).** This is concerning for Uganda's goal of becoming a knowledge-based economy. Currently, only 100,463 students (39%) are enrolled in science-related programmes, compared to 157,135 students (61%) in Arts and Humanities. As technology and the pursuit of knowledge drive significant changes in higher education, increasing student enrollment in science and technology disciplines is crucial for building a knowledge economy. Despite a gradual rise in enrollment in these fields, more deliberate efforts are needed to boost participation in science-related disciplines to achieve the country's economic aspirations.

ii) **The weak linkage between national human resource needs and the academic programmes provided is worsened by the absence of a centralised admission system.** This results in the fragmented and often inefficient alignment of academic programmes with labour market demands, as each institution operates independently without a unified framework. Consequently, graduates frequently find themselves with qualifications that do not match the skills required by employers, leading to a skills mismatch in the job market. The absence of a centralised system also impedes the ability to track and address emerging human resource needs across sectors, making it challenging to adjust educational offerings accordingly. Therefore, enhancing coordination through a centralised admission system could improve the alignment between educational programmes and national human resource requirements, thereby better preparing graduates for the workforce.

iii) **The increase in student enrollment in higher learning institutions has not been matched by a corresponding rise in essential facilities.** As student numbers increase, the capacity of critical infrastructure such as lecture halls, seminar rooms, laboratories, and libraries has remained insufficient. This discrepancy results in overcrowded classrooms, inadequate access to learning resources, and a strained academic environment, all of which compromise the quality of education. Ugandan universities provided 1.1 square metres (sqms) of lecture space per student, 0.3 sqms of library space per student and 0.91 sqms of laboratory space per student, which are inadequate according to the NCHE capacity indicators. Therefore, addressing this imbalance is crucial for ensuring that the enrollment growth is supported by the necessary infrastructure to maintain high standards of education.

iv) **The student-to-staff ratio in Uganda's Higher Education Institutions is unsatisfactory, with 81 students per PhD holder in universities and an overall ratio of 102 students to one PhD holder across all HEIs.** This shortage of qualified staff, essential for advancing knowledge and economic growth, is evident as only 17% of academic staff hold PhDs, 45.6% have master's degrees, and others hold lower qualifications. To achieve the National Council for Higher Education's ideal ratio of one PhD holder to 15 students, Uganda needs approximately 18,700 PhDs, but currently it has only about 1,200, representing a deficit of over 90%. Therefore, addressing this gap requires producing at least 1,000 PhDs annually over the next eleven years, a substantial increase from the current output of about 212 PhD graduates per year.

v) **Higher Education Institutions face significant constraints in research due to inadequate funding.** Despite research being a critical mandate, its funding is still minimal, with private universities allocating just 2.7% while public universities allocating 6.2% of their budgets. This limited investment hampers their ability to conduct meaningful research and innovation, resulting in a stagnation of new knowledge generation. Consequently, the potential for universities to contribute to advancements and solve pressing issues remains underutilised. Therefore, addressing this funding shortfall is essential for enhancing research capabilities and fostering innovation within HEIs.

2.4.6 Adult and Continuing Education

45. **Adult and Continuing Education (ACE) in Uganda encompasses a broad range of initiatives aimed at promoting lifelong learning and addressing literacy gaps among adults.** Literacy programmes focus on improving basic reading and writing skills for those who missed formal education, often targeting marginalised and rural populations. Lifelong learning initiatives are designed to offer ongoing education opportunities for personal and professional development, with various programmes tailored to different community needs. Online and distance education has grown over time in Uganda, providing flexible learning options for adults who cannot attend traditional classes. This mode of education helps to bridge gaps in access and accommodate the busy schedules of adult learners.

46. **Adult and Continuing Education (ACE) in Uganda faces several significant challenges that impact its effectiveness and reach.** These include:

i) **One of the primary challenges facing Adult and Continuing Education (ACE) is inadequate infrastructure and resources.** Many regions lack the necessary facilities, such as well-equipped classrooms, libraries, and technology, which hinders the effectiveness of literacy programmes and other educational initiatives. This inadequate infrastructure affects both the delivery and quality of ACE, limiting access and the ability to provide comprehensive learning experiences.

ii) **The expansion of online and distance education is constrained by low digital literacy and limited access to technology.** Many adult learners, especially those in rural areas, lack the necessary skills and devices to participate effectively in digital learning programmes. This digital divide exacerbates educational inequalities and restricts the reach and impact of online educational initiatives.

iii) **Funding adult and continuing education programmes is often insufficient, affecting the scope and sustainability of these initiatives.** The limited financial resources hinder the development of new programmes, the expansion of existing ones, and the maintenance of essential facilities and materials. Without adequate funding, it becomes challenging to scale up programmes or invest in quality improvements.

iv) **Low awareness of Adult and Continuing Education.** Many adults remain unaware of the benefits and opportunities provided by ACE. Moreover, there is a lack of motivation among some individuals due to perceived irrelevance or previous negative educational experiences. This lack of awareness and motivation leads to low participation rates and diminishes the impact of ACE programmes on personal and professional development.

47. **Therefore, opportunities exist to expand ACE through increased investment, improved digital infrastructure, and more inclusive policies that cater for the diverse learning needs.** The strategic priorities for the future of ACE include enhancing the quality of educational content, expanding access to technology, and fostering partnerships with both local and international organisations to support adult learners effectively.

2.4.7 Teacher Education and Development

48. **Teacher Education and Development in Uganda encompasses several key components that are essential for building an effective and responsive education system.** Teacher training institutions, including primary teacher colleges and universities, play a crucial role in preparing future educators with the necessary pedagogical skills and subject knowledge. The process of teacher qualification and certification ensures that educators meet the required standards to teach effectively, while Continuous Professional Development (CPD) provides ongoing training to enhance teachers' skills and adapt to new educational challenges.

49. **The teaching workforce encompasses a diverse range of employment settings across both public and private sectors.** As of 2015, a total of 347,219 teachers were employed, with 266,290 directly hired by the government. These included 184,275 teachers in primary schools, 67,168 in secondary schools, 13,870 in tertiary institutions, 750 in Primary Teachers Colleges (PTCs), and 227 in National Teachers Colleges (NTCs). The private sector employed 80,929 teachers, 16,741 were in Early Childhood Development (ECD) Centres, 62,779 were in primary schools, 31,841 were in secondary schools, 1,120 were in post-secondary schools, and 289 were in the non-formal education sector. This distribution highlights the extensive involvement of both sectors in supporting educational delivery at various levels.

50. **Teacher education and development face numerous challenges, which hinder the effectiveness and quality of teaching across the system.** These include:

i) **The poor terms and conditions of service for teachers present a significant challenge, impacting both teacher morale and educational quality.** Teachers in Uganda often face poor terms and conditions, including salary disparities, low pay, inadequate benefits, and lack of professional support, which affects their motivation and job satisfaction. This often leads to high turnover rates and difficulties in attracting and retaining qualified professionals.

ii) **Teacher absenteeism remains a significant challenge in primary and secondary schools, leading to disruptions in student learning and decreased educational outcomes.** Frequent absenteeism impacts students' academic progress and creates inconsistency in the quality of education delivered. The problem is exacerbated by insufficient monitoring systems, which contribute to low accountability among educators. Therefore, addressing teacher absenteeism requires a comprehensive approach that includes increasing accountability and implementing effective support and supervision mechanisms.

iii) **The current state of teacher training and Continuous Professional Development (CPD) is insufficient to meet the needs of the education system.** Science teachers are the only ones eligible for the limited chances, which include the Secondary Science and Mathematics Instructors (SESEMAT) Programme. Many teacher training programmes lack standardised, comprehensive curricula, resulting in variations in the quality of teachers produced. The delivery of training is often dominated by lecture-centered methods, with inadequate emphasis on practical, pedagogical skills. Additionally, CPD opportunities are limited, with few teachers benefiting from ongoing professional growth and support. This insufficiency hampers the ability of teachers to adapt to new educational challenges and innovations, ultimately affecting the quality of education provided to students.

iv) **Teacher deployment and recruitment are marked by an oversupply of certain types of teachers and inefficiencies in deployment processes.** This imbalance, particularly the excess of primary and humanities teachers alongside shortages in STEM and special needs education, disrupts the overall effectiveness of the education system. Additionally, the lack of a standardised system for teacher certification and recruitment leads to inconsistencies in teacher quality and distribution. Discrepancies in recruitment practices, such as the ad hoc hiring by school boards without central oversight, result in unequal access to qualified educators, further complicating efforts to deliver quality education uniformly across the country.

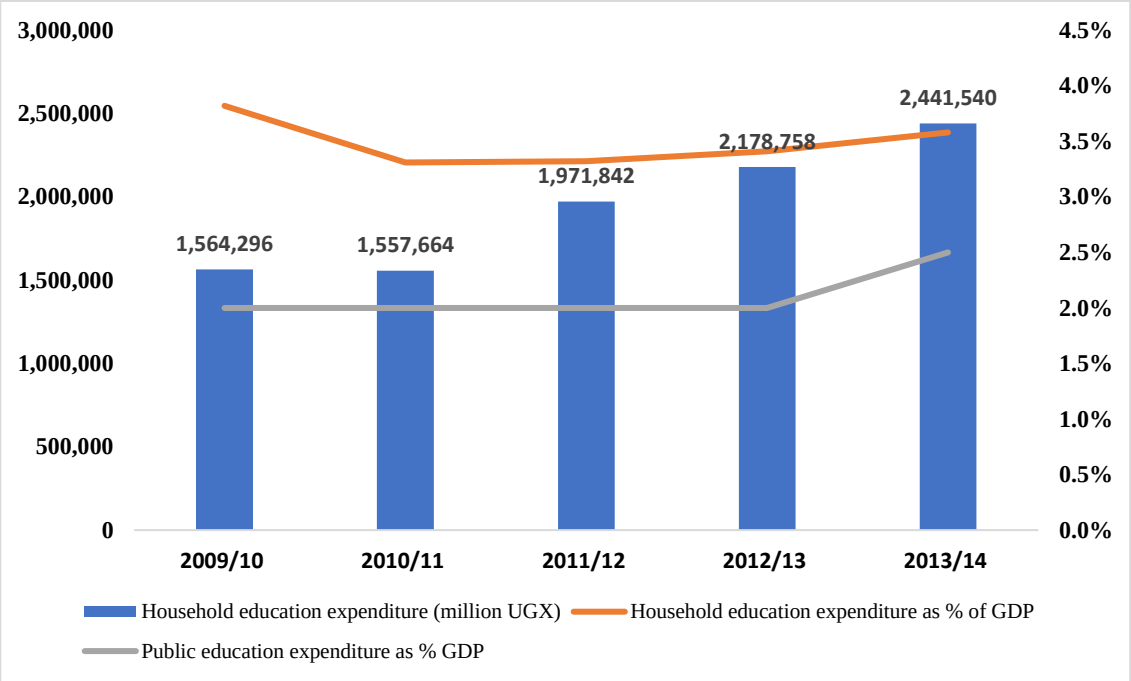
v) **The integration of technology in teaching and learning is hindered by limited access to digital tools and infrastructure, particularly in rural areas.** Many teachers lack the necessary training and skills to effectively incorporate digital resources into their teaching methods, resulting in the underutilisation of available technology. Additionally, inconsistent internet connectivity and inadequate technical support further restrict the effective use of educational technology. These issues create disparities in the quality of education between urban and rural schools, making it difficult to ensure equal learning opportunities for all students.

51. **Therefore, the future of teacher education and development in Uganda holds several promising opportunities and strategic priorities if the above challenges are addressed.** Opportunities in teacher education and development in Uganda include leveraging technology for Continuous Professional Development (CPD) and enhancing teacher training programmes. Strategic priorities for the future involve improving teacher qualifications by raising entry requirements and offering targeted scholarships for high-demand subjects like STEM and special needs education. Expanding access to quality in-service training and mentoring programmes can enhance teaching practices and student outcomes. Furthermore, establishing standardised certification and recruitment processes will ensure consistent quality of educators across the country, thereby creating a robust and effective teacher education and development system, ultimately improving the overall quality of education in Uganda.

2.5. Education Financing

52. **Education funding comes from a variety of sources, each playing a crucial role in sustaining the sector.** Government contributions constitute a significant portion of the funding, providing essential support for public education infrastructure and operations. The private sector also contributes, often through school fees and donations, supporting both private institutions and public schools. Non-Government Organisations (NGOs) and development partners offer additional resources and support for educational programmes and initiatives, particularly in underserved areas. Households, meanwhile, bear a considerable portion of the financial responsibility through direct payments for school fees, materials, and other educational expenses. This diverse funding landscape is vital for addressing the various needs and challenges within Uganda's education system.

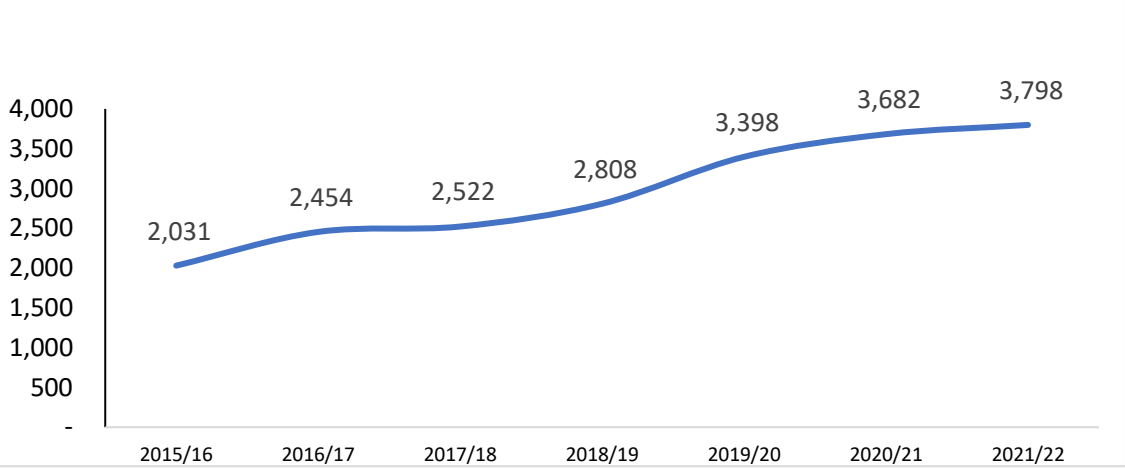
Figure 2.1: Household Education Expenditure



Source: *NPA Report, 2016*

53. **While Governments typically serve as the primary funders of education systems globally, Uganda's situation is different.** In Uganda, households are the principal contributors to education financing. Over the past decade, household spending on education has surged at an average annual rate of 8.3%. Private expenditure rose from 1.5 million shillings in 2009/10 to 2.4 million shillings in 2013/14, as shown in Figure 2.1. Notably, household spending on education as a percentage of GDP exceeds public education expenditure as a percentage of GDP, reflecting the increasing financial burden on families due to rising education costs. In recent years, there has been a noticeable increase in public expenditure on education in Uganda. In nominal terms, the total public funding for education reached Ushs 3,798 billion in FY2021/22, marking an 87 percent increase from the Ushs 2,031 billion allocated in FY2015/16, as shown in Figure 2.2. This significant rise in funding reflects a growing commitment to enhancing educational resources and infrastructure. However, despite this increase, challenges remain in ensuring that the funding effectively addresses the needs of the education sector and translates into improved educational outcomes across the country.

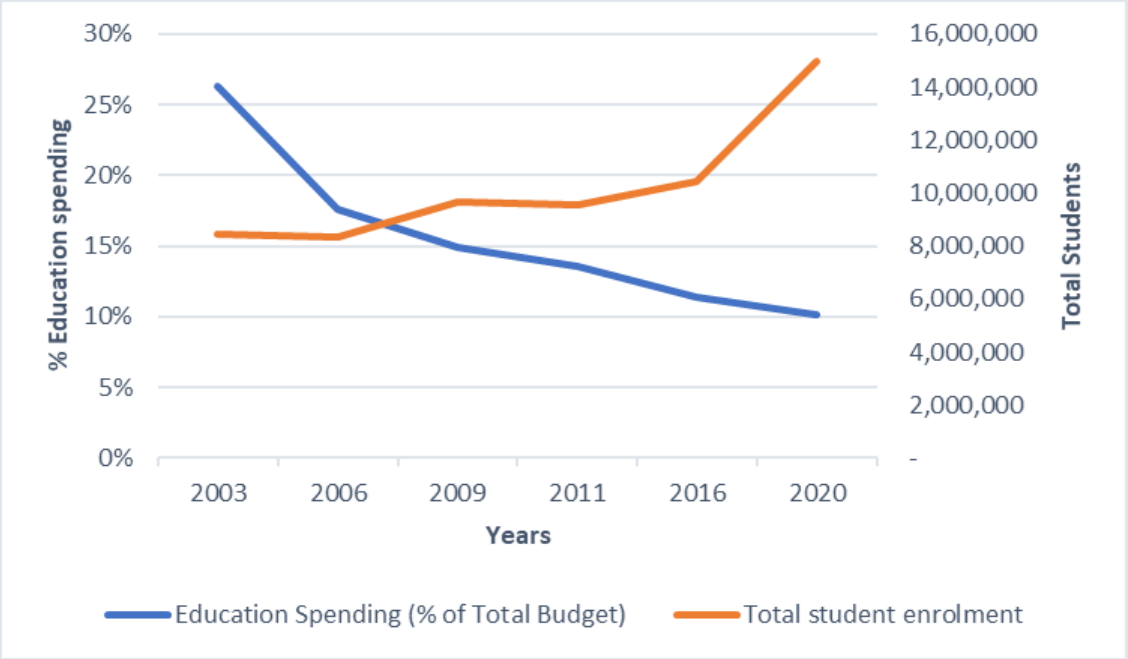
Figure 2.2: Trends in Public Expenditure on Education FY2015/16 – FY2021/22 (UGX Billion)



Source: *Ministry of Finance, Planning and Economic Development*

54. **Although there has been an increase in aggregate spending on education in recent years, reaching around 2.3% of GDP, this investment is not keeping up with the rapid expansion in enrollment throughout the entire education system.** This is despite the robust economic growth and increase in assistance flows. For instance, while the overall number of students rose to over 15 million in 2020 from around 8 million in 2003, the proportion of education spending in the national budget declined to 10.4 percent in 2020 from 26 percent in 2003, as shown in Figure 2.3. The current funding falls significantly below the globally recommended allocation of 15-20 per cent of the national budget.

Figure 2.3: Education Spending and Enrolment



Source: *Ministry of Finance, Planning and Economic Development*

2.5.1 The Students' Loan Financing Scheme

55. **The Students' Loan Financing Scheme is a government initiative established to enhance access to tertiary education by providing loans that cover tuition and other related costs**. It aims to reduce financial barriers for students who might otherwise be unable to afford higher education. Similar to models adopted in other countries, the scheme is designed as a user-pay system that shifts part of the financial burden from the state to students and their families. This approach is intended to promote greater equity by enabling governments to redirect public funds toward financially disadvantaged students.

56. **However, the scheme has faced significant challenges in achieving its intended objectives.** Between FY2014/15 and FY2021/22, the Higher Education Students Financing Board (HESFB) financed only 12,771 out of 36,261 eligible applicants, just 35 percent, highlighting its limited reach. This is a marked decline from earlier coverage rates of 57 percent in FY2014/15 and 64 percent in FY2018/19. As a result, many qualified students remain unable to access higher education due to a lack of financial support.

57. **Although the scheme prioritises funding for science, technology, engineering, and mathematics (STEM) programmes—sectors critical to Uganda's development under the Fourth National Development Plan (NDPIV)—its impact remains constrained**. Fresh graduates often face lengthy periods of frictional unemployment, making the loan repayment terms burdensome. Additionally, enforcement and compliance mechanisms for loan recovery are weak, threatening the long-term sustainability of the programme.

58. **Overall, the scheme's limited coverage, unfavourable repayment conditions, and weak alignment with labour market demands hinder its effectiveness in addressing Uganda's strategic skills gaps.** To realise its full potential, the scheme requires increased funding, improved repayment enforcement, and stronger linkage to priority development areas critical for Uganda's socioeconomic transformation.

2.5.2 Government Sponsorships in Public Universities in Uganda

59. **Each year, the Government of Uganda provides scholarships to approximately 4,000 new students admitted to public universities through various entry schemes**. The majority of these scholarships are awarded under the national merit scheme for direct entry, which targets the highest-performing A-level graduates. In addition, there are alternative access routes such as the mature age entry, diploma entry, and the district quota system, along with special provisions for students with disabilities and exceptional sports talent. This diversified approach is intended to broaden access to higher education by accommodating diverse qualifications and promoting inclusivity.

60. **While these sponsorships have increased access to university education, the current model faces several challenges in meeting Uganda's strategic human resource needs, as outlined in the Fourth National Development Plan (NDPIV).** One major limitation is the lack of alignment between government-funded student placements and the country's priority skill areas. Although students are selected based on academic performance, their areas of study are largely determined by institutional preferences rather than national labour market demands. This disconnect weakens the effectiveness of public investment in addressing critical skills shortages in sectors such as industrialisation, agro-industrialisation, ICT, and science and technology.

61. **Furthermore, despite targeting top-performing secondary school graduates, the government does not specify the academic disciplines in which sponsored students should specialise.** This leaves universities with the discretion to place students in programmes that may not align with national development priorities. As a result, the potential for government sponsorships to strategically fill skills gaps is significantly reduced.

62. **Another key concern is the persistent inequity in access to government sponsorships.** Students from under-resourced and rural schools often face barriers in competing for these opportunities, given disparities in educational quality and exam performance. Consequently, most beneficiaries come from high-performing urban schools—many of which are private and charge high fees—favouring students from wealthier families who could otherwise afford university education without state support. This entrenches socio-economic and regional inequalities, counteracting the equity objectives of public financing.

63. **In conclusion, the current government sponsorship framework, while helpful in expanding access, remains inadequate and unsustainable in addressing Uganda's broader educational and labour market needs.** The student loan scheme offers an alternative pathway, but its limited scope and lack of focus on priority skills further weaken its impact. A more integrated and targeted approach is required—one that links financial support to national skills priorities, promotes regional and socio-economic equity, and incorporates technical and vocational education as a central pillar in Uganda's human capital development strategy.

CHAPTER 3: EMPLOYMENT LANDSCAPE IN UGANDA

3.1. Introduction

65. **Uganda's economic growth has experienced notable fluctuations from 1983 to 2024, driven by political, global, and local factors.** The early years were marked by instability due to political turmoil and external shocks, leading to inconsistent GDP growth. Significant improvements occurred from 2000 to 2010, with annual growth rates often exceeding 5% due to structural reforms, increased foreign investment, and infrastructure development. However, recent years have faced a slowdown, notably impacted by the COVID-19 pandemic and global trade disruptions. Despite these challenges, Uganda showed resilience with a rebound in 2021 and 2024, reflecting its ability to recover from downturns and adapt to changing global conditions. This fluctuating growth pattern highlights the need for sustained economic reforms and adaptability to enhance long-term stability and growth.

66. **The employment landscape in Uganda continues to reflect a high level of informality and agricultural sector dominance.** As of 2024, 68% of the workforce is employed in agriculture, illustrating the sector's enduring role. The services sector has grown significantly, contributing around 26% to GDP, while the industrial sector remains small but crucial for economic diversification. Despite a relatively low average unemployment rate of 3.4% over the past decade, underemployment remains prevalent, especially among youth and in rural areas. The industrial sector has experienced modest growth but is constrained by high energy costs and a shortage of skilled labour. Addressing informality and underemployment, while supporting sectoral growth and diversification, is essential for improving overall employment quality and economic resilience.

3.2. Key economic sectors and their employment shares

3.2.1. Agriculture Sector Employment

67. **Agriculture is Uganda's largest employer, engaging approximately 68% of the labour force.** This labourforce was engaged in various activities such as crop farming, livestock rearing, fishing, and forestry, predominantly on smallholder farms. Women constitute 53% of the agricultural workforce and are vital in subsistence farming, which is crucial for household food security and the country's food supply. Despite 40% of the youth being employed in agriculture, the sector faces difficulties in attracting educated youth due to perceptions of low incomes, profitability, and labour-intensive practices. Nevertheless, agriculture remains essential for employment, particularly in rural areas with limited job alternatives.

68. **Human resources are critical for enhancing Uganda's agriculture sector, which contributed about 24% to GDP and over 50% of export revenues in 2023.** Skilled and equipped work force are critical for enhancing agricultural sector, which contributed 24% to GDP and over 50% export revenues to in 2023. The sector ought to depend on skilled labour to drive productivity and sustainability. However, challenges such as low productivity, limited access to modern farming inputs, and inadequate infrastructure underscore the need for improved agricultural training and extension services. Investing in human resources through targeted education, skills development, and access to modern technologies are important in addressing these issues and optimising growth opportunities, ensuring a more productive and resilient agricultural workforce while supporting the sector's significant economic role.

3.2.2. Manufacturing Sector Employment

69. **Uganda's industry sector, which employs around 15% of the workforce, exhibits significant variation in employment across manufacturing, construction, mining, and energy sub sectors, each uniquely influencing economic development.** The industry sector engages approximately 15% of the total workforce. Manufacturing, with about 1,200,000 employees (7% of the workforce), plays a vital role in urban economic development through activities such as food processing, textiles, chemicals, and machinery production. This sector's substantial employment reflects its importance in driving industrial growth, even though its growth rate is slower compared to the expanding service sector. Construction, employing around 800,000 individuals (5%), is highly labour-intensive, providing a range of job opportunities from skilled engineers to unskilled workers involved in building, road, and bridge construction. Mining, with 300,000 workers (2%), is focused on regions rich with minerals, offering specialised roles like miners, geologists, and engineers.

70. **Intra-sectoral shifts and technological advancements are shaping employment patterns within Uganda's industry sector, leading to a growing demand for skilled labour across various subsectors.** Among the industry subsectors, construction is the most labour-intensive, employing a significant share of both skilled and unskilled workers, while manufacturing also offers substantial employment, especially in labour-intensive industries like textiles and food processing. Productivity levels within manufacturing vary, with advanced technologies leading to higher efficiency compared to traditional methods. Similarly, productivity in construction projects depends on factors such as project scale and technology use. As Uganda's economy transitions from traditional agriculture to more industrial activities, there is an increasing need for skilled labour in manufacturing, construction, and other industrial subsectors. Technological advancements and market demands are driving changes in employment patterns, particularly in manufacturing, where automation and digital technologies are creating a higher demand for skilled workers in engineering and technology-related roles.

3.2.3. Service Sector Employment

71. **The services sector in Uganda, which employs about 33% of the workforce, is a major driver of employment growth, encompassing diverse activities such as retail, finance, education, healthcare, and professional services.** In Uganda, the services sector is a significant employment driver, accounting for approximately 33% of the total workforce. This broad sector includes vital areas such as retail, finance, education, healthcare, and hospitality. Each subsector plays a crucial role in economic growth and living standards. For instance, the retail trade, which covers wholesale and retail sales, supermarkets, and consumer goods distribution, employs a substantial portion of the workforce, particularly in urban areas. The finance and banking sector also contributes significantly, offering roles such as banking professionals, financial analysts, insurance agents, and microfinance specialists. Education and training services are essential for human capital development, employing teachers, instructors, administrators, and education policymakers. The healthcare and social assistance sector, which includes doctors, nurses, pharmacists, and social workers, is particularly employment-intensive, reflecting its critical role in employment.

72. **Productivity and employment patterns within Uganda's services sector are influenced by technological advancements and shifting consumer preferences, necessitating strategic adaptation to meet evolving demands.** Productivity levels vary across different service subsectors. For instance, the finance and banking sectors leverage technology and automation to improve efficiency, while healthcare services are more reliant on human resources and face challenges related to resource allocation and infrastructure. As urbanization and economic development progress, there is an increasing demand for services such as retail, finance, education, and healthcare. Technological advancements, changing consumer preferences, and

policy interventions are driving intra-sectoral shifts in employment patterns. The rise of digital banking and e-commerce, for instance, is creating a growing demand for IT professionals and digital marketers in the finance and retail subsectors. Adapting to these shifts is crucial for optimizing employment opportunities and productivity within the services sector.

3.2.4. Informal Sector Employment

73. **The informal sector is a crucial component of Uganda's economy, significantly impacting job creation, revenue generation, and poverty alleviation.** The informal sector plays a vital role in the economy, encompassing a wide array of activities such as street vending, small-scale manufacturing, agriculture, transportation, and various services. Despite its importance, this sector faces numerous challenges and complexities that require careful analysis. This section explores the size, scope, sectoral composition, and contributions of the informal economy to employment and income generation. It also examines the sector's interaction with the formal economy, regulatory environment, and challenges while considering prospects for integration and formalization. Understanding these aspects is essential for developing evidence-based policy interventions aimed at leveraging the sector's potential for inclusive and equitable development.

74. **The informal sector is a major livelihood source for many Ugandans, particularly the less educated, youth, and women, who might otherwise struggle to find employment in the formal sector**. The informal sector accounts for over 80% of businesses, 86% of the workforce, and 51% of the GDP. The sector's significant contributions to the lives of people experiencing poverty underscore its importance, challenging the perception of it as merely an underground or shadow economy. However, despite its critical role in economic progress and livelihood, the informal sector imposes considerable costs on the economy due to its unregulated nature. Informal businesses are not registered, lack state protection, and do not offer social benefits or formal labour contracts. Consequently, these enterprises and their employees are excluded from social safety nets and tax contributions.

3.2.5. Diaspora employment

75. **Since 2005, the Government of Uganda has implemented labour externalisation programmes to provide a structured alternative to the trafficking of Ugandans seeking employment abroad.** The primary objectives of these programmes are to offer a safe, orderly, and formal pathway for Ugandans pursuing work opportunities overseas and to address the short-term unemployment challenges within the country. During the programme's launch, the President emphasised that these measures were intended as temporary solutions to the unemployment issue. The long-term vision is to mitigate unemployment by fostering growth in agriculture, infrastructure, industry, and tourism, which will generate more decent job opportunities domestically. Despite the allure of overseas employment, the Government remains committed to leveraging its human resources effectively within Uganda to drive national development.

76. **Uganda has deployed approximately 279,330 migrant workers globally, with Saudi Arabia hosting over 81% of these individuals as of March 2024 (see Table 3.1).** The United Arab Emirates (UAE) and Qatar follow, accommodating 9% and 5% of the migrants, respectively. However, many Ugandans working in countries like Kenya, Tanzania, South Sudan, Canada, the USA, and the UK are not included in the official deployment database due to their independent migration processes, complicating tracking efforts despite significant remittances from these regions. Bilateral agreements with Saudi Arabia in 2017 and the UAE in 2019 have significantly influenced these migration patterns, with around 200,000 Ugandans estimated to have travelled abroad without official records. This underscores the challenge of managing and documenting labour migration effectively.

Table 3.1: Number of Migrant Workers externalised from 2016 – March 2024

Destination	2016	2017	2018	2019	2020	2021	2022	2023	2024	Total
Iraq	646	217	2,189	485	36	677	885	196		5,331
Afghanistan	342	416	228	414	50	0	0	0		1,450
Saudi Arabia	175	1,621	12,366	13,537	4,538	79,742	85,928	21,520	6,268	225,695
Qatar	487	520	923	256	1148	4,136	3,695	2,391	21	13,577
UAE	383	303	2,556	10,182	2,585	3,110	2,076	2,381	372	23,948
Bahrain	410	451	23	6	183	24	6	0		1,103
Somalia	96	162	745	139	172	832	700	408		3,254
Kuwait	0	0	0	38	109	21	95	167		430
Jordan	0	1,427	2,582	306	205	0	0	0		4,520
Poland	0	0	0	0	0	11	7	0		18
Romania	0	0	0	0	0	0	4	0		4
Total	2,539	5,117	21,612	25,363	9,026	88,553	93,396	27,063	6,661	279,330

Source: *MGLSD, 2024*

77. **The need for labour externalisation Management Framework to negotiate better working terms for migrant workers.** Countries such as the Philippines and Kenya have successfully enhanced their external employment outcomes by establishing frameworks that transfer the management and operations of selected training institutions, particularly in Nursing, Construction and Repairs, Housekeeping, and Tourism to private industrialists. This approach ensures that labour is trained to meet the industry standards of destination countries, bridging the gap between education and employer requirements. Professionalising labour before external deployment provides numerous benefits, including improved terms of service, enhanced job security and protection, and greater mobility for job seekers. In Uganda, the Assessment and Skills Centre (TASC) currently leads in industry-based contract training for external labour markets, and other entities like Abubaker Technical Services LTD have expressed interest in similar models. To maximise the benefits of labour externalisation programmes, it is critical for the Government of Uganda, through the Ministry of Gender, Labour, and Social Development (MoGLSD), to negotiate better working terms, such as wages, with destination countries and diversify labour export markets beyond casual labour roles. Proactive measures should include targeted skilling in high-demand areas such as business process outsourcing, ICT, research services, and nursing. Furthermore, Uganda should implement re-integration programmes to enable returning workers to leverage acquired skills in productive local sectors.

3.3. Public Vis-a-vis Private Sector Employment

3.3.1. Public Sector Employment and Available Employment Programmes

78. **Public sector employment in Uganda has steadily increased due to the government's focus on expanding services and infrastructure.** As of 2022/2023, approximately 366,574 individuals were employed in the public sector. This growth highlights the government's commitment to enhancing service delivery in essential areas such as education, health, and infrastructure. The expansion reflects a strategic effort to bolster public sector capacity in response to rising service demands. Although public sector employment has grown from 310,000 in 2015 to an estimated 366,574 in 2024, the vacancy rate of 45% remains high, indicating a slower pace of expansion in recent years. This trend underscores the need for continued focus on expanding and optimising public sector employment to maintain effective service delivery.

79. **Government programmes are pivotal in addressing employment challenges and enhancing public-sector employment.** The NDPIV outlines the strategy to recruit new personnel through its Public Sector Transformation Programme, targeting critical shortages in health, education, and infrastructure. This initiative aims to improve service quality and efficiency by addressing

personnel gaps. In addition, the Public Sector Reform Strategy, part of the transformation programme, seeks to streamline operations, enhance efficiency, and align resources with national development goals. Despite these efforts, challenges such as skills mismatches, gender disparities, and the need for ongoing reforms persist. Addressing these challenges is essential for building a more effective, inclusive, and adaptable public sector workforce to support sustainable national development.

3.3.2. Private Sector Employment and available Employment Initiatives

80. **Private sector employment in Uganda is a vibrant and evolving segment of the labour market, playing a pivotal role in the nation's economic progress.** This sector spans a diverse array of industries, including manufacturing, services, finance, and agriculture. Characterised by its flexibility, innovation, and market-driven nature, the private sector significantly influences job creation and economic expansion. In recent years, it has made substantial contributions to employment growth, with a rising number of job opportunities across various industries. This growth is largely fueled by entrepreneurial ventures, foreign investments, and a strategic emphasis on industrialisation and economic diversification. Employment in the private sector increased from 1,500,000 in 2015-2017 to a projected 2,000,000 by 2024-2025, as shown in Table 3.2. The growth rates have varied, with the highest at 11.10% in the 2015-2017 and 2024-2025 periods, reflecting a robust expansion and dynamic job market within the private sector.

Table 3.2: Private Sector Employment Statistics

Period	Number of Employees ('000')	Growth Rate (%)
2015-2017	1,500	11.10%
2018-2020	1,650	10.00%
2021-2023	1,800	9.10%
2024-2025*	2,000	11.10%

Source: *NPA modelled*

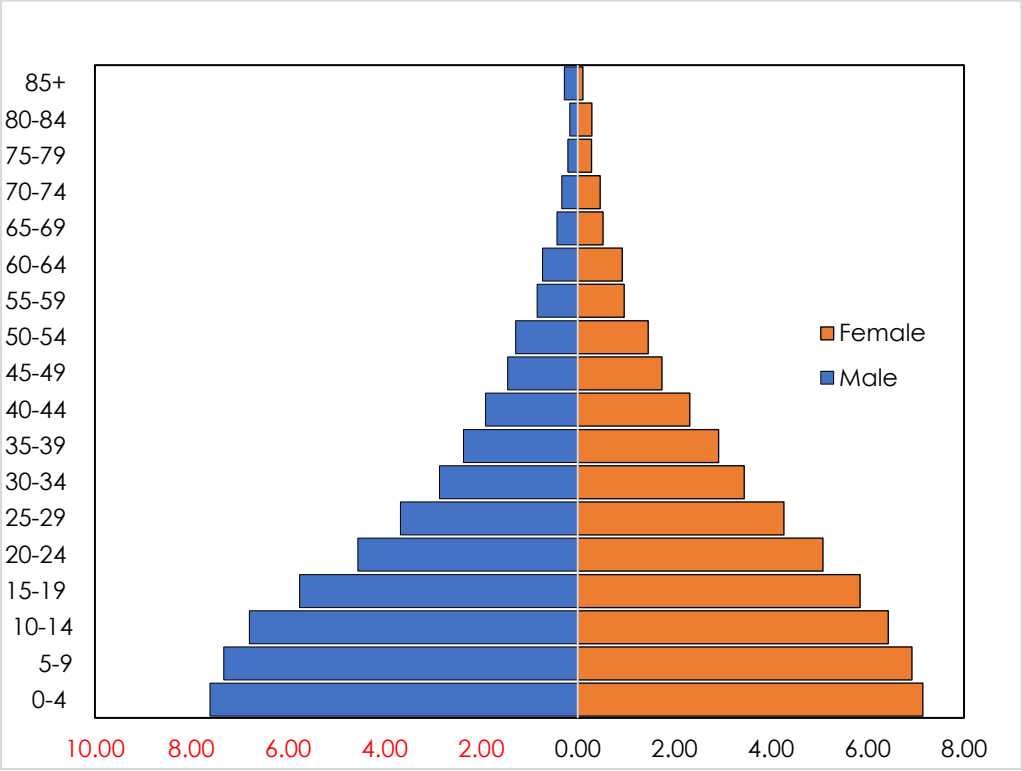
3.4. Key Labour Market Indicators trends and target

81. Monitoring key labour market indicators is essential for understanding the dynamics of Uganda's employment landscape and for setting targets to guide policy interventions. This section outlines the trends and dynamics of crucial labour market indicators as elaborated hereunder.

3.4.1. The Age Population Structure

82. **Uganda's broad-based population age structure has a high dependency ratio (83.8) that strains the working-age population's savings and investments.** Uganda's population has grown from 4.9 million in 1948 to 45.9 million in 2024. The population of Uganda is projected to grow to 55 million in 2030, 71.4 million in 2040, and 86.5 million in 2050 (UBOS, 2015). As a result of the relatively high fertility rates, Uganda has a broad-based population age structure. The country has a dependency ratio of 83.8, implying that out of every 100 working persons, 84 are dependents with a high child dependency ratio of 77.7, implying that a significant portion of children strains the working age population. The population of the youth aged 18-30 stands at 23.5%, the proportion of the productive age group (15 - 64 years) increased to 53% in 2024 from 48.4% in 2014, while the proportion of the population below 15 years decreased to 43.7% in 2024 from 49.3% in 2014 (UBOS, 2024) as shown in Figure 3.1. If the current trends of declining fertility and mortality are accelerated, the population age structure will transform from being broad-based to a bulge in the working-age population, greatly reducing the dependency burden. The reduced burden will create a conducive environment for saving and investment at both national and household levels, providing an opportunity for the country to harness the Demographic Dividend. Delaying the onset of childbirth and increasing the use of modern family planning methods are the major cornerstones to accelerating a rapid fertility decline.

Figure 3.1: Uganda's Population Pyramid



Source: *UBOS*

83. **Uganda's population projections indicate continued growth, emphasising the need for strategic human resource planning.** By 2050, the population is expected to reach 84.4 million, with a significant proportion still under 9 years old, reinforcing the need for sustained investments in education, health, and employment. Managing this growth will require comprehensive policies to harness the demographic dividend and address potential challenges related to urbanisation and youth employment. These projections highlight the importance of developing robust social and economic infrastructures to support a growing and increasingly urban population, ensuring that the benefits of growth are equitably distributed across all segments of society.

Table 3.3: Population Projections by Age Group (2024-2050)

Year	Age Group							Total
	0-9	10-19	20-29	30-39	40-49	50-59	60+	
2024	**13,321,659**	**11,404,639**	**8,070,168**	**5,320,990**	**3,409,649**	**2,088,168**	**2,290,144**	**45,905,417**
2025	14,805,000	11,571,100	8,914,700	5,669,100	3,407,400	2,077,200	1,872,800	**48,317,300**
2030	15,917,100	12,991,100	10,299,700	7,061,100	4,291,000	2,582,400	2,268,000	**55,410,400**
2035	16,518,100	14,572,400	11,346,900	8,654,400	5,429,000	3,168,900	2,871,900	**62,561,600**
2040	16,851,300	15,706,300	12,768,800	10,023,200	6,793,300	4,015,500	3,588,000	**69,746,400**
2045	17,259,000	16,331,300	14,345,500	11,069,700	8,354,100	5,108,900	4,515,700	**76,984,200**
2050	17,879,200	16,688,100	15,481,600	12,483,800	9,698,700	6,421,100	5,739,300	**84,391,800**

Source: UBOS

84. **The spatial distribution of Uganda's population is predominantly rural, with a gradual shift toward urbanisation.** The 2024 population and housing census shows that 71% of the population lives in rural areas, while 29% reside in urban areas, up from 27% in 2019/20. This trend towards urbanisation is indicative of ongoing socio-economic changes, including urban

development and increased economic opportunities in cities. Urban areas, particularly Kampala, continue to attract significant numbers of people due to economic opportunities, better infrastructure, and social amenities. Projections indicate this urbanisation trend will persist, necessitating targeted policies to manage the challenges and opportunities of this demographic shift. These policies should focus on sustainable urban planning, job creation, and improving rural-urban connectivity to ensure balanced development across the country.

3.4.2. Working age population

85. **Uganda's working-age population (14-64) has seen significant growth in recent years from 23.5 million in 2021 to 25.2 million in 2024, offering a substantial labour force that could drive economic growth if leveraged effectively.** This increase over the past three years highlights the dynamic demographic changes as shown in Table 3.4. In 2024, females constituted 51.7% of the working-age population, compared to males at 48.3%. The urban-rural distribution has also shifted, with a decrease in the proportion living in urban areas from 34.6% in 2018/19 to 31.5% in 2024.

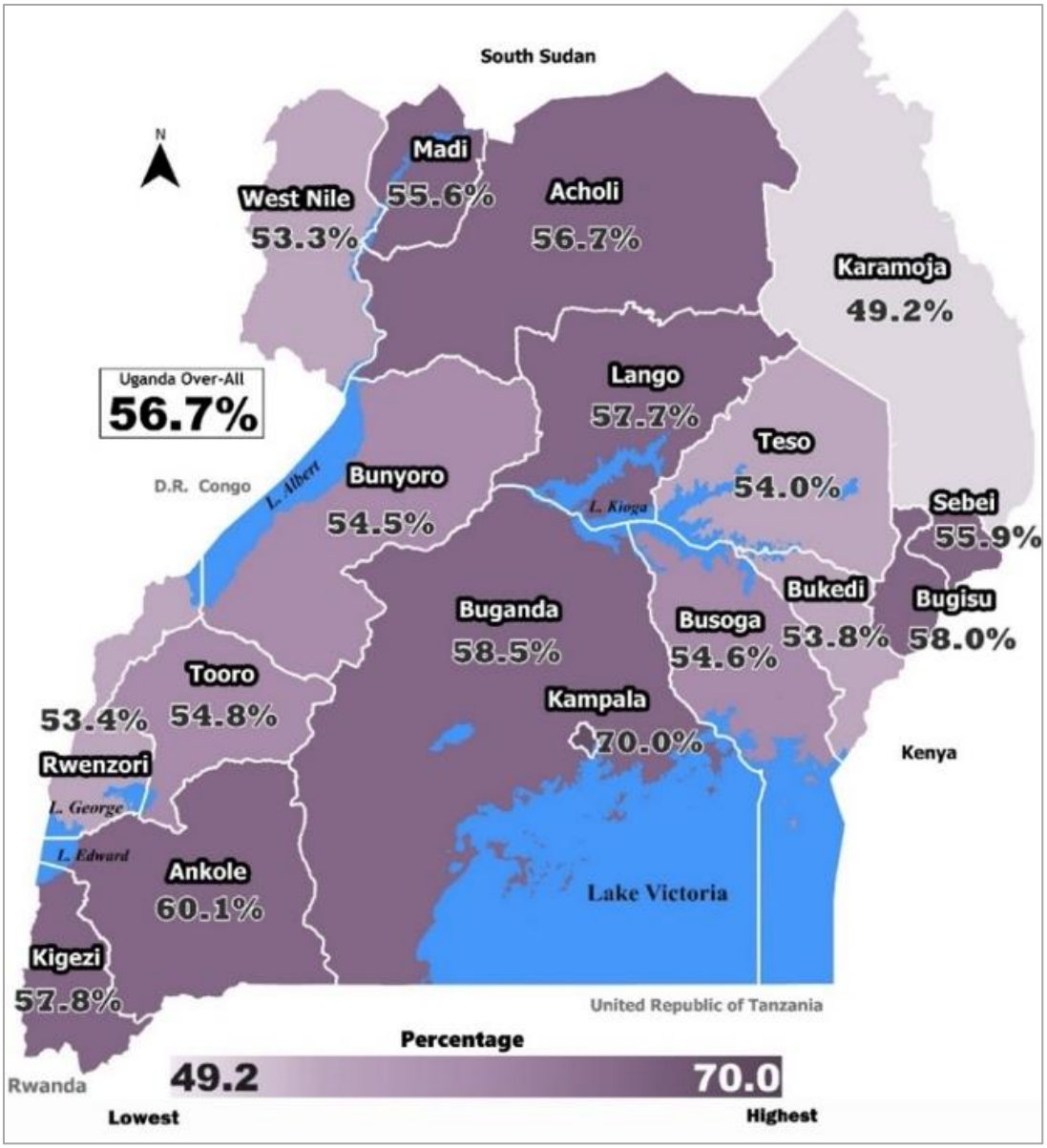
Table 3.4: Distribution of the Working-Age Population (2018/19 - 2024)

Year	Total Working-Age Population (millions)	Urban (%)	Rural (%)	Female (%)	Male (%)
2018/19	20.2	34.6	65.4	51.3	48.7
2019/20	21.4	33.8	66.2	51.4	48.6
2020/21	22.0	33.0	67.0	51.5	48.5
2021/22	23.5	32.3	67.7	51.6	48.4
2022/23	24.3	32.0	68.0	51.6	48.4
2023/24	25.1	31.8	68.2	51.6	48.4
2024/25*	25.8	31.5	68.5	51.7	48.3

Source: *UBOS and NPA, marked with an asterisk (*) are projections*

86. **Furthermore, the percentage of the working age population is high in Kampala at 70%, followed by Mbarara at 60.1% and least in West Nile and Karamoja regions at 53.3% and 49.2%, respectively shown in Figure 3.2.** These trends reflect socio-economic dynamics, including migration patterns and employment changes. Strategic planning and policy implementation are crucial to support this growing working-age population, particularly in enhancing educational opportunities and addressing gender and regional disparities in the labour market.

Figure 3.2: Percentage of the Working Age Population (14-64 years) to the household population per sub region



Source: *UBOS*

87. **Educational attainment among Uganda's working-age population shows significant progress but also highlights areas for improvement.** In 2024, most of the working-age population had attended some primary education level. However, the percentage of those with only primary education decreased from 41% in 2019/20 to 35% in 2021, and further trends indicate continued diversification of educational backgrounds. There was a notable increase in those with some secondary education, rising from 19% in 2019/20 to 25% in 2021. Additionally, the proportion with post-primary specialised training increased from 8% to 11% over the same period. These shifts in educational attainment indicate improvements in access to higher education and training, essential for enhancing the skills and productivity of Uganda's labour force.

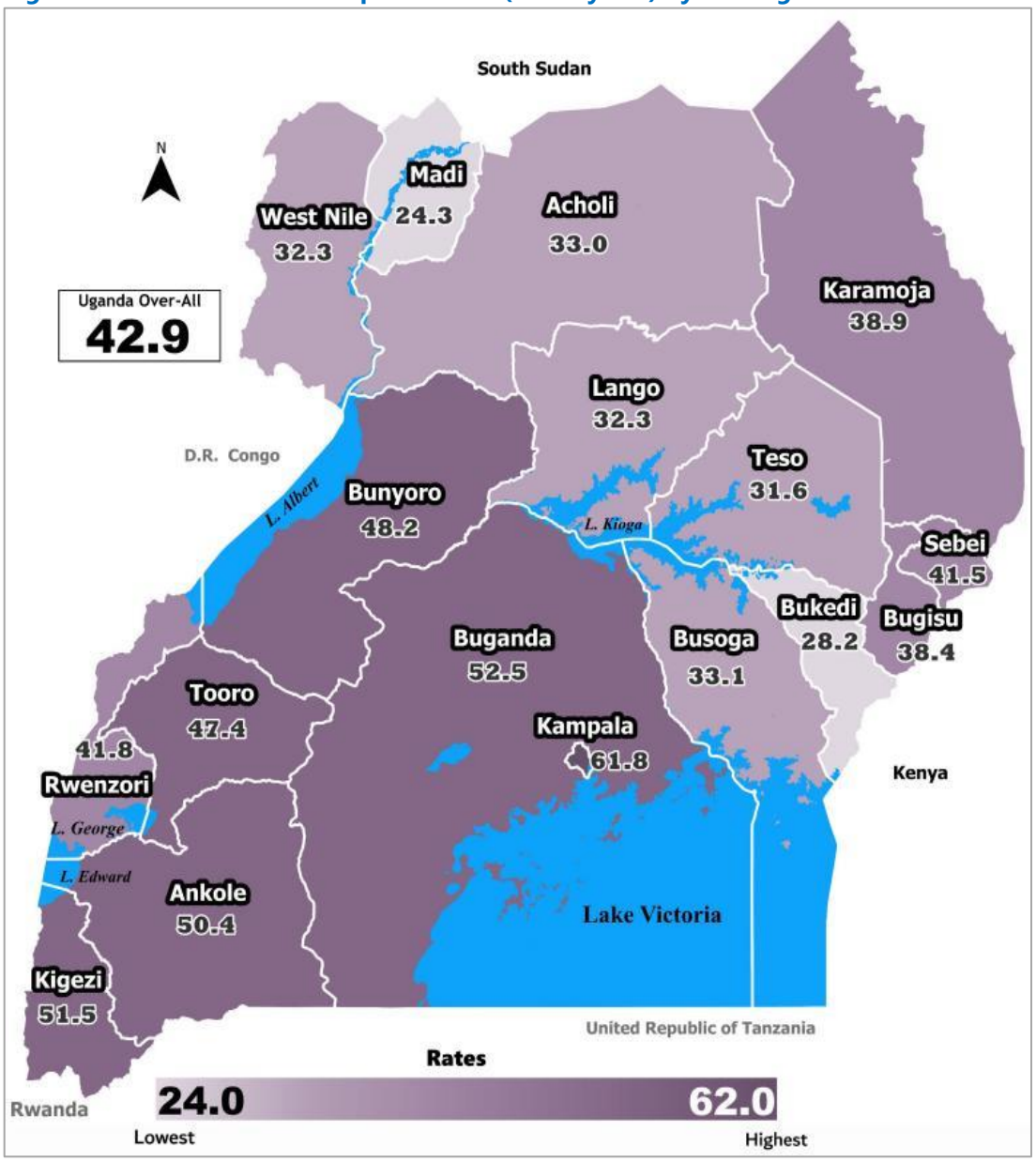
3.4.3. Labour Force Participation

88. **The Labour Force Participation Rate (LFPR) is a crucial indicator of the working-age population's engagement in the labour market, and it was at 42.9% for ages 14-64 years.** This metric encompasses both employed individuals and those actively seeking employment,

offering insight into the labour supply available for producing goods and services. In 2024, LFPR was highest in Kampala at 61.8% and least in Madi at 24.3%, as shown in Figure 3.3. In addition, it decreased in rural areas from 47.4% in 2016/17 to 37.8% in 2023, and from 66.6% to 49.3% in Urban areas over the same period.

89. **Analysis of residence-based trends reveals significant contrasts between rural and urban labour force participation rates.** These declines suggest shifts in employment patterns or economic activities and highlight the need for tailored interventions that address the unique challenges faced by both rural and urban labour markets. Educational attainment and disability status further influence LFPR, with higher education levels correlating with greater workforce participation, while lower educational attainment and disability status contribute to lower participation rates. Additionally, younger age groups and individuals with disabilities consistently show lower participation rates, emphasising the need for inclusive employment strategies. Investing in educational opportunities and inclusive employment practices can help bridge these gaps, leading to improved workforce engagement and broader economic opportunities.

Figure 3.3 Labour force Participation Rate (14-64 years) by sub-region.



Source: *UBOS*

90. **The Labour Force Participation Rate (LFPR) is projected to decline significantly, reaching 33.23% by 2028, following a decrease from 52.6% in 2016/17 to 43.2% in 2024.** Table 3.5 displays the LFPR for males, females, and the total population across the years 2016/17, 2019/20, 2021 and 2024, with projections extending to 2028. The data reveals a decrease in LFPR from 52.6% in 2016/17 to 43.2% in 2024, with a notable decline in both male and female participation rates. This trend highlights a critical need for targeted interventions to boost labour market engagement, especially in adapting strategies to enhance participation among both genders and various age groups. Ensuring effective policies and programmes could help mitigate these declines and support economic growth.

Table 3.5: Actual and Projected LFPR for Uganda

Year	Male LFPR (%)	Female LFPR (%)	Total LFPR (%)
2016/17 (Actual)	61.1	44.8	52.6
2019/20 (Actual)	51.8	34.0	42.5
2021 (Actual)	57.9	39.3	48.3
2024 (Actual)	49.0	38.6	43.2
2025 *	48.00	31.00	39.92
2026 *	45.35	29.35	37.36
2027 *	42.70	27.70	35.29
2028 *	40.05	26.05	33.23

Source: *UBOS and NPA, marked with an asterisk (*) are projections*

3.4.4. Hours of work for the employed persons

91. **The data on average actual hours worked per day reveals notable gender differences and trends over time.** For males, the average daily work hours began at 7.7 in 2016/17, increased slightly to 8.1 in 2019/20, and then decreased marginally to 7.9 in 2021. This fluctuation suggests varying work demands or changes in employment conditions affecting male workers. Conversely, females exhibited a more consistent pattern, with average daily hours worked starting at 7.0, increasing marginally to 7.2 in both subsequent periods. This steadiness might reflect more stable employment conditions or fewer changes in female-dominated job sectors. The overall average daily hours worked per person rose from 7.4 in the first period to 7.7 in the second, and then slightly decreased to 7.6 in the third period. These trends indicate the need for targeted strategies to address gender-specific work conditions and ensure fair work hours across different sectors.

92. **These patterns highlight important gender-specific trends and provide valuable insights into workforce engagement over the specified time intervals.** The variability in work hours for males compared to the stable hours for females suggests potential differences in job roles, industry demands, or work conditions. Understanding these trends is crucial for policymakers and employers in addressing gender-based disparities and designing appropriate interventions. Implementing policies that promote equitable work conditions and adapt to the diverse needs of both genders can enhance overall job satisfaction, productivity, and balance within the labour market.

3.4.5. Wages, Labour Rights, and Income Distribution

93. **Wages in Uganda reveal significant disparities across gender, sector, and geographic location.** In 2021, the median monthly cash wage for individuals in paid employment was 200,000 Ugandan shillings. Males earned 250,000 Ugandan shillings, while females earned 140,000 Ugandan shillings, illustrating a substantial gender wage gap. The services sector offered the highest median monthly wage at 300,000 Ugandan shillings, while public sector employees earned significantly more, with a median wage of 532,000 Ugandan shillings compared to 170,000 Ugandan shillings in the private sector. These disparities highlight broader income inequality and reflect differences in sectoral and gender-based wage structures. Addressing these inequalities

requires targeted policy interventions aimed at promoting wage equity, enhancing labour rights, and ensuring fair compensation across various sectors and genders.

94. **Despite a general increase in median monthly wages from 2016/17 to 2021, significant regional and gender-based disparities remain.** Rural workers saw their median wages rise from 120,000 Ugandan shillings in 2016/17 to 200,000 shillings in 2021. In contrast, urban workers experienced a fluctuation, with wages peaking at 300,000 shillings in 2019/20 before decreasing to 250,000 shillings in 2021, likely due to the economic impact of Covid-19. These trends underscore the need for comprehensive strategies to address wage disparities and protect labour rights. Despite advances in labour laws and regulations aimed at improving working conditions, challenges such as inadequate wages, unsafe work environments, and limited access to grievance mechanisms persist. Strengthening the enforcement of labour laws, expanding worker protections, and enhancing awareness of labour rights are crucial for creating a fairer and more resilient labour market.

3.4.6. Labour Productivity

95. **Labour productivity in Uganda varies significantly across sectors, reflecting broader economic conditions and sector-specific challenges.** From 2019 to 2022, overall productivity improved gradually, with GDP per worker rising from USD 1,500 to USD 1,600 (UBOS, 2022). The manufacturing sector showed a notable increase in productivity, with GDP per worker rising from USD 2,800 to USD 3,000 during the same period. This sector benefits from advanced techniques but faces constraints like high energy costs and financing issues. In contrast, the services sector, which saw GDP per worker increase from USD 3,700 to USD 4,000, demonstrates the highest productivity levels, driven by technological advancements and automation. However, this sector employs only about 20% of the workforce, and disparities within it, such as between high-productivity areas like financial services and low-productivity areas like healthcare, highlight the need for targeted interventions.

96. **Despite employing about 68% of Uganda's workforce, agriculture still shows slower productivity gains compared to other sectors.** The GDP per worker in agriculture increased modestly from USD 1,400 in 2019 to USD 1,500 in 2022 (UBOS, 2022). Despite some progress, productivity is constrained by traditional practices, limited technology, and inadequate infrastructure. The dominance of subsistence farming and smallholder operations, coupled with climatic and logistical challenges, impedes substantial productivity improvements. Addressing these sector-specific issues through modernisation and support for commercial crop cultivation can enhance agricultural productivity. Overall, integrating informal workers into the formal economy and addressing disparities across sectors is crucial for achieving balanced and sustainable economic growth.

97. **Productivity in Uganda is not confined to agriculture but spans all economic sectors, requiring a holistic approach to enhance output across the board.** While agriculture remains pivotal, with low productivity underscoring the need for modernisation and targeted support, other sectors, such as manufacturing and services, also present significant opportunities for economic growth. The manufacturing sector, with relatively higher productivity, holds the potential for substantial economic impact, though it faces structural and operational constraints that require strategic interventions. Similarly, the services sector has benefited from technological advancements, yet internal disparities and the prevalence of informal employment hinder its full potential. To address these challenges, the plan focuses on both intra-sectoral improvements enhancing efficiency, skills, and technology within sectors and inter-sectoral linkages, enabling resources and workforce movement across sectors. By integrating informal workers into the formal economy, investing in infrastructure, and tailoring skills development to sectoral needs, Uganda can achieve balanced, inclusive, and sustained economic growth.

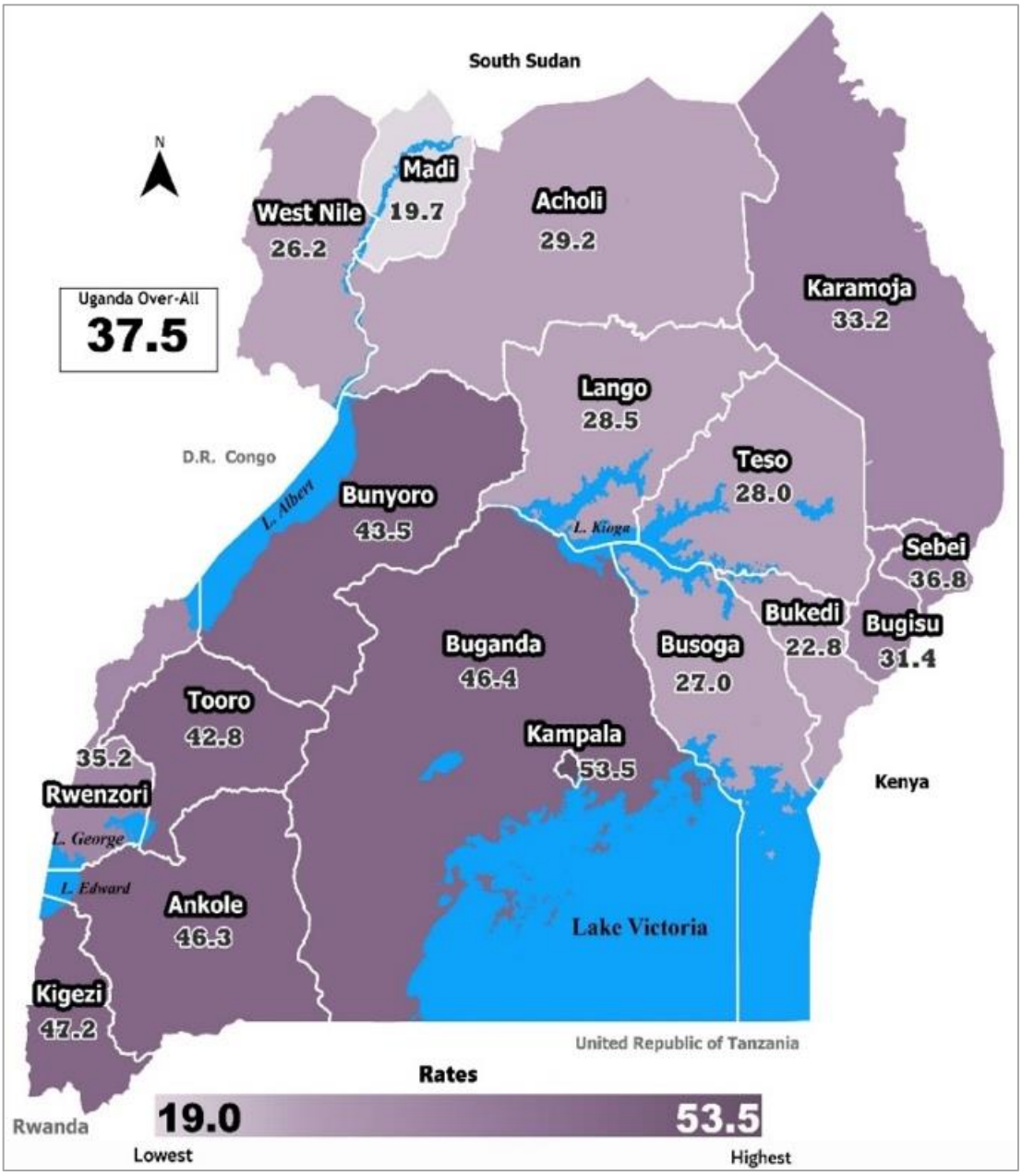
98. **The analysis of labour productivity in Uganda underscores the necessity for targeted and integrated approaches to address sector-specific and overarching challenges.** Despite the gradual increase in national productivity, significant disparities remain between sectors, reflecting both growth opportunities and persistent barriers. Low productivity in agriculture highlights the need for modernisation and enhanced support. The manufacturing sector's higher productivity signals its potential for greater economic impact, yet it faces constraints that need addressing. The services sector's productivity gains demonstrate the benefits of technological advancements but also reveal internal disparities and issues related to informal employment. Comprehensive strategies that address these sector-specific and systemic issues are essential for promoting balanced economic growth and improving overall productivity. Such strategies should focus on enhancing sectoral productivity, integrating informal workers into the formal economy, and investing in infrastructure and skills development.

3.4.7. Employment Status and the Employment-to-Population Ratio

99. **The Employment-to-Population Ratio (EPR) is projected to decline significantly through 2030, reflecting a growing gap between the working-age population and available job opportunities.** According to the NPHC 2024, the EPR for Uganda was 37.5%, where Kampala had the highest at 53.5%, and Madi the least at 19.7% as shown in Figure 3.4. Specifically, the EPR for males is expected to decrease from 51.9% to 43.7%, while females are projected to experience a more pronounced drop from 33.8% to 26.3%. The total EPR is also anticipated to decline, falling from 42.5% to 34.3% as shown in Table 3.6. This projected decline indicates significant challenges in job creation and employment growth, emphasising the need for targeted and effective labour market policies. The sharper decrease in the female EPR suggests an urgent need for gender-specific interventions to address and mitigate employment disparities. Overall, these trends highlight the necessity for enhanced job creation strategies and strategic investments in skills development to better align workforce capabilities with evolving market demands, thereby improving employment prospects for both men and women.

100. **Uganda faces a significant challenge of youth unemployment and under-employment due to skills mismatch arising from inadequate education and training.** Youth unemployment represents a significant challenge, with around 16.7% of individuals aged 15-24 currently unemployed, highlighting a mismatch between educational outcomes and job market demands**.** Underemployment, where individuals work in roles that do not fully utilise their skills, also affects a notable segment of the workforce. The National Development Plan addresses these issues by focusing on targeted interventions to boost job creation, enhance workforce skills, and support sectoral diversification. Aligning employment policies with these strategic goals aims to create a more inclusive and dynamic labour market, thereby supporting sustainable economic growth and development.

Figure 3.4: Employment to population ratio for persons aged 14-64 by Sub Region



Source: *UBOS*

Table 3.6: Employment-to-Population Ratio (EPR) Projections

Year	Male EPR	Female EPR	Total EPR
2016/17	56.2	39.8	47.6
2019/20	47.3	31.0	38.8
2020/21	51.9	33.8	42.5
2021/22	46.3	29.4	37.6
2022/23	45.0*	27.9*	36.5*
2023/24	44.0*	26.5*	35.5*
2024/25	43.0*	25.0*	34.5*
2025/26	42.0*	23.6*	33.5*
2026/27	41.0*	22.2*	32.5*
2027/28	40.0*	20.8*	31.5*
2028/29	39.0*	19.5*	30.5*

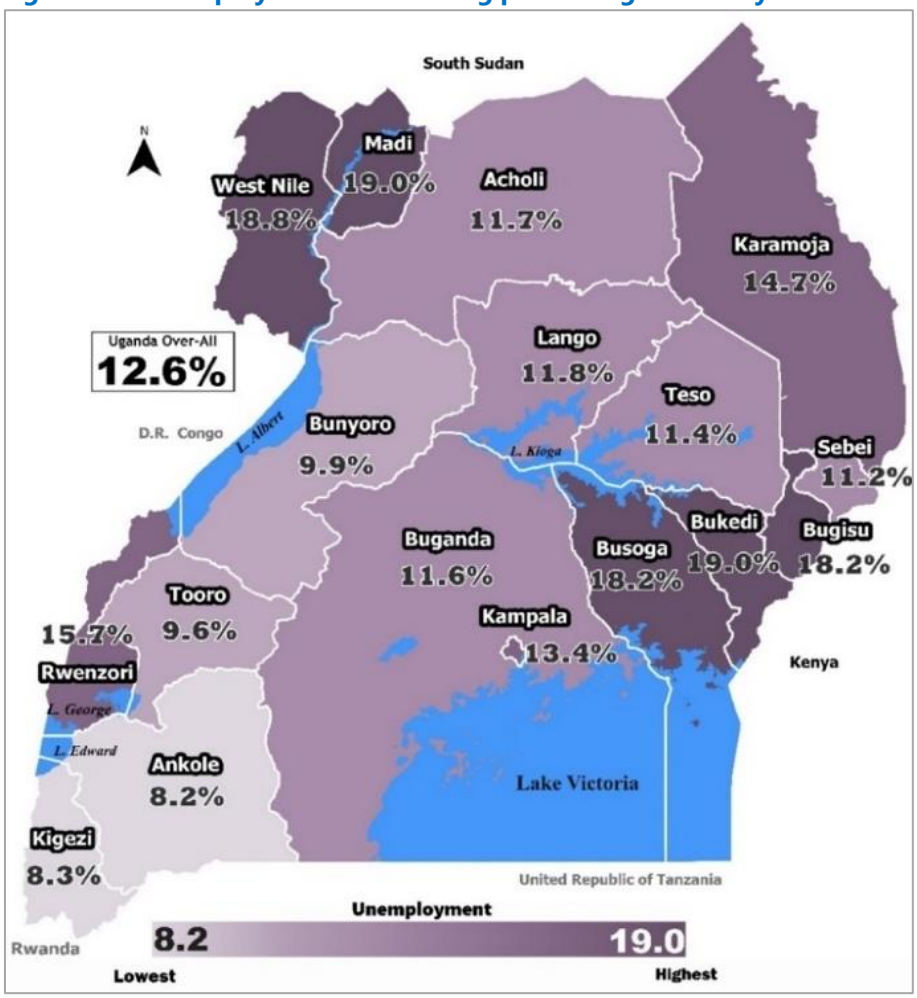
Source: ***NPA 2024,*** *marked with an asterisk (*) are projections*

3.4.8. Unemployment and Underemployment Rates

101. **Globally, unemployment is recognised as a major crisis of the 21st century and presents a significant challenge.** Unemployment threatens national security as it can lead to a lack of access to food, essential services, and basic survival means, driving individuals to criminal activities. Furthermore, unemployment can lead to societal discontent due to issues such as subjugation, injustices, marginalization, and unfair resource allocation. High levels of unemployment impose substantial costs on individuals, society, and the economy. Increased unemployment leads to higher fiscal costs, wastes economic resources, diminishes long-term economic growth potential, and is associated with private and social deprivation, which can breed unrest, crime, and social dislocation, and disrupt social order.

102. **The national unemployment rate stands at 12.6% and is particularly high among youth aged 15-24 years, at 16.7% and those aged 18-30 years at 16.1%**. The unemployment rate among persons aged 14-64 was highest in Bukedi and Madi at 19% and least in Ankole at 8.2% as shown in the Figure 3.5. Although the overall unemployment rate increased from 8.8% to 12.6% between 2019 and 2024, the true extent of the problem is understated due to definitional issues. Many individuals face underemployment, both time-related and skills-related. Approximately 9% of Uganda's labour force is underemployed in terms of working hours. When combined with unemployment, time-related underemployment affects about 20% of the labour force. Additionally, about 47% of the unemployed population have been seeking work or attempting to start a business for over a year, indicating long-term unemployment. The unemployment rate is higher among females compared to males.

Figure 3.5: Unemployment Rate among persons aged 14-64 years



Source: *UBOS*

103. **The scarcity of job opportunities has led to significant consequences for Uganda.** There has been a mass exodus of labour to other countries in search of better opportunities, accelerated rural-to-urban migration, and heightened competition in the labour market. This has resulted in a rising number of unutilised and unproductive workforce, particularly among young people. Addressing unemployment and underemployment is crucial for Uganda's national development, requiring targeted interventions to create job opportunities, enhance skills development, and promote economic stability.

104. **The national unemployment rate is projected to rise significantly to 20.3% by 2030, highlighting critical challenges in job creation and economic stability.** The unemployment rate increased from 8.8% in 2019 to 11.9% in 2021, with projections indicating a continued rise to 20.3% by 2030, as shown in Table 3.7. This trend suggests a growing disconnect between the expanding working-age population and the availability of jobs. The implications of rising unemployment are severe, including heightened poverty, increased social instability, and greater economic strain on both individuals and society. This projection underscores the urgent need for effective labour market policies, substantial job creation efforts, and investment in skills development to mitigate these challenges. Additionally, the persistent gender disparity in unemployment rates necessitates targeted interventions to support women in the labour market. Addressing these issues is crucial for fostering sustainable economic growth and social cohesion in Uganda.

Table 3.7: Projected Unemployment Rates for Uganda (2018-2030)

Year	Unemployment Rate (%)
2018	9.20
2019	8.80
2020	10.40
2021	11.90
2022	12.50*
2023	13.47*
2024	14.44*
2025	15.41*
2026	16.38*
2027	17.35*
2028	18.32*
2029	19.29*
2030	20.26*

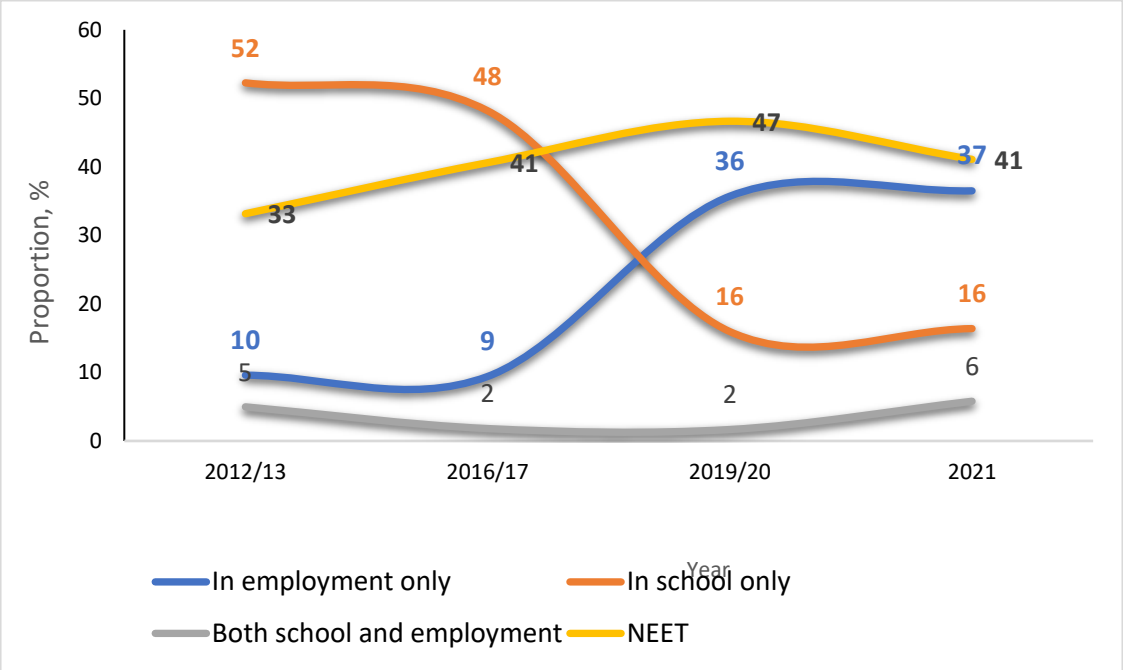
Source: *UBOS and NPA, marked with an asterisk (*) are projections*

3.4.9. Youth Unemployment

105. **Young people in Uganda face significant barriers to entering the labour market, including limited access to quality education, skills mismatches, and inadequate job opportunities.** Many youths are engaged in informal sector activities or underemployment, working fewer hours or in low-paying, unstable jobs. The 2021/22 national labour force survey indicates a youth unemployment rate of 16.5%, with higher rates in urban areas (19%) compared to rural areas (15%). Youths, defined as individuals aged 18 to 30, make up about 22% of the total population. Of this group, 37% are employed, while 41% are NEETs (Neither in Employment, Education, nor Training). Most employed youths (90%) work in the informal sector, and the labour force participation rate stands at 51%. The mismatch between labour supply and job demand, coupled with the influx of new graduates, underscores the need for coordinated efforts and targeted interventions to improve employment outcomes and align educational programmes with market needs.

106. **In 2021, the proportion of youth classified as Neither in Employment, Education, nor Training (NEET) was estimated at 41.1%, highlighting a major obstacle to achieving the demographic dividend.** This NEET rate has been on the rise, increasing from 33% in 2012/13 to a peak of 47% in 2019/20, before experiencing a slight decline to 41.1% in 2021 (see Figure 3.6). NEET youths are those who are neither engaged in educational or vocational training programmes nor participating in the workforce. This category encompasses a range of individuals, including those who are discouraged from seeking work, those unable to work due to disabilities, and those involved in household responsibilities, among other factors. Addressing this issue requires targeted policy actions aimed at boosting labour market participation and expanding opportunities for education and training to better support and integrate young people into the workforce.

Figure 3.6: Activity Status of Youth, Uganda, 2012/13 - 2019/20



Source: *UNHS 2012/13-2019/20, NLFS 2021*

3.4.10. Vulnerability in Employment

107. **Vulnerability in employment in Uganda remains a persistent issue, with informal employment at 85% in 2022.** According to the Uganda Bureau of Statistics (UBOS), informal employment has been consistently high, with a slight increase from 84% in 2016. This sector, characterised by a lack of social protection and job security, reflects the ongoing challenges of low productivity and underemployment at 17.4% in 2022, only a modest improvement from 19.5% in 2016. Youth unemployment, though slightly reduced from 16.8% in 2016 to 13.3% in 2022, continues to impede young people's entry into the labour market. Gender disparities are also notable, with the proportion of women in informal employment rising from 87% in 2016 to 89% in 2022.

108. **The implications of these trends are significant, with rising informal employment limiting tax revenue and social security contributions, affecting public service investment.** High underemployment perpetuates poverty and inequality, as workers in precarious jobs often face lower wages and limited access to benefits. Persistent youth unemployment and gender disparities exacerbate social instability and inequality. The agricultural sector's dominance highlights the need for productivity improvements and greater resilience. Comprehensive policy measures are required to address these issues, focusing on formalising employment, expanding

social protection, investing in skill development, and improving productivity in agriculture. Addressing these challenges is essential for building a more inclusive and resilient labour market, fostering sustainable economic growth, and enhancing the livelihoods of Ugandan citizens.

3.4.11. Educational and Skill Levels of persons in employment

109. **Educational attainment is essential for improving employment outcomes and the quality of the labour force.** The 2021 National Labour Force Survey (NLFS) reveals that higher levels of education and vocational training significantly enhance employment opportunities by equipping individuals with the necessary skills. Uganda's education system, which includes pre-primary, primary, secondary, post-primary/secondary (including vocational training), and tertiary education, plays a pivotal role in preparing individuals for the workforce. Each educational stage builds upon the previous one, contributing to a more skilled and capable labour market. Significant educational disparities present substantial challenges that must be addressed to improve labour market outcomes. The NLFS 2021 data shows that 35% of the population has only attained primary education, while 23% have some secondary education. Gender disparities are also notable, with 16% of females lacking any formal education, compared to 8% of males. These disparities indicate uneven access to quality education, particularly affecting marginalized groups. Such gaps in educational attainment hinder the ability of these groups to fully participate in the labour market and benefit from economic opportunities.

3.5. Employment prospects and the future of work in Uganda

110. **Uganda's economic outlook shows promising growth prospects, driven by sectors such as agriculture, manufacturing, and services.** The Uganda Vision 2040 plan aims to transform the country into a middle-income economy with a focus on industrialisation and economic diversification. This growth trajectory is expected to create new job opportunities across various sectors. For instance, the development of the oil and gas industries, including the East African Crude Oil Pipeline (EACOP) and the oil refinery, is projected to generate thousands of direct and indirect jobs in the coming years. According to the Uganda National Planning Authority, the oil sector alone could create up to 160,000 jobs by 2029/30.

111. **The rise of the digital economy and technological advancements are reshaping the future of work in Uganda**. The government is promoting digital skills development through initiatives like the Digital Uganda Vision and the National ICT Policy. The growth of tech hubs, such as the Kampala Innovation Hub, and the expansion of e-commerce platforms are creating new employment opportunities in IT, digital services, and innovation. The global shift towards remote work and digital platforms also opens new avenues for Ugandan workers to participate in the global gig economy, potentially boosting income and job creation.

112. **Uganda's youthful population presents both a challenge and an opportunity for the labour market.** With over 78% of the population under the age of 30, addressing youth unemployment is crucial. The government and various organisations are focusing on youth employment and entrepreneurship through programmes like the Youth Livelihood Programme (YLP) and the Presidential Initiative on Skilling the Youth. These programmes aim to provide financial support, vocational training, and mentorship to young entrepreneurs, helping them start and grow businesses. According to a 2022 World Bank report, entrepreneurship and small business development are key to absorbing the growing number of young job seekers and fostering innovation.

113. **The alignment of education and training systems with labour market needs is essential for improving employment prospects.** Skills mismatches between graduates and job market requirements are a significant challenge. To address this, the government is implementing reforms to enhance vocational and technical training and establish stronger links between

educational institutions and industry. The introduction of competency-based education and increased investment in vocational training centres are steps towards equipping the workforce with relevant skills. Programmes like the Skilling Uganda Strategy are designed to improve employability by focusing on practical skills and industry-relevant training.

114. **The informal sector remains a major component of Uganda's economy, employing over 85% of the workforce.** While it provides significant employment opportunities, informal jobs often lack stability, social protection, and decent working conditions. Efforts to formalise the informal sector are crucial for improving job quality and expanding social protection coverage. The government is working on policies to encourage the formalisation of businesses, such as simplified registration processes and access to finance for small enterprises. The introduction of digital financial services and mobile banking is also facilitating the inclusion of informal workers into the formal economy.

115. **The transition to a green economy presents new opportunities for employment and sustainable development.** Investments in renewable energy, sustainable agriculture, and environmental conservation are expected to create jobs and contribute to economic growth. The Uganda Green Growth Development Strategy highlights the potential for green jobs in areas like solar energy, reforestation, and eco-tourism. By fostering a green economy, Uganda can not only address environmental challenges but also generate employment opportunities and promote sustainable development.

116. **Regional integration through initiatives like the East African Community (EAC) provides opportunities for expanding markets and increasing trade**. The harmonisation of trade policies and infrastructure development, such as the Standard Gauge Railway (SGR), can enhance regional trade and investment. This integration creates opportunities for Ugandan businesses to access larger markets and benefit from cross-border trade, potentially leading to job creation in manufacturing, logistics, and trade-related sectors. The African Continental Free Trade Area (AfCFTA) further offers potential for expanding trade opportunities and boosting employment in various sectors.

117. **The COVID-19 pandemic has underlined the importance of the health sector and public health jobs.** The pandemic has led to increased demand for healthcare professionals, including doctors, nurses, and public health experts. Investing in healthcare infrastructure and expanding health services can create new job opportunities and improve public health outcomes. Programmes to strengthen the health workforce and enhance training for health professionals are essential for building a resilient health system and addressing future health challenges.

3.6. Emerging issues

118. **As Uganda continues to develop its economy and labour market, several emerging issues have the potential to shape the future of employment and economic growth**. These issues require careful consideration and proactive policy responses to ensure sustainable and inclusive development. Addressing these emerging issues requires a multifaceted approach involving the government, private sector, and civil society to create a resilient and inclusive labour market that supports sustainable economic development and improved livelihoods for Ugandans.

119. **Technological advancements and automation are transforming industries and job markets globally.** According to a 2021 World Bank report, automation could impact around 26% of jobs in developing countries. In Uganda, sectors like agriculture, manufacturing, and services are beginning to see the influence of automation and digital technologies. While technology can improve productivity and create new job opportunities, it can also lead to job displacement, particularly in low-skill sectors. For example, the adoption of automated agricultural machinery may displace farm Labourers. To mitigate negative impacts and harness the benefits of

technological advancements, Uganda needs to invest in digital skills training, promote tech startups, and integrate technology into traditional sectors. This can be supported by evidence from initiatives like the Uganda Digital Acceleration Programme, which aims to increase digital literacy and enhance ICT infrastructure.

i) **Digital Transformation and the gig economy are increasingly significant in shaping the future of work.** the rise of the gig economy, driven by digital platforms, offers flexibility and new employment opportunities. However, it also raises concerns about job security, social protection, and labour rights. According to the International Labour Organisation (ILO), the gig economy is expanding rapidly, with many young people in Uganda engaging in gig work through platforms like Jumia and Safe-Boda. Ensuring decent work conditions in the gig economy requires new regulatory frameworks and social protection measures tailored to this emerging sector.

ii) **Global economic shifts and trade dynamics affect Uganda's export markets and foreign investment.** Changes in global trade policies, such as the African Continental Free Trade Area (AfCFTA) agreement, offer both challenges and opportunities. Adapting to changing global trade dynamics and ensuring competitiveness in international markets is necessary. Diversifying export products, exploring new markets, and enhancing trade facilitation can strengthen Uganda's position in the global economy. Evidence shows that expanding into new markets within the AfCFTA can potentially increase Uganda's exports by up to 15%.

iii) **The Informal Economy presents both challenges and opportunities for economic development.** Over 85% of Uganda's workforce is employed in the informal sector, which often lacks job security, social protection, and decent working conditions. Integrating the informal economy into the formal sector while protecting informal workers' livelihoods is complex. Formalization efforts, access to finance, and social protection for informal workers can improve job quality and economic stability. Programmes that offer microloans and training to informal sector workers can help in transitioning them to the formal economy.

iv) **Urbanization and migration are leading to increased demand for urban infrastructure, housing, and services, reshaping the labour market**. Uganda's urban population is growing at an annual rate of 5.4%, one of the highest in the world. This rapid urbanization creates both challenges and opportunities. Managing urban growth and ensuring that cities can provide adequate employment opportunities and services is crucial. Effective urban planning, investment in urban infrastructure, and policies supporting rural-urban migration can help manage urbanization and create jobs in urban areas. For example, the development of industrial parks in urban areas has the potential to create thousands of jobs in manufacturing and services sectors.

v) **Uganda's youth bulge and demographic transition present both opportunities and challenges for the labour market.** With over 78% of its population below the age of 30, Uganda has one of the youngest populations globally. Providing education, skills training, and employment opportunities for a rapidly growing youth population is critical. Leveraging the demographic dividend through investments in human capital and youth entrepreneurship can drive economic growth and innovation. Programmes like the Youth Livelihood Programme (YLP), which provides financial support and skills training to young entrepreneurs, are crucial in harnessing this potential.

vi) **Health crises and pandemics, such as the COVID-19 pandemic, have significant economic and employment impacts, disrupting labour markets and business operations**. The pandemic led to a contraction of Uganda's economy by 1.1% in 2020, with

significant job losses, particularly in the informal sector. Building resilient health systems and ensuring business continuity during health crises is essential. Strengthening public health infrastructure, promoting telemedicine, and developing crisis response mechanisms can enhance resilience and protect jobs. For instance, increasing investment in healthcare infrastructure and training healthcare workers can prepare the country for future health crises.

vii) **Gender Equality and Inclusion are crucial for overall economic potential, but gender disparities in education, employment, and economic participation persist**. According to the Uganda Bureau of Statistics (UBOS), women are more likely to be employed in low-paying, informal jobs. Addressing gender-based barriers and promoting inclusive policies are essential for achieving gender equality in the labour market. Implementing policies that support women's education, entrepreneurship, and participation in all sectors can enhance economic growth and social equity. Initiatives like the Uganda Women Entrepreneurship Programme (UWEP) have shown promising results in empowering women economically.

viii) **Climate change and environmental sustainability pose significant risks to agriculture, infrastructure, and livelihoods, particularly in vulnerable communities**. Uganda is highly vulnerable to climate change impacts, such as prolonged droughts and erratic rainfall, which threaten agricultural productivity. According to the Uganda National Climate Change Policy, agriculture, which employs about 70% of the workforce, is highly susceptible to climate variations. Addressing climate change requires transitioning to sustainable practices, which can be costly and complex. However, promoting green jobs, investing in renewable energy, and implementing sustainable agricultural practices can create new employment opportunities and build resilience against climate impacts. For instance, the promotion of solar energy has the potential to generate jobs in installation, maintenance, and manufacturing of solar panels.

ix) **Regional integration and cooperation through initiatives like the East African Community (EAC) offer opportunities for trade, investment, and labour mobility**. Ensuring that regional integration benefits all member states and addresses disparities is critical. Promoting regional infrastructure projects, harmonizing policies, and enhancing cross-border trade can boost economic growth and employment. For example, the development of the Standard Gauge Railway (SGR) in East Africa is expected to enhance trade efficiency and create thousands of jobs.

x) **Political Stability and Governance are crucial for economic development and investor confidence.** Political stability and effective governance practices are essential for sustainable development. Strengthening democratic institutions, promoting transparency, and ensuring accountability can create a conducive environment for economic growth and job creation. Uganda's progress in improving governance indicators, such as the World Bank's Governance Indicators, shows a positive trend that can attract more investments.

xi) **Education and Skill Development are critical in meeting the evolving demands of the labour market.** The quality and relevance of education are key determinants of employability. In Uganda, the education system often does not align with labour market needs, leading to a skills mismatch. The World Bank reports that a significant proportion of graduates lack the skills required by employers. Enhancing the quality of education, aligning curricula with industry needs, and expanding vocational training programmes can address this issue and improve employment outcomes.

xii) **Mental Health and Workplace Well-being are gaining attention as important factors influencing productivity and job satisfaction**. Mental health issues can significantly impact workers' performance and overall economic productivity. According to a study by the Ministry of Health, mental health disorders are prevalent in Uganda, with depression and anxiety being common among the workforce. Promoting mental health awareness, providing support services, and creating healthy work environments are essential steps in addressing this emerging issue.

xiii) **Social Protection and Labour Rights are fundamental in ensuring that workers are protected and can maintain a decent standard of living.** The lack of comprehensive social protection systems in Uganda leaves many workers vulnerable, especially in the informal sector. According to the ILO, only a small fraction of the workforce is covered by formal social protection schemes. Expanding social protection coverage, enforcing labour laws, and promoting workers' rights are crucial for fostering a fair and inclusive labour market.

CHAPTER 4: LABOUR MARKET MISMATCHES

4.1. Introduction

120. **The alignment between the demand and the supply of labour is a key aspect of Uganda's socioeconomic transformation agenda.** When the education qualifications and skills of the workforce do not align with the needs of employers, it results in significant inefficiencies, affecting productivity and economic growth both at the national and firm level. In a rapidly changing economic landscape, driven by demographic changes, advancements in technology, and globalisation, understanding and addressing these mismatches is critical. This chapter provides the detailed dynamics of labour market mismatches, having examined the state of both labour supply and demand in the earlier chapters. The subsequent sections demonstrate the methodologies adopted to determine the labour market mismatches and, thereafter, classify the severity of these mismatches.

4.2. Determining the labour market mismatches

121. **The labour market mismatches were determined through a skills mapping process, skills analysis and skills forecasting/projection using a macro model for Human Resource Planning.** The model provides an integrated accounting framework to analyse the employment and Human Resource situation and evolution over time. The model was developed based on the International Standard Classification of Occupations (ISCO), the International Standard Classification of Education (ISCED), and the International Standard Industrial Classification (ISIC) of all economic activities. This classification framework provides a basis for the international comparison of education and occupation categories with other countries. The model thus helped to articulate both the human resources supply and demand, as well as gaps or mismatches. The model was developed to facilitate the labour market assessment, both in terms of labour supply and labour demand, as well as to project the future human resources needs based on the country's development agenda. The model has three components or modules: Labour demand module, Labour supply module, and Gaps or Imbalance module.

122. **The labour demand module assesses and forecasts the current and future demand for human resources at the national level.** The module determines the total number and types of workforce needed across various sectors, industries and occupations in line with the approved strategic direction of the country. It involves analysis of economic growth and trends, industry shifts, demographic changes, and social developments that impact the demand for labour. This component estimates the labour demand for various sectors, industries and occupations based on national policies, infrastructure projects, technological advancements, and changes in consumer preferences. It takes cognisance of government policies, programmes and plans that influence labour demand. The module offers different scenarios to understand potential future labour demand under various conditions such as economic downturns, industry shifts and technological disruptions.

123. **The labour supply module assesses and forecasts the current and future supply of human resources at the national level.** The module provides an assessment of the availability of the currently required human resources in terms of education and skills as well as the capacity of the education and training systems in producing labour that meets the future needs of the country's labour market. This involves analysing enrolment rates, graduation or completion rates, vocational training programmes, and alignment with industry needs. The supply side module, thus, takes stock of all the available workers of different capabilities and skills and provides forecasts of the likely trend of labour supply over time. It provides highlights of trends in workforce participation, population growth and population dynamics, retirement rates, educational attainment, migration patterns, and labour market policies to understand how they influence the supply of human resources. It also provides a glimpse of external factors such as

labour externalisation and the general global labour market trends that impact the national supply of human resources.

124. **The Gaps/Imbalance Module identifies and analyses discrepancies between the projected demand and supply of human resources at the national level, providing a balance between these two sides of the model.** It highlights fields or areas with education and training shortages or surpluses and offers insights into potential policy interventions. By comparing Net Labour Supply and Net Labour Demand across different sectors, industries, and occupations, the module determines labour market imbalances as either surpluses (positive) or deficits (negative). A surplus indicates that the current and projected labour supply exceeds demand, while a deficit means the supply is less than the demand. Additionally, the module compares current and forecasted labour demand and supply to identify Human Resource gaps/imbalances. It investigates causes of these gaps, such as education system inadequacies, industry-training misalignments, or demographic trends, and reviews existing policies to assess their effectiveness. The identified imbalances provide a foundation for formulating the National Human Resource Development Plan, enabling the government to decide on human resource development mechanisms and helping businesses and industries plan their operations.

4.3. Level and type of education and skills mismatches

125. **Education and skills mismatches occur when the workforce's education levels and skills do not align with those demanded by employers.** These mismatches arise as a result of training institutions failing to produce graduates whose skills are aligned to the 21st-century skills needed and the industry revolution. Understanding the extent and types of labour mismatches in the market is critical for developing targeted and effective policies and interventions to bridge the gaps between labour demand and supply. This plan explores various dimensions of labour market mismatches, including Acute and Moderate skills shortages, and Surplus education and skills supply.

4.3.1. Acute Skills Shortages

126. **The country faces acute skills shortages due to limited or no training, resulting in labour market mismatches.** The national manpower survey highlights that a substantial portion of Uganda's workforce lacks the technical and vocational skills needed for today's job market. It reveals that about 68% of employers in Uganda struggle to find employees with the necessary skills, particularly in fields such as engineering, information technology, and technical trades. The education system has also failed to keep pace with the rapid technological advancements and changing industry requirements. The Plan stresses the need for educational reforms that incorporate more vocational training and align curricula with industry demands. This includes integrating STEM education and providing opportunities for students to gain practical experience through internships and apprenticeships. Some of the fields of education and skills for which the country faces critical shortages, and there is limited or no training available at all, are highlighted in Table 4.1.

Table 4.1: List of Selected Acute Skills Shortage Fields

Field/Skill Area	2025/26	2026/27	2027/28	2028/29	2029/30	Required Education
Advanced Clinical Practice	80	90	100	110	120	Master's
Advanced Cybersecurity Specialists	110	105	110	127	130	Master's
Advanced Endoscopy	40	50	60	70	80	Master's
Allergy and Immunology	56	66	70	80	90	Master's
Anti-Corruption Specialists	70	80	90	100	110	Master's
Anti-Money Laundering Specialists	15	18	25	35	45	Master's
Anti-Trafficking Specialists	70	80	90	100	110	Master's
Artificial Intelligence Specialists	130	125	120	115	110	Master's
Big Data Analysts	100	95	90	85	80	Master's
Biomedical Engineering	430	530	632	640	460	Bachelor's
Biostatistics	50	60	70	80	90	Master's
Data Privacy Experts	80	75	70	65	60	Bachelor's
DevOps Engineers	80	75	70	65	60	Bachelor's
Digital Data Architects	50	45	40	35	30	Master's
Digital Forensics Experts	50	45	40	35	30	Master's
Environmental Policy Researchers	30	35	40	45	50	PhD
Environmental Science Professors	5	10	15	20	25	PhD
Epidemiology	100	110	120	130	140	Master's
Evidence-Based Medicine	50	60	70	80	90	Master's
Exploration Data Analysts	20	25	30	35	40	Bachelor's
Exploration Geophysicists	40	45	50	55	60	Master's
Gastroenterology	70	80	90	100	110	Master's
Medical Anthropology	50	60	70	80	90	Master's
Medical Genetics	70	80	90	100	110	Master's
Medical Imaging Technology	140	150	160	170	180	Bachelor's
Medical Informatics	70	80	90	100	110	Master's
Medical Sociology	50	60	70	80	90	Master's
Metabolic Medicine	50	60	70	80	90	Master's
Pediatric Surgery	60	70	80	90	100	Master's
Pediatricians	150	145	140	135	130	Master's
Periodontology	40	50	60	70	80	Master's
Petroleum Geologists	150	145	140	135	130	Master's
Petroleum Geophysicists	150	145	140	135	130	Master's
Process Safety Engineers	48	53	58	63	68	Master's
Process Simulation Analysts	1	6	11	16	21	Master's
Process Simulation Engineers	1	6	11	16	21	Master's
Urban Planning	110	120	138	149	156	Bachelor's
Urban Resilience Planning	50	60	70	80	90	Master's
Urological Surgery	40	50	60	70	80	Master's
Urology	50	60	70	80	90	Master's

Source: *NPA Macro Model for Human Resource Projections*

127. **Reducing and eventually eliminating these acute skills shortages requires a multifaceted approach, including** alignment of government funding and the scholarship system to the acute skills shortages, improvements in curriculum design, stronger partnerships between educational institutions and industry, more targeted investments in vocational and technical training, and

strengthening the education and skills planning function. This will enable Uganda to better prepare its workforce for current and future job market demands, ultimately reducing skills mismatches and improving employment outcomes.

4.3.2. Moderate Skills Shortages

128. **Moderate skills shortages result from the inadequate supply of human resources, hence making them unable to meet the current and future human resource needs.** Unlike acute skills shortages, which are characterised by critical gaps in essential skills, moderate skills shortages involve areas where there is some level of skill availability, but it does not fully meet the needs of the country's labour market. According to the national manpower survey, moderate skills shortages are prevalent in industries such as healthcare, education, and certain technical fields, where Uganda is producing a reasonable number of graduates, albeit with a gap in both numbers and skills demanded by the Labour Market. The Manpower Survey 2016/17 notes that while employers face fewer difficulties in finding candidates with basic qualifications, they struggle to fill positions requiring more advanced skills or specialised knowledge. This moderate shortage can be addressed by boosting the capacity of training institutions to produce more Labour force graduates. Table 4.2 highlights some of the education and skills fields for which training is available in the country, but the supply is less than the current and projected Human Resource needs.

Table 4.2: List of Selected Moderate Skills Shortages

Field/Skill Area	2025/26	2026/27	2027/28	2028/29	2029/30	Required Education
Agroforestry	600	720	840	960	1,080	Bachelor's
Agronomy	720	840	960	1,080	1,200	Bachelor's
Agro-Processing	900	1,080	1,200	1,320	1,500	Diploma
Animal Husbandry	720	840	960	1,080	1,320	Diploma
Architecture	209	220	239	242	306	Bachelor's
Biochemistry	900	1,080	1,200	1,320	1,500	PhD
Biotechnology	300	360	420	480	600	Bachelor's/Master's
Civil Engineering	900	1,080	1,200	1,320	1,500	Bachelor's
Clinical Medicine	720	840	960	1,080	1,200	Bachelor's
Early Childhood Education	600	720	840	960	1,200	Diploma
Economics (Advanced)	102	112	130	138	142	Master's
Electrical Engineering	671	698	710	725	750	Bachelor's
Electrical Installation	750	782	810	835	860	Certificate
Electrical Work	600	720	840	960	1,200	Technical/Vocational
Horticulture	720	840	960	1,080	1,200	Diploma
ICT and Digital Literacy	720	840	960	1,080	1,320	Diploma
Interior Design	600	720	840	960	1,200	Diploma
Mechanical Engineering	480	540	600	720	900	Bachelor's
Mechanics and Automotive Repair	900	1,080	1,200	1,320	1,500	Certificate
Medical Imaging	720	840	960	1,080	1,200	Diploma
Medical Research	27	31	33	35	40	PhD
Mental Health Professionals	180	240	300	360	420	Bachelor's/Master's
Midwifery	900	1,080	1,200	1,320	1,500	Diploma

Field/Skill Area	2025/26	2026/27	2027/28	2028/29	2029/30	Required Education
Mobile Application Development	600	720	840	960	1,200	Bachelor's
Nutrition and Dietetics	600	720	840	960	1,080	Diploma
Organic Farming	900	1,080	1,200	1,320	1,500	Advanced Secondary
Pathology	120	150	180	210	240	Bachelor's/Master's
Pharmacology	180	240	300	360	420	Bachelor's/Master's
Pharmacy	600	720	840	960	1,080	Bachelor's
Radiology	120	150	180	210	240	Bachelor's/Master's
Renewable Energy Technician	720	840	960	1,080	1,320	Diploma
Renewable Resource Management	240	300	360	420	480	Bachelor's
Software Development	320	400	480	560	640	Bachelor's/Master's
Software Engineering	160	192	224	256	320	Bachelor's
Soil Science	80	96	112	128	160	Bachelor's
Special Needs Education	160	192	224	256	288	Bachelor's
Sports Coaching and Development	192	224	256	288	352	Diploma
Water and Sanitation Engineers	192	224	256	288	320	Bachelor's
Water Resource Management	64	80	96	112	128	Bachelor's
Architecture	560	592	640	672	720	Bachelor's
Civil Engineering	560	592	640	672	720	Bachelor's
Clinical Medicine	640	672	720	768	800	Bachelor's
Clinical Psychology	512	544	576	608	640	Master's
Speech Therapists	208	192	176	160	144	Bachelor's
Surgical Assistants	192	176	160	144	128	Diploma
Surgical Nurses	192	176	160	144	128	Diploma
Trauma Care Providers	224	208	192	176	160	Diploma
Trauma Psychologists	192	176	160	144	128	Master's

Source: *NPA Macro Model for Human Resource Projections*

129. **Although many training institutions offer programmes that are broadly aligned with general labour market needs, some programmes lack the depth required for specific advanced roles.** For instance, while broad engineering degrees are available, training in new technologies or methodologies is lacking. The NDPIV-HRDP emphasises the importance of updating training programmes to include emerging trends and technologies, ensuring that educational outputs match the evolving demands of the labour market. Interventions such as updating curricula to reflect current industry standards and demands, investing and developing specialised training programmes and strengthening collaborations between educational institutions and industry sectors to identify and address specific education and skill gaps.

4.3.3. Surplus Education and Skills/Low Skills Shortages

130. **The surplus education and skills imbalances are evident in several sectors where there are more trained individuals than the available job opportunities, leading to underemployment and inefficiencies**. The surplus is partly driven by the higher number of graduates pursuing academic and professional courses in these fields without corresponding growth in job opportunities. The national manpower survey indicates that surplus skills are particularly noticeable in certain fields such as humanities, social sciences, and some business disciplines.

Despite the high number of graduates in these areas, the job market cannot accommodate all of them, resulting in a situation where many are either unemployed or underemployed. Table 4.3 highlights some of the education and skills fields that are relevant to national development, but the current and projected supply exceeds the current and projected demand.

Table 4.3: Surplus Skills/Low Skills Shortages

Field/Skill Area	2025/26	2026/27	2027/28	2028/29	2029/30	Required Education
Accounting occupations	(700)	(665)	(630)	(595)	(560)	Bachelor's
Adult Education Occupations	(420)	(490)	(560)	(630)	(770)	Bachelor's
Advocacy occupations	(595)	(560)	(525)	(490)	(455)	Bachelor's
Animal Feed Suppliers	(1,120)	(1,190)	(1,260)	(1,330)	(1,400)	No Formal Education
Animal Husbandry Assistants	(107)	(164)	(184)	(214)	(234)	No Formal Education
Banking and Insurance	(700)	(665)	(630)	(595)	(560)	Bachelor's
Basic Agricultural Labourers	(1,400)	(1,470)	(1,575)	(1,680)	(1,750)	No Formal Education
Basic Aquaculture Workers	(126)	(119)	(112)	(105)	(98)	No Formal Education
Basic Crop Breeding Labourers	(1,575)	(1,645)	(1,750)	(1,820)	(1,925)	Bachelor's
Business Administration	(560)	(525)	(490)	(455)	(420)	Bachelor's
Community Development	(1,225)	(1,295)	(1,400)	(1,470)	(1,575)	Bachelor's
Computer Science	(420)	(490)	(560)	(630)	(770)	Diploma
Family Medicine	(420)	(385)	(350)	(315)	(280)	Bachelor's
Forklift Driver	(350)	(420)	(490)	(560)	(700)	Bachelor's
Freight Handler	(25)	(25)	(26)	(27)	(28)	Bachelor's
Front Office Managers	(525)	(630)	(700)	(770)	(875)	Bachelor's
Furniture Handler	(980)	(1,050)	(1,120)	(1,190)	(1,260)	Diploma
Gender and Development	(1,050)	(1,120)	(1,190)	(1,260)	(1,330)	Bachelor's
Gender Studies	(350)	(420)	(490)	(560)	(630)	Bachelor's
General Medicine	(525)	(490)	(455)	(420)	(385)	Bachelor's
General Nursing	(700)	(665)	(630)	(595)	(560)	Diploma
General Tour Guides	(107)	(164)	(184)	(214)	(234)	Diploma
Graphic Design	(350)	(420)	(490)	(560)	(700)	Technical/Vocational
Multimedia	(525)	(630)	(700)	(770)	(875)	Diploma
Mass Communication	(1,225)	(1,295)	(1,400)	(1,470)	(1,575)	Bachelor's
Medical Laboratory Science	(980)	(1,050)	(1,120)	(1,190)	(1,260)	Diploma
Midwifery	(1,225)	(1,295)	(1,400)	(1,470)	(1,575)	Bachelor's
Nursing	(350)	(420)	(490)	(560)	(630)	Bachelor's
Psychology	(1,050)	(1,120)	(1,190)	(1,260)	(1,330)	Bachelor's
Public Administration	(350)	(420)	(490)	(560)	(700)	Bachelor's
Public Administration	(1,050)	(1,120)	(1,190)	(1,260)	(1,330)	Bachelor's
Public Health	(1,225)	(1,295)	(1,400)	(1,470)	(1,575)	Bachelor's
Records Management	(875)	(945)	(1,050)	(1,120)	(1,225)	Diploma

Field/Skill Area	2025/26	2026/27	2027/28	2028/29	2029/30	Required Education
Resort Service Staff	(107)	(164)	(184)	(214)	(234)	Diploma
Catering Services	(350)	(420)	(490)	(560)	(630)	Primary Level
Statistics	(1,050)	(1,120)	(1,190)	(1,260)	(1,330)	Bachelor's
Sugarcane Farming	(350)	(420)	(490)	(560)	(630)	Lower Secondary
Supply and Distribution	(114)	(214)	(315)	(415)	(515)	Bachelor's
Taxi Driving	(350)	(420)	(490)	(560)	(700)	Lower Secondary
Tea Processing	(350)	(420)	(490)	(560)	(630)	Diploma
Teaching (Primary)	(1,575)	(1,645)	(1,750)	(1,820)	(1,925)	Bachelor's
Teaching (Secondary)	(1,400)	(1,470)	(1,575)	(1,680)	(1,750)	Bachelor's
Theology	(875)	(945)	(1,050)	(1,120)	(1,225)	Bachelor's
Tour Bus Drivers	(175)	(168)	(161)	(158)	(154)	Primary Level
Tour Conductors	(39)	(35)	(32)	(28)	(25)	Diploma
Tour Desk Clerks	(567)	(654)	(704)	(804)	(894)	Primary Level
Tour Guiding	(350)	(420)	(490)	(560)	(700)	Lower Secondary
Tour Logistics Coordinators	(107)	(164)	(184)	(214)	(234)	Diploma
Tour Package Assistants	(350)	(420)	(490)	(560)	(630)	Diploma
Transportation and Logistics	(525)	(630)	(700)	(770)	(875)	Bachelor's
Vehicle Painter	(300)	(335)	(406)	(441)	(477)	No Education Qualification

Source: *NPA Macro Model for Human Resource Projections*

131. **These imbalances have resulted in many individuals taking on roles for which they are overqualified or struggling to find positions that match their qualifications**. Many graduates find that their qualifications do not provide the specialised expertise required for specific roles, leading to underemployment in areas unrelated to their field of study. The Plan emphasises the need for educational institutions to align their programmes with current labour market demands, with greater emphasis on practical and industry-specific training to address these surplus skills. The plan emphasises the need to phase out some of these training programmes, regulate admissions into oversaturated programmes, revise the curricula at all levels to better match industry requirements, and strengthen career guidance services to help students make informed decisions about their education and career paths.

4.4. Causes and consequences of labour market mismatches.

132. **Labour market mismatches present significant challenges to the country's economic development and productivity**. Despite a growing population and expanding economic opportunities, there is a notable disconnect between the skills of the workforce and the needs of employers. This disconnect manifests in various forms, including high unemployment rates among educated youth, unfilled job vacancies, and inefficiencies in job matching. Understanding the causes and consequences of labour market mismatches helps in designing targeted and specific interventions to address them holistically.

i) **The failure of the education system to align with the demands of the labour market, producing graduates whose skills are not in high demand, is the main cause of labour market mismatches in Uganda.** The education system often produces graduates whose skills don't align with the market demands, leading to high unemployment rates among educated youth. The Manpower Survey Report 2016/17 put the unemployment rate among

university graduates at 36%, which is higher than the national average of 9.2%. This discrepancy indicates a critical misalignment between the skills imparted by educational institutions and those required by employers in the labour market. The report also highlighted that only 6% of the workforce had undergone vocational training, which exacerbates the situation by creating a shortage of skills in trades which are essential for various industries.

ii) **The rapid pace of technological advancements.** As industries evolve and new technologies emerge, the education system struggles to keep pace, resulting in graduates with outdated skills that do not meet the contemporary demands of employers. This mismatch is particularly evident in sectors such as information technology, engineering, and manufacturing, where technological proficiency is crucial. There is a need for the education system to adapt to these changes by incorporating more STEM (Science, Technology, Engineering, and Mathematics) education and promoting Technical and Vocational Education and Training (TVET). The traditional focus on academic qualifications rather than practical skills leaves a significant portion of the workforce unprepared for technical roles. As a result, employers struggle to find qualified candidates for technical positions, leading to a surplus of unemployed graduates and unfilled job vacancies.

iii) **Uganda's gradual transition from an agriculture-based economy to one driven by services and industry has created significant labour market mismatches.** This transformation has led to a substantial realignment of the labour market. This shift leaves many workers in declining agricultural sectors without the relevant skills to transition to emerging industries, such as information technology, finance, and manufacturing, which are gaining prominence. The impact of globalisation has further intensified these structural changes. Increased competition and changing global markets have led to job losses in certain industries, particularly those unable to compete with international players. For instance, local textile and manufacturing industries have faced significant challenges due to cheaper imports, resulting in job cuts and closures. Workers displaced by these changes often find it challenging to acquire new skills that are in demand, leading to persistent mismatches between the supply and demand in the labour market.

iv) **Economic policies and investment trends have played a role in shaping labour market dynamics.** Major projects such as the development of the East African Crude Oil Pipeline and the oil refinery are expected to create numerous job opportunities. However, the workforce's readiness to take up these roles remains a concern. According to the manpower survey report 2016/17, 55% of employers in the industrial sector reported difficulties in finding suitably skilled workers, underscoring the mismatch between the skills of the available workforce and the needs of the industry.

v) **The lack of a comprehensive labour market information system exacerbates mismatches by preventing job seekers and employers from making informed decisions.** Information asymmetry is a significant cause of labour market mismatches in Uganda, where a lack of comprehensive labour market information impedes both job seekers and employers. In many cases, job seekers are not aware of available job opportunities or the specific skills required for those positions. Similarly, employers often struggle to find candidates with the right qualifications and skills. According to the manpower survey report 2016/17, 68% of employers reported difficulties in finding suitably skilled workers, highlighting the critical role of information asymmetry in the labour market. This lack of reliable labour market information means that job seekers may pursue careers that do not align with current market demands, further exacerbating mismatches. For instance, many graduates enter the job market with qualifications that are not in high demand, leading to high unemployment rates among educated youth. The NDPIII-HRDP emphasised the need for better labour market information systems to address these issues.

Such systems provide real-time data on job vacancies, skill requirements, and industry trends, enabling job seekers to make more informed decisions about their education and career paths.

vi) **The inadequate provision of career guidance services also contributes to labour market mismatches.** Many young people in Uganda lack access to effective career counselling that could help them understand the labour market and choose career paths that align with their interests and the needs of employers. According to the NDPIII-HRDP, enhancing career guidance and counselling services in schools and universities was prioritised as essential to bridge this gap.

133. **These labour market mismatches have significant consequences for both individuals and the broader economy, leading to inefficiencies and inequalities that often impede socioeconomic transformation.** The most direct consequence of labour market mismatches is the rise in unemployment and underemployment. According to the Uganda Bureau of Statistics (UBOS), the national unemployment rate was approximately 12.3% in 2024, a figure that reflects the challenges many individuals face in securing jobs that match their qualifications. Underemployment is another critical issue, where individuals accept positions that do not fully utilise their skills. For instance, a university graduate may take on a job in the informal sector or in roles that require significantly lower qualifications than they possess. This situation has led to a substantial waste of human potential and contributes to worker dissatisfaction and a decline in overall productivity. Another significant consequence of labour market mismatch is reduced economic growth. When businesses cannot find workers with the necessary skills, it hampers productivity and suffocates innovation.

134. **The World Bank Report 2023 notes that Uganda's GDP growth could increase by 2-3 percentage points annually if the country can effectively address its skill gaps.** However, the current mismatches prevent the economy from achieving its full potential and limit the capacity for technological and industrial advancements. This stagnation not only affects the immediate economic environment but also the long-term development prospects of the country. For instance, Uganda Vision 2040 aims to transform the country into a modern and prosperous nation, but labour market mismatches pose a significant barrier to achieving these aspirations. These labour market mismatches have also been linked to wage inequalities, brain drain, increased training costs to bridge the skills gap, low productivity, socio-economic inefficiencies, and sectoral imbalances.

135. **There is thus a need for coordinated efforts from governments, educational institutions, and businesses to address the identified labour market mismatches in order to avert such consequences.** Aligning educational outputs with industry demands, investing in continuous human resource planning and development, and implementing effective labour policies are critical to mitigating these mismatches and foster a more efficient and equitable labour market.

PART 2: STRATEGIC DIRECTION AND HUMAN RESOURCE NEEDS

CHAPTER 5: THE STRATEGIC DIRECTION FOR THE NDPIV- HRD PLAN

5.1. Introduction

136. **This chapter outlines the strategic direction for the NDPIV-HRDP, and it articulates the strategic thrust, theme, goal, and objectives of the Plan**. The chapter further elaborates the key strategies to achieve the plan's objectives, detailing specific actions required for effective implementation. Additionally, it highlights critical reforms in the national human resource development aimed at strengthening institutional capacity, improving workforce productivity, and fostering innovation to drive Uganda's long-term development aspirations.

5.2. Strategic Thrust and Pillars of the NDPIV - HRD Plan

137. **This Plan is anchored to the NDPIV, serving as the critical mechanism to support Uganda's ambition of achieving a 10-fold economic growth strategy.** The NDPIV prioritises five key growth areas—agro-industry, tourism, minerals, oil and gas, a knowledge economy driven by STI and ICT, and finance—alongside enablers such as human capital and infrastructure development. The Plan operationalises this vision by focusing on equipping the workforce with the skills and competencies required to drive growth in these anchor sectors.

138. **By addressing the skills gaps, promoting value addition, and aligning education and training systems with the industry demands, the plan ensures that human capital development catalyses productivity gains, diversification, and job creation.** With a target of creating 4.4 million new jobs during the Plan period, the Plan strengthens the private sector, supports entrepreneurial growth, and fosters resilience across all sectors. This symbiotic relationship between the HRDP and NDPIV underscores the foundational role of human capital in transforming Uganda's economy into a higher and more sustainable growth frontier.

139. **The principal thrust underpinning the Plan is the need for the creation of a strong Human Resource base to support the development of a knowledge-based economy to enhance productivity and competitiveness.** Efforts will be made to develop an efficient and responsive education and training system to meet the demand for a knowledgeable and highly skilled labour force that is equipped with positive values and attitudes. The National Human Resource Development Plan is conceptualised around five (5) key pillars, which are summarised in Figure 5.1.

Figure 5.1: Pillars of the NDPIV-HRD Plan

Pillar 1: Education Reform and Access

Focuses on improving the quality and relevance of education at all levels to equip Ugandans with the skills needed for the modern economy. This includes reforms in curriculum development, teacher training, infrastructure development, and efforts to enhance access to quality education, particularly in remote and rural areas.

Pillar 2: Technical and Vocational Education and Training (TVET)

Focuses on strengthening TVET systems to provide relevant skills training and certification programmes aligned with market demands. This pillar emphasizes the expansion of TVET infrastructure, collaboration with industries to develop demand-driven curricula, and efforts to enhance the image and prestige of vocational education.

Pillar 3: Workforce Planning and Development

Focuses on implementing strategies for effective workforce planning, including mainstreaming and institutionalising Manpower planning, undertaking labour market analysis, skills forecasting, and identification of priority sectors for skills development. This pillar focuses on ensuring that there are systems in place for ensuring that the workforce remains adaptable to changing economic needs.

Pillar 4: Equality and Social Inclusion

Focuses on promoting equality and social inclusion in HRD initiatives to ensure that all segments of the population have equal access to education, training, and employment opportunities. This pillar prioritises measures to address disparities by gender in access to education and the workforce, as well as efforts to empower marginalised groups such as women, youth, persons with disabilities, and refugees.

Pillar 5: Entrepreneurship and Innovation

Focuses on fostering a culture of entrepreneurship and innovation by providing support for Small and Medium Enterprises (SMEs), startups, and innovation hubs. This pillar includes initiatives to provide entrepreneurship education and training, access to finance, mentorship programmes, and support for research and development activities.

5.3. Theme, Goal and Objectives

140. The **Theme** of the NDPIV-HRD Plan is **"Building a Skilled, Productive and Competitive Workforce"**

141. The **Goal** of the Plan is **"A Skilled, Productive and Competitive Workforce"**

142. **The strategic objectives of the NDPIV-HRDP are to:**

1. Strengthen the alignment of the national education and training system with current and future labour market needs;
2. Reform and increase access to Technical and Vocational Education and Training (TVET) to enhance employment and employability of Ugandans;
3. Strengthen an enabling ecosystem for employment creation, entrepreneurship, and innovation,

4. Enhance the coordination and effectiveness of manpower planning and development.

5.4. Strategies to achieve the plan objectives

143. The strategic objectives of the NDPIV-HRDP are to be operationalised through the following strategies summarised in Table 5.1.

Table 5.1: Strategies Matrix

SN	Objectives	Strategies
1.	Strengthen the alignment of the national education and training system with current and future labour market needs.	1.1 Increase accessibility to quality education and training opportunities across all tiers of the educational system.
		1.2 Address the critical education and skills gaps to meet the current and projected HR needs at national and global levels.
		1.3 Develop and implement a comprehensive Teacher development and welfare programme focused on aligning educational outcomes with labour market needs.
		1.4 Promote a culture of lifelong learning, adult education programmes and continuous professional development opportunities.
2.	Reform and increase access to Technical and Vocational Education and Training (TVET) to enhance the employment and employability of Ugandans.	2.1 Develop, popularise, and implement the Uganda Vocational Qualifications Framework (UVQF).
		2.2 Expand and Modernise TVET Infrastructure Nationwide
		2.3 Develop industry-aligned TVET curricula and programmes
		2.4 Implement inclusive TVET access programmes
		2.5 Enhance Public-Private Partnerships (PPP) in the delivery of TVET in Uganda
3.	Strengthen an enabling ecosystem for employment creation, entrepreneurship, and innovation.	3.1 Strengthen policy and regulatory frameworks for business development in the country
		3.2 Enhance access to finance for startups and small enterprises
		3.3 Develop infrastructure to support business growth and connectivity.
		3.4 Foster innovation and technology adoption across sectors and businesses
4.	Enhance the coordination and effectiveness of manpower planning and development.	4.1 Strengthen the national and institutional frameworks for manpower planning and coordination.
		4.2 Establish a framework for timely production and analysis of labour market statistics and information.
		4.3 Enhance collaboration between education providers, employers, and government.
		4.4 Create a cohesive and well-coordinated capacity-building programme that aligns domestic and foreign support with national development goals.

5.5. Actions to achieve the NDPIV-HRDP Strategies

144. To effectively achieve the NDPIV-HRDP strategies, the following actions will be implemented as summarised in Table 5.2.

Table 5.2: Action Matrix

Strategies	Actions
1.1 Increase accessibility to quality educational and training opportunities across all tiers of the educational system.	1.1.1 Invest in educational infrastructure development (construct, rehabilitate and equip), such as classrooms, teacher houses, libraries, and laboratories at all levels. 1.1.2 Expand financial aid to ensure access for disadvantaged groups and underprivileged communities, such as Karamoja. 1.1.3 Implement school feeding programmes to improve nutrition and retention rates, especially in primary and secondary schools. 1.1.4 Implement targeted remedial programmes to address learning gaps and improve educational outcomes for disadvantaged students. 1.1.5 Increase the availability and affordability of higher education opportunities (including scholarships, grants, and student loans) to expand access for qualified Ugandans.
1.2 Address the critical education and skills gaps to meet the current and projected HR needs at national and global levels.	1.2.1 Produce and publish a national scarce skills and occupation report to highlight critical scarce qualifications. 1.2.2 Develop a Uganda National Qualification Framework to standardise skill levels and enhance recognition of qualifications across sectors. 1.2.3 Develop a centralised admissions system for TVET and tertiary institutions aligned with national development priorities. 1.2.4 Annual Status report on NDPIV-HRDP Education and Skills development report produced. 1.2.5 Produce Employment and Skills Status report. 1.2.6 Develop and publish an annual jobs report 1.2.7 Develop and implement a criterion for financing critical skills to link the allocation of scholarships and loan financing to critical skill needs identified in the plan 1.2.8 Undertake regular reviews of curricula at all levels of education and training to accommodate the changing labour market needs. 1.2.9 Integrate robust career guidance and counselling at all levels of education to guide students in the selection of their career paths. 1.2.10 Establish a programme for cross-border apprenticeships, internships, and knowledge exchanges to provide hands-on learning experiences and exposure to different work cultures and practices. 1.2.11 Strengthen external employment services to facilitate externalisation of skilled manpower through international collaborations, training partnerships and knowledge exchange. 1.2.12 Address the skills needs of the cultural and creative industries as engines of economic growth and job creation, particularly for youths and women.
1.3 Develop and implement a comprehensive Teacher development and welfare programme focused on aligning educational outcomes with labour market needs.	1.3.1 Revise teacher training curricula to equip teachers with skills and knowledge relevant to current labour market demands. 1.3.2 Establish a teacher continuous professional development programme for the continuous upskilling of teachers to adapt to emerging industry trends and technologies.

Strategies	Actions
1.4 Promote a culture of lifelong learning, adult education programmes and continuous professional development opportunities.	1.4.1 Expand access to adult education by establishing community learning centres that offer flexible learning options such as evening classes, weekend workshops, online courses, and distance learning programmes. 1.4.2 Offer short-term and modular training courses in emerging fields and technologies to facilitate continuous learning and adaptation to changing market demands.
2.1 Develop, popularise, and implement the Uganda Vocational Qualifications Framework (UVQF).	2.1.1 Develop the UVQF Standards and Guidelines 2.1.2 Strengthen the standardisation and certification programme to make Uganda's labour force employable and competitive. 2.1.3 Enhance the quality and relevance of TVET curricula through partnerships with industry stakeholders, professional associations and accreditation bodies.
2.2 Expand and Modernise TVET Infrastructure Nationwide	2.2.1 Upgrade existing TVET institutions with modern equipment and technology to enhance learning environments that meet industry standards. 2.2.2 Construct new TVET centers in underserved regions to increase access to TVET, especially in rural and remote areas. 2.2.3 Establish industry-led apprenticeship programmes and internship opportunities to facilitate hands-on learning and job placement for TVET graduates.
2.3 Develop Industry-Aligned TVET Curricula and Programmes	2.3.1 Operationalise the TVET Council and Sector Skills Expert Committees to oversee the implementation of TVET and provide regular industry input on curriculum design and updates. 2.3.2 Update existing TVET curricula to include current industry trends and technologies that reflect current and emerging labour market demands. 2.3.3 Develop short-term, modular courses for specific industry skills to offer flexibility for learners to acquire targeted skills quickly.
2.4 Implement Inclusive TVET Access Programmes	2.4.1 Launch scholarship programmes targeting marginalised groups to increase their enrollment in TVET programmes. 2.4.2 Establish community-based TVET centers in rural areas to increase local access to TVET, reducing the need for relocation. 2.4.3 Develop and implement TVET programmes specifically for persons with disabilities to increase their employability.
2.5 Enhance Public-Private Partnerships (PPP) in the delivery of TVET in Uganda	2.5.1 Develop joint training programmes between TVET institutions and industry players to deliver programmes that meet specific industry needs and enhance the employability of TVET graduates. 2.5.2 Create a PPP-based apprenticeship and internship centralised platform for matching students with industry opportunities.
3.1 Strengthen Policy and Regulatory Frameworks for business development in the country	3.1.1 Expand the services of one-stop business support centers to different parts of the country to provide entrepreneurs with access to information and services. 3.1.2 Develop policies to protect Intellectual Property (IP) rights to enhance the protection and commercialisation of innovations.
3.2 Enhance access to finance for startups	3.2.1 Create a government-backed fund for startups and SMEs to increase access to seed funding and growth capital.

Strategies	Actions
and small enterprises	3.2.2 Develop and expand existing microfinance programmes targeting rural and underserved entrepreneurs to expand financial inclusion and support for grassroots businesses. 3.2.3 Provide financial literacy training to entrepreneurs to improve financial management and the sustainability of small businesses. 3.2.4 Facilitate access to export financing for SMEs to expand market opportunities and revenue growth for small businesses.
3.3 Develop Infrastructure to Support Business Growth and Connectivity.	3.3.1 Invest in a reliable and affordable energy supply to provide a consistent power supply for industrial and business operations. 3.3.2 Invest in digital infrastructure, including broadband internet connectivity, mobile technology, and e-commerce platforms, to enable digital entrepreneurship and remote work opportunities. 3.3.3 Create co-working spaces and incubators in urban centers to offer collaborative environments for startups and entrepreneurs. 3.3.4 Improve water and sanitation infrastructure in business areas to enhance health and productivity in business environments.
3.4 Foster innovation and technology adoption across sectors and businesses	3.4.1 Establish regional innovation hubs and incubators to increase support for startups and innovation-driven enterprises. 3.4.2 Support digital transformation initiatives across industries to increase productivity and market competitiveness through technology adoption.
4.1 Strengthen the national and institutional frameworks for human resource planning and coordination.	4.1.1 Develop and implement a comprehensive national human resource development plan. 4.1.2 Support MDAs and LGs to incorporate human resource planning into their Strategic Plans. 4.1.3 Develop and implement a National Human Resource Development Policy. 4.1.4 Streamline the issuance of work permit processes in line with skills availability in the country guided by the NDPIV-HRDP.
4.2 Establish a framework for the timely production and analysis of labour market statistics and information.	4.2.1 Develop and implement a comprehensive, centralized and integrated LMIS platform 4.2.2 Develop and regularly update a robust web-based system for human resource projections and employment tracking
4.3 Enhance collaboration between education providers, employers, and the government.	4.3.1 Conduct and facilitate regular dialogue forums between academia, employers, and policymakers.

5.6. National Human Resource Development Reforms

145. **The NDPIV-HRDP has introduced several HRD reforms**. These reforms are aimed at enhancing the country's human capital and improving employment outcomes. The proposed reforms are designed to address existing challenges and harness opportunities for sustainable development. The following outlines the key proposed reforms:

i) **Development and operationalisation of a National Human Resource Development Policy for Uganda.** The changing socio-economic landscape of Uganda highlights the urgent need to develop and operationalise a comprehensive National Human Resource Development (HRD) Policy. Such a policy would serve as a strategic framework to guide the country's efforts in enhancing human capital, addressing employment challenges, and achieving sustainable human resources development. A national HRD policy will provide a coherent framework to align various HRD initiatives across programmes, sectors and all other levels of government. This will ensure that educational programmes, vocational training, and skill development efforts are strategically coordinated to meet national development goals.

ii) **Review the approach of allocating government sponsorship and student loan schemes to prioritise scarce skills.** As Uganda advances its human resource development, it becomes increasingly important to align government sponsorship and school schemes with the nation's strategic needs. The current allocation methods may not fully address the evolving demands of the labour market or prioritise the development of skills that are critical for economic growth. Government sponsorship and school schemes should be re-aligned to prioritise fields and skills that are identified as scarce or in high demand according to the NDPIV-HRDP. This approach ensures that resources are directed towards areas that have the most significant impact on national development and economic competitiveness. The allocation method should be dynamic, allowing for adjustments based on periodic assessments of labour market needs and emerging industry trends. This flexibility ensures that sponsorships are continuously relevant and responsive to changes in the economy.

iii) **Centralising the admission to universities and other Tertiary Institutions.** Centralising the admission process to universities and tertiary institutions is a strategic approach that can address several challenges in Uganda's higher education system. By streamlining and standardising admissions, the government can enhance fairness, efficiency, and alignment with national development goals. The central authority prioritises admission to programmes and institutions that align with identified skills needs and strategic areas of growth. Centralising admissions also ensures that all applicants are evaluated based on uniform criteria and standards. This helps to eliminate disparities in admission processes among different institutions and promotes fairness in access to higher education. The reform would simplify and streamline the application processes and reduce duplication and administrative burdens, making it more efficient for both applicants and institutions.

iv) **Establishing and operationalising a Uganda National Talent Register (NTR-U) for all professions.** The National Talent Register aims to create a centralised database that captures detailed information about individuals' skills, qualifications, and career experiences across various professions. By providing a comprehensive view of available talent, the register supports informed decision-making by employers, policymakers, and educational institutions. It helps identify skills gaps, forecast future labour market needs, and align training programmes with industry demands. The register enables better workforce planning by providing insights into the availability and distribution of talent across different professions and regions. This helps organisations and government agencies plan for current and future staffing needs. This centralised approach facilitates better management and utilisation of human capital. The development and operationalisation of a National Talent Register is a strategic initiative aimed at creating a comprehensive and systematic approach to talent management across all professions.

v) **Strengthening and promoting Technical and Vocational Education and Training, especially for the youth as a viable career path.** Strengthening and incentivising Vocational Education and Training (VET) is critical for equipping youths with the skills needed to thrive in Uganda's dynamic labour market. By enhancing TVET programmes and providing targeted incentives, the country addresses skills mismatches, improves employment

outcomes, and supports economic growth. Raising awareness about the value and benefits of TVET is essential for changing perceptions and encouraging more youths to consider vocational careers. Public campaigns need to highlight successful TVET graduates and the opportunities available in various trades and professions. This will be through providing robust career guidance and counselling services to help youths make informed decisions about vocational training.

vi) **Fast-track the establishment and implementation of a National Service Scheme to engage youth in structured programmes.** The proposed National service scheme will address pressing challenges such as youth unemployment, skills gaps, and low productivity by engaging young people in structured service programmes across key sectors of national development. Participants would work in areas such as education, healthcare, agriculture, environmental conservation, and infrastructure development among others. The scheme will equip participants with practical skills, enhance their employability, and foster entrepreneurial mindsets. Furthermore, it will promote a sense of discipline, civic responsibility, and national unity by bringing together individuals from diverse regions and backgrounds. By focusing on critical areas of need, the National Service Scheme will create job opportunities, contribute to human capital development, and drive sustainable economic growth, aligning with Uganda's broader development goals.

vii) **Reform A-level curriculum to incorporate vocational and competence-based subjects.** This will equip students with practical skills that directly align with the demands of the labour market. By integrating vocational and competence-based education such as technical training, entrepreneurship, agriculture, health sciences, and information technology alongside traditional academic courses, the reform will ensure that students graduate with both theoretical knowledge and hands-on expertise. This approach will address the skills gap in Uganda's workforce, where there is often a mismatch between academic qualifications and the skills employers need. Additionally, the reform will help to reduce the stigma associated with vocational education, highlighting it as a legitimate and valuable career path. By diversifying the curriculum, this change will not only improve employability but also foster a more adaptable, skilled, and productive workforce, contributing to the country's economic growth and reducing youth unemployment.

CHAPTER 6: PROGRAMME HUMAN RESOURCE NEEDS 2025/26-2029/30

6.1. Introduction

146. **The success of Uganda's development agenda hinges on the availability of a skilled and competent workforce tailored to meet the specific demands across the key programmes.** This chapter focuses on identifying and addressing the human resource needs for the period 2025/26 to 2029/30. It outlines the workforce requirements across various programmes crucial to Uganda's socio-economic transformation, such as agro-industrialisation, human capital development, extractive resources, manufacturing, tourism development, among others. The strategic approach adopted in this chapter is informed by the macro model for human resource projection, ensuring accurate forecasts and alignment with national priorities. This chapter thus sets the stage for a detailed examination of the specific human resource needs for each of Uganda's key development programmes, providing actions for building a skilled, adaptable, and inclusive workforce to drive national progress between 2025/26 to 2029/30.

6.2. Programme HR Requirements Between 2025-2030

147. **The Human Resource requirements were determined through a skills mapping process, skills analysis and skills forecasting/projection using a macro model for HR projection developed by NPA.** The model provides an integrated accounting framework to analyze the employment and Human Resource situation and evolution over time. The model primarily leverages the National Manpower Survey, Labour Force Survey and UNHS data from UBOS. This model operates within the frameworks of the International Standard Classification of Occupations (ISCO) and UNESCO's International Standard Classification of Education (ISCED), providing a structured approach to forecasting the country's workforce requirements. The analysis identifies key skills and education qualifications needed and aligns these with anticipated investments and developments outlined in the rolling expenditure framework. This plan explores three dimensions of gaps or mismatches, including 1) Acute Shortages (**RED**), (2) Moderate Shortages (**Amber**), and 3) Excess Supply (**Green**) as explained in Table 6.1.

Table 6.1: Definition of Human Resource Gaps

Colour	Nomenclature	Description
	Acute Shortages	Acute shortages are those in education and skills fields for which the country faces critical shortages and there is limited or no training available in the country. The demand for such educational qualifications and skills exceeds the current supply and, in some cases, the demand is projected to rise sharply
	Moderate Shortages	Moderate shortages are those education and skills fields for which training is available in the country, but supply is less than the current and projected Human Resource needs. The demand for such skills exists and is increasing, but the current and projected supply may not be adequate to meet future demands.
	Excess Supply	The Excess Supply are education and skills fields which are relevant to national development, but the current and projected supply exceeds the current and projected demand. The country has an overabundance of workers with such qualifications/skills relative to the demand in the labor market.

NPA, 2024

148. **The identified HR gaps reflect the disparity between workforce demand and supply to guide the training and educational focus.** The plan details HR requirements for each programme and the corresponding education entry-level, ranging from no formal education to

PhDs, ensuring alignment with job market needs. HR gaps are highlighted for all national development programmes except for Private Sector Development since its needs are addressed within the broader context of all the other programmes, consistent with NDPIV strategic priorities.

149. **The guiding principles of human resource development have informed the identification of human resource and skills needs in this plan, but they have not yet been fully localised to reflect Uganda's unique context**. These international standards serve as a framework for identifying the workforce requirements for each programme, providing a starting point for human resource and skills development. However, they do not fully capture Uganda's specific challenges, resources, and cultural dynamics. Currently, these standards are used because local standards have not yet been fully developed or domesticated. Moving forward, the intention is to adapt and localise these principles, ensuring that the identified human resources and skills needs are relevant, practical, and aligned with Uganda's realities.

150. **The human resource skills required for each programme reflect the additional workforce needed throughout the plan, but these projections do not imply that the government will be able to fully train and achieve the desired workforce within the timeframe of NDPIV**. In reality, developing the required labour force within this period presents significant challenges due to the complexities of skill acquisition, the time needed for effective training, and the requirement for practical experience. Therefore, a phased and flexible approach to workforce development is essential. This should involve short-term strategies to maximise the use of existing skills while simultaneously investing in long-term education and training initiatives. By doing so, the government can gradually build the necessary workforce throughout the plan, ensuring both immediate and future success in the implementation of NDPIV.

151. **Acute skills shortages in critical sectors such as agro-industrialization, tourism, mineral-based industries, and STI, including ICT, have been identified within the NDPIV.** These shortages represent skills in high demand but are currently underrepresented in the workforce, necessitating urgent intervention. As the anchor programme for Human Capital Development, HCD will play a central role in addressing these gaps through targeted training programmes, scholarships, and strategic industry partnerships. Although developing the required skills will take time, HCD's strategic approach will enable the government to begin addressing these immediate needs, ensuring that Uganda can make progress toward its developmental goals. The government's efforts to bridge these acute shortages will lay the foundation for sustainable growth. See Table 6.2 for a detailed breakdown of the acute skills shortages.

Table 6.2: Estimated 5-year Human Resource Gaps for the NDPIV ATMS in the Short Term

NDPIV Programme	Field/Skill Area	Estimated 5-year Gaps	Entry-Level Education	Status
Agro-Industrialization Agro-Industrialization	Agricultural Engineering	538	Bachelor's	
	Agricultural Finance Experts	295	Master's	
	Irrigation engineers	330	Bachelors	
	Quantitative animal breeder	103	Bachelors	
	Agricultural Lawyer	970	Bachelor's	
	Agricultural Biotechnology Experts	200	Master's	
	Agricultural Risk Management Analysts	175	Master's	
	Livestock Nutritionists	225	Master's	
	Power Grid Maintenance Technicians	125	Diploma	
	Process Safety Engineers	290	Master's	
	Soil Science	311	Bachelor's	
	Agricultural Engineering	538	Bachelor's	
Tourism Development	Border Security Analysts	140	Bachelor's	
	Tourism Financial Analysts	60	Master's	
	Tourism Policy Analysts	150	Master's	
	Tourist Service Quality Assessors	60	Master's	

NDPIV Programme	Field/Skill Area	Estimated 5-year Gaps	Entry-Level Education	Status
	Destination Branding Specialists	75	Bachelor's	
	Hospitality Training Specialists	673	Bachelor's	
	Tourism Marketing Specialists	300	Master's	
Human Capital Development	Chiropractors	652	Master's	
	Geriatric Pharmacist	332	Masters	
	Geriatric Doctors	240	Masters	
	Geriatric Neurologist	150	Masters	
	Geriatric Psychiatrist	268	Masters	
	Neurosurgeons	109	Master's	
	Anesthesiologists	321	Master's	
	Advanced Endoscopy	186	Master's	
	Optometrists	349	Master's	
	Physiotherapists	241	Master's	
	Thoracic Surgeons	211	Master's	
	Interventional Pulmonologists	145	Master's	
	Pulmonologists	354	Master's	
	Oncologists (Thoracic/Pulmonary)	121	Master's	
	Pulmonary Rehabilitation Specialists	203	Master's	
	Allergists/Immunologists	163	Master's	
	Critical Care Specialists	361	Master's	
	Respiratory Therapists	237	Master's	
	Advanced Pediatric Care	350	Master's	
	Infectious Disease Specialists	421	Master's	
	Virologists	328	Master's	
	Cardiologists	350	Master's	
	Cardiothoracic Surgeons	124	Master's	
	Cardiac Electrophysiologists	105	Master's	
	Pediatric Cardiologists	55	Master's	
	Cardiac Anesthesiologists	178	Master's	
	Interventional Cardiologists	189	Master's	
	Cardiovascular Imaging	400	Bachelor's	
	Clinical Cardiology	450	Master's	
	Metabolic Medicine	350	Master's	
	Nephrologist	300	PhD	
	Oncologist	650	Master's	
	Radiation Therapists	321	Master's	
	Oncologic Pathologists	118	Master's	
	Pediatric Oncologists	123	Master's	
	Hematologists (Hematologic Oncologists)	250	Master's	
	Orthodontists	225	Master's	
Sustainable Extractives Industry Development	Gold Processing Plant Specialists	100	Master's	
	Industrial Process specialists	172	Master's	
	Machine Learning Engineers	650	Master's	
	Mineral Resource Development Specialists	250	Master's	
	Pipeline engineers	278	Master's	
	Oil Refinery Safety Engineers	225	Bachelor's	
	Refinery technicians	570	Bachelor's	
	Oil Well Logging Specialists	175	Bachelor's	
	Environmental scientists	600	Master's	
	Oilfield Quality Control Specialists	225	Master's	
	Petroleum Geologists	700	Master's	
	Polymer Scientists	140	Master's	
	Process Simulation Analysts	47	Master's	
	Product Design Engineers	300	Bachelor's	
	Underground Mining Engineers	260	Master's	
	Environmental Engineering and Policy Analysts	140	Bachelor's	
	Geographical Information Systems (GIS)	390	Bachelor's	
	Geotechnical Engineers	155	Master's	

NDPIV Programme	Field/Skill Area	Estimated 5-year Gaps	Entry-Level Education	Status
Integrated Transport Infrastructure and Services	Hydroelectric Plant Engineers	100	Master's	
	Infrastructure Investment Analysts	184	Bachelor's	
	Materials Scientists	150	Master's	
	Traffic Engineering professionals	109	Master's	
	Infrastructure Risk Analysis and Management	195	Bachelor's	
	Smart Grid Analysts	155	Bachelor's	
	Smart Transportation Systems Engineers	255	Master's	
	Aviation Experts	350	Master's	
	Transport Economists	105	Master's	
Innovation, Technology Development and Transfer	Aerospace and Avionics Engineering	50	Bachelor's	
	Cyber and Space Technology	50	Bachelor's	
	Mechanical/Mechatronics Engineering	50	Bachelor's	
	Telecommunications/Antenna Engineering	50	Bachelor's	
	Radar Engineering in Space craft systems	50	Bachelor's	
	Computer Engineering in Aerospace	50	Bachelor's	
	Software Engineering in Aerospace	50	Bachelor's	
	Industrial and Manufacturing Engineering	50	Bachelor's	
	Remote Sensing and Signal Processing	50	Bachelor's	
	Data Science and Analytics in Aerospace	50	Bachelor's	
	Embedded Systems in Aerospace technology	50	Bachelor's	
	Machine Learning and Aerospace Systems	50	Bachelor's	
	Aviation Law and Policy	50	Bachelor's	
	Space Law, Policy and Governance	50	Bachelor's	
	Space mission project Planning, Monitoring and Evaluation	50	Bachelor's	
	Aerospace Material Sciences	50	Bachelor's	
	Power Systems/Green energy in Aerospace	50	Bachelor's	
	Nuclear Physics and Space mission Biosafety	50	Bachelor's	
	Battery Systems Engineer	132	Bachelor's	
	Automotive Software Engineer	231	Bachelor's	
	Automotive Mechanical Engineer	150	Bachelor's	
	Automotive Parts Designer	125	Bachelor's	
	Automotive Data Analyst	156	Bachelor's	
	Charging Infrastructure Technician (Electrical Engineering Technicians)	127	Bachelor's	
Digital Transformation Sustainable Energy Development	Cloud Computing Engineers	900	Master's	
	Cybersecurity Specialists	582	Master's	
	AI Systems Engineers	202	Master's	
	Blockchain Developers	500	Bachelor's	
	Cybersecurity Architects	250	Master's	
	Digital Forensics Experts	200	Master's	
	Human-Computer Interaction Specialists	250	Master's	
	Network Architects	600	Master's	
	Software Architects	650	Master's	
	Virtual Reality Developers	150	Master's	
	Industrial Process Consultants	172	Master's	
	Renewable Energy Engineers	200	Master's	
	Nuclear Engineering	1,130	Bachelor's	
	Nuclear Reactor Operation	240	Bachelor's	
	Nuclear Chemistry	630	Master's	
	Nuclear Physics	500	Master's	
	Nuclear Geology	570	Master's	
	Nuclear Safety and Security	1,720	Master's	
	Nuclear Law	165	Master's	
	Radiation Protection	1,960	Bachelor's	
	Nuclear Technicians	1,324	Bachelor's	
	Nuclear Craftsmen	3,600	Certificate	
	Green Hydrogen Economy	139	Bachelor's	

***Source**: NPA Human Resource Projection Model, 2024*

152. **Moderate skills shortages also exist in the key growth areas identified in the NDPIV, which require attention over the medium term.** These shortages involve skills that are present in the country but are insufficient in number or quality to meet the growing demands of sectors such as agro-industrialisation, tourism, mineral-based industries, and STI. In the medium term, the Human Capital Development (HCD) Programme will focus on improving the effectiveness of local education and training institutions to ensure they can meet the demands of these specialised sectors. A critical component of this effort will be expanding and enhancing programmes that address both general and specialised skill sets, including advanced technology, environmental management, tourism management, and mining engineering. The government will prioritise the development of specialised training programmes for professionals in fields such as geriatric care, neurology, and oncology in the health sector while also encouraging local professionals to pursue advanced studies in these critical areas. HCD will serve as the central mechanism for allocating scholarships and coordinating training initiatives in alignment with identified human resource needs. By strengthening local training capacity and ensuring alignment with national development objectives, Uganda can reduce its reliance on foreign-trained professionals. Table 6.3 provides a detailed breakdown of the moderate skills shortages.

Table 6.3: Estimated Human Resource Gaps for the NDPIV ATMS for the Medium Term

NDPIV Programme	Field/Skill Area	Estimated Medium Term Gaps	Entry-Level Education	Status
Agro-Industrialisation	Agricultural Machine Operators	1600	Diploma	
	Animal Husbandry	4920	Diploma	
	Dairy Science specialists	2081	Bachelor's	
	Disaster Risk Management	1652	Bachelor's	
	Food and Beverage Processing	5280	Diploma	
	Food microbiologists	1368	Bachelor's	
	Food Science and Technology	3600	Bachelor's	
	Food Science Specialists/ Food Scientists	1321	Bachelor's	
	Animal Health Specialists	3150	Bachelors	
	Veterinary Epidemiologist	1358	Bachelors	
	Quality Regulators	475	Diploma	
	Bio-Medical Engineering	215	Bachelors	
	Laboratory Specialists	1697	Bachelors	
	Wildlife Medicine Specialists	1212	Bachelors	
	Entomologist	727	Bachelors	
	Veterinary Doctors	1309	Bachelors	
Tourism Development	Event Planning and Management experts	1,360	Diploma	
	Hotel Management Specialists	1,930	Diploma	
	Adventure Tourism Coordinators	580	Diploma	
	Tourism Guides	1,137	Diploma	
	Adventure Tourism Planners	800	Bachelor's	
	Cultural Experience Facilitators	560	Bachelor's	
	Cultural Heritage Management Specialists	800	Bachelor's	
	Tourism Development Planners	400	Master's	
	Tourism Resource Managers	1,137	Bachelor's	
	Travel Safety Analysts	580	Master's	
	Travel Safety Coordinators	1,881	Diploma	
Human Capital Development	Anesthesiologists	521	Master's	
	Orthopedic surgeons	574	Master's	
	General surgeons	432	Master's	
	Emergency Medicine	561	Master's	
	Pediatricians	643	Master's	
	Physicians/ Internal Medicine	1590	Master's	
	Ear Nose and Throat Surgeons	550	Master's	
	Registered Paediatric Nurse	1,091	Diploma	

NDPIV Programme	Field/Skill Area	Estimated Medium Term Gaps	Entry-Level Education	Status
	Registered Public Health Nurse	11,781	Diploma	
	Registered Nurse	47,171	Diploma	
	Optometrists	749	Master's	
	Clinical Microbiologists	213	Master's	
	Epidemiologists (Infectious Disease Epidemiologists)	304	Master's	
	Pathologists	231	Master's	
	Pharmacologists	332	Master's	
	Immunologists	227	Masters	
	Physiotherapists	541	Master's	
	General Practitioners	12,211	Bachelor's	
	General Surgery	353	Bachelor's	
	Emergency Medicine	1,266	Master's	
	Dental surgeons	1,812	Master's	
	Registered Midwife	33,754	Diploma	
	Nutritionist	2,987	Bachelor's	
	Obstetrics and Gynecology	649	Bachelor's	
	Clinical Medicine	4,800	Bachelor's	
	Early Childhood Education	4,320	Diploma	
	Endodontists	3,500	Master's	
	Midwifery	6,000	Diploma	
	Nutrition and Dietetics	4,200	Diploma	
	Occupational Health and Safety	1,137	Diploma	
	Occupational Therapy	1,137	Bachelor's	
Sustainable Extractives Development	Biochemistry Specialists	1156	PhD	
	Bioenergy Specialists	1,050	Bachelor's	
	Biotechnology Specialists	1,360	Bachelor's/Master's	
	Environmental Policy professionals	740	Master's	
	Petroleum Engineering professionals	543	Bachelor's	
	Geophysicists	680	Bachelor's	
	Drilling technicians	1,268	Diploma/Technical	
	Plumbing Labourers	2,940	Lower Secondary	
	Renewable Energy Policy	2,500	Master's	
	Renewable Energy Systems	1,137	Bachelor's	
	Renewable Energy Technician	2,920	Diploma	
Integrated Transport Infrastructure and Services	Pavement Engineers	540	Bachelor's	
	Transport Engineers	655	Bachelor's	
	Materials Engineers	573	Bachelor's	
	Civil Engineers	630	Master's	
	Environmental Engineering experts	1145	Master's	
	Mechanical Engineers	2135	Bachelor's	
	Water and Sanitation Engineering Technicians	755	Bachelor's	
	Automotive and Power Engineering experts	683	Master's	
	Civil Engineering Technicians	850	Master's	
	Logistics and Supply Chain Managers	1,184	Bachelor's	
	Railway Engineering professionals	1,731	Bachelor's	
	Environmental Impact Assessment specialists	919	Bachelor's	
	Geotechnical Engineers	865	Master's	
	Advanced Roadway Design Engineers	1,105	Bachelor's	
	Rail Infrastructure Specialists	1,435	Bachelor's	
	Advanced Traffic Management Specialists	774	Master's	
	Road Safety Engineers	625	Bachelor's	
	Infrastructure Investment Analysts	580	Bachelor's	
Innovation, Technology Development and Transfer	Big Data Analysts	450	Master's	
	Prototype Engineers	350	Bachelor's	
	Data Scientists	700	Master's	
	DevOps Engineers	350	Bachelor's	
	Digital Data Architects	200	Master's	

NDPIV Programme	Field/Skill Area	Estimated Medium Term Gaps	Entry-Level Education	Status
	IoT (Internet of Things) Experts	450	Master's	
	Industry 4.0 Experts	125	Bachelor's	
	Robotics Engineers	250	Master's	
	Intellectual Property (IP) Managers	155	Bachelor's	
	Automotive and Power Engineering experts	183	Bachelor's	
	Biomedical Engineering	1,992	Bachelor's	
	Automotive Diagnostic Technician	1432	Certificate	
	Biopharmaceuticals	400	Bachelor's	
Digital Transformation	Digital Marketing	4620	Bachelor's	
	ICT and Digital Literacy	4920	Diploma	
	Mobile Application Development	4320	Bachelor's	
	Network Administration	4920	Bachelor's	
	Network Engineering	5400	Bachelor's	
	Software Engineering	1152	Bachelor's	
Sustainable Energy Development	Electrical Engineering	3554	Bachelor's	
	Electrical Technicians	4037	Certificate	
	Mechanical Engineering	3240	Bachelor's	
	Radiology	900	Bachelor's/Master's	
	Renewable Energy Technician	4920	Diploma	
	Renewable Resource Management	1800	Bachelor's	

6.2.1. Human Capital Development Programme

6.2.1.1. Introduction

153. **A country that does not invest in its human capital mortgages its future**. A well-educated, skilled, and healthy populace serves as the backbone of economic development. Through early investments in health, nutrition, and education, countries lay a solid foundation for a robust human capital, paving the way for increased productivity, technological advancement, and overall societal progress. Uganda's Vision 2040 underscores the pivotal role of human capital development in driving the country's transformation journey, ensuring that every citizen can realise their full potential and lead a dignified life. However, challenges persist, hindering optimal human capital development. These include deficiencies in the human resource lifecycle, inadequate knowledge and skills, subpar public health standards, population management issues, limited social safety nets, and a lack of integrated planning for human resource development within the broader economic agenda.

154. **Furthermore, education and skills enhancement not only empower individuals but also yield profound societal benefits, fostering productivity, innovation, and entrepreneurship while fostering economic and social progress**. There is still a significant shortage of skills in priority fields of human capital development in Uganda. The country faces shortages of skilled professionals in key fields, with only 10% of its population having tertiary education, compared to the global average of 34%. Urgent attention is needed to address these gaps, requiring comprehensive strategies aligned with the national development framework. Priority areas include bolstering education and training systems to cultivate societal knowledge, addressing staffing shortages in healthcare, and adapting to evolving demographic dynamics.

155. **The Human Capital Development Programme will serve as the central mechanism for achieving the human resource requirements outlined in the NDPIV.** This programme will focus on enhancing the effectiveness of local education and training institutions to ensure they can adequately meet the specialised demands of key sectors, including Agro-Industrialization, Tourism, Mineral-Based Industries, and Science, Technology, and Innovation (STI). A critical component of this effort will be expanding and enhancing programmes that cater to both general

and specialised skill sets within these sectors. This will include investing in training for professionals in fields such as advanced technology, environmental management, and industry-specific expertise like tourism management and mining engineering. In addition, the development of specialised training for super-specialists such as geriatricians, neurologists, and oncologists in the health sector will be prioritised. The Government will also create incentives to encourage local professionals to pursue advanced studies and specialisation in these critical areas. The Human Capital Development Programme will be the central mechanism to oversee the allocation of scholarships and the coordination of training initiatives in line with the identified human resource needs. By strengthening local capacity for specialised training across the ATMS and ensuring that the Human Capital Development Programme aligns with the country's broader development objectives, Uganda will be better positioned to reduce its reliance on foreign-trained professionals.

6.2.1.2. Guiding Standards in the Estimation of the HCD Programme HR needs

156. **The guiding standards for the Human Capital Development (HCD) Programme serve as foundational principles to ensure effective planning, implementation, and evaluation of initiatives aimed at optimising human resources.** These standards encompass strategic objectives such as identifying critical skills gaps, fostering a culture of continuous learning and development, and promoting equitable access to training opportunities. They emphasise the importance of aligning workforce strategies with organisational goals, leveraging technology for efficient HR management, and adhering to ethical practices in recruitment and retention. Moreover, these standards advocate for transparent and inclusive HR policies that empower employees, nurture leadership capabilities, and uphold principles of fairness and equality. By adhering to these guiding standards, the programme aims to cultivate a skilled, motivated workforce capable of driving sustainable growth and innovation across all sectors.

157. **In the process of estimating HR requirements and identifying gaps in human capital programmes, standard indicators from the education and health sectors were utilised.** These indicators will serve as the foundation of the strategic interventions over the next five years. The approach used integrates internationally recognised health standards, recommended education and training benchmarks, and local contextual factors to inform planning as shown in Tables 6.4 and 6.5. The focus remains on augmenting both the quantity and caliber of human resources. This emphasis aims to bolster service delivery effectiveness amidst a growing population.

Table 6.4: Guiding assumptions for estimation of health workforce needs

Occupation	Recommended Standards
Physicians	1 per 5,000 population
Nurses	1 per 1,000 population
General Doctors	1 per 1,000
Dentists	1 per 3,000 population
Pharmacists	1 per 5,000 population
Psychologists	1 per 50,000 population
Optometrists	1 per 5,000 population
Veterinarians	1 per 100,000 population
Speech-Language Pathologists	1 per 10,000 population
Physiotherapists	1 per 5,000 population
Radiologists	1 per 20,000 population
Midwives	1 per 500 births
Medical Laboratory Technicians	1 per 5,000 population
Epidemiologists	1 per 50,000 population
Healthcare Administrators	1 per 1,000 healthcare providers
Healthcare Educators	1 per 2,000 healthcare providers
Health Informaticians	1 per 2,000 healthcare providers
Occupational Therapists	1 per 10,000 population

Occupation	Recommended Standards
Nutritionists/Dietitians	1 per 5,000 population
Emergency Medical Technicians	1 per 50,000 population
Social Workers	1 per 10,000 population
Public Health Workers	1 per 2,000 population
Speech Therapists	1 per 10,000 population
Genetic Counsellors	1 per 50,000 population
Occupational Health Specialists	1 per 5,000 population
Palliative Care Specialists	1 per 20,000 population
Infectious Disease Specialists	1 per 50,000 population
Forensic Scientists	1 per 100,000 population
Health Lawyers	1 per 50,000 population
Substance Abuse Counsellors	1 per 10,000 population
Health Journalists	1 per 100,000 population
Public Health Educators	1 per 5,000 population
Health Technology Assessors	1 per 50,000 population
Medical Ethicists	1 per 50,000 population
Disaster Response Specialists	1 per 100,000 population
Geriatricians	1 per 20,000 population
Health Statisticians	1 per 50,000 population
Telemedicine Specialists	1 per 10,000 population
Healthcare Interpreters	1 per 10,000 non-native speaker patients
Health Economists	1 per 50,000 population
Dermatologists	1 per 20,000 population
Cardiologists	1 per 20,000 population
Oncologists	1 per 50,000 population
Haematologists	1 per 50,000 population
Endocrinologists	1 per 30,000 population
Gastroenterologists	1 per 30,000 population
Urologists	1 per 30,000 population
General Surgeons	1 per 40,000 population
Paediatricians	1 per 1,000 to 1,500 children
Orthopedic Surgeons	1 per 40,000 population
Pediatric Surgeons	1 per 200,000 population
Teachers (Primary)	1 per 53 Pupils
Secondary School Teachers	1 per 29 students
TVET Instructors	1 per 100 students
Librarians	1 per 500 students

Source: *MoH, MOE and International Guidelines*

Table 6.5: Guiding Assumptions for Estimation of Teachers' Needs

Assumptions for teacher's needs estimation				
ECD and Primary Level Assumptions	**2020**	**2025**	**2030**	**2035**
Gross Intake Rate (GIR) for Primary one	130%	120%	115%	105%
Primary Completion Rate (PCR)	53%	60%	66.8%	70.5%
Share of Repeaters (SoR)	8%	6%	4.5%	2%
Share of Enrolment in Private schools (SEP)	17.5%	20%	24.5%	
Pupil-teacher ratio (PTR) in Government schools	43:1	40:1	38:1	35:1
Pupil-teacher ratio (PTR) in private schools	29:1	33:1	35:1	32:1
Teacher Attrition Rate (TAR) in Government schools	4.5%	5.0%	6.0%	5.5%
Teacher Attrition Rate (TAR) in private schools	5.1%	5.8%	6.5%	6%
The official primary school-aged population (Pop_{6-12})	7,544,200	8,186,500	9,301,700	10,250,300
Lower Secondary Assumptions	**2020**	**2025**	**2030**	**2035**
Primary Completion Rate (PCR)	57%	53%	60%	66.80%
Transition Rate (TR) from P7 to S1	66%	62%	64%	72%
Share of Repeaters (SoR)	2.30%	2.10%	1.50%	0.90%
Survival Rate (SR) from S1 to S4	72%	75%	78%	86.50%
Lower Secondary Assumptions	**2020**	**2025**	**2030**	**2035**
Share of Enrolment in Private schools (SEP)	62%	60%	58%	55%
Students-Teacher Ratio (STR)	28	26.5	20	25

Assumptions for teacher's needs estimation				
ECD and Primary Level Assumptions	**2020**	**2025**	**2030**	**2035**
Secondary Teacher Attrition Rate (TAR)	5%	4.60%	4.20%	4.00%
Teacher Workload (TW)	12	12	12	16
Number of Class Hours (CH) (Hours per week)	33.3	33.3	32	30
Average Number of Students Per Stream (SPS)	63	60	56	45
The official secondary School-aged population	2,966,970	3,539,910	4,396,614	5,352,059
Advanced Secondary Assumptions	**2020**	**2025**	**2030**	**2035**
Transition Rate (TR) from 'O' to 'A' level	30%	31%	32%	39%
Share of Repeaters (SoR)	3.00%	2.50%	2%	0.80%
Survival Rate (SR)	80%	85%	89%	95%
Share of Enrolment in Private schools (SEP)	64%	62.50%	60%	55%
Students-Teacher Ratio (STR) (Private)	20	21	23	25
Secondary Teacher Attrition Rate (TAR)	5.50%	5.20%	4.90%	4.50%
Teacher Workload (TW)	9	10	10	12
Number of Class Hours (CH) (Hours per week)	27	29	30	32
Average Number of Students Per Stream (SPS)	40	38	41	35
The official advanced secondary school-aged population	1,368,310	1,526,320	1,611,902	1,749,507
Lower TVET Assumptions	**2020**	**2025**	**2030**	**2035**
Enrolment (% of Ordinary Secondary)	0.90%	1.4%	1.8%	2.20%
Enrolment (Number)	11,500	14,500	18,400	25,000
Pupil-Teacher Ratio	20	21	22	25
Teacher Attrition Rate	5%	5%	4.5%	4.1%
Upper TVET Key Indicators	**2020**	**2025**	**2030**	**2035**
Enrolment (% of Advanced Secondary)	6.4%	7.0%	7.8%	8.20%
Enrolment (Number)	12,000	22,100	35,450	45,560
Pupil-Teacher Ratio	20	20	20	20
Teacher Attrition Rate	5%	5%	4.5%	4.1%
Universities Sub sector Assumptions	**2020**	**2025**	**2030**	**2035**
Gross intake rate	19%	25%	31%	34%
Gross Enrolment Rate	7.20%	7.90%	8.30%	8.50%
University Enrolment (Number)	141,580	176,085	258,726	310,543
Pupil-Teacher Ratio	20.8	25.4	30	33.3
Teacher Attrition Rate	5.0%	4.8%	4.5%	4.2%
Proportion of teaching staff of total staff (Public)	42.20%	43.10%	44%	50%
Proportion of teaching staff of total staff (Private)	47.50%	49%	50.30%	55.50%

Source: *MoES, 2023 and NPA Projections*

158. **The occupation and skills gaps for the human capital development programme are based on the projected socio-economic changes, the minimum standards in health and education, and the anticipated replacement demand**. Demographic projections indicate that Uganda's population is anticipated to grow to 48.3 million by 2025 and up to 55.4 million people by 2030 up from 41.58 million people in 2020. The urban population is projected to rise from 24.6% in 2020 to 27.5% in 2025. The rise in total population and more so the urban population implies high demand for health services and other social services; this will necessitate more health workers, more ambulatory workers, more medical imaging and therapeutic equipment technicians, and education and training professions among others.

159. **Further, the population of older persons (60+ years) that will need critical health care is projected to grow to 1.872 million people in 2025 and 2.268 million by 2030 up from 1.525 million people in 2020.** The rise in the population of older persons also has several implications on the type of human resources that will be required. This is because older persons are associated with common health complications such as hypertension and diabetes; heart and respiratory diseases; pneumonia; oral health problems cardiovascular and atherosclerosis disease; cancer; arthritis; cataracts; osteoporosis; and cognitive decline, among others. As a result, the country will need more Radiation oncologists; Emergency Medicine Specialists; Neurologists; Public Health

Medicine Specialists; General Medicine specialist physicians; obstetricians and gynecologists; and Family Physicians, among others.

6.2.1.3. Skills and Occupation Gaps for the Programme

160. **The occupation and skills gaps in the Human Capital Development Programme are determined by projected socio-economic changes during the NDPIV, minimum health and education standards, and anticipated replacement demands.** Uganda's population is expected to reach 48.3 million by 2025 and 55.4 million by 2030, up from 41.58 million in 2020, with the urban population rising from 24.6% to 27.5% by 2025. This demographic shift, particularly in urban areas, will significantly increase demand for health and social services, necessitating more health workers, ambulatory care providers, medical imaging and therapeutic equipment technicians, and educators. Additionally, the population of women aged 15-49 is projected to increase to 12.101 million by 2025 and 14.071 million by 2030, up from 10.224 million in 2020, underscoring the need for skilled health professionals, including nurses, midwives, gynaecologists, obstetricians, anaesthetists, emergency medicine specialists, ophthalmologists, paediatricians, and general practitioners. Detailed occupational and skill requirements for the Human Capital Development Programme over the next five years are outlined in Table 6.6.

Table 6.6: Estimated 5-Year Occupation and Skills Gaps for the HCD Programme

Occupations Title	Estimated 5-year Gaps					Entry-Level Education	Status
	2025/26	2026/27	2027/28	2028/29	2029/30		
Advanced Clinical Practice	40	45	50	55	60	Master's	
Advanced Endoscopy	40	50	60	70	80	Master's	
Advanced Paediatric Care	50	60	70	80	90	Master's	
Advanced Surgical Techniques	45	56	67	79	89	Master's	
Clinical Biochemistry	100	110	120	130	140	Bachelor's	
Clinical Cardiology	70	80	90	100	110	Master's	
Clinical Epidemiology	70	80	90	100	110	Master's	
Clinical Nutrition	80	90	100	110	120	Bachelor's	
Clinical Pharmacology	70	80	90	100	110	Master's	
Clinical Psychopharmacology	50	60	70	80	90	Master's	
Clinical Toxicology	40	50	60	70	80	Master's	
Dental Surgery	80	90	100	110	120	Master's	
Dermatopathology	50	60	70	80	90	Master's	
Educational Psychologists	180	160	140	120	100	Master's	
Educational Policy and Research Analysts	160	140	120	100	80	Master's	
Epidemiology	100	110	120	130	140	Master's	
Gastroenterology	70	80	90	100	110	Master's	
Genetic Epidemiology	50	60	70	80	90	Master's	
Gynaecologic Oncology	60	70	80	90	100	Master's	
Health Information Systems	70	80	90	100	110	Bachelor's	
Health Policy and Management	60	70	80	90	100	Master's	
Hematologic Oncology	50	60	70	80	90	Master's	
Hepatology	60	70	80	90	100	Master's	
Immunology	90	100	110	120	130	Master's	
Kidney Specialists	100	110	120	130	140	Master's	
Medical Anthropology	50	60	70	80	90	Master's	
Medical Laboratory Technology	150	160	170	180	190	Diploma	
Nephrology	40	50	60	70	80	PhD	

Occupations Title	Estimated 5-year Gaps					Entry-Level Education	Status
	2025/26	2026/27	2027/28	2028/29	2029/30		
Neurologists	100	110	120	130	140	Master's	
Nutritionists	130	125	120	115	110	Bachelor's	
Obstetricians	100	110	120	130	140	Master's	
Oncology	140	135	130	125	120	Master's	
Optometry	35	40	45	50	55	Bachelor's/Master	
Orthodontists	35	40	45	50	55	Master's	
Orthopedics	80	90	100	110	120	Master's	
Pediatric Anesthesiology	40	50	60	70	80	Master's	
Pediatric Cardiology	40	50	60	70	80	PhD	
Pediatric Dermatology	60	70	80	90	100	Master's	
Pediatric Endocrinology	50	60	70	80	90	Master's	
Pediatric Gastroenterology	40	50	60	70	80	Master's	
Pediatric Hematology	40	50	60	70	80	Master's	
Pediatric Infectious Diseases	50	60	70	80	90	Master's	
Pediatric Neurology	30	40	50	60	70	PhD	
Pediatric Orthopedics	50	60	70	80	90	Master's	
Pediatric Pulmonology	40	50	60	70	80	Master's	
Pediatric Rheumatology	60	70	80	90	100	Master's	
Pediatricians	150	145	140	135	130	Master's	
Prosthodontics	60	70	80	90	100	Master's	
Psychiatrists	35	30	25	20	15	Master's	
Radiotherapy	80	90	100	110	120	Bachelor's	
Reproductive Endocrinology	60	70	80	90	100	Master's	
Rheumatology	50	60	70	80	90	Master's	
Speech-Language Pathology	70	80	90	100	110	Master's	
Sports Medicine and Nutrition Specialist	60	70	80	90	100	Bachelor's	
Telemedicine	60	70	80	90	100	Master's	
Urology	50	60	70	80	90	Master's	
Vascular Surgeons	90	85	80	75	70	Master's	
Virology	50	60	70	80	90	Master's	
Dental Technology	250	270	300	320	350	Diploma	
Early Childhood Education	600	720	840	960	1200	Diploma	
Economics	280	290	300	310	367	Bachelor's	
Endodontists	657	687	703	800	653	Master's	
Gastroenterology	130	120	110	106	98	Master's	
General Surgery	129	142	166	180	220	Master's	
Health Economics	106	120	130	143	152	Master's	
Mental Health Professionals	180	240	300	360	420	Bachelor's/Masters	
Midwifery	900	1080	1200	1320	1500	Diploma	
Nutrition and Dietetics	600	720	840	960	1080	Diploma	
Pharmacology	180	240	300	360	420	Bachelor's/Masters	
Philosophy	250	270	300	320	350	Bachelor's	
Physics	200	340	360	380	400	Bachelor's	
Physiotherapy	200	310	360	380	407	Bachelor's	
Sports Coaching and Development	192	224	256	288	352	Diploma	
Surgical Technologists	320	340	360	380	400	Diploma	
Telehealth Coordinators	160	192	224	256	320	Bachelor's	
Therapeutic Recreation	160	192	224	256	320	Bachelor's	
Trauma Psychologists	192	176	160	144	128	Master's	

Occupations Title	Estimated 5-year Gaps					Entry-Level Education	Status
	2025/26	2026/27	2027/28	2028/29	2029/30		
Urological Technicians	320	400	480	560	640	Diploma	
X-ray Technicians	214	221	227	234	241	Diploma	
Adult Education occupations	(420)	(490)	(560)	(630)	(770)	Bachelor's	
Basic Medical Science	(1,700)	(1,600)	(1,500)	(1,400)	(1,300)	Bachelor's	
Basic Nursing	(2,000)	(1,900)	(1,800)	(1,700)	(1,600)	Diploma	
Gender and Development	(1,050)	(1,120)	(1,190)	(1,260)	(1,330)	Bachelor's	
Gender Studies	(350)	(420)	(490)	(560)	(630)	Bachelor's	
General Medicine	(525)	(490)	(455)	(420)	(385)	Bachelor's	
General Nursing	(700)	(665)	(630)	(595)	(560)	Diploma	
Health and Safety Officers	(1,200)	(1,400)	(1,600)	(1,800)	(2,000)	Diploma	
Health Care Assistants	(1,800)	(1,700)	(1,600)	(1,500)	(1,400)	No education	
Health Data Analysts	(1,400)	(1,300)	(1,200)	(1,100)	(1,000)	Bachelor's	
Herbal Medicine	(1,200)	(1,400)	(1,600)	(1,800)	(2,200)	Secondary	
Herbal Medicine Production	(1,500)	(1,800)	(2,000)	(2,200)	(2,500)	No Education	
Nursing	(350)	(420)	(490)	(560)	(630)	Bachelor's	
Psychology	(1,050)	(1,120)	(1,190)	(1,260)	(1,330)	Bachelor's	
Public Health	(1,225)	(1,295)	(1,400)	(1,470)	(1,575)	Bachelor's	
Secondary School Teaching	(1,500)	(1,800)	(2,000)	(2,200)	(2,500)	Bachelor's	
Social Work and Social Administration	(4,000)	(4,200)	(4,500)	(4,800)	(5,000)	Bachelor's	
Sociology	(3,200)	(3,400)	(3,600)	(3,800)	(4,000)	Bachelor's	
Teaching (Primary)	(1,575)	(1,645)	(1,750)	(1,820)	(1,925)	Bachelor's	
Teaching (Secondary)	(1,400)	(1,470)	(1,575)	(1,680)	(1,750)	Bachelor's	

*Source: NPA HR Projection Model. ***Figures in brackets represent over supply; otherwise, net demand*

6.2.1.4. Interventions to Address the Programme HR Gaps

161. **The Human Capital Development Programme aims to foster sustainable development by ensuring the availability of a skilled and competent workforce in Uganda**. Table 6.7 outlines key human resource development objectives and the corresponding interventions designed to address critical gaps and enhance workforce capabilities. The lead implementing Ministries, Departments, and Agencies (MDAs) are identified for each intervention to ensure coordinated and effective execution.

Table 6.7: HRD Interventions for Human Capital Development Programme and respective actors

Interventions	Implementing MDAs
i. Implement competitive salary packages and benefits to attract and retain qualified professionals.	MoPS, MoFPED
ii. Offer scholarships and loans for all healthcare workers and specialists who wish to undertake specialised training in line with the skills gaps in the HCD Programme	MoES, MoH
iii. Develop and implement accelerated certification programmes for key skills.	MoES, UNEB
iv. Align national certification standards with international benchmarks.	NCHE, MoES
v. Facilitate partnerships with international accreditation bodies.	MoES, MTIC
vi. Promote recognition of prior learning and experience in certification processes.	MoES, MGLSD
vii. Partner with tech companies and industries to offer specialised training programmes.	MoES, UIRI

viii. Provide incentives for continuous learning and skill upgrades in emerging technologies.	MoFPED, MoSTI
ix. Offer certification and recertification programmes to keep skills up-to-date.	NCHE, UNMC
x. Implement performance appraisal systems to regularly evaluate employee performance.	MoPS, MoH
xi. Conduct regular workforce assessments to identify gaps and future needs.	MoPS, MoH
xii. Integrate HR development planning into the strategic plans of all MDAs in the programme to recognise, prioritise, and address essential skills, educational needs, and soft skills for current and future workforce requirements	NPA, MoPS, MoFPED
xiii. Establish Programme Skills Coordination Committees (PSCC) to assess and establish the skill requirements and standards for the Human Capital Development Programme.	Program Secretariate
xiv. Develop and implement a national human resource planning framework to guide HR development across MDAs.	NPA
xv. Conduct regular HR audits and assessments to identify gaps and areas for improvement.	NPA
xvi. Integrate human resource development into institutional strategic plans.	All MDAs and LGs under this programme

6.2.2. Agro-Industrialisation Programme

6.2.2.1. Introduction

162. **Agriculture remains a vital source of livelihood for a large segment of Uganda's population, with 68% of the workforce engaged in agriculture, forestry, and fishing.** However, the sector's potential for creating sustainable employment is not yet fully realised. While agricultural employment has grown, labour productivity is still below the national average. Over the past five years, national agricultural output has increased by only 2.5% annually, compared to 3% to 5% growth in other East African Community countries. Enhancing agricultural productivity is essential for job creation and economic transformation in Uganda, alongside transitioning young workers to higher productivity roles in manufacturing and services.

163. **Uganda has achieved better job creation and higher labour incomes through agribusiness, agro-processing, and food exports compared to primary agricultural production.** Large food manufacturing firms in Uganda offer better-paying jobs than primary agricultural roles. In 2022, approximately 400,000 Ugandans were employed in formal positions within the food manufacturing and food and beverage services sectors. Promising trends in Uganda's agri-food sector include increasing domestic and regional demand for higher-value foods, shifts towards more processed foods, and greater integration of smallholders into agricultural value chains. Policies should focus on expanding farm opportunities, moving from subsistence to commercial farming, and encouraging private investment in agriculture and agro-processing. Additionally, essential public goods like infrastructure, research, and extension services, along with technical training for market-oriented production, are critical for progress.

6.2.2.2. Guiding Standards in the Estimation of the Programme HR Needs

164. **In Uganda, the transition towards Agro-industrialisation stands as a pivotal strategy for economic diversification and sustainable development.** At the core of this transformation lie robust guiding standards for Human Resources (HR), meticulously crafted to optimise workforce capabilities amidst the intersection of agriculture and industry. These standards, derived from Uganda-specific sources and internationally recognised organizations such as FAO, WHO, and the World Bank, provide a comprehensive framework for estimating HR needs across diverse Agro-agricultural domains. By adhering to prescribed ratios and qualifications, they ensure that

the agricultural sector is equipped with essential expertise to drive growth, enhance productivity, and bolster sustainability efforts. Moreover, these standards streamline HR planning and foster innovation, resilience, and inclusive growth, aligning with Uganda's national development priorities and global best practices. This integrated approach not only facilitates optimal resource allocation but also enhances programme effectiveness, steering Uganda towards a competitive and sustainable agro-industrial sector. Table 6.8 outlines the guiding assumptions crucial for estimating human resource needs in Agro-industrialisation.

Table 6.8: Guiding Assumptions for Estimation of Agro-industrialisation Human Resource Needs.

Occupation	Recommended Standards
Extension Workers	1 per 5,000 farmers.
Agricultural Engineers	1 per 100,000 population.
Agronomists	1 per 10,000 hectares of arable land.
Veterinary Officers	1 per 20,000 livestock units.
Post-Harvest Technicians	1 per 50,000 tonnes of produce.
Agricultural Economists	1 per 100,000 population.
Farm Managers	1 per 1,000 farms.
Quality Control Officers	1 per 10,000 tonnes of processed products.
Agricultural Researchers	1 per 50,000 farmers.
Irrigation Technicians	1 per 2,000 hectares of irrigated land.
Food Safety Inspectors	1 per 1,000 food processing facilities.
Plant Breeders	1 per 100,000 hectares of cultivated land.
Agricultural Extension ICT Specialists	1 per 500 extension workers.
Soil Scientists	1 per 10,000 hectares of agricultural land.
Livestock Breeders	1 per 50,000 livestock units.
Agribusiness Managers	1 per 100,000 population.
Agricultural Policy Analysts	1 per 100,000 population.
Crop Protection Specialists	1 per 10,000 hectares of arable land.
Climate Change Specialists	1 per 100,000 population.
Nutritionists	1 per 100,000 population.
Fisheries Officers	1 per 10,000 tonnes of fish production.
Agroforestry Specialists	1 per 10,000 hectares of arable land.
Rural Development Officers	1 per 50,000 population.
Agricultural Trainers	1 per 500 extension workers.
Food Technologists	1 per 10,000 tonnes of food processed.
Water Resource Managers	1 per 100,000 population.
Organic Farming Advisors	1 per 500 organic farms.
Agricultural Extension Trainers	1 per 100 extension workers.
Precision Agriculture Specialists	1 per 10,000 hectares of cultivated land.
Pesticide Safety Advisors	1 per 10,000 hectares of crop production.
Aquaculture Specialists	1 per 5,000 tonnes of fish production.
Agribusiness Development Officers	1 per 50,000 population.
Rural Finance Specialists	1 per 100,000 population.
Agricultural Communication Specialists	1 per 500,000 population.
Seed Certification Officers	1 per 10,000 hectares of seed production.
Horticultural Specialists	1 per 10,000 hectares of horticultural crops.
Agricultural Cooperative Managers	1 per 1,000 cooperative members.
Biosecurity Officers	1 per 50,000 livestock units.
Agro-Meteorologists	1 per 100,000 population.
Rural Infrastructure Development Officers	1 per 100,000 population.
Agricultural Biotechnologists	1 per 100,000 hectares of arable land.

Source: *Various Sources*

6.2.2.3. Skills and Occupation Gaps for the Programme

165. **The identified gaps in occupations and skills for agro-industrialisation are aligned with the national development agenda and the anticipated need to replace retiring human resources**. Agriculture remains a cornerstone of Uganda's economy, significantly contributing to

employment. In 2024, the sector employed 68% of the total workforce, with about 40% being youth involved in various agricultural activities. Despite being the largest employer, a substantial portion of households (62.3%) remain in the subsistence economy. This results in farmers receiving low market prices, and farmer organisations that could aid in collective marketing and processing are weak, lacking both capital and managerial or technical skills for secondary processing. To address these issues, Uganda needs to enhance its human resource capacity, particularly in secondary processing and agro-processing. The situation is exacerbated by a shortage of modern storage facilities, leading to high post-harvest losses—30% to 40% for grains and other staples, and 30% to 80% for fresh fruits and vegetables. These challenges contribute to low agricultural productivity and minimal value addition, resulting in low farm gate prices and further impoverishing farmers. Consequently, the demand for specific occupations and skills in this programme over the next five years is outlined in Table 6.9.

Table 6.9: Estimated 5-year occupation and skills gaps for the Agro-industrialisation Programme

Field/Skill Area	Estimated 5-year Gaps					Entry-Level Education	Status
	2025/26	2026/27	2027/28	2028/29	2029/30		
Agricultural Engineering	86	106	126	128	92	Bachelor's	
Agricultural Finance Experts	50	55	53	63	74	Master's	
Agricultural Lawyer	150	196	202	208	214	Bachelor's	
Agricultural Biotechnology Experts	20	30	40	50	60	Master's	
Agricultural Risk Management Analysts	25	30	35	40	45	Master's	
Lean Six Sigma Experts	38	43	48	53	58	Master's	
Livestock Nutritionists	35	40	45	50	55	Master's	
Power Grid Maintenance Technicians	35	30	25	20	15	Diploma	
Process Safety Engineers	48	53	58	63	68	Master's	
Process Safety Management Specialists	35	40	45	50	55	Master's	
Soil Science	36	51	66	72	86	Bachelor's	
Veterinary Medicine	60	70	80	90	100	Bachelor's	
Agribusiness Management	875	910	926	951	987	Bachelor's/Master's	
Agricultural Engineering	700	800	1,000	1,200	1,500	Bachelor's	
Agricultural Equipment Repair Technicians	350	330	310	290	270	Diploma	
Agricultural Extension Workers	420	400	380	360	340	Bachelor's	
Agricultural Labour Supervisors	450	430	410	390	370	Bachelor's	
Agricultural Machine Operators	360	340	320	300	280	Diploma	
Agroforestry	600	720	840	960	1,080	Bachelor's	
Agronomy	720	840	960	1,080	1,200	Bachelor's	
Agro-Processing	900	1,080	1,200	1,320	1,500	Diploma	
Animal Husbandry	720	840	960	1,080	1,320	Diploma	
Animation and Game Development	500	600	700	800	1,000	Technical/Vocational	
Coffee Processing	120	140	160	180	200	Diploma	
Cotton Farming	920	940	960	980	1,020	Lower Secondary	
Cotton Ginning and Spinning	150	180	200	220	250	Diploma	
Crop Production	500	800	900	1,200	1,500	Lower Secondary	
Crop Science	300	320	340	360	380	Bachelor's	
Dairy Production and Processing	950	980	1,050	1,200	1,500	Diploma	
Dairy Science specialists	392	404	416	428	441	Bachelor's	
Disaster Risk Management	311	321	330	340	350	Bachelor's	
Fish Farming	870	940	960	980	1,080	Lower Secondary	
Fish Processing and Preservation	267	282	261	256	230	Diploma	
Fisheries Management	280	300	320	340	360	Diploma	

Field/Skill Area	Estimated 5-year Gaps					Entry-Level Education	Status
	2025/26	2026/27	2027/28	2028/29	2029/30		
Floristry Operations and Management specialists	341	351	362	372	384	Master's	
Food and Beverage Processing	900	1,040	1,060	1,080	1,200	Diploma	
Food microbiologists	258	265	273	282	290	Bachelor's	
Food researchers	207	214	220	227	234	Bachelor's	
Food Safety	300	320	340	360	380	Diploma	
Food Science and Technology	500	600	700	800	1,000	Bachelor's	
Food Science specialists/ Food Scientists	249	256	264	272	280	Bachelor's	
Food Technology and Processing specialists	214	221	227	234	241	Bachelor's	
Forestry and Tree Planting	900	1,200	1,400	1,600	2,000	Diploma	
Greenhouse Management specialists	123	127	131	135	139	Bachelor's	
Horticultural Science specialists	214	221	227	234	241	Master's	
Horticultural Services specialists	257	264	272	280	289	Bachelor's	
Horticulture	720	840	960	1,080	1,200	Diploma	
Meat Processing	600	720	840	960	1,200	Diploma	
Veterinary Health	214	221	227	234	241	Bachelor's	
Veterinary Medicine	214	221	227	234	241	Bachelor's	
Veterinary Surgeons	192	224	256	288	352	Master's	
Veterinary Technicians	320	400	480	560	640	Diploma	
Animal Health Economists	334	378	430	488	552	Masters	
Animal Health Specialists	482	545	620	705	798	Bachelors	
Veterinary Epidemiologist	208	235	267	304	344	Bachelors	
Laboratory Specialists	259	294	334	380	430	Bachelors	
Wild Life Medicine Specialists	185	210	239	271	307	Bachelors	
Entomologist	111	126	143	163	184	Bachelors	
Veterinary Doctors	200	227	258	293	331	Bachelors	
Apiarists and Sericulturists	109	130	150	171	190	Bachelors	
Agricultural Policy Support Staff	(210)	(190)	(170)	(150)	(130)	Bachelor's	
Agricultural Processing Assistants	(300)	(280)	(260)	(240)	(220)	Diploma	
Agricultural Supply Store Workers	(370)	(350)	(330)	(310)	(290)	No Formal Education	
Animal Feed Suppliers	(1,120)	(1,190)	(1,260)	(1,330)	(1,400)	No Formal Education	
Animal Husbandry Assistants	(107)	(164)	(184)	(214)	(234)	No Formal Education	
Basic Agricultural Business Workers	(250)	(230)	(210)	(190)	(170)	No Formal Education	
Basic Agricultural Data Analysts	(10)	(10)	(10)	(10)	(10)	Diploma	
Basic Agricultural Data Entry Clerks	(310)	(290)	(270)	(250)	(230)	No Formal Education	
Basic Agricultural Data Specialists	(50)	(30)	(20)	(10)	(10)	Diploma	
Basic Agricultural Development Managers	(30)	(10)	(10)	(10)	(10)	Diploma	
Basic Agricultural Development Workers	(30)	(10)	(10)	(10)	(10)	Bachelor's	
Basic Agricultural Economists	(200)	(180)	(160)	(140)	(120)	Bachelor's	
Basic Agricultural Education Assistants	(260)	(240)	(220)	(200)	(180)	No Formal Education	
Basic Agricultural Equipment Operators	(120)	(100)	(80)	(60)	(40)	No Formal Education	
Basic Agricultural Extension Workers	(440)	(420)	(400)	(380)	(360)	Bachelor's	
Basic Agricultural Infrastructure Staff	(80)	(60)	(40)	(20)	(10)	Diploma	

Field/Skill Area	Estimated 5-year Gaps					Entry-Level Education	Status
	2025/26	2026/27	2027/28	2028/29	2029/30		
Basic Agricultural Innovation Assistants	(40)	(20)	(10)	(10)	(10)	Diploma	
Basic Agricultural Innovation Specialists	(130)	(110)	(90)	(70)	(50)	Diploma	
Basic Agricultural Labourers	(1,400)	(1,470)	(1,575)	(1,680)	(1,750)	No Formal Education	
Basic Agricultural Machinery Operators	(390)	(370)	(350)	(330)	(310)	Diploma	
Basic Agricultural Planning Assistants	(80)	(60)	(40)	(20)	(10)	Bachelor's	
Basic Agricultural Processing Technicians	(270)	(250)	(230)	(210)	(190)	Diploma	
Basic Agricultural Supply Chain Workers	(210)	(190)	(170)	(150)	(130)	Diploma	
Basic Agricultural Technology Workers	(100)	(80)	(60)	(40)	(20)	Diploma	
Basic Agroforestry Labourers	(220)	(200)	(180)	(160)	(140)	No Formal Education	
Basic Agroforestry Workers	(150)	(130)	(110)	(90)	(70)	No Formal Education	
Basic Agro-Processing Labourers	(200)	(180)	(160)	(140)	(120)	No Formal Education	
Basic Animal Breeding Workers	(370)	(350)	(330)	(310)	(290)	No Formal Education	
Basic Animal Health Workers	(410)	(390)	(370)	(350)	(330)	No Formal Education	
Basic Animal Nutrition Workers	(180)	(160)	(140)	(120)	(100)	No Formal Education	
Basic Aquaculture Technicians	(350)	(330)	(310)	(290)	(270)	No Formal Education	
Basic Aquaculture Workers	(126)	(119)	(112)	(105)	(98)	No Formal Education	
Basic Crop Breeding Labourers	(1,575)	(1,645)	(1,750)	(1,820)	(1,925)	Bachelor's	
Basic Crop Maintenance Labourers	(460)	(440)	(420)	(400)	(380)	No Formal Education	
Basic Crop Production Workers	(500)	(480)	(460)	(440)	(420)	No Formal Education	
Basic Crop Protection Workers	(20)	(10)	(10)	(10)	(10)	No Formal Education	
Basic Farm Infrastructure Workers	(290)	(270)	(250)	(230)	(210)	No Formal Education	
Crop Production specialists	(392)	(404)	(416)	(428)	(441)	Bachelor's	
Crop specialists	(341)	(351)	(362)	(372)	(384)	Bachelor's	
Dairy Farming	(1,000)	(1,200)	(1,310)	(1,420)	(1,600)	Advanced Secondary	
Dairy Husbandry and Production specialists	(190)	(196)	(202)	(208)	(214)	Bachelor's	
Poultry Farming	(1,200)	(1,400)	(1,600)	(1,800)	(2,000)	Primary Level	
Sugarcane Farming	(350)	(420)	(490)	(560)	(630)	Lower Secondary	
Sustainable Farming Techniques	(1,000)	(1,200)	(1,500)	(1,800)	(2,000)	Technical/Vocational	
Systems Administrators	(684)	(687)	(689)	(692)	(695)	Bachelor's	
Tea Processing	(350)	(420)	(490)	(560)	(630)	Diploma	
Hunter	(21)	(21)	(21)	(21)	(21)	No formal educational	
Subsistence Crop Farmers	(164,584)	(163,491)	(162,201)	(160,748)	(159,150)	No formal educational	

Field/Skill Area	Estimated 5-year Gaps					Entry-Level Education	Status
	2025/26	2026/27	2027/28	2028/29	2029/30		
Subsistence Livestock Farmers	(2,693)	(2,612)	(2,517)	(2,409)	(2,290)	No formal educational	
Subsistence Mixed Crop and Livestock Farmers	(39,969)	(39,926)	(39,876)	(39,820)	(39,759)	No formal educational	

Source: *NPA HR Projection Model. *** Figures in brackets represent oversupply; otherwise, net demand*

6.2.2.4. Interventions to Address the Programme HR Gaps

166. **The Agro-industrialisation Programme is pivotal for Uganda's economic growth, focusing on transforming the agricultural sector through value addition, technological advancements, and capacity building.** To achieve this, targeted human resource interventions are essential. These interventions, implemented by key agencies such as the Ministry of Agriculture, Animal Industry and Fisheries (MAAIF), Ministry of Education and Sports (MoES), Ministry of Trade, Industry and Cooperatives (MTIC), and the Ministry of Public Service (MoPS), aim to enhance skills, foster innovation, and improve the overall efficiency of the agro-industrial workforce. Table 6.10 outlines the key objectives and interventions to build a robust human capital base that supports sustainable agro-industrialisation.

Table 6.10: HRD Objectives and Proposed Interventions for the Agro-industrialisation Programme

Interventions	Implementing MDAs
i. Design and conduct regular training sessions on sustainable farming practices and modern agricultural techniques.	MAAIF
ii. Establish farmer field schools and demonstration plots to provide hands-on learning experiences.	MAAIF
iii. Develop e-learning platforms and mobile applications for continuous learning and support for agricultural workers.	MoES; MoICT & NG
iv. Collaborate with agricultural universities and research institutions to update training curricula based on the latest research findings.	NARO; MoES
v. Set up agro-processing training centres equipped with modern processing equipment.	MTIC
vi. Provide training on quality control, packaging, and marketing strategies for value-added products.	MTIC
vii. Promote public-private partnerships to enhance investment in agro-processing infrastructure and training.	MAAIF; MTIC
viii. Provide training on best practices for post-harvest handling, storage, and transportation of agricultural produce.	MAAIF; MTIC
ix. Develop and disseminate training programmes on the use of modern agricultural technologies and equipment.	MoSTI; MAAIF
x. Support innovation hubs and incubators that focus on agricultural technology development and deployment.	MoSTI; UIRI
xi. Provide grants and subsidies for farmers and agribusinesses adopting innovative practices and technologies.	MAAIF; MoFPED
xii. Establish post-harvest technology centres to support training and innovation in storage and handling techniques.	MTIC; UIRI
xiii. Incorporate climate-smart agriculture modules into existing agricultural training programmes.	MAAIF; MoES
xiv. Train agricultural workers on adaptive techniques such as conservation agriculture, agroforestry, and water-efficient practices.	MAAIF; MoWE
xv. Promote the use of resilient crop varieties and livestock breeds through training and demonstration projects.	NARO; MAAIF

Interventions	Implementing MDAs
xvi. Develop and implement performance-based incentive schemes for agricultural workers.	MoPS; MAAIF
xvii. Establish career development and progression frameworks within the agricultural sector.	MAAIF; MoPS
xviii. Conduct regular workforce planning and skills audits to identify gaps and address them proactively.	MoES; NPA; MAAIF
xix. Create supportive work environments with adequate resources and facilities for agricultural workers.	MAAIF; MoFPED
xx. Establish a Programme Skills Coordination Committee (PSCC) for Agro-Industrialisation to determine the programme's skills needs and standards.	Programme Secretariat
xxi. Build the Human Resource Development Planning capacities of Planning Units and Departments in the Ministries, Departments and Agencies as well as Local Governments within this programme	NPA, MoFPED
xxii. Develop Human Resource Development Planning Guidelines for Ministries, Departments and Agencies as well as Local Governments	NPA, MoFPED
xxiii. Integrate human resource development into institutional strategic plans.	MDAs and LGs under this programme,

6.2.3. Sustainable Extractives Industry Development Programme

6.2.3.1. Introduction

167. **Uganda's sustainable development of petroleum and mineral resources is integral to its future, representing a commitment to inclusive growth, environmental preservation, and social progress.** With abundant reserves including gold, copper, phosphates, and oil, Uganda aims to distribute benefits equitably, reduce inequalities, and foster societal cohesion. Beyond short-term gains, Uganda prioritises environmental stewardship, implementing stringent measures to mitigate ecological impacts and ensure sustainable development. By tapping into its natural resources responsibly, Uganda not only safeguards its ecological heritage but also lays the groundwork for sustained prosperity and well-being for its citizens, both present and future.

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169. **Central to this ambitious endeavour is the imperative of responsible resource management, which lies at the heart of Uganda's sustainable development objectives**. Through the implementation of robust regulatory frameworks, active community engagement, and transparent revenue allocation mechanisms, Uganda aims not only to harness the economic potential of its resources but also to ensure that the benefits are shared fairly among its citizens. This approach not only drives socio-economic progress but also helps to mitigate disparities and foster social cohesion across the nation. Moreover, sustainable development within these sectors offers a promising pathway to economic diversification, thereby reducing Uganda's reliance on traditional industries. By championing responsible mining practices, stimulating local content development, and promoting value-addition initiatives, Uganda is actively cultivating a resilient and dynamic economy capable of weathering global market fluctuations and seizing emerging opportunities in the petroleum and mineral sectors.

6.2.3.2. Guiding Standards in the Estimation of the Programme HR needs

170. **In the dynamic realm of extractive industries, the efficient management of Human Resources (HR) stands as a cornerstone for sustainable development and operational success.** The Guiding Standards for estimating HR needs within the Extractives Programme encompass a strategic framework designed to address the specialised demands of mining, geological exploration, and resource extraction. These standards emphasise the comprehensive

assessment of technical competencies, regulatory compliance, and community engagement to ensure responsible resource management and operational continuity, as shown in Table 6.11. By integrating predictive methodologies and local workforce development initiatives, these standards aim to foster a skilled and diverse workforce while upholding environmental stewardship and social responsibility.

Table 6.11: Guiding Assumptions for Estimating HR Needs for Extractives Programmes

Key Human Resources	Recommended Standards
Geologists	1 per 100,000 residents
Mining Engineers	1 per 100,000 residents
Environmental Scientists	1 per 100,000 residents
Health and Safety Officers	2 per 100,000 residents
Community Liaison Officers	1 per 100,000 residents
Petroleum Engineers	1 per 100,000 residents
Legal Advisors	1 per 200,000 residents
Financial Analysts	1 per 200,000 residents
Surveyors	1 per 150,000 residents
ICT Specialists	2 per 100,000 residents
Human Resource Managers	1 per 200,000 residents
Mechanical Engineers	1 per 100,000 residents
Electrical Engineers	1 per 100,000 residents
Civil Engineers	1 per 150,000 residents
Chemical Engineers	1 per 100,000 residents
Training and Development Specialists	1 per 200,000 residents
Project Managers	1 per 150,000 residents
Quality Control Inspectors	1 per 200,000 residents
Social Workers	1 per 200,000 residents
Logistics Managers	1 per 200,000 residents
Economists	1 per 250,000 residents
Public Relations Officers	1 per 200,000 residents
Data Analysts	1 per 200,000 residents
Urban Planners	1 per 300,000 residents
Industrial Engineers	1 per 150,000 residents
Procurement Specialists	1 per 200,000 residents
Marketing Managers	1 per 200,000 residents
Trainers for Artisan Miners	2 per 100,000 residents
Environmental Health Officers	1 per 150,000 residents
Supply Chain Managers	1 per 200,000 residents
Occupational Health Specialists	1 per 100,000 residents
Sustainability Managers	1 per 200,000 residents
Renewable Energy Technicians	1 per 100,000 residents
Communications Specialists	1 per 200,000 residents
Corporate Social Responsibility Managers	1 per 200,000 residents
Compliance Officers	1 per 200,000 residents
Environmental Engineers	1 per 150,000 residents
Agronomists	1 per 250,000 residents
Water Resource Managers	1 per 200,000 residents
Construction Managers	1 per 150,000 residents

6.2.3.3. Skills and Occupation Gaps for the Programme

171. **Uganda faces formidable challenges in the realm of human resources and skills development, critical to sustainable petroleum and mineral development.** Despite the vast potential for job creation and skills enhancement within these sectors, Uganda grapples with a shortage of trained professionals in key fields such as geology, engineering, environmental management, and community relations. Addressing these gaps necessitates strategic investments in education and training programmes, as well as fostering collaborative

partnerships with academic institutions and industry stakeholders to nurture a skilled workforce equipped to drive sustainable resource management practices forward. Detailed qualifications and skills needed for the Sustainable Petroleum and Mineral Development programme required over the next five years by field of study are articulated in Table 6.12.

Table 6.12: Estimated 5-Year Occupation and Skills Gaps for Extractive Resources Programme

Occupations Title	Estimated 5-year Gaps					Entry-Level Education	Status
	2025/26	2026/27	2027/28	2028/29	2029/30		
Chemical Engineering	430	530	632	640	460	Bachelor's	
Chemical Manufacturing Specialists	40	56	65	72	84	Master's	
Electric Grid Analysts	20	15	10	5	5	Bachelor's	
Exploration Data Analysts	20	25	30	35	40	Bachelor's	
Exploration Geophysicists	40	45	50	55	60	Master's	
Gold Processing Plant Specialists	30	25	20	15	10	Master's	
Hydroelectric Plant Engineers	30	25	20	15	10	Master's	
Hydropower Plant Maintenance Engineers	20	15	10	5	5	Master's	
Industrial Engineering	140	135	130	125	120	Bachelor's	
Industrial Process Consultants	18	26	31	46	51	Master's	
Machine Learning Engineers	140	135	130	125	120	Master's	
Mineral Resource Analysts	60	55	50	45	40	Master's	
Mineral Resource Development Specialists	40	45	50	55	60	Master's	
Mining Safety Specialists	40	35	30	25	20	Bachelor's	
Offshore Energy Engineers	20	15	10	5	5	Master's	
Oil and Gas Financial Analysts	25	30	35	40	45	Bachelor's	
Oil Extraction Engineers	140	135	130	125	120	Bachelor's	
Oil Extraction Safety Engineers	251	264	278	254	209	Master's	
Oil Refinery Operations Experts	22	18	15	13	10	Master's	
Oil Refinery Safety Engineers	35	40	45	50	55	Bachelor's	
Oil Well Logging Specialists	25	30	35	40	45	Bachelor's	
Oilfield Environmental Engineers	130	125	120	115	110	Bachelor's	
Oilfield Geotechnical Engineers	25	30	35	40	45	Master's	
Oilfield Health and Safety Managers	15	10	8	6	2	Master's	
Oilfield Logistics Coordinators	30	25	20	15	10	Master's	
Oilfield Maintenance Managers	15	20	25	30	35	Master's	
Oilfield Quality Control Specialists	35	40	45	50	55	Master's	
Petroleum Geologists	150	145	140	135	130	Master's	
Petroleum Geophysicists	150	145	140	135	130	Master's	
Petroleum Process Safety Specialists	15	20	25	30	35	Bachelor's	
Petroleum Reservoir Simulation Experts	130	125	120	115	110	Master's	
Polymer Scientists	22	25	28	31	34	Master's	
Power Grid Maintenance Technicians	35	30	25	20	15	Diploma	
Process Safety Engineers	48	53	58	63	68	Master's	
Process Safety Management Specialists	35	40	45	50	55	Master's	
Process Simulation Analysts	10	12	11	9	5	Master's	
Process Simulation Engineers	11	16	11	10	8	Master's	
Product Design Engineers	50	55	60	65	70	Bachelor's	
Robotics Engineers	60	55	50	45	40	Master's	

Occupations Title	Estimated 5-year Gaps					Entry-Level Education	Status
	2025/26	2026/27	2027/28	2028/29	2029/30		
Underground Mining Engineers	35	45	50	65	65	Master's	
Biochemistry	900	1080	1200	1320	1500	PhD	
Bioenergy	500	600	700	800	1000	Technical/Vocational	
Biotechnology	300	360	420	480	600	Bachelor's/Master's	
Environmental Health	280	300	320	340	360	Diploma	
Environmental Impact Assessment specialists	173	178	184	189	195	Bachelor's	
Environmental Policy	120	156	165	169	130	Master's	
Petroleum Engineering	109	110	121	108	95	Bachelor's	
Physics	200	340	360	380	400	Bachelor's	
Plumbing	920	980	1060	1080	1900	Lower Secondary	
Renewable Energy	106	120	130	143	152	Bachelor's	
Renewable Energy Policy	300	400	500	600	700	Master's	
Renewable Energy Systems	214	221	227	234	241	Bachelor's	
Renewable Energy Technician	720	840	960	1080	1320	Diploma	
Renewable Energy Technicians	980	1270	1568	1768	1967	Diploma	
Renewable Resource Management	240	300	360	420	480	Bachelor's	
Lawyers	(1,500)	(1,800)	(2,000)	(2,200)	(2,500)	Bachelor's	
Leisure and Recreational Staff	(130)	(120)	(110)	(100)	(90)	Primary Level	
Library Science	(2,500)	(2,700)	(3,000)	(3,200)	(3,500)	Diploma	
Lift Operator	(187)	(189)	(192)	(175)	(168)	Bachelor's	
Plumbing	(1,000)	(1,200)	(1,400)	(1,600)	(2,000)	Technical/Vocational	
Plumbing and Pipefitting	(1,000)	(1,200)	(1,400)	(1,600)	(2,000)	Certificate	
Welders	(2,800)	(3,000)	(3,200)	(3,400)	(3,600)	Lower Secondary	

Source: *NPA HR Projection Model. ***Figures in brackets represent oversupply, otherwise, net demand*

6.2.3.4. Interventions to Address the Programme HR Gaps

172. The National Human Resource Development Plan emphasizes interventions as illustrated in Table 6.13 within this programme.

Table 6.13: Human Resource Development Interventions for the Extractive Resources Programme

Interventions	Implementing MDAs
i. Conduct regular safety training sessions and audits to ensure adherence to specific safety protocols and environmental standards.	MEMD, NEMA, DIT
ii. Establish diversity training programmes and recruitment policies that promote inclusivity and diversity within the workforce.	MEMD, NEMA, MGLSD
iii. Develop a certification program for compliance with safety and environmental regulations.	MEMD, NEMA, UNBS
iv. Develop and implement specialised training programmes in mining, geological exploration, and environmental management in collaboration with technical institutions and industry experts.	MEMD, NEMA, MoES
v. Offer scholarships, apprenticeships, and vocational training opportunities to residents, focusing on developing skills relevant to the extractive industry.	MEMD, NEMA, MoES
vi. Establish partnerships with international institutions to bring global best practices to local training programmes.	MEMD, MoES, MoSTI
vii. Invest in technology-focused training and establish a technology adoption task force to enhance operational efficiency and innovation in mining practices.	MEMD, MoSTI, PSFU
viii. Develop and implement specialised training programmes in mining, geological exploration, and environmental management in collaboration with technical institutions and industry experts.	MEMD, NEMA, MoES
ix. Organize workshops and conferences on the latest technological advancements in the extractive industry.	MEMD, MoSTI, PSFU
x. Offer scholarships, apprenticeships, and vocational training opportunities to local residents, focusing on developing skills relevant to the extractive industry.	MEMD, NEMA, MoES
xi. Develop community outreach programmes to educate and collaborate with local communities on the benefits and impacts of extractive operations.	MEMD, NEMA, MoES
xii. Launch local talent identification and mentorship programmes to nurture potential leaders in the extractive industry.	MEMD, MGLSD, PSFU
xiii. Establish a Programme Skills Coordination Committee (PSCC) for the Extractive Programme to determine the program's skills needs and skills standards.	Programme Secretariat
xiv. Mainstream Human Resource Development Planning in institutions' Strategic Plans to identify and prioritize critical skills and education needs and soft skills requirements to meet the present and future manpower needs within the Programme.	All MDAs and LGs
xv. Develop Human Resource Development Planning Guidelines for Ministries, Departments, and Agencies as well as Local Governments	NPA, MoFPED
xvi. Build the Human Resource Development Planning capacities of Planning Units and Departments in the Ministries, Departments, and Agencies as well as Local Governments within this programme	NPA, MoFPED
xvii. Integrate human resource development into institutional strategic plans.	All MDAs and LGs under this programme,

6.2.4. Tourism Development Programme

6.2.4.1. Introduction

173. **The tourism industry contributes significantly to employment and inclusive growth and development.** This has manifested in a variety of ways; including increased foreign exchange earnings and job creation. In 2022, the tourism industry employed 618,887, compared to 536,600 workers in 2019. However, the overall contribution of tourism to employment declined from 5.8% to 3.5% over the same period because of COVID-19 pandemic that affected the tourism industry. These were majorly employed in hotels, travel agencies, airlines, and other passenger transportation services (excluding commuter services). With regards to the direct jobs in 2022, over 215,250 (1.2% of total employment) were registered. By 2033, tourism is projected to account for 352,024 direct jobs (1.3% of total employment) and indirect jobs totaling to 1,086,812 (4.1% of total employment).

174. **Notwithstanding the Programme's high employment potential, significant human resource challenges still exist including** the low level of tourism skills across the national tourism value chain, at managerial, technical, operational and key development supporting functions both in the government and private sector, limited knowledge of the existing inventory of skills by value chain nodes as well as the skills requirements for each value chain actor in the industry. Further, there is a high dominance of SMEs and family-owned businesses that majorly employ unskilled family members at low pay thus compromising quality visitor experiences. There is also weak capacity in terms of instructional infrastructure, training manpower and the human capital of the trainers in the available tourism training institutions, and poor working conditions leading to high labour turnover in the programme. The programme still has limited investment in skills development of the existing workforce in the private sector and the fragmented tourism education and training across a multiplicity of stakeholders.

175. **It is evident from both the public and private sector stakeholders that weak human resources capacity is one of the most serious constraints to the development of the tourism programme in Uganda**. Although there are no major quantitative shortages of labour supply in Uganda's tourism programme, there are serious qualitative skill gaps. Skill levels are generally low, resulting in poor, low, and unprofessional service delivery which is detrimental to service quality, productivity, and competitiveness. The apparent skill gaps necessitate the recruitment of foreign labour, particularly for supervisory and managerial positions and in higher-end establishments. On the other hand, Ugandan employees with experience have tended to seek employment abroad in search of higher salaries and this further contributes to the skill deficiency.

176. **Human Resource Development (HRD) planning in the tourism sector is thus fundamental in creating an enabling environment**. The tourism programme cannot reach its full potential without well-trained, educated, and motivated human resources that can develop effective policies, and plans, and manage, market, and deliver quality products and services to visitors. Building a strong human resources base for the sector requires concerted efforts and investments in education, training, and continuous professional development. The diversity of tourism activities is indicative of the range of knowledge, skills, and attributes needed by tourism workers and employees of tourism-related industries, professions, and government agencies. The workforce and human resource development for the tourism industry ought to be at the centre of planning because competitiveness comes through the people who deliver tourist services and products.

177. **Tourism education and training should not only be built based on a consultative model but more on an engaged and participative stakeholder model**. This should involve multi-ministry, industry associations, the private sector, and international donor agencies. There is also an urgent need to up-skill the officials in the various government agencies and institutions and to fill the

vacant posts. This will focus on streamlining tourism and hospitality training in Uganda to ensure an improvement in technical training contents and delivery, enhancing the capacity and skills of in-service personnel in the tourism and hospitality industry, and increasing demand for tourism-related job opportunities by highly skilled individuals. The estimation of the human resource gaps for the tourism development programme is based on the projected expansion of socio-economic activities and the strategic direction of the programme over the short to medium term.

6.2.4.2. Guiding Standards in the Estimation of the Programme HR Needs

178. **The guiding standards for human resources in Uganda's tourism development programme play a pivotal role in ensuring strategic alignment and operational excellence within the sector**. As Uganda anticipates significant growth in its tourism industry, projected to increase its GDP contribution to 10.6% by 2024/25, robust guiding standards are essential for effectively managing human capital needs. These standards are crafted to address the dynamic challenges and opportunities within the sector, influenced by global trends, local socio-economic dynamics, and the strategic imperatives outlined in the Fourth National Development Plan (NDPIV). By establishing clear guidelines for workforce development, skills enhancement, and regulatory compliance, these standards aim to foster a skilled, diverse, and resilient workforce capable of driving sustainable tourism growth while maintaining high standards of professionalism and service excellence (see Table 6.14).

Table 6.14: Guiding Assumptions for Estimating Human Resource Needs for Tourism Development Programmes

Occupations	Recommended Standards
Tour Guides	1 per 100 tourists
Hotel General Managers	1 per 50,000 residents
Resort Operations Managers	1 per 100,000 residents
Tourist Information Managers	1 per 50,000 residents
Marketing and Sales Managers	1 per 100,000 residents
Event Coordinators	1 per 50,000 residents
Customer Service Managers	1 per 50,000 residents
Finance Managers	1 per 100,000 residents
Human Resource Managers	1 per 100,000 residents
Destination Marketing Managers	1 per 100,000 residents
Sustainability Officers	1 per 100,000 residents
Health and Safety Managers	1 per 100,000 residents
Cultural Heritage Managers	1 per 100,000 residents
Ecotourism Development Officers	1 per 100,000 residents
Visitor Experience Managers	1 per 50,000 residents
Adventure Tourism Managers	1 per 100,000 residents
IT Managers	1 per 100,000 residents
Resort Sustainability Managers	1 per 100,000 residents
Operations Directors	1 per 200,000 residents
Conservation Managers	1 per 100,000 residents
Public Relations Managers	1 per 100,000 residents
Cultural Events Managers	1 per 50,000 residents
Research and Development Managers	1 per 100,000 residents
Business Development Managers	1 per 100,000 residents
Training and Development Managers	1 per 100,000 residents
Quality Assurance Managers	1 per 100,000 residents
Legal Counsel	1 per 100,000 residents
Risk Management Specialists	1 per 100,000 residents
Supply Chain Managers	1 per 100,000 residents
Executive Directors	1 per 200,000 residents
Cultural Liaison Officers	1 per 50,000 residents
Revenue Management Specialists	1 per 100,000 residents
Tour Operators	1 per 100 tourists

6.2.4.3. Skills and Occupation Gaps for the Programme

179. **The estimation of human resource gaps in Uganda's tourism development program is grounded in projected socio-economic expansion and the strategic direction set for the programme in the NDPIV**. Projections indicate a potential increase in the tourism sector's GDP contribution to 10.6% by 2024/25, up from 7.7% in 2019/20, despite challenges posed by the COVID-19 pandemic. As part of the government's post-pandemic recovery strategy, efforts are underway to strengthen the sector, coinciding with anticipated growth in international arrivals to 1,950,000 by 2024/25 as global and domestic vaccination rates improve. Entry-level requirements for each occupation are integrated and guided by established standards to ensure alignment with industry needs. Detailed occupation and respective entry-level education and skills requirements for the programme are outlined in Table 6.15, ensuring that entry-level qualifications align with guiding standards to effectively address identified human resource gaps.

Table 6.15: Estimated 5-Year Occupation and Skills Gaps for the Tourism Development Programme

Occupations Title	Estimated 5-year Gaps					Entry-Level Education	Status
	2025/26	2026/27	2027/28	2028/29	2029/30		
Border Control Specialists	50	60	70	80	90	Bachelor's	
Border Security Analysts	100	110	120	130	140	Bachelor's	
Tourism Financial Analysts	20	10	10	10	10	Master's	
Tourism Policy Analysts	50	40	30	20	10	Master's	
Tourist Service Quality Assessors	20	10	10	10	10	Master's	
Destination Branding Specialists	25	20	15	10	5	Bachelor's	
Destination Development Managers	45	40	35	30	25	Master's	
Destination Event Planners	20	15	10	5	5	Bachelor's	
Destination Marketing Analysts	50	60	70	80	90	Master's	
Destination Marketing Managers	50	60	70	80	90	Master's	
Destination Product Managers	35	45	50	65	65	Master's	
Hospitality Training Specialists	110	120	138	149	156	Bachelor's	
Tourism Marketing Analysts	50	60	70	80	90	Master's	
Tourism Marketing Specialists	40	50	60	70	80	Master's	
Event Planning and Management	600	890	899	921	1,050	Diploma	
Hospitality Management	106	120	130	143	152	Diploma	
Hotel and Lodge Management	600	700	800	870	960	Diploma	
Hotel Management	600	700	800	870	960	Diploma	
Housekeeping	900	1,040	1,060	1,080	1,200	Primary Level	
Human Rights	214	221	227	234	241	Bachelor's	
ICT and Digital Literacy	720	840	960	1,080	1,320	Diploma	
Adventure Tourism Coordinators	130	120	110	110	110	Diploma	
Adventure Tourism Guides	214	221	227	234	241	Diploma	
Adventure Tourism Planners	192	176	160	144	128	Bachelor's	
Cultural Exchange Program Coordinators	109	130	150	171	190	Bachelor's	
Cultural Experience Facilitators	120	110	110	110	110	Bachelor's	
Cultural Experience Managers	101	110	91	85	80	Master's	
Cultural Heritage Management Specialists	180	170	160	150	140	Bachelor's	
Tourism Development Planners	100	90	80	70	60	Master's	
Tourism Resource Managers	109	130	150	171	190	Master's	
Tourism Resource Managers	214	221	227	234	241	Bachelor's	
Travel Safety Analysts	130	120	110	110	110	Master's	
Travel Safety Coordinators	291	310	410	460	410	Diploma	
Aircraft Baggage Handler	(56)	(58)	(59)	(61)	(63)	Diploma	
Aircraft Load Controller	(22)	(23)	(24)	(24)	(25)	Bachelor's	

Occupations Title	Estimated 5-year Gaps					Entry-Level Education	Status
	2025/26	2026/27	2027/28	2028/29	2029/30		
Basic Nursing	(2,000)	(1,900)	(1,800)	(1,700)	(1,600)	Diploma	
Beauty Therapy	(2,500)	(2,700)	(3,000)	(3,200)	(3,500)	Lower Secondary	
Booking Agents	(280)	(270)	(260)	(250)	(240)	Diploma	
Bus Tour Guides	(140)	(130)	(120)	(110)	(100)	Diploma	
Business Administration	(560)	(525)	(490)	(455)	(420)	Bachelor's	
Commercial Cleaners	(2,000)	(1,900)	(1,800)	(1,700)	(1,600)	Bachelor's	
Community Development	(1,225)	(1,295)	(1,400)	(1,470)	(1,575)	Bachelor's	
Community Health Workers	(1,600)	(1,500)	(1,400)	(1,300)	(1,200)	No formal education	
Cultural Tourism Operators	(320)	(410)	(510)	(610)	(710)	Diploma	
Customer Service Representatives	(290)	(280)	(270)	(260)	(250)	Diploma	
Event Logistics Assistants	(420)	(410)	(410)	(310)	(310)	Diploma	
Event Planners	(160)	(150)	(140)	(130)	(120)	Bachelor's	
Event Setup Coordinators	(270)	(260)	(250)	(240)	(230)	Diploma	
Event Setup Staff	(260)	(250)	(240)	(230)	(220)	Primary Level	
Freight Handlers	(25)	(25)	(26)	(27)	(28)	Bachelor's	
Front Office Managers	(525)	(630)	(700)	(770)	(875)	Bachelor's	
General Tour Guides	(107)	(164)	(184)	(214)	(234)	Diploma	
Graphic Designers	(350)	(420)	(490)	(560)	(700)	Technical/Vocational	
Guest Check-in Staff	(30)	(20)	(10)	(10)	(10)	Primary Level	
Guest Experience Assistants	(70)	(60)	(50)	(40)	(30)	Diploma	
Guest Relations Officers	(90)	(80)	(70)	(60)	(50)	Bachelor's	
Guest Service Attendants	(140)	(130)	(120)	(110)	(100)	Primary Level	
Guest Services Staff	(180)	(170)	(160)	(150)	(140)	Primary Level	
Hairdressing	(2,500)	(2,700)	(3,000)	(3,200)	(3,500)	Lower Secondary	
Handicrafts and Artisan Products	(1,500)	(1,800)	(2,000)	(2,200)	(2,500)	No Formal Education	
Hospitality Sales Agents	(520)	(510)	(490)	(410)	(510)	Diploma	
Hospitality Services	(3,000)	(3,200)	(3,400)	(3,600)	(3,800)	Diploma	
Hotel Guest Service Representatives	(450)	(430)	(410)	(400)	(390)	Diploma	
Hotel Housekeepers	(400)	(380)	(360)	(340)	(320)	Primary Level	
Hotel Maintenance Workers	(40)	(30)	(20)	(10)	(10)	Primary Level	
Hotel Receptionists	(210)	(200)	(190)	(180)	(170)	Diploma	
Hotel Reservation Coordinators	(40)	(30)	(20)	(10)	(10)	Diploma	
Hotel Sales Representatives	(280)	(270)	(260)	(250)	(240)	Diploma	
Housekeeping Staff	(300)	(290)	(280)	(270)	(260)	Primary Level	
Leisure and Recreational Staff	(130)	(120)	(110)	(100)	(90)	Primary Level	
Local Cultural Performers	(450)	(430)	(410)	(400)	(390)	Primary Level	
Local Tour Guides	(190)	(180)	(170)	(160)	(150)	Diploma	
Resort Service Staff	(107)	(164)	(184)	(214)	(234)	Diploma	
Restaurant and Catering Services	(350)	(420)	(490)	(560)	(630)	Primary Level	
Restaurant Hosts	(380)	(370)	(360)	(350)	(340)	Primary Level	
Restaurant Managers	(200)	(190)	(180)	(170)	(160)	Bachelor's	
Restaurant Servers	(350)	(340)	(330)	(320)	(310)	Primary Level	
Retail Sales	(1,500)	(1,800)	(2,000)	(2,200)	(2,500)	Lower Secondary	
Tour Bus Drivers	(175)	(168)	(161)	(158)	(154)	Primary Level	
Tour Conductors	(439)	(435)	(432)	(428)	(425)	Diploma	
Tour Desk Clerks	(567)	(654)	(704)	(804)	(894)	Primary Level	
Tour Guiding	(350)	(420)	(490)	(560)	(700)	Lower Secondary	
Tour Logistics Coordinators	(107)	(164)	(184)	(214)	(234)	Diploma	
Tour Package Assistants	(350)	(420)	(490)	(560)	(630)	Diploma	
Tourism and Cultural Heritage Management	(1,000)	(1,200)	(1,400)	(1,600)	(2,000)	Bachelor's	
Tourism and Hospitality Management	(1,500)	(1,800)	(2,000)	(2,200)	(2,500)	Diploma	
Track Maintenance Technicians	(284)	(287)	(289)	(292)	(295)	Bachelor's	
Transport and Dispatch Clerk	(350)	(352)	(353)	(355)	(357)	Master's	

Occupations Title	Estimated 5-year Gaps					Entry-Level Education	Status
	2025/26	2026/27	2027/28	2028/29	2029/30		
Transportation and Logistics	(525)	(630)	(700)	(770)	(875)	Bachelor's	
Wildlife Management	(2,500)	(2,700)	(3,000)	(3,200)	(3,500)	Diploma	
Visitor Services Clerks	(2,000)	(2,050)	(2,150)	(2,190)	(2,230)	Primary Level	
Waitstaff/Servers	(340)	(330)	(320)	(340)	(356)	Primary Level	

Source: *NPA HR Projection Model. *** Figures in brackets represent oversupply, otherwise, net demand*

6.2.4.4. Interventions to Address the Programme HR Gaps

180. To achieve the above objectives, the Plan prioritises the following interventions under this programme, summarised in Table 6.16.

Table 6.16: Human Resource Development Interventions for the Tourism Development Programme

Interventions	Implementing MDAs
i. Collaborate with industry stakeholders to create and implement curricula that meet current and future industry needs, ensuring relevance and quality in tourism education.	MoES, UTB, MoTWA
ii. Invest in modern instructional infrastructure and increase the number of qualified trainers in tourism training institutions to improve the quality of education and training.	MoES, UTB, MoTWA
iii. Develop specialised training programmes focusing on innovation and creativity in tourism product development.	MoES, UTB, MoTWA
iv. Incorporate digital and e-learning platforms to widen access to tourism education and training.	MoES, UTB, MoTWA, NCDC
v. Implement ongoing training programmes such as workshops, seminars, and certifications to up-skill and reskill the existing tourism workforce, ensuring they stay updated with industry trends and standards.	MoTWA, Uganda Hotel Owners Association (UHOA) , UTB
vi. Provide training and development programmes tailored for SMEs and family-owned businesses to improve their service quality and operational standards, thus enhancing visitor experiences.	MoTWA, UHOA, UTB
vii. Establish a tourism skills development fund to support continuous professional development.	MoTWA, UHOA, UTB, MoGLSD
viii. Facilitate exchange programmes and study tours for tourism professionals to learn best practices globally	MoTWA, UHOA, UTB
ix. Attract skilled professionals to the tourism sector by offering competitive salaries, benefits, and career growth opportunities, addressing the shortage of skilled personnel.	MoPS, MoFPED, MoTWA
x. Implement talent identification and mentorship programmes to nurture young professionals in the tourism sector.	MoPS, MoFPED, MoTWA
xi. Create a recognition and rewards programme to celebrate outstanding contributions to tourism.	MoPS, MoFPED, MoTWA, Uganda Tourism Association (UTA)
xii. Implement ongoing training programmes such as workshops, seminars, and certifications to up-skill and reskill the existing tourism workforce, ensuring they stay updated with industry trends and standards.	MoTWA, UTB, NCDC
xiii. Develop online learning modules and certification courses accessible to all tourism professionals.	MoTWA, UTB, NCDC
xiv. Encourage the establishment of professional associations in tourism to promote lifelong learning	MoTWA, UTB, NCDC
xv. Foster partnerships between tourism businesses and educational institutions to provide practical training opportunities like internships and apprenticeships, enhancing the employability of graduates.	MoTWA, Local Governments, (UCTA).

Interventions	Implementing MDAs
xvi. Conduct community sensitisation and education programmes to raise awareness about the benefits of tourism.	MoTWA, UCTA
xvii. Support local entrepreneurship initiatives within the tourism value chain	MoTWA, Local Governments, UCTA, UTB
xviii. Provide training and development programmes tailored for SMEs and family-owned businesses to improve their service quality and operational standards, thus enhancing visitor experiences.	MoTWA, UTB, PSFU
xix. Collaborate with industry stakeholders to create and implement curricula that meet current and future industry needs, ensuring relevance and quality in tourism education	MoTWA, UTB, PSFU
xx. Establish centres of excellence for specialised tourism training (e.g., eco-tourism, adventure tourism	MoTWA, UTB, PSFU, NCDC
xxi. Establish a Programme Skills Coordination Committee (PSCC) for the Tourism Development Programme to determine the programme's skills needs and skills standards.	Programme Secretariat
xxii. Invest in modern instructional infrastructure and increase the number of qualified trainers in tourism training institutions to improve the quality of education and training.	MoTWA, UTB, UNBS, MoES

6.2.5. Innovation, Technology Development, and Transfer

6.2.5.1. Introduction

181. **To achieve double-digit economic growth and transform Uganda into a knowledge-based economy, substantial investment in human capital is essential.** Enhancing science education is a strategic move aimed at creating a critical mass of scientists and innovators to drive sustainable growth and development. The government's commitment to increasing access to Science, Technology, and Innovation (STI) disciplines in higher education has led to more students enrolling in science and engineering courses. However, despite rising enrolments and efforts to boost teacher training, there remains a significant shortage of skilled professionals in science and technology. Government policy interventions have increased enrolments across all educational levels, but major gaps persist in the education and training value chain. Challenges include inadequate infrastructure, a shortage of motivated teachers, and an exam-focused curriculum that lacks innovation.

182. **The rapid pace of technological advancement and scientific innovation is reshaping workforce demands and redefining the skills needed in Uganda's STI industry**. As the nature of work evolves in an increasingly digitalised and interconnected world, there is a growing necessity for a blend of hard and soft skills that integrate classroom knowledge with practical career preparedness. This paradigm shift requires science education in Uganda to go beyond traditional teaching methods and promote comprehensive literacy. Interdisciplinary literacy encourages students to make connections across different fields of study, fostering a holistic understanding of complex problems. Information literacy equips them with the ability to efficiently locate, evaluate, and use information, which is critical in the age of information overload.

183. **Additionally, intercultural and international literacy are essential in a globalised economy, enabling students to navigate and thrive in diverse cultural and international settings.** Inter-professional literacy encourages collaboration across various professional fields, enhancing innovation and problem-solving capabilities. Beyond these literacies, science education should also focus on developing skills and mindsets that promote flexibility, adaptability, versatility, and resilience. To meet these evolving demands, science education in Uganda must incorporate project-based learning, real-world problem-solving, and opportunities for interdisciplinary projects. This approach helps students to link theoretical content with practical applications,

preparing them for the challenges and opportunities of the future workforce. By fostering such a comprehensive skill set, Uganda can ensure that its graduates are not only technically proficient but also adaptable and innovative, ready to drive the country's economic transformation towards double-digit growth and a robust knowledge-based economy.

6.2.5.2. Guiding Standards in the estimation of Programme Human Resource Needs

184. **Guiding standards for estimating human resource needs in the innovation, technology development, and transfer programme are critical to ensuring that the right mix of skills and expertise is available to drive technological advancement and economic growth.** For data scientists, the standard should account for the increasing demand for professionals capable of analysing complex datasets and extracting actionable insights, essential for various sectors from healthcare to finance. Machine learning and Artificial Intelligence (AI) specialists are also in high demand, requiring a significant number of professionals who can develop and implement AI solutions that enhance automation, efficiency, and decision-making across industries. Additionally, manufacturing engineers are crucial for advancing production processes, integrating new technologies, and improving industrial output, necessitating a robust supply of qualified engineers to support the manufacturing sector.

185. **Furthermore, intellectual property specialists are needed to navigate the legal and regulatory landscape of innovation, ensuring that new technologies and inventions are adequately protected and commercialised.** Space archaeology specialists, though a niche field, are increasingly important as space exploration expands, requiring expertise in preserving and understanding space artifacts and heritage. Nanotechnologists are also essential, given the growing application of nanotechnology in medicine, electronics, and materials science. Establishing guiding standards as shown in Table 6.17 reflect that these diverse needs ensures that educational and training programmes produce a steady pipeline of skilled professionals. This strategic alignment will enable the country to effectively harness innovation and technology, driving sustainable development and maintaining a competitive edge in the global economy.

Table 6.17: Guiding Standards in the estimation of Programme Human Resource Needs

Occupation title	Recommended International Standards
Data Scientists	10 per 100,000 population
Machine learning and Artificial Intelligence (AI) specialists	5 per 100,000 population
Manufacturing Engineers	20 per 100,000 population
Intellectual Property specialists	5 per 100,000 population
Space archaeology specialists	1 per 100,000 population
Nanotechnologists	3 per 100,000 population
Astrobiology specialists	1 per 100,000 population
Astrochemistry and cosmochemistry specialists	1 per 100,000 population
Business intelligence (BI) analysts	10 per 100,000 population
Animal Geneticists	2 per 100,000 population
Clinical Research Specialists	20 per 100,000 population
Scientific Researchers	40 per 100,000 population
Application Support Specialists	10 per 100,000 population

6.2.5.3. Skills and Occupation Gaps for the Programme

186. **The Innovation, Technology Development, and Transfer Programme faces significant skills and occupation gaps that need addressing to support its objectives effectively, as shown in Table 6.18.** For animal geneticists, there is a noticeable shortage of professionals specialising in the genetic improvement of livestock and other animals, which is crucial for advancing agricultural productivity and sustainability. Similarly, the field of astronomy is experiencing a deficit of astronomers who can contribute to space research and exploration, a gap that hinders

progress in understanding cosmic phenomena and developing related technologies. These shortages underscore the need for targeted educational and training programmes to build expertise in these specialised areas.

187. **In the realm of data analysis, there is a substantial gap in the availability of big data analysts and business intelligence (BI) analysts.** Both roles are essential for interpreting vast amounts of data and providing actionable insights that drive decision-making and strategic planning across industries. Data scientists, who play a critical role in analysing complex datasets and developing predictive models, are also in high demand. Therefore, addressing these gaps requires investing in training and development to produce more professionals skilled in data analytics and intelligence. By focusing on these areas, the programme can ensure a well-equipped workforce to harness innovation and technology effectively, driving growth and enhancing competitive advantage.

Table 6.18: Estimated 5-year HR Gaps for the Innovation, Technology Development and Transfer Programme

Occupations Title	Estimated 5-year Gaps					Entry-Level Education	Status
	2025/26	2026/27	2027/28	2028/29	2029/30		
Big Data Analysts	100	95	90	85	80	Master's	
Cybercrime Investigators	100	110	120	130	140	Bachelor's	
Cybersecurity Analysts	120	115	110	105	100	Bachelor's	
Cybersecurity Architects	60	55	50	45	40	Master's	
Data Privacy Experts	80	75	70	65	60	Bachelor's	
Data Scientists	150	145	140	135	130	Master's	
DevOps Engineers	80	75	70	65	60	Bachelor's	
Digital Data Architects	50	45	40	35	30	Master's	
IoT (Internet of Things) Experts	100	95	90	85	80	Master's	
Robotics	35	30	25	20	15	Bachelor's/Master's	
Robotics Engineers	60	55	50	45	40	Master's	
Smart Grid Analysts	20	15	10	5	5	Bachelor's	
Database Administration	320	340	360	380	400	Bachelor's	
ICT and Digital Literacy	720	840	960	1,080	1,320	Diploma	
Information Technology	600	700	800	870	960	Bachelor's	
IT Support	274	282	290	299	308	Diploma	
Mobile Application Development	600	720	840	960	1,200	Bachelor's	
Mobile Phone Repair	900	1,080	1,200	1,320	1,500	Lower Secondary	
Network Administration	720	840	960	1,080	1,320	Bachelor's	
Network & System Administration	600	700	800	870	960	Diploma	
Network Engineering	800	900	1,000	1,200	1,500	Bachelor's	
Network Security	106	120	130	143	152	Bachelor's	
Software Development	320	400	480	560	640	Bachelor's/Master's	
Software Engineering	160	192	224	256	320	Bachelor's	
Web Design	482	545	620	705	798	Diploma	
Web Development	482	545	620	705	798	Technical/Vocational	
Web Development	482	545	620	705	798	Bachelor's	
Graphic Design	(350)	(420)	(490)	(560)	(700)	Technical/Vocational	
Graphic Design and Multimedia	(525)	(630)	(700)	(770)	(875)	Diploma	
Secretarial Studies	(2,500)	(2,700)	(3,000)	(3,200)	(3,500)	Diploma	
Systems Administrators	(684)	(687)	(689)	(692)	(695)	Bachelor's	
Systems Analysts	(170)	(172)	(174)	(176)	(179)	Bachelor's	
Videography	(1,500)	(1,800)	(2,000)	(2,200)	(2,500)	Diploma	
Basic IT Consultants	(330)	(310)	(290)	(270)	(250)	Bachelor's	
Basic IT Managers	(150)	(130)	(110)	(90)	(70)	Bachelor's	
Basic IT Project Managers	(270)	(250)	(230)	(210)	(190)	Bachelor's	

Occupations Title	Estimated 5-year Gaps					Entry-Level Education	Status
	2025/26	2026/27	2027/28	2028/29	2029/30		
Basic IT Solutions Specialists	(100)	(80)	(60)	(40)	(20)	Diploma	
Basic IT Support Technicians	(500)	(480)	(460)	(440)	(420)	Diploma	
Junior System Administrators	(400)	(380)	(360)	(340)	(320)	Bachelor's	
Basic Network Support Staff	(80)	(60)	(40)	(20)	(10)	Diploma	
Basic Network Technicians	(430)	(410)	(390)	(370)	(350)	Diploma	
Basic Software Developers	(180)	(160)	(140)	(120)	(100)	Bachelor's	
Basic Software Engineers	(460)	(440)	(420)	(400)	(380)	Bachelor's	
Network Administrators	(440)	(420)	(400)	(380)	(360)	Bachelor's	
Web Design Assistants	(440)	(420)	(400)	(380)	(360)	Diploma	
Web Developers	(430)	(410)	(390)	(370)	(350)	Bachelor's	
Entry-Level Systems Engineers	(170)	(150)	(130)	(110)	(90)	Bachelor's	
General Software Developers	(480)	(460)	(440)	(420)	(400)	Bachelor's	

*Source: NPA HR Projection Model. *** Figures in brackets represent oversupply; otherwise, net demand*

6.2.5.4. Specific Interventions to address competency gaps for the Programme

188. The NDPIV-HRDP will prioritise the following interventions under this programme as shown in Table 6.19.

Table 6.19: HRD Interventions for the Innovation, Technology Development and Transfer Programme

Intervention	Implementing MDAs
i. Create and implement specialised training modules for managing and developing STI infrastructure.	STIS, MoES and MoFPED
ii. Set up centres focused on developing skills and expertise in STI infrastructure management.	STIS, MoWT and MoLG
iii. Launch mentoring programmes pairing experienced professionals with emerging talent in STI infrastructure.	STIS, MoES and MoFPED
iv. Develop and maintain repositories of knowledge and best practices related to STI infrastructure.	STIS, MoWT and MoLG
v. Collaborate with international experts to transfer knowledge and expertise in STI infrastructure.	STIS, MoFPED and MoTIC
vi. Establish certification programmes to formally recognize skills and knowledge in various STI fields.	STIS, MoES and MGLSD
vii. Develop online and offline platforms for ongoing skill development and knowledge updating in STI fields.	STIS, MoES and MoICT &NG
viii. Form partnerships between educational institutions and industries for knowledge transfer and practical skill application.	STIS, MoTIC and MoES
ix. Provide financial support for individuals pursuing advanced studies in STI areas.	STIS, MoFPED and MoES
x. Create programmes specifically aimed at upgrading existing skills and adapting to new STI advancements.	STIS, MoES and MGLSD
xi. Create training programmes to advance skills and capabilities of the R&D workforce in STI.	STIS, MoES and MoFPED
xii. Implement programmes focused on developing and nurturing R&D talent through mentorship and hands-on experience.	STIS, MoES and MoPS
xiii. Facilitate and fund collaborative R&D projects between institutions and industry.	STIS, MoFPED and MoTIC
xiv. Develop clear career pathways and support systems for individuals in R&D roles.	STIS and MoES
xv. Develop and roll out training programmes specifically for technology transfer processes and practices.	STIS, MoTIC and MoES

Intervention	Implementing MDAs
xvi. Create units dedicated to facilitating and managing technology transfer activities.	STIS, MoTIC and MoES
xvii. Produce comprehensive guidelines to standardize and streamline technology transfer procedures.	STIS, MoTIC and MoFPED
xviii. Provide financial and logistical support for technology transfer projects and initiatives.	STIS, MoFPED and MoTIC
xix. Design and deliver training programmes on legal and regulatory aspects related to STI.	STIS, MoJCA and MoES
xx. Develop guides outlining legal and regulatory frameworks applicable to STI sectors.	STIS, MoJCA and MoFPED
xxi. Enhance the capacity of legal advisors to support STI-related legal and regulatory needs.	STIS, MoJCA and MoPS
xxii. Implement systems to monitor and ensure compliance with STI-related legal and regulatory requirements.	STIS, MoJCA and MoLG
xxiii. Implement systems to manage and oversee HR development activities within the program's value chain.	MoPS, MoFPED and STIS
xxiv. Establish a Programme Skills Coordination Committee (PSCC) for the Programme to determine the program's skills needs and skills standards.	Programme Secretariat
xxv. Mainstream Human Resource Development Planning in institutions Strategic Plans to identify and prioritise critical skills and education needs and soft skills requirements to meet the present and future manpower needs within the Programme.	All MDAs and LGs
xxvi. Develop Human Resource Development Planning Guidelines for Ministries, Departments and Agencies as well as Local Governments	NPA, MoFPED
xxvii. Build the Human Resource Development Planning capacities of Planning Units and Departments in the Ministries, Departments and Agencies as well as Local Governments within this program	NPA, MoFPED

6.2.6. Manufacturing Programme

6.2.6.1. Introduction

189. **Uganda's industrial sector encompasses manufacturing, mining and quarrying, construction, and utilities, operating within both formal and informal settings.** Aligned with Uganda Vision 2040, there is a recognised need for a resilient and competitive industrial foundation to drive employment, technological progress, and economic durability. However, Uganda's manufacturing sector remains underfunded in critical upstream stages, limiting the creation of high-value goods capable of global market penetration and the generation of substantial employment opportunities with notable welfare impacts. Manufacturing, a vital component of the industrial sector, is pivotal for economic growth, driven by job creation, increased domestic production utilising local resources, and the enhancement of exports value. This robust manufacturing sector contributes to higher citizen income, reduced forex spending on imports, and increased foreign revenue, while also fostering economic growth across sectors and employing a diverse range of skilled professionals, particularly in engineering, complemented by expertise in marketing and advertising.

6.2.6.2. Guiding Standards in the Estimation of the Programme HR Needs

190. **The estimation of human resource needs for Uganda's manufacturing sector is critical for achieving the goals outlined in the NDPIV.** Ensuring an adequate and well-distributed workforce across various key roles is essential for driving industrial growth, enhancing productivity, and fostering innovation. The guiding standards as provided in Table 6.20 offer a framework for aligning the sector's human resource requirements with international benchmarks, considering the unique socio-economic context of Uganda. By adhering to these standards, Uganda can strategically develop its manufacturing capabilities, reduce dependency on imports,

boost exports, and create sustainable employment opportunities, ultimately contributing to the nation's overall economic resilience and prosperity.

Table 6.20: Guiding Assumptions for Estimating Human Resource Needs for the Manufacturing Programme

Occupation	Recommended Standards
Engineers	1 per 10,000 residents
Technicians	1 per 5,000 residents
Quality Control Specialists	1 per 50,000 residents
Production Managers	1 per 50,000 residents
Supply Chain Managers	1 per 100,000 residents
Industrial Safety Officers	1 per 25,000 residents
Environmental Officers	1 per 100,000 residents
Human Resource Managers	1 per 50,000 residents
Marketing Specialists	1 per 100,000 residents
Research and Development Scientists	1 per 100,000 residents
Financial Analysts	1 per 100,000 residents
Legal Advisors	1 per 200,000 residents
IT Specialists	1 per 20,000 residents
Training Coordinators	1 per 50,000 residents
Sales Managers	1 per 100,000 residents
Operations Managers	1 per 50,000 residents
Pharmacists (for pharmaceutical manufacturing)	1 per 200,000 residents
Lab Technicians	1 per 50,000 residents
Export Managers	1 per 200,000 residents
Procurement Officers	1 per 100,000 residents
Warehouse Managers	1 per 100,000 residents
Customer Service Representatives	1 per 200,000 residents
Compliance Officers	1 per 50,000 residents
Public Relations Officers	1 per 200,000 residents
Data Analysts	1 per 100,000 residents
Logistics Coordinators	1 per 100,000 residents
Electrical Engineers	1 per 20,000 residents
Mechanical Engineers	1 per 20,000 residents
Chemical Engineers	1 per 100,000 residents
Project Managers	1 per 100,000 residents
Accountants	1 per 50,000 residents

6.2.6.3. Skills and Occupation Gaps for the Programme

191. **The identification of occupation and skills gaps within the manufacturing programme is informed by anticipated socio-economic shifts and the strategic direction of the programme.** Addressing these identified needs is vital for achieving the program's planned outcomes in the short and medium terms. The overarching objective of this initiative is to broaden and amplify the variety of locally manufactured goods, aiming for import substitution and expanded exports. However, Uganda's manufacturing landscape currently leans heavily towards end products, assembly, and raw material processing. Consequently, the reliance on imported intermediate and capital goods to sustain production processes elevates the nation's import expenditure. Detailed qualifications and skills needed for the Manufacturing programme required over the next five years by field of study are articulated in Table 6.21.

Table 6.21: Estimated 5-year occupation and skills gaps for the Manufacturing Programme

Occupations Title	Estimated 5-year Gaps					Entry-Level Education	Status
	2025/26	2026/27	2027/28	2028/29	2029/30		
Advanced Process Analysts	105	115	120	125	130	Master's	
AI Research Scientists	150	145	140	135	130	PhD	
AI Systems Engineers	52	45	40	35	30	Master's	
Big Data Analysts	100	95	90	85	80	Master's	
Biomedical Engineering	230	330	432	540	460	Bachelor's	
Biopharmaceuticals	60	70	80	90	100	Master's	
Biostatistics	50	60	70	80	90	Master's	
Chemical Engineering	430	530	632	640	460	Bachelor's	
Chemical Manufacturing Specialists	40	56	65	72	84	Master's	
Cloud Computing Specialists	100	95	90	85	80	Bachelor's	
CNC Machinists	22	35	38	41	44	Diploma	
Data Scientists	150	145	140	135	130	Master's	
DevOps Engineers	80	75	70	65	60	Bachelor's	
Digital Data Architects	50	45	40	35	30	Master's	
Energy Storage Systems Engineers	25	20	15	10	5	Master's	
Environmental Engineering	500	600	700	800	1,000	Bachelor's	
Industrial Engineering	140	135	130	125	120	Bachelor's	
Industrial Process Consultants	18	26	31	46	51	Master's	
Lean Six Sigma Experts	38	43	48	53	58	Master's	
Machine Learning Engineers	140	135	130	125	120	Master's	
Materials Scientists	20	25	30	35	40	Master's	
Mineral Resource Development Specialists	40	45	50	55	60	Master's	
Mining Safety Specialists	40	35	30	25	20	Bachelor's	
Petroleum Geologists	150	145	140	135	130	Master's	
Petroleum Geophysicists	150	145	140	135	130	Master's	
Petroleum Process Safety Specialists	15	20	25	30	35	Bachelor's	
Petroleum Reservoir Simulation Experts	130	125	120	115	110	Master's	
Process Safety Engineers	48	53	58	63	68	Master's	
Process Safety Management Specialists	35	40	45	50	55	Master's	
Process Simulation Analysts	10	12	11	9	5	Master's	
Process Simulation Engineers	11	16	11	10	8	Master's	
Product Design Engineers	50	55	60	65	70	Bachelor's	
Renewable Energy Engineers	50	45	40	35	30	Master's	
Robotics Engineers	60	55	50	45	40	Master's	
Smart Grid Analysts	20	15	10	5	5	Bachelor's	
Software Architects	140	135	130	125	120	Master's	
Software Development	60	55	50	45	40	Bachelor's	
Software Engineering	140	135	130	125	120	Bachelor's	
Underground Mining Engineers	35	45	50	65	65	Master's	
Water Resource Management Specialists	113	118	123	128	133	Master's	
Agricultural Engineering	700	800	1000	1200	1500	Bachelor's	
Agro-Processing	900	1080	1200	1320	1500	Diploma	
Bioenergy	500	600	700	800	1000	Technical/Vocational	
Biotechnology	300	360	420	480	600	Bachelor's/Master's	
Building and Construction Technology	870	893	917	943	978	Diploma	
Civil Engineering	560	592	640	672	720	Bachelor's	
Cotton Ginning and Spinning	150	180	200	220	250	Diploma	

Occupations Title	Estimated 5-year Gaps					Entry-Level Education	Status
	2025/26	2026/27	2027/28	2028/29	2029/30		
Electrical Engineering	671	698	710	725	750	Bachelor's	
Electrical Installation	750	782	810	835	860	Certificate	
Electrical Work	600	720	840	960	1200	Technical/Vocational	
Environmental Engineers	205	211	218	224	231	Bachelor's	
Environmental Health	280	300	320	340	360	Diploma	
Environmental Impact Assessment specialists	173	178	184	189	195	Bachelor's	
Environmental Policy	120	156	165	169	130	Master's	
Food and Beverage Processing	900	1040	1060	1080	1200	Diploma	
Food Science and Technology	500	600	700	800	1000	Bachelor's	
Garment Manufacturing	129	142	166	180	220	Diploma	
Greenhouse Management specialists	123	127	131	135	139	Bachelor's	
Leather Goods Manufacturing	106	120	130	143	152	Diploma	
Leather Tanning and Processing	106	120	130	143	152	Lower Secondary	
Leather Tanning and Processing	106	120	130	143	152	Diploma	
Renewable Energy Systems	214	221	227	234	241	Bachelor's	
Renewable Energy Technician	720	840	960	1080	1320	Diploma	
Renewable Energy Technicians	980	1270	1568	1768	1967	Diploma	
Soil Science	80	96	112	128	160	Bachelor's	
Solar Panel Installation and Maintenance	860	880	900	920	940	Diploma	
Textile Engineers	120	150	180	210	240	Bachelor's	
Waste Management and Recycling	860	880	900	920	940	Lower Secondary	
Basic Agricultural Processing Technicians	(270)	(250)	(230)	(210)	(190)	Diploma	
Basic Agricultural Supply Chain Workers	(210)	(190)	(170)	(150)	(130)	Diploma	
Basic Agroforestry Labourers	(220)	(200)	(180)	(160)	(140)	No Formal Education	
Basic Agroforestry Workers	(150)	(130)	(110)	(90)	(70)	No Formal Education	
Basic Agro-Processing Labourers	(200)	(180)	(160)	(140)	(120)	No Formal Education	
Basic Animal Breeding Workers	(370)	(350)	(330)	(310)	(290)	No Formal Education	
Basic Animal Health Workers	(410)	(390)	(370)	(350)	(330)	No Formal Education	
Basic Animal Nutrition Workers	(180)	(160)	(140)	(120)	(100)	No Formal Education	
Basic Aquaculture Technicians	(350)	(330)	(310)	(290)	(270)	No Formal Education	
Basic Aquaculture Workers	(126)	(119)	(112)	(105)	(98)	No Formal Education	
Crane Operator	(34)	(35)	(36)	(37)	(38)	Bachelor's	
Database Designers and Administrators	(25)	(26)	(27)	(28)	(28)	Bachelor's	
Forklift Driver	(350)	(420)	(490)	(560)	(700)	Bachelor's	
Freight Handler	(25)	(25)	(26)	(27)	(28)	Bachelor's	
Lift Operator	(187)	(189)	(192)	(175)	(168)	Bachelor's	
Plumbing and Pipefitting	(1,000)	(1,200)	(1,400)	(1,600)	(2,000)	Certificate	
Supply and Distribution Manager	(114)	(214)	(315)	(415)	(515)	Bachelor's	
Supply Logistics Clerk	(556)	(558)	(559)	(561)	(63)	Master's	
Manufacturing Quality Manager	(115)	(289)	(463)	(637)	(811)	Bachelors	
Quality Manager	(223)	(355)	(487)	(619)	(751)	Bachelors	
Metrologist	(118)	(121)	(124)	(127)	(129)	Bachelors	
Quality Systems Auditor	(17)	(20)	(21)	(24)	(27)	Bachelors	

Source: *NPA HR Projection Model. *** Figures in brackets represent oversupply, otherwise, net demand*

6.2.6.4. Interventions to Address the Programme HR Gaps

192. The Plan will prioritise the following interventions summarized in Table 6.22 under this programme:

Table 6.22: Human Resource Development Interventions for the Manufacturing Programme

Intervention	Implementing MDAs
i. Establish and enhance industrial training institutes to provide specialised training in manufacturing-related skills.	MoES, UMA, MTIC
ii. Develop and implement apprenticeship programmes collaborating with manufacturing industries to provide hands-on experience.	MoES, UMA, MTIC
iii. Facilitate access to affordable financing for SMEs to invest in human resource development and technology upgrades.	MoFPED, UDB, MTIC
iv. Expedite the process of obtaining international certifications for domestic skills to boost the capabilities of human resources in the manufacturing sector.	UNBS, MTIC, NPA
v. Offer targeted short-term training programmes to diversify and strengthen the resilience of the manufacturing workforce.	MoES, UMA, MTIC
vi. Deliver specialised training for entrepreneurs on applying standards in production and leveraging clustering initiatives.	MTIC, UMA, PSFU
vii. Promote public-private partnerships to support innovation and research and development activities in the manufacturing sector.	MoSTI, MTIC, UMA
viii. Facilitate access to affordable financing for SMEs to invest in human resource development and technology upgrades.	MoFPED, UDB, MTIC
ix. Develop and implement apprenticeship programmes collaborating with manufacturing industries to provide hands-on experience.	MoES, UMA, MTIC
x. Establish and enhance industrial training institutes to provide specialised training in manufacturing-related skills.	MoES, UMA, MTIC
xi. Offer targeted short-term training programmes to diversify and strengthen the resilience of the manufacturing workforce.	MoES, UMA, MTIC
xii. Develop and implement apprenticeship programmes collaborating with manufacturing industries to provide hands-on experience.	MoES, UMA, MTIC
xiii. Strengthen the regulatory framework to ensure compliance with manufacturing standards and improve the quality of locally produced goods.	UNBS, MTIC, NPA
xiv. Establish a Programme Skills Coordination Committee (PSCC) for the Manufacturing Programme to determine the programme's skills needs and skills standards.	Program Secretariat
xv. Mainstream Human Resource Development Planning in the Institutions' Strategic Plans to identify and prioritize critical skills and education needs and soft skills requirements to meet the present and future manpower needs within the Programme.	All MDAs and LGs
xvi. Establish and enhance industrial training institutes to provide specialised training in manufacturing-related skills.	MoES, UMA, MTIC
xvii. Integrate human resource development into institutional strategic plans.	All MDAs and LGs under this programme.

6.2.7. Natural Resources, Environment, Climate Change, Land and Water Management

6.2.7.1. Introduction

193. **Effective management of natural resources and climate change is essential for mitigating disaster losses, boosting household incomes, and elevating the population's quality of life**. Uganda's economy heavily relies on agriculture and nature-based tourism, making the condition of its environment and natural resources critical for achieving development goals related to income poverty, export volumes, inflation, and foreign exchange rates.

194. **Guided by the focus of the NDPIV, the programme aims to reduce environmental degradation and counter the adverse effects of climate change while promoting the sustainable utilisation of natural resources for economic growth and livelihood security.** The programme outcomes in conservation, restoration, and management of land, water, environment, and natural resources are pivotal for aligning environmental, economic, and social opportunities, ensuring benefits for present and future generations while preserving and enhancing land quality. Effective management of programme components involves a complex interplay of factors, including sustainable water resource and wetland management, enhancement of meteorological services, restoration and conservation of forest cover, improved land management and planning, pollution reduction, and management of natural and man-made hazards.

195. **While the NDPIV acknowledges the pivotal role of natural resource and climate change management in reducing disaster risks, boosting household incomes, and improving the overall quality of life, it also acknowledges the challenges encountered in conservation, restoration, and overall management of land, water, environment, and natural resources.** Notably, there has been a concerning decline in forest cover, plummeting from 15% in 2010 to a mere 9.5% in 2017, accompanied by the degradation and encroachment of wetlands from 11.9% in 2012 to 10.9% in 2017. Despite Uganda's forests playing vital roles in energy provision, tourism revenue, and job creation for approximately one million people, efforts to restore forest and tree cover have failed to match the pace of depletion. Consequently, the programme is committed to addressing environmental degradation, mitigating the impacts of climate change, and optimising natural resource utilisation to foster sustainable economic growth and livelihood security. This highlights the critical importance of ensuring the availability of suitable human resources in the medium term.

6.2.7.2. Guiding Standards in the Estimation of the Programme HR needs

196. **The guiding standards for estimating the human resource needs of the Climate Change, Natural Resources, Environment, and Water Management Programme are essential benchmarks** to ensure the availability of a skilled workforce capable of addressing the complex challenges associated with environmental sustainability and climate resilience. These standards, derived from international best practices and tailored to the unique needs of Uganda, provide a framework for determining the optimal number and qualifications of key human resources required to achieve the programme's objectives. By adhering to these standards, the programme can ensure a systematic and efficient approach to human resource planning, which is crucial for the effective management of natural resources, mitigation of climate impacts, and enhancement of environmental quality. The standards encompass a wide range of critical roles, from environmentalists and climate change specialists to water resource managers and renewable energy engineers, each playing a vital part in promoting sustainable development and safeguarding the environment for future generations. These benchmarks not only facilitate targeted training and capacity-building efforts but also align with global development goals, ensuring that Uganda remains at the forefront of environmental stewardship and climate action. Table 6.23 outlines the guiding standards or assumptions for estimating the programme's human resource needs and gaps.

Table 6.23: Guiding Assumptions for Estimating HR Needs for Climate Change, Natural Resources, Environment, and Water Management Programme.

Occupations	Recommended Standards
Environmentalists	1 per 1000 residents
Meteorologists	1 per 100,000 Residents
Forestry Technicians	1 per 10,000 hectares
Hydrologists	1 per 50,000 Residents
GIS Specialists	1 per 50,000 Residents
Environmental Engineers	1 per 50,000 Residents

Occupations	Recommended Standards
Conservation Biologists	1 per 100,000 hectares
Water Quality Specialists	1 per 100,000 Residents
Environmental Educators	1 per 100,000 Residents
Disaster Risk Management Experts	1 per 100,000 Residents
Agronomists	1 per 50,000 hectares
Ecologists	1 per 100,000 hectares
Soil Scientists	1 per 50,000 hectares
Climate Change Analysts	1 per 100,000 Residents
Wetland Ecologists	1 per 100,000 hectares
Hydrogeologists	1 per 100,000 Residents
Environmental Lawyers	1 per 200,000 Residents
Sustainability Managers	1 per 100,000 Residents
Community Development Officers	1 per 50,000 Residents
Environmental Policy Analysts	1 per 100,000 Residents
Marine Biologists	1 per 200,000 hectares
Wildlife Managers	1 per 100,000 hectares
Urban Planners	1 per 100,000 Residents
Fisheries Biologists	1 per 100,000 hectares
Pollution Control Technicians	1 per 50,000 Residents
Renewable Energy Specialists	1 per 100,000 Residents
Environmental Health Officers	1 per 50,000 Residents
Land Use Planners	1 per 100,000 Residents
Climate Adaptation Specialists	1 per 100,000 Residents
Forest Rangers	1 per 50,000 hectares
Biodiversity Conservationists	1 per 100,000 hectares
Geologists	1 per 100,000 Residents
Environmental Economists	1 per 100,000 Residents
Carbon Footprint Analysts	1 per 100,000 Residents
Ecotourism Managers	1 per 100,000 Residents
Air Quality Specialists	1 per 100,000 Residents
Waste Management Engineers	1 per 100,000 Residents
Environmental Technicians	1 per 50,000 Residents
Rangeland Managers	1 per 100,000 hectares
Environmental Sociologists	1 per 100,000 Residents
Remote Sensing Specialists	1 per 100,000 Residents
Aquaculture Specialists	1 per 100,000 hectares
Urban Foresters	1 per 100,000 Residents
Environmental Communicators	1 per 100,000 Residents
Soil Conservationists	1 per 100,000 hectares
Environmental Auditors	1 per 100,000 Residents
Wildlife Veterinarians	1 per 200,000 hectares

6.2.7.3. Skills and Occupation Gaps for the Programme

197. **To deliver this programme effectively, addressing critical human resource gaps is essential for achieving the targeted results.** However, further analysis is necessary to guide the Ministry of Education and Sports on areas that need strengthening within the education and training system. Efforts must be made to secure additional funding for specialised training, both for current and future needs, and to provide targeted external scholarships for training unavailable within the country. Occupations with high labour demand but insufficient supply should be prioritised, with training programmes reoriented to produce qualified individuals for these roles. Conversely, occupations facing an oversupply should focus on retraining workers towards areas with high demand and low supply. Detailed qualifications and skills needed for the Natural Resources, Environment, Climate Change, Land and Water Management programme required over the next five years by field of study are articulated in Table 6.24

Table 6.24: Estimated 5-year HR Gaps for Natural Resources, Environment, Climate Change, Land and Water Management Programme

Occupations Title	Estimated 5-year Gaps					Entry-Level Education	Status
	2025/26	2026/27	2027/28	2028/29	2029/30		
Environmental Engineering	500	600	700	800	1,000	Bachelors	
Environmental Health	70	80	90	100	110	Masters	
Environmental Policy Analysts	150	145	140	135	130	Masters	
Environmental Policy Researchers	30	35	40	45	50	PhD	
Environmental Science Professors	15	14	15	13	12	PhD	
Geographical Information Systems (GIS)	300	400	500	600	700	Bachelors/Masters	
Geotechnical Engineers	20	15	10	5	5	Master's	
Industrial Engineering	140	135	130	125	120	Bachelor's	
Industrial Process Consultants	18	26	31	46	51	Master's	
Oilfield Environmental Engineers	130	125	120	115	110	Bachelor's	
Oilfield Quality Control Specialists	35	40	45	50	55	Master's	
Water Resource Management Specialists	113	118	123	128	133	Master's	
Wind Energy Specialists	190	185	180	175	170	Technical	
Natural Resources Management specialists	138	142	146	150	155	Bachelor's	
Environmental Engineers	205	211	218	224	231	Bachelor's	
Environmental Health	280	300	320	340	360	Diploma	
Environmental Impact Assessment specialists	173	178	184	189	195	Bachelors	
Environmental Policy	120	156	165	169	130	Masters	
Environmental Science	120	140	160	180	220	Bachelors	
Environmental Science	120	140	160	180	220	Bachelors	
Forestry and Tree Planting	900	1200	1400	1600	2000	Diploma	
Natural Resource Management	600	720	840	960	1200	Bachelors	
Plumbing	920	980	1060	1080	1900	Lower Secondary	
Solar Energy	720	840	960	1080	1320	Technical	
Waste Management and Recycling	860	880	900	920	940	Lower Secondary	
Water and Sanitation Engineers	192	224	256	288	320	Bachelors	
Water and Sanitation Management	860	880	900	920	940	Bachelors	
Water Resource Management	320	400	480	560	640	Bachelors	
Plumbing	(1,000)	(1,200)	(1,400)	(1,600)	(2,000)	Technical	
Plumbing and Pipefitting	(1,000)	(1,200)	(1,400)	(1,600)	(2,000)	Certificate	
Road and Bridge Construction	(1,500)	(1,800)	(2,000)	(2,200)	(2,500)	Diploma	
Road Construction and Maintenance	(1,500)	(1,800)	(2,000)	(2,200)	(2,500)	Lower Secondary	
Rural Development	(1,000)	(1,200)	(1,400)	(1,600)	(2,000)	Bachelors	
Rural Electrification	(1,200)	(1,400)	(1,600)	(1,800)	(2,200)	Bachelors	
Waste Management	(1,200)	(1,400)	(1,600)	(1,800)	(2,000)	Diploma	

Source: *NPA HR Projection Model. *** Figures in brackets represent oversupply, otherwise, net demand*

6.2.7.4. Interventions to Address the Programme HR Gaps

198. The NDPIV-HRDP emphasizes the following interventions within this programme presented in Table 6.25.

Table 6.25: Human Resource Development Interventions for the Tourism Development Programme

Interventions	Implementing MDAs
i. Develop and implement targeted training programmes for specialists in the sector.	NEMA, MoES, MoWE
ii. Offer scholarships, apprenticeships, and vocational training opportunities to enhance local skills.	NEMA, MoES, MoWE
iii. Conduct workforce needs assessments to identify and address skill gaps.	MoWE, NEMA, MoLHUD
iv. Invest in technology-focused training and establish a technology adoption task force.	MoSTI, PSFU, NEMA
v. Establish research grants and scholarships for advanced studies and innovation.	MoSTI, MoFPED MoES
vi. Organize workshops and conferences on the latest technological advancements.	MoSTI, PSFU, NGOs (Non-Governmental Organizations)
vii. Develop and implement continuous learning programmes, including workshops, seminars, and certifications.	MoWE, NFA, MoES
viii. Enhance the curriculum and training facilities to support ongoing education.	MoES, MoWE, NEMA
ix. Partner with international organizations to facilitate knowledge exchange and professional development.	MoWE, NFA, NGOs
x. Establish partnerships with leading international institutions for knowledge transfer.	MoWE, NFA, MoES
xi. Develop and implement industry-academic collaboration programmes such as internships and research projects.	MoWE, MoES, NEMA
xii. Facilitate stakeholder forums to discuss and align workforce development with industry needs.	MoWE, NFA, MoLHUD
xiii. Establish a Programme Skills Coordination Committee (PSCC) for the Natural Resources, Environment, Climate Change, Land, and Water Management Programme to determine the program's skills needs and skills standards.	Programme Secretariat
xiv. Mainstream Human Resource Development Planning in institutions' Strategic Plans to identify and prioritise critical skills and education needs and soft skills requirements to meet the present and future human resource needs within the Programme.	All MDAs and LGs
xv. Develop Human Resource Development Planning Guidelines for Ministries, Departments, and Agencies as well as Local Governments.	NPA, MoFPED
xvi. Build the Human Resource Development Planning capacities of Planning Units and Departments in the Ministries, Departments, and Agencies as well as Local Governments within this programme.	NPA, MoFPED
xvii. Integrate human resource development into institutional strategic plans.	All MDAs and LGs under this programme

6.2.8. Integrated Transport Infrastructure and Services Programme

6.2.8.1. Introduction

199. **An advanced and effective integrated transport infrastructure and services are essential for economic and social progress.** Transport is crucial for economic and social advancement as it enables access to economic and social opportunities. It facilitates the movement of individuals, goods, labour, resources, products, and raw materials across the region, thereby creating market prospects for both consumers and producers. Transport has a direct impact on various sectors of

the economy. It serves as a catalyst for economic growth, poverty alleviation, and global competitiveness within an economy.

200. **An effective Integrated Transport Infrastructure and Services (ITIS) Programme depends significantly on a varied and highly skilled workforce.** By fulfilling these human resource needs, the programme can successfully accomplish its objective of establishing a smooth, secure, all-encompassing, and enduring multi-modal transportation system. Strategic investment in skilled personnel and ongoing commitment to professional growth will be crucial for the enduring prosperity and adaptability of the transportation infrastructure.

201. **A comprehensive approach to human resource development within the ITIS Programme involves not only recruiting individuals with the necessary technical skills but also fostering a culture of innovation and continuous improvement.** By creating an environment that values and nurtures talent, the programme ensures that its workforce can adapt to technological advancements and emerging trends in transportation. Additionally, investing in human capital contributes to the resilience and sustainability of the transportation system, as a well-equipped and knowledgeable workforce is better prepared to address challenges and drive the programme towards its long-term goals.

6.2.8.2. Guiding Standards in the estimation of Programme HR needs

202. **The guiding standards in the estimation of ITIS Programme Human Resource Needs offer a fundamental framework for methodically assessing the human resource requirements necessary for integrated transport systems to be implemented and maintained successfully.** Human Resource Development Planning plays a critical role in ensuring the smooth operation and longevity of transport infrastructure projects. These standards as highlighted in Table 6.2.3 seek to assist stakeholders, planners, and policymakers in making decisions that will improve the overall resilience and performance of transportation services by providing clear guidelines and methods for calculating the required levels of expertise, skills, and workforce.

203. **By adhering to these standards, institutions can more accurately identify gaps in their current workforce and anticipate future needs, thereby optimising recruitment and training efforts**. This strategic approach not only facilitates the effective allocation of resources but also promotes the continuous professional development of personnel, ensuring that the workforce remains adept at handling emerging technologies and evolving industry demands. Moreover, these guidelines foster collaboration among various stakeholders, enabling a unified effort towards achieving sustainable and efficient transport systems. By systematically addressing human resource needs, the ITIS Programme aims to enhance the operational efficiency and reliability of transportation networks, ultimately contributing to economic growth and improved quality of life for communities.

Table 6.26: Guiding Standards in the Estimation of Programme Human Resource Needs

Occupation title	International Standards
Civil Engineers	6 per 10,000 population
Mechanical Engineers	7 per 10,000 population
Air pilots	1.2 per 10,000 population
Power Production Plant Operators	0.9 per 10,000 population
Earthmoving and Related Plant Operators	1 per 1,000 population
Surveyors	1.1 per 10,000 population
Geothermal Technicians	0.3 per 10,000 population
Aeronautical Engineers	1.2 per 10,000 population
Ratio of Civil Engineers to Civil Engineering Technicians	1:2.5 per 10,000 population
Ratio of Mechanical Engineers to Mechanical Engineering Technicians	1:2 per 10,000 population
Air Traffic Safety Electronics Technicians	3 per 100,000 population
Tram Drivers	10 per 100,000 population

Transport Planning specialists	15 per 100,000 population
Railway operations managers	3 per 100,000 population
Transport Service Manager	10 per 100,000 population
Airline management specialists	3 per 100,000 population
Marine Surveyor	3 per 100,000 population
Aviation Manager	4 per 100,000 population
Vehicle Body Builder and Trimmer	2 per 100,000 population
Works Safety Officer	7 per 100,000 population.
Aircraft Load Controller	4 per 100,000 population.
Database Designers and Administrators	20 per 100,000 population.

6.2.8.3. Skills and Occupation Gaps for the Programme

204. **The Integrated Transport Infrastructure and Services Programme faces significant skills and occupation gaps that need addressing to achieve programme objectives.** There is a notable shortage of specialised technical skills, such as civil and structural engineering, project management, and advanced IT competencies, essential for modern transport systems. Additionally, there is a deficit in skilled labour for the maintenance and operation of infrastructure, underlining the need for focused vocational training programmes. Managerial and administrative skills are also insufficient, impeding effective project implementation and oversight. To bridge these gaps, a coordinated effort between educational institutions, industry stakeholders, and the government is essential, involving the development of tailored training programmes and fostering partnerships that align educational outcomes with the specific needs of the transport sector. The detailed skills gaps are highlighted in Table 6.27.

Table 6.27: Estimated 5-year HR Gaps for the Integrated Transport Infrastructure and Services Programme

Occupations Title	Estimated 5-year Gaps					Entry-Level Education	Status
	2025/26	2026/27	2027/28	2028/29	2029/30		
Civil Security Analysts	30	35	40	45	50	Bachelor's	
Electric Grid Analysts	20	15	10	5	5	Bachelor's	
Environmental Engineering	500	600	700	800	1,000	Bachelor's	
Environmental Policy Analysts	150	145	140	135	130	Master's	
Environmental Policy Researchers	30	35	40	45	50	PhD	
Geographical Information Systems (GIS)	300	400	500	600	700	Bachelor's/Master's	
Geotechnical Engineers	20	15	10	5	5	Master's	
Hydroelectric Plant Engineers	30	25	20	15	10	Master's	
Hydropower Plant Maintenance Engineers	20	15	10	5	5	Master's	
Infrastructure Investment Analysts	20	15	10	5	5	Bachelor's	
IoT (Internet of Things) Experts	100	95	90	85	80	Master's	
IT Solutions Architects	70	65	60	55	50	Master's	
Masonry	150	160	170	180	190	Lower Secondary	
Materials Scientists	20	25	30	35	40	Master's	
Real Estate Valuation	35	30	25	20	15	Diploma	
Risk Management	35	30	25	20	15	Bachelor's	
Robotics Engineers	60	55	50	45	40	Master's	
Security Infrastructure Planners	200	210	220	230	240	Master's	
Smart Grid Analysts	20	15	10	5	5	Bachelor's	
Smart Transportation Systems Engineers	20	15	10	5	5	Master's	
Software Architects	140	135	130	125	120	Master's	
Solar Energy Systems Engineers	20	15	10	5	5	Bachelor's	
Water Resource Management Specialists	113	118	123	128	133	Master's	

Occupations Title	Estimated 5-year Gaps					Entry-Level Education	Status
	2025/26	2026/27	2027/28	2028/29	2029/30		
Wind Energy	190	185	180	175	170	Technical	
Energy Efficiency Auditors	20	15	10	8	7	Master's	
Advanced Pipeline Engineers	16	13	7	5	4	Master's	
Geospatial Data Analysts	22	20	18	15	10	Master's	
Water Treatment Plant Engineers	20	15	10	5	5	Master's	
Architectural occupations	560	592	640	672	720	Bachelor's	
Building and Construction Technology	870	893	917	943	978	Diploma	
Carpentry and Joinery	791	809	824	869	893	Lower Secondary	
Civil Engineering	560	592	640	672	720	Bachelor's	
Civil Works and Construction	610	650	740	760	780	Diploma	
Electrical Engineering	671	698	710	725	750	Bachelor's	
Electrical Installation	750	782	810	835	860	Certificate	
Electrical Work	600	720	840	960	1,200	Technical	
Natural Resources Management specialists	138	142	146	150	155	Bachelor's	
Environmental Engineers	205	211	218	224	231	Bachelor's	
Environmental Health	280	300	320	340	360	Diploma	
Environmental Impact Assessment specialists	173	178	184	189	195	Bachelor's	
Environmental Policy	120	156	165	169	130	Master's	
Environmental Science	120	140	160	180	220	Bachelor's	
Geographical Science specialists	274	282	290	299	308	Master's	
Housing and Urban Development	900	1,200	1,400	1,600	2,000	Bachelor's	
Landscape Architecture	920	980	1,060	1,080	1,900	Bachelor's	
Mechanical Engineering	480	540	600	720	900	Bachelor's	
Mechanics and Automotive Repair	900	1,080	1,200	1,320	1,500	Certificate	
Plumbing	920	980	1,060	1,080	1,900	Lower Secondary	
Quantity Surveying	214	221	227	234	241	Bachelor's	
Renewable Energy	106	120	130	143	152	Bachelor's	
Renewable Energy Policy	300	400	500	600	700	Master's	
Renewable Energy Systems	214	221	227	234	241	Bachelor's	
Renewable Energy Technician	720	840	960	1,080	1,320	Diploma	
Renewable Energy Technicians	980	1,270	1,568	1,768	1,967	Diploma	
Renewable Resource Management	240	300	360	420	480	Bachelor's	
Solar Energy	720	840	960	1,080	1,320	Technical	
Solar Energy Installation and Maintenance	860	880	900	920	940	Diploma	
Solar Panel Installation and Maintenance	860	880	900	920	940	Diploma	
Waste Management and Recycling	860	880	900	920	940	Lower Secondary	
Water and Sanitation Engineers	192	224	256	288	320	Bachelor's	
Water and Sanitation Management	860	880	900	920	940	Bachelor's	
Water Resource Management	320	400	480	560	640	Bachelor's	
Power Grid Maintenance Technicians	135	130	125	120	115	Diploma	
Hydroelectric Plant Engineers	130	125	120	115	110	Master's	
Smart Grid Technology Experts	136	129	150	159	200	Master's	
Infrastructure Project Managers	78	86	91	99	106	Bachelor's	
Energy Storage Systems Engineers	89	96	106	129	152	Master's	
Environmental Impact Assessors	220	215	210	235	245	Master's	
Geotechnical Engineers	120	115	210	235	185	Master's	
Advanced Roadway Design Engineers	220	215	210	225	235	Bachelor's	
Rail Infrastructure Specialists	320	315	310	255	235	Bachelor's	

Occupations Title	Estimated 5-year Gaps					Entry-Level Education	Status
	2025/26	2026/27	2027/28	2028/29	2029/30		
Advanced Traffic Management Specialists	136	129	150	159	200	Master's	
Transport System Analysts	120	115	210	235	185	Bachelor's	
Water Resource Engineers	135	130	125	120	115	Bachelor's	
Power System Analysts	130	120	110	110	110	Bachelor's	
Road Safety Engineers	135	130	125	120	115	Bachelor's	
Infrastructure Investment Analysts	130	120	110	110	110	Bachelor's	
Substation Engineers	380	429	479	530	581	Diploma	
Accounting occupations	(700)	(665)	(630)	(595)	(560)	Bachelor's	
Agricultural Policy Support Staff	(210)	(190)	(170)	(150)	(130)	Bachelor's	
Applications Programmers	(70)	(72)	(74)	(76)	(79)	Bachelor's	
Basic Agricultural Infrastructure Staff	(80)	(60)	(40)	(20)	(10)	Diploma	
Basic Medical Science	(1,700)	(1,600)	(1,500)	(1,400)	(1,300)	Bachelor's	
Basic Nursing	(2,000)	(1,900)	(1,800)	(1,700)	(1,600)	Diploma	
Crane Operator	(34)	(35)	(36)	(37)	(38)	Bachelor's	
Driving Instructors	(98)	(101)	(104)	(107)	(110)	Bachelor's	
Heavy Machinery Operation	(1,500)	(1,800)	(2,000)	(2,200)	(2,500)	Diploma	
Plumbing and Pipefitting	(1,000)	(1,200)	(1,400)	(1,600)	(2,000)	Certificate	
Road and Bridge Construction	(1,500)	(1,800)	(2,000)	(2,200)	(2,500)	Diploma	
Road Construction and Maintenance	(1,500)	(1,800)	(2,000)	(2,200)	(2,500)	Lower Secondary	
Sanitation and Hygiene	(1,500)	(1,800)	(2,000)	(2,200)	(2,500)	Bachelor's	
Track Maintenance Technicians	(284)	(287)	(289)	(292)	(295)	Bachelor's	
Urban Planning	(1,000)	(1,200)	(1,400)	(1,600)	(1,800)	Bachelor's	
Vehicle Body Builder and Trimmer	(240)	(351)	(410)	(511)	(651)	Bachelor's	
Vehicle Painter	(300)	(335)	(406)	(441)	(477)	Bachelor's	
Waste Management	(1,200)	(1,400)	(1,600)	(1,800)	(2,000)	Diploma	
Welders	(2,800)	(3,000)	(3,200)	(3,400)	(3,600)	Lower Secondary	
Bricklaying	850	890	932	965	987	No Formal Education	

Source: *NPA HR Projection Model. *** Figures in brackets represent over supply, otherwise, net demand*

6.2.8.4. Specific Interventions to address the Programme Human Resource Gaps

205. The Plan will prioritise the following interventions under this programme as shown in Table 6.28.

Table 6.28: HRD Interventions for Integrated Transport Infrastructure and Services Programme

Intervention	Implementing MDAs
i. Create and implement training programmes focusing on modern transport infrastructure and sustainable practices.	MoWT, MoES and MoLG
ii. Form partnerships with technical institutions and industry experts to enhance practical training and knowledge.	MoWT, MoES and MSTI
iii. Develop certification schemes and accreditation processes for various transport-related skills and competencies.	MoWT, MoES and UNBS
iv. Provide on-the-job training and mentorship opportunities to build hands-on experience in transport projects.	MoWT, MoLG, and MoP
v. Organise conferences to update and enhance knowledge on emerging trends and technologies in transport.	MoWT, MoLG and MSTI
vi. Conduct workshops focused on advanced techniques and best practices in asset management.	MoWT, MoFPED, and MoP

Intervention	Implementing MDAs
vii. Introduce and train staff on modern asset management software and systems.	MoWT, MoFPED, and URA
viii. Perform regular skills assessments and provide certification to ensure staff proficiency in asset management.	MoWT, MoFPED, and MoP
ix. Create and distribute guidelines on best practices for transport asset management.	MoWT, MoFPED, and UNBS
x. Establish mentorship programmes and encourage peer learning to share expertise and experiences.	MoWT, MoFPED, and MoP
xi. Offer training sessions that focus on the integration of land use and transport planning.	MoWT, MoLG and MLHUD
xii. Develop and implement frameworks that guide integrated land use and transport planning efforts.	MoWT, MoPS and MLHUD
xiii. Initiate projects that require collaboration between land use and transport planning professionals.	MoWT, MoLG and MLHUD
xiv. Facilitate knowledge exchange programmes with other countries and regions experienced in integrated planning.	MoWT, MSTI and MLHUD
xv. Establish guidelines for integrating land use and transport planning based on international best practices.	MoWT, MoLG and MLHUD
xvi. Partner with recognized project management organisations to offer certification programmes such as PMP (Project Management Professional) or PRINCE2 (Projects in Controlled Environments), ensuring staff are equipped with standardised project management skills.	MoWT, MoLG and MLHUD
xvii. Create and implement comprehensive governance frameworks to guide decision-making and oversight.	OPM, MoWT and MoFPED
xviii. Develop and deploy a performance management system to monitor and evaluate the effectiveness of governance and management practices.	OPM, MoWT and MoPS
xix. Establish and enforce risk management strategies to proactively identify and mitigate potential governance and management risks.	OPM, MoWT and MoFPED
xx. Design and implement SOPs to standardise governance and management processes, ensuring consistency and accountability.	OPM, MoWT and MoPS
xxi. Develop and integrate a framework to enhance transparency and accountability within the management of transport infrastructure projects.	OPM, MoWT and MoFPED
xxii. Establish a Programme Skills Coordination Committee (PSCC) for the Programme to determine the program's skills needs and skills standards.	Programme Secretariat
xxiii. Mainstream Human Resource Development Planning in institutions strategic plans to identify and prioritise critical skills and education needs and soft skills requirements to meet the present and future human resource needs within the Programme.	All MDAs and LGs
xxiv. Develop Human Resource Development Planning Guidelines for Ministries, Departments and Agencies as well as Local Governments	NPA, MoFPED
xxv. Build the Human Resource Development Planning capacities of Planning Units and Departments in the Ministries, Departments and Agencies as well as local governments within this programme	NPA, MoFPED
xxvi. Integrate human resource development into institutional Strategic Plans.	All MDAs and LGs

6.2.9. Sustainable Energy Development Programme

6.2.9.1. Introduction

206. **Access to affordable, reliable, and stable power remains central to Uganda's vision of accelerated industrialisation and enhanced quality of life for its citizens.** As a key input to all other sectors of the economy, affordable and reliable energy directly and indirectly influences growth, job creation, productivity, and competitiveness. Human resource development plays a crucial role in achieving these goals by ensuring that there is a skilled workforce capable of managing and expanding the energy sector. Additionally, expanding access to energy in under-served regions will spur local economic activities and reduce disparities in living standards, aligning with the country's aspiration for inclusive growth. Furthermore, the development of

renewable energy sources is essential for mitigating climate change impacts, preserving natural resources for future generations, and fulfilling the international commitments to sustainability.

207. **Developing a highly skilled workforce is essential to enhance access to affordable and reliable electricity, which supports the attainment of national, regional, and international development aspirations.** Specifically, Vision 2040 aims to provide clean, affordable, and reliable energy to facilitate industrialisation, while the EAC Vision 2050 targets a significant increase in energy production by 2030. Additionally, Agenda 2030 (SDG 7.1) aspires to achieve universal access to modern energy services. Despite having a relatively advanced energy sector, Uganda faces challenges such as low grid access, unreliable power supply, high electricity tariffs, and infrastructure vandalism. Addressing these issues necessitates targeted human resource strategies, including training and deploying skilled professionals to optimise power generation, improve the transmission network, and ensure rural areas are connected to the grid. By focusing on these human resource needs, the energy sector can better support the nation's development goals.

6.2.9.2. Guiding Standards in the Estimation of Programme Human Resource Needs

208. **The estimation of human resource needs for the Sustainable Energy Development Programme requires adherence to several guiding standards to ensure accuracy and effectiveness.** First and foremost, it is essential to conduct a comprehensive workforce analysis, considering the current skill levels, existing workforce demographics, and projected industry growth. This involves evaluating the demand for specific technical skills such as renewable energy engineering, grid management, and advanced IT systems relevant to modern energy infrastructure. Additionally, international standards and best practices should be incorporated, drawing on successful models from countries with advanced sustainable energy programmes. Therefore, aligning human resource planning with these standards ensures that the workforce is not only adequately equipped but also capable of meeting future technological and regulatory advancements. The guiding standards in the estimation of this programme's human resource needs are highlighted in Table 6.29.

Table 6.29: Guiding Standards in the estimation of Programme Human Resource Needs

Occupation title	International Standards
Power Production Plant Operators	1.78 per 10,000 population in urban and 1.82 per 10,000 population in rural areas.
Electronics Engineers	100 per 10,000 population in urban areas and 20 per 10,000 population in rural areas.
Meteorologists	3 per 10,000 population in urban areas and 1 per 10,000 population in rural areas.
Chemical Engineers	30 per 10,000 population in urban areas and 5 per 10,000 population in rural areas.
Geologists	5 per 10,000 population in urban areas and 1 per 10,000 population in rural areas.
Geophysicists	3 per 10,000 population in urban areas and 1 per 10,000 population in rural areas
Petroleum and Natural Gas Refining Plant Operators	5 per 10,000 population in urban areas and 2 per 10,000 population in rural areas.
Industrial Engineers	5 per 10,000 population in urban areas and 3 per 10,000 population in rural areas.
Electrical Engineering Technicians	8 per 10,000 population in urban areas and 3 per 10,000 population in rural areas.
Refinery Process Technicians	5 per 10,000 population in urban areas and 2 per 10,000 population in rural areas.
Production Engineers	6 per 10,000 population in urban areas and 2 per 10,000 population in rural areas.

Occupation title	International Standards
Sustainable Energy & Green Technologies Specialists	1 per 10,000 population in urban areas and 0.2 per 10,000 population in rural areas
Nuclear Physicists	2 per 10,000 population in urban areas and 1 per 10,000 population in rural areas.
Engineering Thermodynamics Specialists	4 per 100,000 population
Environmental Geologists	5 per 100,000 population.
Nuclear, Hydraulic, and Thermal Energy Specialists	3 per 100,000 population
Petroleum Engineers	5 per 100,000 population
Renewable Energy & Carbon Management Specialists	10 per 100,000 population
Renewable Energy Systems Specialists	10 per 100,000 population
Energy Systems and Climate Change Specialists	15 per 100,000 population
Power System Dynamics and Control Specialists	4 per 100,000 population
Renewable Energy & Clean Technology Specialists	7 per 100,000 population.
Ecologists	6 per 100,000 population
Computational Continuum Mechanics Specialists	2 per 100,000 population

6.2.9.3. Skills and Occupation Gaps for the Programme

209. **Based on a thorough human resource supply and demand analysis, the next five years will see significant occupation and skills gaps in the Sustainable Energy Development Programme.** The demand for specialised technical roles such as renewable energy engineers, grid management experts, and energy efficiency specialists is expected to surge. These roles are critical for the expansion of renewable energy projects, the modernisation of the grid, and the implementation of energy efficiency measures. However, the current supply of professionals with these skills is insufficient to meet the anticipated demand. This gap is further exacerbated by the rapid technological advancements in the energy sector, which require a workforce that is not only technically proficient but also adaptable to new technologies and methodologies. Consequently, targeted educational and training programmes are necessary to bridge these gaps, with an emphasis on hands-on experience and certification in cutting-edge energy technologies.

210. **Additionally, there is a notable deficiency in managerial and administrative skills crucial for the successful implementation of sustainable energy projects**. Project management, regulatory compliance, and strategic planning are areas where the existing workforce falls short. Effective management is essential to oversee complex energy projects, ensure adherence to regulatory standards, and align projects with national and international sustainability goals. The demand for skilled managers who can navigate the intricate landscape of sustainable energy policies and financing is projected to grow, yet the supply of such professionals remains limited. Addressing this gap requires developing robust training programmes that focus on leadership, project management, and policy analysis within the context of the energy sector. By focusing on these key areas, the Sustainable Energy Development Programme can build a well-rounded workforce capable of driving the country's energy agenda forward over the next five years. The detailed skills and occupation gaps for the programme are shown in Table 6.30.

Table 6.30: Estimated 5-Year Occupation and Skills Gaps for the Sustainable Energy Development Programme

Occupations Title	Estimated 5-year Gaps					Entry-Level Education	Status
	2025/26	2026/27	2027/28	2028/29	2029/30		
Chemical Engineering professionals	430	530	632	640	460	Bachelor's/ Master's	
Chemical Manufacturing Specialists	40	56	65	72	84	Master's	
Electric Grid Analysts	20	15	10	5	5	Bachelor's/ Master's	
Energy Policy Analysts	20	15	10	5	5	Bachelor's/ Master's	
Energy Storage Systems Engineers	25	20	15	10	5	Master's/ Master's	
Renewable Energy Engineers	50	45	40	35	30	Master'/ Master's	
Wind Energy Specialists	190	185	180	175	170	Bachelor's /Master's	
Biochemistry	15	18	21	24	27	PhD	
Electrical Engineer	380	429	479	530	581	Bachelors	
Electrical Engineering Technologist	136	129	150	159	200	Bachelors	
Energy Engineer	159	180	201	222	245	Bachelors	
Production Engineering Technologist	132	144	155	165	177	Bachelors	
Energy Efficiency Manager	125	135	146	156	167	Bachelors	
Bioenergy	500	600	700	800	1,000	Technical	
Biotechnology	300	360	420	480	600	Bachelor's/Master's	
Electrical Engineering	671	698	710	725	750	Bachelor's	
Electrical Installation	750	782	810	835	860	Certificate	
Electrical Work	600	720	840	960	1,200	Technical	
Mechanics and Automotive Repair	900	1,080	1,200	1,320	1,500	Certificate	
Physics	200	340	360	380	400	Bachelor's	
Renewable Energy	106	120	130	143	152	Bachelor's	
Renewable Energy Policy	300	400	500	600	700	Master's	
Renewable Energy Systems	214	221	227	234	241	Bachelor's	
Renewable Energy Technician	720	840	960	1,080	1,320	Diploma	
Renewable Energy Technicians	980	1,270	1,568	1,768	1,967	Diploma	
Renewable Resource Management	240	300	360	420	480	Bachelor's	
Solar Energy	720	840	960	1,080	1,320	Technical/Vocational	
Solar Installation and Maintenance	860	880	900	920	940	Diploma	
Solar Panel Installation and Maintenance	860	880	900	920	940	Diploma	
IT and Electrical Repairs	(210)	(220)	(230)	(240)	(250)	Lower Secondary	
Basic Administrative Coordinators	(70)	(80)	(90)	(100)	(110)	Lower Secondary	
Basic Drilling Coordinators	(35)	(40)	(45)	(50)	(55)	Bachelor's	
Basic Drilling Field Assistants	(190)	(200)	(210)	(220)	(230)	No Formal Education	
Basic Drilling Supervisors	(35)	(45)	(55)	(65)	(75)	Diploma	
Basic Engineering Support Staff	(30)	(40)	(50)	(60)	(70)	Lower Secondary	
Basic Mining Safety Coordinators	(130)	(140)	(150)	(160)	(170)	Diploma	
Basic Oilfield Administrators	(45)	(50)	(55)	(60)	(65)	Bachelor's	
Basic Oilfield Safety Engineers	(25)	(35)	(45)	(55)	(65)	Bachelor's	
Basic Petroleum Technicians	(5)	(10)	(15)	(20)	(25)	Diploma	
Basic Process Operations Managers	(25)	(30)	(35)	(40)	(45)	Bachelor's	
Basic Process Safety Managers	(35)	(45)	(55)	(65)	(75)	Bachelor's	
Basic Processing Plant Technicians	(20)	(25)	(30)	(35)	(40)	No Formal Education	
Basic Refinery Engineers	(110)	(120)	(130)	(140)	(150)	Bachelor's	

Occupations Title	Estimated 5-year Gaps					Entry-Level Education	Status
	2025/26	2026/27	2027/28	2028/29	2029/30		
Basic Refinery Operators	(45)	(50)	(55)	(60)	(65)	No Formal Education	
Basic Refinery Operators	(70)	(80)	(90)	(100)	(110)	No Formal Education	
Basic Refinery Supervisors	(15)	(25)	(35)	(45)	(55)	Diploma	
Basic Refining Safety Technicians	(15)	(25)	(35)	(45)	(55)	No Formal Education	
General Drilling Assistants	(50)	(55)	(60)	(65)	(70)	Diploma	
General Drilling Engineers	(160)	(170)	(180)	(190)	(200)	Bachelor's	
General Drilling Operations Managers	(60)	(70)	(80)	(90)	(100)	Bachelor's	
General Drilling Safety Officers	(20)	(30)	(40)	(50)	(60)	Diploma	
General Engineers	(180)	(190)	(200)	(210)	(220)	Bachelor's	
General Oil Extraction Operators	(120)	(130)	(140)	(150)	(160)	No Formal Education	

*Source: NPA HR Projection Model. *** Figures in brackets represent over supply, otherwise, net demand*

6.2.9.4. Specific Interventions to Address the Programme Human Resource Gaps

211. The Plan will prioritise the following interventions under this programme, as shown in Table 6.31.

Table 6.31: HRD Interventions for the Sustainable Energy Development Programme and Respective Actors

Interventions	Implementing MDAs
i. Develop specialised training programmes focused on advanced electricity access technologies and management practices.	MoEMD, MoES and ERA
ii. Develop knowledge-sharing platforms for professionals to share knowledge, best practices, and innovations in electricity access.	MoEMD, MoES and UEDCL
iii. Introduce certification and accreditation programmes to standardise skills and ensure high-quality service delivery.	MoEMD, ERA and MoPS
iv. Establish ongoing professional development initiatives to keep electricity professionals updated with the latest trends and technologies.	MoEMD, UEDCL and MoES
v. Develop and offer training programmes specifically for expanding electricity generation capacity and infrastructure.	MoEMD, UEGCL and MoPS
vi. Form partnerships with international institutions to provide specialised training in electricity generation technologies.	MoEMD, MoES and UEGCL
vii. Establish apprenticeship and internship programmes to provide hands-on experience in electricity generation projects.	MoEMD, UEGCL and MoES
viii. Invest in state-of-the-art training equipment and facilities to enhance practical learning experiences.	MoEMD, UEGCL and MoFPED
ix. Implement certification programmes for specialists involved in electricity generation to ensure competency and expertise.	MoEMD, UEGCL and ERA
x. Create and integrate clean energy modules into educational curricula at various levels.	MoEMD, MoES and NCHE
xi. Launch campaigns to educate the public about the benefits and use of clean energy sources.	MoEMD, NEMA and MoICT & NG
xii. Set up specialised training centres to provide education and skills development in clean energy technologies.	MoEMD, NCHE and UNREA
xiii. Develop incentive programmes to encourage participation in clean energy education and training.	MoEMD, URA and MoFPED
xiv. Partner with clean energy companies to offer practical training and exposure to new technologies.	MoEMD, UNREA and MoTIC
xv. Implement comprehensive training programmes focused on nuclear safety protocols and emergency response.	MoEMD, AEC and MoH

Interventions	Implementing MDAs
xvi. Create a committee to oversee nuclear safety practices and ensure adherence to safety standards.	MoEMD, AEC and MoIA
xvii. Conduct regular drills and exercises to prepare staff for emergency situations related to nuclear energy.	MoEMD, AEC and MoH
xviii. Introduce certification programmes for professionals working with nuclear energy to ensure safety and expertise.	MoEMD, AEC and UNBS
xix. Partner with international organizations to align local practices with global nuclear safety standards.	MoEMD, AEC and MoFA
xx. Establish a Programme Skills Coordination Committee (PSCC) for the Programme to determine the program's skills needs and skills standards.	Programme Secretariat
xxi. Mainstream Human Resource Development Planning in institutions Strategic Plans to identify and prioritise critical skills and education needs and soft skills requirements to meet the present and future human resource needs within the Programme.	All MDAs and LGs
xxii. Build the Human Resource Development Planning capacities of Planning Units and Departments in the Ministries, Departments and Agencies as well as Local Governments within this programme	NPA, MoFPED
xxiii. Integrate human resource development into institutional Strategic Plans. .	All MDAs and LGs

6.2.10. Digital Transformation Programme

6.2.10.1. Introduction

212. **In today's rapidly evolving global landscape, the development of human resources in Information and Communication Technology (ICT) is crucial for shaping sustainable economic development and governance.** As Uganda strives towards a more modernised and inclusive economy, integrating ICT into the NDPIV requires a workforce skilled in innovative technologies and governmental transparency. Training programmes must focus on equipping individuals with the necessary skills to improve public service delivery, which directly impacts the population's quality of life. Additionally, there is a need to develop ICT infrastructure specialists to support advancements in education and healthcare, enhance agricultural productivity through modern techniques, and enable Small and Medium-Sized Enterprises (SMEs) to access new markets and financial services. This holistic development of human resources in ICT is vital for Uganda to achieve inclusive economic growth and improve national capabilities.

213. **Despite advancements in Uganda's ICT sector, the shortage of highly skilled professionals hampers its growth and diminishes its impact on productivity across other economic sectors.** It's essential to prioritise human resource development to foster widespread digital transformation in the country. To establish and sustain Uganda's position as a key player in the global ICT market, a substantial pool of skilled human resources is essential to cater for both domestic demands and international exports. However, the current deficiency of proficient ICT professionals in both public and private sectors highlights the urgent need for enhanced professional skill development.

6.2.10.2. Guiding Standards in the Estimation of Programme Human Resource Needs

214. **The estimation of human resources needs for a Digital Transformation Programme requires adherence to internationally recognised standards to ensure a robust and capable workforce.** The development of such a workforce should be informed by specific occupation titles and their recommended standards per population size, as illustrated in Table 6.32. For instance, Information and Communications and Technology Service Managers and Telecommunications Engineers should be provided at a rate of 3 per 10,000 population to ensure

efficient management and oversight of digital services and telecommunications infrastructure. Similarly, other key roles such as ICT Sales Professionals and Systems Administrators should be maintained at 4 per 10,000 population to drive the adoption and maintenance of digital solutions as shown in Table 6.32. These benchmarks help to align the human resource capacity with the demands of a rapidly advancing digital environment, ensuring that the necessary expertise is available to support digital transformation initiatives.

Table 6.32: Guiding Standards in the Estimation of Programme Human Resource Needs

Occupation title	Recommended International Standards
Information and Communications Technology Service Manager	3 per 10,000 Population
Telecommunications Engineers	3 per 10,000 population
Information and Communications Technology Sales Professionals	4 per 10,000 population
Systems Analyst	3 per 10,000 population
Systems Administrator	4 per 10,000 population
Software Developer	6 per 10,000 population
Programmer Analyst	40 per 100,000 population
Web and Multimedia Developers	30 per 100,000 population
Computer Network and Systems Engineer	40 per 100,000 population
Network Engineer	3 per 10,000 population
Network Analyst	2 per 10,000 population
Transmission Engineer	2 per 10,000 population
Data Management Manager	20 per 100,000 population
Application Development Manager	3 per 10,000 population

6.2.10.3. Skills and Occupation Gaps for the Programme

215. **A detailed human resource supply and demand analysis for the Digital Transformation Programme reveals significant occupation and skills gaps over the next five years.** Key managerial roles such as Chief Information Officer (CIO) and ICT Project Manager show considerable shortfalls, as shown in Table 6.33. This indicates a pressing need for targeted educational programmes and professional development initiatives to train and prepare individuals for these critical positions. These managerial positions typically require a bachelor's degree, underscoring the importance of enhancing higher education curricula to align with industry requirements and to address these shortages effectively. In addition, in the technical domain, Telecommunications Engineering Technologists and Network Engineers exhibit growing gaps, reflecting an increasing demand for expertise in maintaining and expanding digital infrastructure. There is a need for a strategic focus on both vocational training and higher education, ensuring that programmes are designed to equip students with practical, industry-relevant skills. Furthermore, expanding access to diploma and bachelor-level education in ICT-related fields is essential to bridge these gaps and support the sustainable growth of Uganda's digital economy.

Table 6.33: Estimated 5-Year HR gaps for the Digital Transformation Programme

Occupations Title	Estimated 5-year Gaps					Entry-Level Education	Status
	2025/26	2026/27	2027/28	2028/29	2029/30		
Advanced Cloud Computing Engineers	190	185	180	175	170	Master's	
Advanced Cybersecurity Specialists	110	105	110	127	130	Master's	
AI Research Scientists	150	145	140	135	130	PhD	
AI Systems Engineers	52	45	40	35	30	Master's	
Augmented Reality Developers	90	85	80	75	70	Master's	

Occupations Title	Estimated 5-year Gaps					Entry-Level Education	Status
	2025/26	2026/27	2027/28	2028/29	2029/30		
Big Data Analysts	100	95	90	85	80	Master's	
Blockchain Developers	110	105	100	95	90	Bachelor's	
Cloud Computing Specialists	100	95	90	85	80	Bachelor's	
Cyber Intelligence Analysts and Experts	130	140	150	160	170	Master's	
Cybercrime Investigators	100	110	120	130	140	Bachelor's	
Cybersecurity Analysts	120	115	110	105	100	Bachelor's	
Cybersecurity Architects	60	55	50	45	40	Master's	
Data Privacy Experts	80	75	70	65	60	Bachelor's	
Data Scientists	150	145	140	135	130	Master's	
DevOps Engineers	80	75	70	65	60	Bachelor's	
Digital Data Architects	50	45	40	35	30	Master's	
Digital Forensics Experts	50	45	40	35	30	Master's	
Human-Computer Interaction Specialists	60	55	50	45	40	Master's	
IoT (Internet of Things) Experts	100	95	90	85	80	Master's	
IT Solutions Architects	70	65	60	55	50	Master's	
Machine Learning Engineers	140	135	130	125	120	Master's	
Network Architects	130	125	120	115	110	Master's	
Smart Grid Analysts	20	15	10	5	5	Bachelor's	
Smart Transportation Systems Engineers	20	15	10	5	5	Master's	
Software Architects	140	135	130	125	120	Master's	
Software Development	60	55	50	45	40	Bachelor's	
Software Engineering	140	135	130	125	120	Bachelor's	
Virtual Reality Developers	90	85	80	75	70	Master's	
Animation and Game Development	500	600	700	800	1000	Technical/Vocational	
Digital Literacy	200	250	300	350	400	Technical/Vocational	
Digital Marketing	900	920	930	850	1020	Bachelor's	
Disaster Risk Management	311	321	330	340	350	Bachelor's	
ICT and Digital Literacy	720	840	960	1080	1320	Diploma	
Information Technology	600	700	800	870	960	Bachelor's	
Insurance Underwriting	257	264	272	280	289	Diploma	
Mobile Application Development	600	720	840	960	1200	Bachelor's	
Network Administration	720	840	960	1080	1320	Bachelor's	
Network Engineering	800	900	1000	1200	1500	Bachelor's	
Network Security	106	120	130	143	152	Bachelor's	
Software Development	320	400	480	560	640	Bachelor's/Master's	
Software Engineering	160	192	224	256	320	Bachelor's	
Web Design	482	545	620	705	798	Diploma	
Web Development	482	545	620	705	798	Technical/Vocational	
Web Development	482	545	620	705	798	Bachelor's	
Applications Programmers	(70)	(72)	(74)	(76)	(79)	Bachelor's	
Computer Science	(420)	(490)	(560)	(630)	(770)	Diploma	
Database Designers and Administrators	(25)	(26)	(27)	(28)	(28)	Bachelor's	
Graphic Design	(350)	(420)	(490)	(560)	(700)	Technical/Vocational	
Graphic Design and Multimedia	(525)	(630)	(700)	(770)	(875)	Diploma	
Systems Administrators	(684)	(687)	(689)	(692)	(695)	Bachelor's	
Videography	(1,500)	(1,800)	(2,000)	(2,200)	(2,500)	Diploma	
Wood Processing and Furniture Making	(1,000)	(1,200)	(1,400)	(1,600)	(1,800)	Diploma	
Basic IT Consultants	(330)	(310)	(290)	(270)	(250)	Bachelor's	
Basic IT Managers	(150)	(130)	(110)	(90)	(70)	Bachelor's	
Basic IT Project Managers	(270)	(250)	(230)	(210)	(190)	Bachelor's	

Occupations Title	Estimated 5-year Gaps					Entry-Level Education	Status
	2025/26	2026/27	2027/28	2028/29	2029/30		
Basic IT Solutions Specialists	(100)	(80)	(60)	(40)	(20)	Diploma	
Basic IT Support Technicians	(500)	(480)	(460)	(440)	(420)	Diploma	
Junior System Administrators	(400)	(380)	(360)	(340)	(320)	Bachelor's	
Basic Network Support Staff	(80)	(60)	(40)	(20)	(10)	Diploma	
Basic Network Technicians	(430)	(410)	(390)	(370)	(350)	Diploma	
Basic Software Developers	(180)	(160)	(140)	(120)	(100)	Bachelor's	
Basic Software Engineers	(460)	(440)	(420)	(400)	(380)	Bachelor's	
Network Administrators	(440)	(420)	(400)	(380)	(360)	Bachelor's	
Web Design Assistants	(440)	(420)	(400)	(380)	(360)	Diploma	
Web Developers	(430)	(410)	(390)	(370)	(350)	Bachelor's	
Entry-Level Systems Engineers	(170)	(150)	(130)	(110)	(90)	Bachelor's	
General Software Developers	(480)	(460)	(440)	(420)	(400)	Bachelor's	

Source: *NPA HR Projection Model. *** Figures in brackets represent over supply, otherwise, net demand*

6.2.10.4. Specific Interventions to Address the Programme Human Resource Gaps

216. The NDPIV–HRDP will prioritise the following interventions under this programme as shown in Table 6.34.

Table 6.34: HRD Interventions for the Digital Transformation Programme and Respective Actors

Interventions	Implementing MDAs
i. Revise and update educational curricula to reflect current industry requirements and emerging technologies.	MoES, MoICT & NG and NCHE
ii. Establish partnerships between educational institutions and tech companies to ensure relevant training and internships.	MoES, MoICT & NG and UCC
iii. Develop Industry-Driven Certification Programmes based on industry needs to validate and recognise relevant skills.	MoICT &NG, UCC and MoPS
iv. Integrate projects that address real-world challenges into academic programmes to enhance practical skills.	MoES, MoICT & NG and NCHE
v. Invest in modern training facilities and resources to support up-to-date learning methods and technologies.	MoES, MoICT & NG and UCC
vi. Set up institutes focused on advanced and niche areas of ICT and digital technology for in-depth learning.	MoICT & NG, UCC and MoES
vii. Develop programmes for ongoing professional development in ICT to keep skills current with technological advancements.	MoICT & NG, UCC and MoPS
viii. Develop platforms for professionals to share knowledge, best practices, and emerging trends in ICT.	MoICT & NG, UCC and MoES
ix. Promote and support online courses and certifications to provide flexible learning opportunities.	MoICT & NG, UCC and MoES
x. Facilitate industry conferences and events to update professionals on new developments and networking opportunities.	MoICT & NG, UCC and MoES
xi. Create training programmes specifically focused on the skills needed for ICT infrastructure expansion.	MoICT & NG, UCC and MoWT
xii. Implement apprenticeship and internship programmes to provide practical experience in ICT infrastructure projects.	MoICT & NG, UCC and MoES
xiii. Develop certification programmes to validate the expertise of technicians working on ICT infrastructure.	MoICT & NG, UCC and MoPS
xiv. Encourage partnerships between government and private sector to enhance the development of ICT infrastructure.	MoICT & NG, UCC and MoWT
xv. Invest in advanced training equipment and facilities to support skills development for ICT infrastructure.	MoICT & NG, UCC and MoFPED

Interventions	Implementing MDAs
xvi. Establish hubs dedicated to ICT research and innovation to support and nurture new ideas and technologies.	MoICT & NG, UCC and MoES
xvii. Provide grants to support research and development projects in ICT and digital technologies.	MoICT & NG, UCC and MoFPED
xviii. Foster partnerships with international research institutions to enhance local ICT research and innovation.	MoICT & NG, UCC and MoFA
xix. Organize challenges and competitions to stimulate innovative solutions in ICT and digital technologies.	MoICT & NG, UCC and MoES
xx. Provide targeted training for individuals involved in ICT research and development to enhance their expertise.	MoICT & NG, UCC and MoES
xxi. Develop a comprehensive framework for HR development tailored to the ICT and digital technology sectors.	MoICT & NG, UCC and MoPS
xxii. Embed HR development initiatives within strategic planning processes to ensure alignment with ICT goals.	MoICT & NG, UCC and MoFPED
xxiii. Implement a system to monitor and evaluate the effectiveness of HR development activities in the ICT sector.	MoICT & NG, UCC and MoPS
xxiv. Develop Human Resource Development Planning Guidelines for Ministries, Departments and Agencies as well as Local Governments	NPA, MoFPED
xxv. Integrate human resource development into institutional strategic plans.	All MDAs and LGs under this programme

6.2.11. Sustainable Housing and Urban Development

6.2.11.1. Introduction

217. **The Sustainable Urbanisation and Housing Programme is essential for capitalising on the opportunities presented by urbanisation to accelerate socio-economic transformation.** As urbanisation generates wealth, it also concentrates poverty and inequality, necessitating skilled professionals to mitigate these challenges. Efficient urban planning and development require a workforce capable of managing the complexities of inclusive structural transformation. The concentration of economic activities in urban areas provides substantial productive advantages, contributing to overall growth and development. Therefore, a well-prepared and effective human resource strategy is crucial to harness these opportunities and ensure that urbanisation leads to equitable and sustainable progress.

218. **The growing urban middle class drives demand for manufactured goods and urban construction, creating significant opportunities for industrial development and employment.** To meet these demands, the programme must focus on developing a skilled labour force capable of supporting industrial growth and urban infrastructure development. By investing in human resources, the Sustainable Urbanisation and Housing Programme can facilitate the creation of employment opportunities, promote decent housing, and ensure the transformation of the informal sector into a more organised and productive component of the economy. This will ultimately lead to improved incomes and well-being for the urban population, driving sustainable socio-economic development in Uganda.

6.2.11.2. Guiding Standards in the Estimation of Programme Human Resource Needs

219. **The estimation of the human resource needs for the Sustainable Urbanisation and Housing Programme involves establishing specific guiding standards to ensure an adequate and well-distributed workforce.** For building architects, the standard is set at 15 architects per 10,000 population. This ratio ensures that there are sufficient professionals to design and oversee the construction of buildings, which is critical for managing rapid urban growth. Landscape architects, who play a key role in creating sustainable and aesthetically pleasing urban environments, are needed at a rate of 10 per 100,000 population. Urban and regional planners,

essential for developing comprehensive plans for land use and infrastructure, are required at a standard of 15 planners per 100,000 population as shown in Table 6.35. By adhering to these standards, the programme can ensure that all aspects of urban development are managed by qualified professionals, leading to well-planned, sustainable, and livable urban environments

Table 6.35: Guiding Standards in the Estimation of Programme Human Resource Needs

Occupation title	Recommended International Standards
Building Architects	15 per 10,000 population.
Landscape Architects	10 per 100,000 population.
Urban and Regional Planner	15 per 100,000 population
Traffic Planners and Analyst	5 per 100,000 population
Cartographer	4 per 100,000 population
Surveyor	15 per 100,000 population
Landscape Designers	5 per 100,000 population
Geographic Information System specialists	10 per 100,000 population
Environmental Engineers	20 per 100,000 population
Incinerator and Water Treatment Plant Operators	30 per 100,000 population
Social Impact Assessment specialists	2 per 100,000 population
Interior Designers and Decorators	20 per 100,000 population
Environmental and Occupational Health Inspectors and Associates	15 per 100,000 population
Real Estate Agents and Property Managers	150 per 100,000 population

6.2.11.3. Skills and Occupation Gaps for the Programme

220. **The Sustainable Urbanisation and Housing Programme faces significant skills and occupation gaps that must be addressed to ensure the successful implementation of urban development initiatives.** The demand for heritage architects and conservation architects is steadily increasing, reflecting the need for professionals skilled in preserving historical buildings and sites. Building architects, who are critical for designing and constructing new structures, are also in high demand, indicating a growing need for trained professionals in this field. These gaps highlight the necessity for educational institutions to produce more graduates with specialised degrees in architecture and conservation to meet the expanding needs of sustainable urbanisation projects.

221. **In the landscape architecture sector, there are notable deficits in landscape designers, landscape planners, and garden designers, suggesting a critical shortage of qualified professionals.** Town and traffic planners, including urban and regional planners and traffic planners and analysts, are also in short supply as shown in Table 6.36. These roles are essential for developing comprehensive urban plans, managing transportation systems, and ensuring efficient land use. Addressing these skill gaps requires targeted educational and training programmes to produce more professionals in these fields. Without closing these gaps, the Sustainable Urbanisation and Housing Programme may struggle to achieve its goals of creating well-planned, sustainable, and livable urban environments, as the availability of skilled professionals is crucial for effective urban development and planning.

Table 6.36: Estimated 5-year HR Gaps for the Sustainable Urbanisation and Housing Programme

Occupations Title	Estimated 5-year Gaps					Entry-Level Education	Status
	2025/26	2026/27	2027/28	2028/29	2029/30		
Environmental Engineering	500	600	700	800	1,000	Bachelor's	
Environmental Health	70	80	90	100	110	Master's	
Environmental Policy Analysts	150	145	140	135	130	Master's	
Environmental Policy Researchers	30	35	40	45	50	PhD	

Occupations Title	Estimated 5-year Gaps					Entry-Level Education	Status
	2025/26	2026/27	2027/28	2028/29	2029/30		
Environmental Science Professors	15	14	15	13	12	PhD	
Geographical Information Systems (GIS)	300	400	500	600	700	Bachelor's/ Master's	
Urban Planning	110	120	138	149	156	Bachelor's	
Urban Resilience Planning	50	60	70	80	90	Master's	
Water Resource Management Specialists	113	118	123	128	133	Master's	
Wind Energy	190	185	180	175	170	Technical/ Vocation	
Affordable Housing Developers	360	340	320	300	280	Master's	
Building Code Compliance Officers	440	420	400	380	360	Bachelor's	
Building Code Inspectors	200	180	160	140	120	Bachelor's	
Building Inspectors	430	410	390	370	350	Bachelor's	
Housing Demand Analysts	120	100	80	60	40	Bachelor's	
Housing Market Analysts	90	70	50	30	10	Bachelor's	
Land Administration Specialists	390	370	350	330	310	Bachelor's	
Land and Housing Policy Experts	420	400	380	360	340	Master's	
Land and Housing Research Specialists	40	20	10	5	2	Master's	
Land Surveying Technicians	350	330	310	290	270	Diploma	
Land Surveyors	480	460	440	420	400	Bachelor's	
Architecture	209	220	239	242	306	Bachelor's	
Building and Construction Technology	870	893	917	943	978	Diploma	
Civil Engineering	560	592	640	672	720	Bachelor's	
Civil Works and Construction	610	650	740	760	780	Diploma	
Electrical Engineering	671	698	710	725	750	Bachelor's	
Electrical Installation	750	782	810	835	860	Certificate	
Electrical Work	600	720	840	960	1,200	Technical/Vocational	
Geographical Science specialists	274	282	290	299	308	Master's	
Greenhouse Management specialists	123	127	131	135	139	Bachelor's	
Health Administration	920	980	1,060	1,080	1,900	Bachelor's	
Natural Resource Management	600	720	840	960	1,200	Bachelor's	
Quantity Surveying	214	221	227	234	241	Bachelor's	
Waste Management and Recycling	860	880	900	920	940	Lower Secondary	
Water and Sanitation Engineers	192	224	256	288	320	Bachelor's	
Water and Sanitation Management	860	880	900	920	940	Bachelor's	
Water Resource Management	320	400	480	560	640	Bachelor's	
Land Use Planners	450	430	410	390	370	Bachelor's	
Land Use Planning and Development Specialists	50	30	20	10	5	Master's	
Land Use Policy Experts	110	90	70	50	30	Master's	
Property Development Financial Managers	50	30	20	10	5	Bachelor's	
Property Development Risk Analysts	190	170	150	130	110	Bachelor's	
Property Management Specialists	350	330	310	290	270	Bachelor's	
Property Valuers	470	450	430	410	390	Bachelor's	
Urban Development Strategy Experts	130	110	90	70	50	Master's	
Urban Environmental Engineers	320	300	280	260	240	Master's	
Urban Safety Inspectors	180	160	140	120	100	Master's	
Urban Safety Planners	380	360	340	320	300	Master's	
Urban Transport Planners	380	360	340	320	300	Master's	
Plumbing	(810)	(820)	(840)	(860)	(906)	Technical/Vocational	
Plumbing and Pipefitting	(810)	(820)	(840)	(860)	(2,000)	Certificate	
Property and Real Estate Management	(1,500)	(1,800)	(2,000)	(2,200)	(2,500)	Bachelor's	

Occupations Title	Estimated 5-year Gaps					Entry-Level Education	Status
	2025/26	2026/27	2027/28	2028/29	2029/30		
Road and Bridge Construction Labourers	(1,500)	(1,800)	(2,000)	(2,200)	(2,500)	Diploma	
Road Construction and Maintenance Labourers	(1,500)	(1,800)	(2,000)	(2,200)	(2,500)	Lower Primary	
Building and Construction Assistants	(750)	(800)	(850)	(900)	(950)	Lower Secondary	
Building and Construction Coordinators	(600)	(650)	(700)	(750)	(800)	Diploma	
Building Compliance Assistants	(10)	(15)	(20)	(30)	(40)	Diploma	
Building Compliance Staff	(60)	(70)	(80)	(90)	(100)	Diploma	
Building Inspectors	(600)	(650)	(700)	(750)	(800)	Bachelor's	
Building Project Assistants	(20)	(30)	(40)	(50)	(60)	Lower Secondary	
Building Project Coordinators	(150)	(200)	(250)	(300)	(350)	Bachelor's	
Building Project Support Staff	(10)	(15)	(20)	(30)	(40)	Diploma	
Building Quality Inspectors	(1,050)	(1,100)	(1,150)	(1,200)	(1,250)	Bachelor's	
Building Site Assistants	(300)	(350)	(400)	(450)	(500)	Diploma	
Building Site Coordinators	(1,000)	(1,050)	(1,100)	(1,150)	(1,200)	Diploma	
Building Technicians	(850)	(900)	(950)	(1,000)	(1,050)	Diploma	
Construction Site Supervisors	(900)	(950)	(1,000)	(1,050)	(1,100)	Diploma	
General Administrative Assistants	(1,200)	(1,250)	(1,300)	(1,350)	(1,400)	Diploma	
Housing Development Coordinators	(250)	(300)	(350)	(400)	(450)	Bachelor's	
Land Administration Officers	(700)	(750)	(800)	(850)	(900)	Bachelor's	
Land and Property Management Assistants	(30)	(40)	(50)	(60)	(70)	Diploma	
Property Management Assistants	(550)	(600)	(650)	(700)	(750)	Lower Secondary	
Property Management Clerks	(350)	(400)	(450)	(500)	(550)	Lower Secondary	
Property Management Support Staff	(15)	(20)	(30)	(40)	(50)	Lower Secondary	
Property Managers	(750)	(800)	(850)	(900)	(950)	Bachelor's	

Source: *NPA HR Projection Model. *** Figures in brackets represent over supply, otherwise, net demand*

6.2.11.4. Specific Interventions to address competency gaps for the Programme

222. The NDPIV-HRDP will prioritise the following interventions under this program as shown in Table 6.37.

Table 6.37: HRD Interventions for the Sustainable Urbanisation and Housing Programme and respective actors

Intervention	Implementing MDAs
i. Develop and implement vocational training programmes tailored to urban economic sectors.	MoES, MGLSD, MoFPED
ii. Provide support and mentorship programmes for urban entrepreneurs to foster business growth.	MoTIC and MoFPED
iii. Promote and facilitate PPPs to create job opportunities and economic growth in urban areas.	MoFPED, MoLG and MoTIC
iv. Conduct workshops and training sessions to enhance skills relevant to urban economic sectors.	MoES, MGLSD and MoLG
v. Establish research and planning units focused on urban economic development to guide workforce strategies.	MoFPED, MoLG and MoTIC

Intervention	Implementing MDAs
vi. Develop and deliver education programmes focused on urban planning and development best practices.	MLHUD, MoES and MoLG
vii. Organise workshops and seminars to enhance skills and knowledge related to urban development.	MLHUD, MoLG and MoFPED
viii. Develop and enforce standards and guidelines for orderly urban development.	MLHUD, MoLG and MoFPED
ix. Strengthen the capacity of agencies involved in urban development through targeted training and resources.	MLHUD, MoLG and MoPS
x. Promote and facilitate public participation in urban planning processes to ensure that community needs are addressed.	MLHUD, MoLG and MoICT &NG
xi. Provide training programmes on effective solid waste management practices.	MoWE, MoLG and MoH
xii. Invest in and develop facilities that convert waste into energy, improving waste management and infrastructure.	MoWE, MoEMD and MoLG
xiii. Conduct workshops on best practices for urban infrastructure planning and design.	MoWT, MLHUD and MoLG
xiv. Develop training programmes focused on understanding and implementing urban policies and laws.	MLHUD, MoJCA and MoLG
xv. Create comprehensive manuals and guidelines to support the effective implementation of urban policies and laws.	MLHUD, MoJCA and MoLG
xvi. Organise workshops to improve skills in implementing and enforcing urban policies and laws.	MLHUD, MoJCA and MoLG
xvii. Create and implement human resource policies and strategies to support programme objectives.	MoPS, MoFPED and MoES
xviii. Conduct programmes to enhance the skills and capabilities of HR personnel involved in the programme.	MoPS, MoES and MoFPED
xix. Establish systems to monitor and manage performance within the programme's human resources.	MoPS, MoFPED and MoLG
xx. Develop Human Resource Development Planning Guidelines for Ministries, Departments and Agencies as well as Local Governments	NPA, MoFPED
xxi. Integrate human resource development into institutional strategic plans. .	All MDAs and LGs under this programme

6.2.12. Regional Development Programme

6.2.12.1. Introduction

223. **The Regional Development Programme (RDP) addresses regional disparities and promotes balanced development across Uganda.** This programme enhances local governance, improves infrastructure, and fosters economic opportunities at the regional level. Recognising that human resource development is vital for driving regional growth, the RDP ensures that local populations have access to the necessary skills and training to engage in economic activities. The RDP aligns with Uganda's national goals for equitable development and social inclusion by focusing on decentralisation and empowering local governments. This commitment to enhancing regional capacities is essential for achieving the aspirations outlined in Uganda Vision 2040 and the African Union's Agenda 2063, emphasising sustainable development across all member states.

6.2.12.2. Guiding Standards in the Estimation of Programme HR Needs

224. **Accurate estimation of human resource needs for the RDP requires adherence to specific guiding standards.** A thorough analysis of current workforce capabilities, demographic trends, and projected regional development needs is essential. This includes assessing the demand for key roles in local governance, infrastructure development, and economic management. Additionally, integrating international standards and best practices will ensure that local governments are equipped with the necessary expertise to manage development projects effectively. By aligning human resource planning with these guiding standards, the RDP can foster a capable workforce prepared to meet regional challenges and opportunities. The guiding

standards in the estimation of this programme's human resource needs are summarised in Table 6.38.

Table 6.38: Guiding Standards in the Estimation of Programme Human Resource Needs

Occupation Title	International Standards
Telecommunications Engineers	0.5 per 10,000 population in urban areas
Energy and Infrastructure Planners	0.6 per 10,000 population in urban and rural areas
Transport Engineers	0.5 per 10,000 population in urban areas
Geospatial Information Systems (GIS) Specialists	0.4 per 10,000 population in urban areas
Disaster Risk Reduction Specialists	0.3 per 10,000 population in urban and rural areas
Water and Sanitation Officers	0.4 per 10,000 population in urban areas
Medical Superintendents	0.4 per 10,000 population in urban and rural areas
Community Development Workers	0.5 per 10,000 population in rural areas
Urban and Regional Planners	0.7 per 10,000 population in urban areas
District Health Officers	0.4 per 10,000 population in urban and rural areas
Public Works Engineers	0.5 per 10,000 population in urban areas
Inspectors of Schools	0.3 per 10,000 population in urban areas
Environmental Conservation Officers	0.5 per 10,000 population in urban areas
Surveyors and Cartographers	0.4 per 10,000 population in urban and rural areas
Social Workers (Regional Focus)	0.5 per 10,000 population in urban areas
Local Government Auditors	0.3 per 10,000 population in rural areas
Physical Planners	0.3 per 10,000 population in urban areas
IT Systems Administrators	0.5 per 10,000 population in urban areas
Public Finance Specialists	0.6 per 10,000 population in urban areas
Construction Managers	0.4 per 10,000 population in urban and rural areas
Disaster Response Coordinators	0.3 per 10,000 population in urban areas
Production Officers	0.4 per 10,000 population in rural areas
Decentralization Experts	0.3 per 10,000 population in urban areas
Local Economic Development Specialists	0.4 per 10,000 population in rural areas
Rural Development Specialists	0.3 per 10,000 population in rural areas
Refugee Response Coordinators	0.3 per 10,000 population in urban areas
Environmental & Social Impact Assessors	0.4 per 10,000 population in urban and rural areas
Agribusiness Development Officers	0.3 per 10,000 population in rural areas
Vocational Trainers & Instructors	0.4 per 10,000 population in rural areas
Transport & Logistics Specialists	0.5 per 10,000 population in urban areas
Rural Tourism Development Officers	0.3 per 10,000 population in rural areas
Regional Planning Officers	0.4 per 10,000 population in urban areas
Social Protection Officers	0.3 per 10,000 population in rural areas
Veterinary Officers	0.3 per 10,000 population in rural areas
Basic Administrative Roles (Local Authorities)	0.5 per 10,000 population in urban areas
Regional Public Administrators	0.5 per 10,000 population in urban areas
Library Science (Regional Services)	0.3 per 10,000 population in urban areas
Elementary Construction Workers	0.4 per 10,000 population in rural areas
Data Entry Clerks	0.5 per 10,000 population in urban areas
Human Rights Officers	0.3 per 10,000 population in urban areas

6.2.12.3. Education and Skills Gaps for the Programme

225. **The analysis of human resource supply and demand within the Regional Development Programme (RDP) reveals critical skills and occupation gaps over the next five years, especially in local governance and economic development.** With an increasing emphasis on decentralisation and local governance, there is a growing need for skilled local government administrators and economic development officers who can effectively implement policies and programmes at the community level. As infrastructure projects continue to expand, the demand for planners and engineers is also rising, underscoring the importance of technical training in these areas. Furthermore, there is a significant need for capacity building in community engagement and public health to ensure that local initiatives are responsive to the needs of the populations they serve. Addressing these gaps will necessitate strategic interventions that focus

on education, training, and partnerships with local institutions, ensuring a robust and capable workforce.

226. **The human resource projections for the RDP address these critical gaps needed to reduce regional disparities and enhance local governance and economic development.** These estimates stem from the programme's strategic context, which prioritizes addressing regional inequalities, improving local governance, and creating economic opportunities across various regions. The human resource projections model incorporates region-specific labor market needs, infrastructure development requirements, and service delivery improvements designed to boost economic resilience and local revenue. The identified occupation gaps are essential for supporting decentralisation efforts, building institutional capacity, and addressing the unique challenges faced by different regions in Uganda. Over the next five years (FY 2025/26 - 2029/30), these projections are set to guide initiatives aimed at aligning workforce needs with development objectives, highlighting the educational qualifications necessary to fill these roles. The detailed skills and occupation gaps for the programme are outlined in Table 6.39.

Table 6.39: Estimated 5-year occupation and skills gaps for the Regional Development Programme

Occupation Title	2025/26	2026/27	2027/28	2028/29	2029/30	Entry-Level Education	Status
Telecommunications Engineers	12	15	18	22	25	Bachelor's	
Energy and Infrastructure Planners	10	12	15	18	22	Bachelor's	
Transport Engineers	10	12	15	18	20	Bachelor's	
Urban and Regional Planners	15	18	22	25	30	Bachelor's	
Community Development Workers	12	15	18	22	25	Bachelor's	
Public Works Engineers	10	12	15	18	22	Bachelor's	
Environmental Conservation Officers	12	15	18	22	25	Bachelor's	
Surveyors and Cartographers	10	12	15	18	20	Bachelor's	
Social Workers (Regional Focus)	15	20	25	30	35	Bachelor's	
Local Government Auditors	8	10	12	15	20	Bachelor's	
IT Systems Administrators (Regional Offices)	10	12	15	18	20	Bachelor's	
Public Finance Specialists	10	12	15	18	20	Master's	
Construction Managers (Regional Projects)	12	15	18	22	25	Bachelor's	
Disaster Response Coordinators	8	10	12	15	18	Bachelor's	
Civil Engineers	10	12	15	18	20	Bachelor's	
Decentralization Experts	10	12	15	18	20	Master's	
Local Economic Development Specialists	12	15	18	22	25	Bachelor's	
Water Resource Management Engineers	8	10	12	15	20	Bachelor's	
Rural Development Experts	15	18	22	25	30	Master's	
Refugee Response Coordinators	10	12	15	18	22	Bachelor's	
Public Health Coordinators	15	20	25	30	35	Master's	
Geospatial Information Systems (GIS) Specialists	8	10	12	15	20	Bachelor's	
Environmental & Social Impact Assessors	12	15	18	22	25	Bachelor's	
Agribusiness Development Officers	15	18	22	25	30	Bachelor's	
Vocational Trainers & Instructors	20	25	30	35	40	Diploma	
Transport & Logistics Specialists	12	15	18	22	25	Bachelor's	
Rural Tourism Development Officers	8	10	12	15	20	Bachelor's	
Regional Planning Officers	10	12	15	18	20	Bachelor's	
Social Protection Officers	12	15	18	22	25	Bachelor's	
Cultural Development Officers	8	10	12	15	20	Bachelor's	

Occupation Title	2025/26	2026/27	2027/28	2028/29	2029/30	Entry-Level Education	Status
Basic Administrative Roles (Local Authorities)	(60)	(70)	(80)	(90)	(100)	Diploma	
Event Planning & Hospitality Services (Regional)	(15)	(20)	(25)	(30)	(35)	Diploma	
Receptionists & Guest Relations Staff (Local)	(20)	(25)	(30)	(35)	(40)	Certificate	
Library Science (Regional Services)	(10)	(12)	(15)	(18)	(20)	Diploma	
Elementary Construction Workers	(50)	(60)	(70)	(80)	(90)	No Education	

Source: *NPA HR Projection Model. *** Figures in brackets represent over supply, otherwise, net demand*

6.2.12.4. Interventions to Address the Programme HR Gaps

227. The Plan will prioritise the following interventions under this programme as shown in Table 6.40.

Table 6.40: HRD Interventions for the Regional Development Programme and Respective Actors

Intervention	Implementing MDAs
i. Implement training workshops focusing on governance, leadership, and service delivery.	MoLG and MoFPED
ii. Develop mentorship programmes to support new local government officials in effective administration.	MoLG
iii. Organise regular refresher courses for existing officials on new policies and practices.	MoLG
iv. Introduce e-learning modules for the continuous professional development of local officials.	MoLG
v. Facilitate exchanges with officials from successful regional governments to share best practices.	MoLG
vi. Establish partnerships with local universities for skills training in economic development.	MoFPED and MoES
vii. Launch regional economic forums to promote best practices and knowledge sharing among practitioners.	MoFPED
viii. Create job creation initiatives through entrepreneurship training and funding opportunities.	MoFPED
ix. Facilitate workshops on market research and business development for local entrepreneurs.	MoFPED
x. Create platforms for dialogue between local governments and communities to enhance participation.	MoLG and MoFPED
xi. Develop community engagement toolkits to guide local leaders in participatory planning processes.	MoLG
xii. Organise regular community forums to gather feedback on local development initiatives.	MoLG
xiii. Conduct outreach programmes to educate communities on their rights and opportunities for engagement.	MoLG
xiv. Conduct training programmes for health and environmental officers on emerging public health challenges.	MoH, MoWE
xv. Facilitate community workshops on public health awareness and environmental sustainability.	MoH, MoWE
xvi. Establish partnerships with NGOs for capacity building in health and environmental sectors.	MoH, MoWE
xvii. Implement health promotion campaigns targeting specific local health challenges.	MoH
xviii. Partner with local vocational institutions to provide targeted skills training programmes.	MoES, MoFPED

Intervention	Implementing MDAs
xix.Promote awareness campaigns on the importance of skill development for local employment.	MoES
xx.Support the establishment of regional training centers to offer specialised skills programmes.	MoES
xxi.Create internship opportunities for students to gain hands-on experience in local industries.	MoES
xxii.Integrate human resource development into institutional strategic plans.	All MDAs and LGs

6.2.13. Public Sector Transformation Programme

6.2.13.1. Introduction

228. **The Public service must be equipped with skilled human resources to effectively implement government programmes and support the private sector.** This requires a robust human resources strategy that focuses on closing significant skills gaps within the public sector. Enhancing the capabilities of public service personnel is crucial to driving efficiency, accountability, and innovation in government operations. By investing in targeted training and development programmes, fostering a culture of continuous improvement, and ensuring that public sector employees are well-equipped to meet the evolving demands of their roles, the government can create a dynamic and responsive public service. This will not only improve service delivery but also support the private sector in achieving sustained economic growth, thereby realising the ambitious goals outlined in Uganda's development plans.

229. **An effective and efficient public service is essential to a country's development and requires a well-trained and capable workforce.** The public sector encompasses all levels of government—central, regional, and local—as well as government-controlled enterprises. Public service professionals play a crucial role in delivering high-quality public goods and services, ensuring equitable income distribution, and fostering balanced economic growth. They are responsible for job creation, regulating public affairs, maintaining public order, and creating an investment-friendly environment. In the face of complex challenges such as climate change, political instability, geopolitical dynamics, globalisation, pandemics, epidemics, migration, and rapid population growth, the human resources within the public service must be adept and resilient. This necessitates ongoing training and development to equip public sector employees with the skills and knowledge needed to address these issues effectively. By investing in the development of the public service workforce, governments can ensure that they are prepared to navigate these complexities and risks, ultimately contributing to sustainable development and improved public sector performance.

6.2.13.2. Guiding Standards in the estimation of Programme Human Resource Needs

230. **The guiding standards for estimating human resource needs in the Public sector Transformation Programme as shown in Table 6.41 are essential for ensuring the programme's success.** For example; Economists are crucial for analyzing economic trends and providing insights that shape public policy and economic strategies. Human resource managers play a key role in recruiting, training, and retaining a skilled workforce, which is vital for the effective operation of the public sector. Policy and planning managers are needed to develop and implement strategic plans that align with governmental goals, while policy administration professionals ensure the smooth execution and administration of policies. Accountants and financial management specialists are essential for maintaining financial integrity, managing budgets, and ensuring transparency in public spending. Establishing clear standards for the number and distribution of these professionals helps to address gaps and ensure that all aspects of public sector transformation are adequately supported. By focusing on these roles, the

programme can build a competent and effective workforce capable of driving public sector reform, improving service delivery, and enhancing overall governance and efficiency.

Table 6.41: Guiding Standards in the Estimation of Programme Human Resource Needs

Occupation title	International Standards
Economists	20 per 100,000 population
Human Resource Managers	30 per 100,000 population
Policy and Planning Managers	15 per 100,000 population
Policy Administration Professionals	20 per 100,000 population
Accountants	100 per 100,000 population
Customs and Border Inspectors	5 per 100,000 population
Financial Management specialists	20 per 100,000 population
Government Licensing Officials	5 per 100,000 population
Government Social Benefits Officials	10 per 100,000 population
Government Tax and Excise Officials	10 per 100,000 population
Managing Directors and Chief Executives	20 per 100,000 population
Police Inspectors and Detectives	30 per 100,000 population
Journalists	100 per 100,000 population
Lawyers	150 per 100,000 population
Legislators	10 per 100,000 population
Public Relations Professionals	30 per 100,000 population
Prison Guards	40 per 100,000 population

6.2.13.3. Skills and Occupation Gaps for the Programme

231. **The Public Sector Transformation Programme faces significant occupation and skills gaps that need to be addressed to ensure effective reform and development.** As shown in Table 6.42, there is a critical shortage of professionals skilled in analysing economic data and trends to inform policy decisions. Human resource roles are similarly underserved, with gaps in positions such as human resource managers, business training managers, and compensation and benefits managers. These roles are essential for managing workforce development, recruitment, and employee well-being, which are crucial for transforming public sector organisations. Additionally, there is a need for expertise in employee wellness, health and safety management, and personnel management to ensure a healthy and productive work environment.

232. **Policy and planning also reveal significant gaps, including shortages in corporate planning managers, public policy managers, and strategic planning managers.** These professionals are needed to develop and implement effective policies and strategies for public sector transformation. The demand extends to policy development and administration, with a need for policy development managers, monitoring and evaluation managers, and policy analysts. These roles are critical for crafting, assessing, and refining policies to ensure they meet public sector goals and respond to emerging challenges. Therefore, addressing these gaps through targeted recruitment and training will enhance the programme's ability to drive successful public sector reforms and improve overall governance and service delivery.

Table 6.42: Estimatjed 5-year occupation and skills gaps for the Public Sector Transformation Programme

Occupations Title	Estimated 5-year Gaps					Entry-Level Education	Status
	2025/26	2026/27	2027/28	2028/29	2029/30		
Anti-Corruption Specialists	70	80	90	100	110	Master's	
Anti-Money Laundering Specialists	15	18	25	35	45	Master's	
Anti-Trafficking Specialists	70	80	90	100	110	Master's	
Artificial Intelligence Specialists	130	125	120	115	110	Master's	
Auto Body Repair	100	110	120	130	140	Bachelor's	
Auto Electrical	130	125	120	115	110	Bachelor's	

Occupations Title	Estimated 5-year Gaps					Entry-Level Education	Status
	2025/26	2026/27	2027/28	2028/29	2029/30		
Auto Mechanics	111	116	122	131	143	Bachelor's	
Big Data Analysts	100	95	90	85	80	Master's	
Biostatistics	50	60	70	80	90	Master's	
Blockchain Developers	110	105	100	95	90	Bachelor's	
Border Control Specialists	50	60	70	80	90	Bachelor's	
Educational Policy Analysts	140	130	120	110	100	Master's	
Educational Research Analysts	160	140	120	100	80	Master's	
Energy Policy Analysts	20	15	10	5	5	Master's	
Environmental Policy Analysts	150	145	140	135	130	Master's	
Genetic Counseling	40	50	60	70	80	Master's	
Operations Research Specialists	12	17	22	27	32	Master's	
Public Security Management Specialists	40	45	50	55	60	Master's	
School Curriculum Analysts	130	120	110	100	90	Master's	
Business Innovation	853	894	915	954	980	Bachelor's	
Business Management	420	524	613	659	714	Bachelor's	
Civil Engineering	560	592	640	672	720	Bachelor's	
Disaster Risk Management	311	321	330	340	350	Bachelor's	
Economics	280	290	300	310	367	Bachelor's	
Food and Beverage Processing	900	1,040	1,060	1,080	1,200	Diploma	
Housing and Urban Development	900	1,200	1,400	1,600	2,000	Bachelor's	
Human Resource Management	920	980	1,060	1,080	1,900	Bachelor's	
Human Rights	214	221	227	234	241	Bachelor's	
International Development	106	120	130	143	152	Master's	
International Relations	257	264	272	280	289	Bachelor's	
Investment Management	274	282	290	299	308	Bachelor's	
Journalism	900	1,040	1,060	1,080	1,200	Bachelor's	
Waste Management and Recycling	860	880	900	920	940	Lower Secondary	
Water and Sanitation Management	860	880	900	920	940	Bachelor's	
Water Resource Management	320	400	480	560	640	Bachelor's	
Accounting occupations	(700)	(665)	(630)	(595)	(560)	Bachelor's	
Advocacy occupations	(595)	(560)	(525)	(490)	(455)	Bachelor's	
Banking and Insurance	(700)	(665)	(630)	(595)	(560)	Bachelor's	
Business Administration	(560)	(525)	(490)	(455)	(420)	Bachelor's	
Commercial Cleaners	(1,930)	(2,150)	(2,450)	(2,760)	(2,890)	Bachelor's	
Community Development	(1,225)	(1,295)	(1,400)	(1,470)	(1,575)	Bachelor's	
Customer Service Representatives	(290)	(280)	(270)	(260)	(250)	Diploma	
Front Office Managers	(525)	(630)	(700)	(770)	(875)	Bachelor's	
Gender and Development	(1,050)	(1,120)	(1,190)	(1,260)	(1,330)	Bachelor's	
Gender Studies	(350)	(420)	(490)	(560)	(630)	Bachelor's	
Journalism	(1,000)	(1,200)	(1,400)	(1,600)	(2,000)	Diploma	
Lawyers	(1,500)	(1,800)	(2,000)	(2,200)	(2,500)	Bachelor's	
Office Administration	(2,800)	(3,000)	(3,200)	(3,400)	(3,600)	Diploma	
Office Cleaning	(1,200)	(1,400)	(1,600)	(1,800)	(2,200)	Primary Level	
Personal Finance	(1,230)	(1,320)	(1,450)	(1,680)	(1,820)	Bachelor's	
Sanitation and Hygiene	(1,500)	(1,800)	(2,000)	(2,200)	(2,500)	Bachelor's	
Social Work and Social Administration	(2,820)	(2,960)	(3,250)	(3,810)	(4,010)	Bachelor's	

Source: *NPA HR Projection Model. *** Figures in brackets represent over supply, otherwise, net demand*

6.2.13.4. Specific Interventions to address competency gaps for the Programme.

233. Table 6.43 illustrates the interventions that the NDPIV-HRDP will prioritise for the programme

Table 6.43: HRD Interventions for the Public Sector Transformation Programme

Intervention	Implementing MDAs
i. Revise and update curricula to reflect current and future needs of the public sector labour market.	MoES, MoPS, and MoFPED
ii. Develop and implement apprenticeship programmes within the public sector to provide hands-on experience.	MoES, MoPS, and MoGLSD
iii. Foster partnerships between public sector institutions, industries, and academic institutions to align training programmes.	MoES, MoSTI, MTIC
iv. Establish CPD programmes to ensure public sector employees continuously update their skills and knowledge.	MoPS, MoES, MoFPED
v. Develop training programmes focused on enhancing technical skills specific to various public sector roles.	MoPS, MoES,, STI Secretariat
vi. Provide scholarships for public sector employees to pursue advanced technical and professional training.	MoPS, MoES, MoFPED
vii. Create platforms for public sector employees to share knowledge, experiences, and best practices.	MoPS, MoICT&NG, MoES,
viii. Implement mentorship and coaching programmes to support career development and skill enhancement.	MoPS, MoES, MoFPED
ix. Develop and implement accelerated certification programmes for priority skills areas.	MoES, MoPS, MTUC
x. Collaborate with international certification organizations to align local programmes with global standards.	MoES, MoSTI, MoFA
xi. Establish systems to recognize and certify skills and knowledge acquired through work experience and informal learning.	MoES, MoPS, MoGLSD
xii. Set up centres dedicated to assessing and certifying competencies according to international standards.	MoES, MoPS, MTIC
xiii. Establish a Programme Skills Coordination Committee (PSCC) for the Governance and Security Programme. The Council shall determine skills needs and skills standards of the programme.	Programme Secretariat
xiv. Mainstream Human Resource Development Planning in institutions Strategic Plans to identify and prioritise critical skills and education needs and soft skills requirements to meet the present and future manpower needs within the Programme.	All MDAs and LGs
xv. Build the Human Resource Development Planning capacities of Planning Units and Departments in the Ministries, Departments and Agencies as well as Local Governments within this program	NPA, MoFPED
xvi. Integrate human resource development into institutional strategic plans.	All MDAs and LGs

6.2.14. Governance and Security Programme

6.2.14.1. Introduction

234. **Governance and security programme play a critical role in ensuring stability, enforcing laws, and administering the country effectively.** This sector encompasses a diverse range of institutions and roles essential for safeguarding public safety, protecting national interests, and promoting good governance practices. However, challenges such as human rights violations and corruption hinder progress, necessitating urgent reforms aligned with Uganda's NDPIV. Good governance serves as the foundation for Uganda's development trajectory, influencing economic, political, and social spheres. Its alignment with the NDPIV strategic direction provides a framework for national progress. Despite these aspirations, Uganda faces numerous challenges, including persistent human rights violations, bureaucratic delays, policy inadequacies, and widespread corruption. These obstacles cast shadows on socio-economic advancement, underscoring the need for comprehensive governance reforms to foster sustained growth and prosperity.

235. **In parallel, security and human resource development are pivotal drivers of development, echoing NDPIV objectives**. Ongoing insecurity challenges emphasise the need for skilled personnel equipped with advanced methods to tackle evolving security threats effectively. Emphasising security, good governance, and human resource development roles is crucial for

propelling Uganda's development towards achieving double-digit growth and ensuring sustainable progress and prosperity aligned with NDPIV. Addressing occupation and skill gaps within the Governance and Security Programme is essential for meeting NDPIV priorities and anticipated demand. Strengthening human resource capacity, expanding institutions in conflict-prone areas, and enhancing personnel to manage workload demands are critical steps. Improving crime detection, investigation capabilities, and crime forecasting are also vital for enhancing governance and security efforts in Uganda.

6.2.14.2. Guiding Standards in the Estimation of Programme HR needs

236. **The estimation of human resource needs for Uganda's Governance and Security Programme is guided by several key standards and considerations aimed at ensuring effective resource allocation and operational efficiency.** These standards are essential for aligning human resource development strategies with the overarching goals of national security, law enforcement, and governance effectiveness. HR needs within the Governance and Security programme are closely aligned with NDPIV and other relevant policy frameworks. These plans outline strategic objectives, priorities, and anticipated challenges in governance, security, and public safety. A comprehensive analysis of current and projected operational requirements forms the basis for estimating manpower needs. This includes assessing the workload demands, geographic distribution of security threats, and the capacity of existing institutions to effectively respond to evolving challenges.

237. **By forecasting future needs based on demographic trends, crime patterns, and technological advancements, the plan anticipates and prepares for changing demands within the programme.** Benchmarking against international standards and best practices in governance and security sectors provides a comparative basis for estimating human resource needs, as illustrated in Table 6.44. This involves studying staffing ratios, professional qualifications, and deployment strategies observed in comparable jurisdictions. By adopting best practices, Uganda aims to enhance professionalism, operational effectiveness, and the ability to address transnational security threats in alignment with global norms.

Table 6.44: Guiding Standards for the estimation of Governance and Security Programme HR needs

Occupation tittle	Recommended Standards
Police Officers	1: 400 to 800 residents in urban areas, and 1: 1,000 to 1,500 residents in rural areas.
Traffic Officer	1: 5,000 to 10,000 residents in Urban Areas; 1:10,000 to 20,000 residents in Suburban Areas and 1: 20,000 to 30,000 residents in Rural Areas
Detectives	1: 3-5 patrol officers, depending on the caseload and complexity of cases.
Police Chief	1 chief/administrator per department, to oversee strategic direction, policy implementation, and community relations.
Correctional Officer	1: 3-5 inmates in higher security facilities to 1:20-30 inmates in lower security settings.
Prison Warden	1 warden per prison facility, regardless of size, responsible for overall administration and management.
Prison Counselor	1 counselor per 50-100 inmates, depending on the rehabilitation and mental health needs within the facility
Prison Nurse	1 nurse per 50 to 100 inmates, depending on the healthcare needs within a secure environment where access to medical services may be more restricted compared to community settings.
Labour Inspectors	1 Labour inspector per 10,000 workers, depending on the national distribution of labour force within the different sectors
Immigration Officers	1 Immigration Officer per 10,000 to 50,000 residents depending on peak times and operational needs.
Customs Officers	1 Customs officer per 1,000 to 5,000 incoming passengers, depending on the size and activity of the port as well as the Cargo and Trade Volume
Judges	1 judge per 100,000 to 200,000 residents, but also depending on factors such as the complexity of legal cases, the number of courts, and the efficiency of judicial processes.

Occupation tittle	Recommended Standards
Magistrates	1 magistrate per 200,000 to 300,000 residents, but may vary by regions due to differences in legal systems, judicial structures, and caseload dynamics.
Attorneys	1 attorney per 200 to 1,000 residents depending on factors such as the legal system, regulatory environment, and societal demand for legal services.
Border Patrol Agents	1 agent per 5,000 to 50,000 residents in High-Volume Border Crossings; 1 agent per 10 to 100 kilometers of border length, depending on the need for surveillance, patrolling, and response capabilities.

238. **The integration of technological advancements and innovation plays a pivotal role in determining human resource needs.** This includes leveraging advancements in cybersecurity, data analytics, and forensic sciences to optimise operational efficiencies and enhance investigative capabilities. By investing in training and development aligned with technological trends, the plan ensures that Uganda's Governance and Security workforce remains adaptable and proficient in utilising modern tools and techniques. Human rights considerations and ethical standards are integral to human resource planning within the Governance and Security programme. Upholding principles of accountability, transparency, and respect for human rights ensures that the workforce operates within legal frameworks and international conventions. Training programmes incorporate modules on human rights protection, conflict resolution, and community engagement to foster trust and cooperation between security agencies and the public. By observing these guiding standards, the NDPIV-HRDP aims to foster a skilled, professional, and responsive workforce capable of safeguarding national interests, promoting good governance, and ensuring public safety in Uganda.

6.2.14.3. Education and Skills Gaps for the Programme

239. **Effective governance and robust security are important to the stability and prosperity of Uganda.** However, the ability to implement and maintain such systems often faces significant challenges due to skills shortages. This section identifies and presents the key skills gaps within the Governance and Security Programme, providing an agenda for addressing these deficiencies. Although a thorough understanding of legal and regulatory frameworks is crucial for those involved in governance and security, there is an observed gap in the knowledge of laws, regulations, and international standards, which can lead to non-compliance and ineffective enforcement. Also, as technology continues to evolve, there is a growing need for governance and security personnel to be proficient in modern technological tools and cybersecurity practices. Currently, there is a notable gap in the technical skills required to protect against cyber threats and utilize technology for governance functions. The critical skills gaps for the Governance and Security Programme are summarised in Table 6.45.

Table 6.45: Estimated 5-Year Occupation and Skills Gaps for Governance and Security Programme

Occupations Title	Estimated 5-year Gaps					Entry-Level Education	Status
	2025/26	2026/27	2027/28	2028/29	2029/30		
Anti-Corruption Specialists	70	80	90	100	110	Master's	
Anti-Money Laundering Specialists	15	18	25	35	45	Master's	
Anti-Trafficking Specialists	70	80	90	100	110	Master's	
Border Control Specialists	50	60	70	80	90	Bachelor's	
Border Security Analysts	100	110	120	130	140	Bachelor's	
Civil Security Analysts	30	35	40	45	50	Bachelor's	
Conflict Mediation Specialists	110	115	120	125	130	Master's	
Counterterrorism Experts	130	140	150	160	170	Master's	
Crisis Negotiation Specialists	80	90	100	110	120	Master's	
Cyber Intelligence Analysts and Experts	130	140	150	160	170	Master's	

Occupations Title	Estimated 5-year Gaps					Entry-Level Education	Status
	2025/26	2026/27	2027/28	2028/29	2029/30		
Cybercrime Investigators	100	110	120	130	140	Bachelor's	
Cybersecurity Analysts	120	115	110	105	100	Bachelor's	
Cybersecurity Architects	60	55	50	45	40	Master's	
Data Privacy Experts	80	75	70	65	60	Bachelor's	
Educational Policy Analysts	140	130	120	110	100	Master's	
Educational Reform Consultants	140	130	120	110	100	Master's	
National Security Analysts	25	35	45	55	65	Master's	
Public Security Management Specialists	40	45	50	55	60	Master's	
Risk Management	35	30	25	20	15	Bachelor's	
Security Analysis Trainers	15	20	25	30	35	Master's	
Security Infrastructure Planners	200	210	220	230	240	Master's	
Strategic Intelligence Analysts	50	55	60	65	70	Master's	
Customs Officers	291	310	410	460	410	Diploma	
Immigration Officers	220	215	210	235	245	Diploma	
Import-export Administrator	130	120	110	110	110	Diploma	
Passport Officers (Issuing)	135	130	125	120	115	Bachelor's	
Motor Vehicle Examiner	320	315	310	255	235	Diploma	
Custodial Officer	106	117	129	141	156	Diploma	
Prison Warden	198	218	240	264	290	Diploma	
Prison Guard	184	202	223	245	269	Diploma	
Custodial Services Officer	199	209	120	132	145	Diploma	
Conflict Resolution and Peacebuilding	120	140	160	180	220	Bachelor's	
Criminal Justice	320	340	360	380	400	Bachelor's	
Disaster Risk Management	311	321	330	340	350	Bachelor's	
Human Rights	214	221	227	234	241	Bachelor's	
Journalism	900	1,040	1,060	1,080	1,200	Bachelor's	
Network Security	106	120	130	143	152	Bachelor's	
Mobile Patrol Officers	230	253	278	306	336	O-level Certificate	
Railway Patrol Officer	135	130	125	120	115	O-level Certificate	
Answering Service Operator	291	310	410	460	410	O-level Certificate	
Public Policy	260	280	309	480	514	Master's	
Advocacy occupations	(595)	(560)	(525)	(490)	(455)	Bachelor's	
Lawyers	(600)	(820)	(932)	(1,139)	(1,540)	Bachelor's	
Watchman positions	(988)	(1,196)	(1,316)	(1,447)	(1,647)	O-level Certificate	
Security Guards	(1,482)	(1,794)	(1,974)	(2,171)	(2,471)	O-level Certificate	
General Safety Assistants	(1,482)	(1,794)	(1,974)	(2,171)	(2,471)	O-level Certificate	
General Safety Trainers	(1,400)	(1,500)	(1,600)	(1,700)	(1,800)	Diploma	
General Security Personnel	(200)	(300)	(400)	(500)	(600)	O-level Certificate	
Governance Data Clerks	(1,900)	(2,000)	(2,100)	(2,200)	(2,300)	O-level Certificate	
Governance Support Staff	(50)	(150)	(250)	(350)	(450)	O-level Certificate	
National Security Analysts	(600)	(700)	(800)	(900)	(1,000)	Diploma	
Office Clerks	(50)	(55)	(60)	(65)	(70)	Bachelor's	
Office Managers	(800)	(900)	(1,000)	(1,100)	(1,200)	No Formal Education	
Office Support Staff	(200)	(300)	(400)	(500)	(600)	Bachelor's	
Police Assistants	(1,300)	(1,400)	(1,500)	(1,600)	(1,700)	No Formal Education	
Police Officers	(1,600)	(1,700)	(1,800)	(1,900)	(2,000)	Diploma	
Policy Implementation Coordinators	(1,800)	(1,900)	(2,000)	(2,100)	(2,200)	Bachelor's	
Policy Implementation Officers	(1,000)	(1,100)	(1,200)	(1,300)	(1,400)	Bachelor's	
Public Policy Assistants	(900)	(1,000)	(1,100)	(1,200)	(1,300)	Bachelor's	
Public Relations Officers	(10)	(110)	(210)	(310)	(410)	Bachelor's	
Records Clerks	(600)	(700)	(800)	(900)	(1,000)	Bachelor's	
Risk Management Clerks	(1,100)	(1,200)	(1,300)	(1,400)	(1,500)	O-level Certificate	
Security Assistants	(600)	(700)	(800)	(900)	(1,000)	O-level Certificate	
Security Coordinators	(25)	(125)	(225)	(325)	(425)	O-level Certificate	

Occupations Title	Estimated 5-year Gaps					Entry-Level Education	Status
	2025/26	2026/27	2027/28	2028/29	2029/30		
Security Guards	(400)	(500)	(600)	(700)	(800)	Diploma	
Security Inspectors	(1,900)	(2,000)	(2,100)	(2,200)	(2,300)	O-level Certificate	
Security Management Assistants	(1,000)	(1,100)	(1,200)	(1,300)	(1,400)	Diploma	
Security Operations Center Operators	(25)	(75)	(125)	(175)	(225)	Bachelor's	
Security Service Providers	(1,400)	(1,500)	(1,600)	(1,700)	(1,800)	Diploma	
Security Supervisors	(1,200)	(1,300)	(1,400)	(1,500)	(1,600)	Diploma	

Source: *NPA HR Projection Model. *** Figures in brackets represent over supply, otherwise, net demand*

6.2.14.4. Interventions to address the Programme HR Gaps

240. The NDPIV-HRDP will prioritise interventions highlighted in Table 6.46.

Table 6.46: HRD Interventions for Governance and Security Programme and respective actors

Intervention	Implementing MDAs
i. Revise educational curricula to include current governance and security trends and technologies.	Ministry of Education, Universities, Training Institutes (MEUTI)
ii. Partner with industry leaders to ensure training programmes align with labour market needs.	MGLSD, Industry Associations, Educational Institutions
iii. Establish internship programmes with relevant organisations to provide hands-on experience.	Universities, Private Sector Organizations, Government Agencies
iv. Conduct regular skills assessments to identify gaps and update training programmes accordingly.	Ministry of Education, Professional Bodies, Training Institutes
v. Offer continuing education and professional development courses to keep skills current.	Universities, Training Institutes, Professional Associations
vi. Develop specialised training programmes focused on critical security skills.	Security Agencies, Training Institutes, Ministry of Internal Affairs
vii. Implement certification programmes for key security and governance competencies.	Professional Bodies, Security Agencies, Educational Institutions
viii. Create leadership development programmes to prepare future leaders in governance and security.	MoPS, Universities, Training Institutes
ix. Train personnel in process optimisation and efficiency techniques for JLOS business processes.	JLOS Secretariat, Training Institutes, Ministry of Justice
x. Fast-track the establishment of a National Defense College (NDC) and Institute for Security Studies (ISS).	MoFA, Security Agencies, International Organizations
xi. Facilitate workshops and seminars with the private sector to understand and address their security needs.	Chamber of Commerce, Security Agencies, Private Sector Organizations
xii. Strengthen the capacity of the Uganda Police Force through providing specialised trainings to combat sophisticated crimes such as cyber-crimes.	MoFA, Security Agencies
xiii. Implement cross-functional training programmes to build expertise in multiple areas.	MoPS, Universities, Training Institutes
xiv. Conduct workshops focusing on technical skills needed for sustainable development.	Ministry of Environment, Universities, NGOs
xv. Encourage participation in professional networks and associations.	Professional Associations, Universities, Government Agencies
xvi. Establish exchange programmes with other governance and security organisations globally.	MoFA, Security Agencies, International Organizations
xvii. Develop online platforms for continuous learning and skill enhancement.	Ministry of ICT, Universities, Training Institutes
xviii. Establish a Programme Skills Coordination Committee (PSCC) for the Governance and Security Programme to	Program Secretariat

Intervention	Implementing MDAs
determine the program's skills needs and skills standards.	
xix. Mainstream Human Resource Development Planning in institutions' Strategic Plans to identify and prioritise critical skills and education needs and soft skills requirements to meet the present and future human resource needs within the Programme.	All MDAs and LGs
xx. Develop Human Resource Development Planning Guidelines for Ministries, Departments and Agencies as well as Local Governments	NPA, MoFPED
xxi. Build the Human Resource Development Planning capacities of Planning Units and Departments in the Ministries, Departments and Agencies as well as Local Governments within this programme	NPA, MoFPED
xxii. Integrate human resource development into institutional strategic plans.	All MDAs and LGs under this programme

6.2.15. Administration of Justice Programme

6.2.15.1. Introduction

241. **The effective administration of justice is a cornerstone for maintaining law and order, protecting individual rights, and upholding the rule of law**. An adequately staffed judiciary is essential to ensure timely and fair hearings, which in turn reduces the backlog of cases and prevents prolonged detention of individuals on remand. However, the judiciary in Uganda is grappling with significant staff shortages, which have compromised the efficiency and credibility of the justice system. This situation undermines public confidence in the legal system and hampers the overall functioning of the judiciary. The judiciary's current staffing levels are insufficient to keep pace with the increasing caseload, despite efforts to recruit more judicial officers. The mismatch between the number of judicial officers and the existing crime rate has resulted in an excessive volume of work at every court level. For instance, the Supreme Court requires 20 justices but has only 10, the Court of Appeal needs 56 but has only 15, and the High Court requires 150 but has just 58. These staffing gaps contribute to significant delays in the justice process, leading to prolonged detention and delayed justice for many individuals.

242. **Efforts have been made to address these gaps. The Administration of the Judiciary Act, 2020, has facilitated the recruitment of judicial officers, increasing staffing levels from 37% in FY 2020/21 to 45% in FY 2021/22.** In FY 2021/22, 258 new judicial officers were appointed to bridge staffing gaps and improve service delivery. This recruitment drive has led to improved performance by the courts of judicature in the previous financial year. However, despite these efforts, the judiciary continues to face substantial challenges. For example, in Arua district, the number of magistrates was reduced from two to one due to a recall, exacerbating the already critical staffing shortages. The magnitude of the problem is further highlighted by the situation in the Court of Appeal, which has over 8,000 cases pending. Operating in a panel system, the Court of Appeal can only constitute a maximum of five panels if all justices are available, but practically, only three panels are usually formed. With three panels available to handle 8,000 cases, the backlog is overwhelming, making it impractical for the current number of judges to hear and conclude both criminal and civil cases promptly. This results in lengthy trials and significant delays in the disposal of cases.

243. **Despite the increase in staffing levels from 37% to 45%, the current staffing is still inadequate to meet the demands of the judiciary.** The ongoing challenges in timely case resolution underscore the need for continued efforts to recruit and retain more judicial officers. The judiciary's progress in improving staffing levels is commendable, yet the extent of the staffing gaps remains significant, necessitating further measures to enhance the administration of justice

in Uganda. In summary, the administration of justice in Uganda faces critical challenges due to significant staff shortages, which hinder the timely and fair resolution of cases. Efforts to increase staffing have yielded some improvements, but the judiciary still requires substantial support to meet the growing demands. Addressing these staffing gaps is essential to restoring public confidence in the justice system and ensuring that justice is administered efficiently and equitably.

6.2.15.2. Guiding Standards in the estimation of Programme HR needs

244. **In estimating human resource needs for an Administration of Justice Programme, several guiding standards and considerations were employed to ensure adequate staffing levels that can effectively handle the workload and responsibilities within the judiciary**. These standards include: (i) Conducting a thorough analysis of the current and projected caseload. This involves assessing the number and types of cases being handled, case complexities, and the average time required to resolve different types of cases. This analysis helps determine the number of judges, magistrates, court clerks, and support staff needed to manage the workload efficiently; (ii) International benchmarks and standards to provide comparative insights into staffing ratios and best practices in judicial administration. Benchmarks from similar jurisdictions were adapted to local contexts to determine optimal staffing levels and organisational structures; (iii) Consideration of qualitative factors, such as the complexity of legal issues, geographical distribution of courts, and the diversity of cases handled, complements quantitative data in determining staffing requirements. This holistic approach ensures that human resource planning accounts for the unique characteristics and demands of the justice system. Table 6.47 provides summary of guidelines or standards that were used to estimate human resource needs for the Administration of Justice Programme.

Table 6.47: Guiding standards for the Estimation of HR needs for the Administration of justice Programme

Occupation	Recommended Standards
Judges	1 per 100,000 residents
Magistrates	1 per 200,000 residents
Court Clerk	1 per 50,000 residents
Attorney/Lawyers	1 per 500 residents
Public Defenders	1 per 10,000 residents
Prosecutors	1 per 10,000 residents
Paralegals	1 per 1,000 residents
Police Officers	1 per 1,000 residents
Detectives	1 per 5,000 residents
Sheriffs	1 per 50,000 residents
Correctional Officers	1 per 200 inmates
Probation Officers	1 per 50,000 residents
Parole Officers	1 per 50,000 residents
Court Reporters	1 per 10,000 residents
Bailiffs	1 per 10,000 residents
Legal Secretaries	1 per 500 residents
Forensic Analysts	1 per 50,000 residents
Mediator/Arbitrators	1 per 20,000 residents
Legal Educator/Professors	1 per 100,000 residents
Victim Advocates	1 per 50,000 residents
Court Administrators	1 per 50,000 residents
Juvenile Probation Officers	1 per 25,000 residents
Crime Scene Investigators	1 per 50,000 residents
Legal Consultants	1 per 50,000 residents
Legal Analysts	1 per 50,000 residents
Law Librarians	1 per 100,000 residents
Legal Researchers	1 per 50,000 residents
Criminal Investigators	1 per 50,000 residents

6.2.15.3. Education and Skills Gaps for the Programme

245. **The Administration of Justice Program relies on a skilled workforce with specialised knowledge to handle complex legal challenges, manage diverse caseloads, and ensure fairness**. Identifying education and skill gaps is crucial for developing targeted interventions to tackle these issues effectively. For instance, many judicial officers and legal professionals lack expertise in emerging fields such as cyber law, environmental law, and international human rights law. There's also an increasing need for judicial officers to be proficient in technology, including the use of case management systems and digital evidence tools. Addressing poor case management and administrative inefficiencies is essential to reduce backlogs and delays in court proceedings.

246. **Upholding ethical standards and judicial ethics is vital for maintaining the credibility of court decisions.** However, limited knowledge of Alternative Dispute Resolution (ADR) skills like mediation impedes efforts to promptly resolve disputes. Effective communication with stakeholders, including litigants and the public, is crucial for maintaining transparency and trust, but sufficient skills in this area are lacking. Additionally, developing leadership and management skills among senior judicial officers is crucial for strategic decision-making and efficient court administration. Identifying education and skill gaps is essential for developing targeted interventions to address these challenges effectively. The critical education and skills gaps for the Administration of Justice Program are summarised in Table 6.48.

Table 6.48: Estimated 5-Year Occupation and Skills Gaps for Administration of Justice Programme

Occupations Title	Estimated 5-year Gaps					Entry-Level Education	Status
	2025/26	2026/27	2027/28	2028/29	2029/30		
Anti-Corruption Specialists	70	80	90	100	110	Master's	
Anti-Money Laundering Specialists	15	18	25	35	45	Master's	
Anti-Trafficking Specialists	70	80	90	100	110	Master's	
Cybercrime Investigators	100	110	120	130	140	Bachelor's	
Cybersecurity Analysts	120	115	110	105	100	Bachelor's	
Cybersecurity Architects	60	55	50	45	40	Master's	
Data Privacy Experts	80	75	70	65	60	Bachelor's	
Justices and Judges	125	135	146	156	167	Bachelors	
Chief Magistrates	15	17	18	21	22	Bachelors	
Magistrates (Grade One)	50	60	65	70	75	Bachelors	
Legal Executive	128	141	155	171	188	Bachelors	
Clerk of Court	77	85	93	102	113	Bachelors	
Court Bailiff	55	61	67	73	81	Bachelors	
Registrars	32	36	42	44	50	Bachelors	
Law Clerk	128	141	155	171	188	Bachelors	
Private Investigator	255	261	267	273	281	Diploma	
Forensic Detective	175	183	196	210	233	Diploma	
Detective Intelligence	105	116	127	140	154	Diploma	
Inspector (SAPS)	190	199	209	220	232	Diploma	
Drugs Officer	145	150	154	160	166	Diploma	
Adjudicator	133	137	140	144	149	Bachelors	
Court Orderly / Court Registry Officer	252	258	263	270	277	Diploma	
Law Clerk	196	206	117	128	141	Diploma	
Private Investigator	151	167	175	189	194	Diploma	
Associate Legal Professional	302	325	356	386	397	Diploma	
Labour Dispute Enforcement Agent	116	105	97	55	44	Diploma	
Civil Engineering	560	592	640	672	720	Bachelor's	
Counselling and Guidance	210	220	240	260	280	Bachelor's	

Occupations Title	Estimated 5-year Gaps					Entry-Level Education	Status
	2025/26	2026/27	2027/28	2028/29	2029/30		
Criminal Justice	320	340	360	380	400	Bachelor's	
Law Enforcement	257	264	272	280	289	Diploma	
Public Policy	260	280	309	480	514	Master's	
Senior State Attorneys	50	61	73	82	89	Master's	
Forensic Scientists	102	115	119	123	128	Master's	
Principal Human Rights Officers	109	118	125	136	142	Master's	
Public Defenders	201	222	234	254	261	Master's	
Advocacy occupations	(595)	(560)	(525)	(490)	(455)	Bachelor's	
Banking and Insurance	(700)	(665)	(630)	(595)	(560)	Bachelor's	
General Practice Advocates	(600)	(820)	(932)	(1,139)	(1,540)	Bachelor's	
Political Science	(750)	(770)	(806)	(867)	(902)	Bachelor's	
Public Administration	(1,050)	(1,120)	(1,190)	(1,260)	(1,330)	Bachelor's	
Public Relations Specialists	(260)	(250)	(240)	(230)	(220)	Bachelor's	
Security Services	(1,500)	(1,800)	(2,000)	(2,200)	(2,500)	Primary Level	
Court Clerk	(1,034)	(1,344)	(1,747)	(2,272)	(2,953)	Diploma	
Court Interpreters	(516)	(570)	(941)	(1,240)	(1,410)	Diploma	
Paralegal	(967)	(1,547)	(1,733)	(1,941)	(2,173)	Diploma	

Source: *NPA HR Projection Model. *** Figures in brackets represent over supply, otherwise, net demand*

6.2.15.4. Interventions to Address the Programme HR Gaps

247. The NDPIV-HRDP under this programme will prioritise the following interventions as highlighted in Table 6.49.

Table 6.49: HRD Interventions for Administration of Justice Programme and Respective Actors

Intervention	Implementing MDAs
i. Develop Specialised Training Modules: Create curriculum focusing on emerging legal issues (e.g., cyber law, human rights), technological advancements, and advanced case management techniques.	Judicial Training Institutes, Ministry of Justice, Legal Academies
ii. Conduct Workshops and Seminars: Organize regular workshops and seminars led by subject matter experts and experienced practitioners to update judicial officers on current legal trends and practices.	Judicial Training Institutes, Bar Associations, Universities
iii. Implement Certification Programmes: Establish certification programmes to recognize proficiency in specialised areas and encourage continuous professional development among judicial officers.	Judicial Service Commission, Professional Associations, Accreditation Bodies
iv. Foster Peer Learning Networks: Facilitate peer learning and knowledge exchange platforms where judicial officers can share best practices and case studies.	Judicial Associations, Court Administrations, Senior Judicial Officers
v. Provide Access to Online Resources: Develop online portals and databases with resources on legal updates, case studies, and international legal frameworks to support self-paced learning.	Ministry of Justice, IT Departments, Legal Research Institutions
vi. Conduct Regular Ethics Training: Offer mandatory and continuous training sessions on judicial ethics, impartiality, and integrity.	Judicial Training Institutes, Ethics Committees, Bar Associations
vii. Establish Clear Ethical Guidelines: Develop and disseminate comprehensive guidelines and codes of conduct for judicial officers, addressing conflicts of interest and ethical decision-making.	Judicial Service Commission, Legal Reform Commissions, Judiciary
viii. Implement Ethical Review Mechanisms: Introduce mechanisms for peer reviews, ethical audits, and disciplinary procedures to monitor and enforce compliance with ethical standards.	Ethics Committees, Judicial Oversight Bodies, Ombudsman Offices
ix. Conduct Public Awareness Campaigns: Launch campaigns to educate the public and legal community on ethical standards, judicial independence, and the importance of judicial integrity.	Ministry of Justice, Communications

Intervention	Implementing MDAs
	Departments, Civil Society Organizations
x. Strengthen Whistle-blower Protection: Enhance protections for whistle-blowers reporting judicial misconduct and establish confidential reporting mechanisms.	Judiciary, Ministry of Justice, Anti-Corruption Agencies
xi. Integrate ADR Training Programmes: Embed ADR modules into judicial education curricula and continuing legal education requirements for judicial officers.	Judicial Training Institutes, ADR Centres, Ministry of Justice
xii. Collaborate with established ADR centres to provide practical training, mentorship, and certification in mediation and arbitration.	Judiciary, ADR Institutions, Legal Aid Organizations
xiii. Advocate for ADR Institutionalization: Advocate for the formalization and integration of ADR mechanisms within the judicial system through policy advocacy and legislative support.	Bar Associations, Judiciary Committees, Legislative Bodies
xiv. Provide ADR Facilities and Resources: Allocate resources for establishing ADR facilities and supporting infrastructure within court premises for convenient access.	Ministry of Justice, Public Works Departments, Local Governments
xv. Monitor ADR Effectiveness: Implement monitoring and evaluation frameworks to assess the impact of ADR on reducing case backlog and improving case resolution times.	Judicial Service Commission, Research Institutes, Monitoring Committees
xvi. Develop IT Training Programmes: Design and deliver training programmes on digital literacy, e-filing systems, and courtroom technologies tailored to the needs of judicial officers.	Ministry of Justice, IT Departments, Judicial Training Institutes
xvii. Provide Access to Technical Support: Establish helpdesks and technical support teams to assist judicial officers in using digital tools effectively and troubleshoot IT issues.	IT Departments, Court Administrations, Technical Support Providers
xviii. Collaborate with IT Experts: Partner with IT consultants, tech firms, and universities to offer specialised training and workshops on emerging technologies in legal practice.	Ministry of Justice, Universities, Private Sector Partners
xix. Implement Pilot Projects: Pilot test new technologies, such as virtual hearings and digital evidence management systems in selected courts to demonstrate benefits and gather feedback.	Judiciary, Ministry of Justice, Pilot Project Teams
xx. Evaluate Technological Adoption: Establish benchmarks and metrics to evaluate the adoption and impact of technological solutions on court efficiency and case management.	Judicial Service Commission, Monitoring and Evaluation Units, IT Departments
xxi. Establish a Programme Skills Coordination Committee (PSCC) for the administration of justice to determine the programme's skills needs and skills standards.	Programme Secretariat
xxii. Mainstream Human Resource Development Planning in institutions' Strategic Plans to identify and prioritise critical skills and education needs and soft skills requirements to meet the present and future manpower needs within the Programme.	All MDAs and LGs
xxiii. Develop Human Resource Development Planning Guidelines for Ministries, Departments and Agencies as well as Local Governments	NPA, MoFPED
xxiv. Build the Human Resource Development Planning capacities of Planning Units and Departments in the Ministries, Departments and Agencies as well as Local Governments within this programme	NPA, MoFPED
xxv. Integrate human resource development into institutional strategic plans.	All MDAs and LGs under this programme

6.2.16. Legislature, Oversight and Representation Programme

6.2.16.1. Introduction

248. **Human Resource Development Planning is critical for the effectiveness of the Legislature, Representation, and Oversight programme.** This programme aims to enhance the capacity, efficiency, and responsiveness of legislative bodies, ensuring that they operate with high standards of accountability, transparency, and inclusivity. As legislative functions become more complex, the need for skilled and knowledgeable personnel becomes increasingly crucial. In this regard, the plan focuses on equipping legislators and supporting staff with the necessary tools,

knowledge, and skills to perform their roles effectively. This includes drafting and analysing legislation, engaging with constituents, overseeing executive actions, and representing diverse community interests.

249. **The programme relies on a diverse array of proficient personnel, ranging from researchers and legal experts to administrative staff, who are instrumental in supporting MPs in their duties and ensuring the effective operation of parliamentary committees**. However, reports indicate pronounced shortages in these technical skills, posing challenges for the Uganda Parliamentary Service Commission in their efforts to recruit and retain skilled staff amidst resource limitations and competition from other sectors. This scarcity of technical expertise, particularly in areas such as legal research, policy analysis, and administrative support, undermines MPs' ability to engage with constituents and address their needs effectively, hindering the comprehensive oversight and scrutiny of government actions and expenditures by parliamentary committees, thus impeding the accountability and transparency of governance processes. Detailed qualifications and skills needed for the Legislature, Representation and Oversight programme required over the next five years by field of study are articulated in Table 6.50

6.2.16.2. Guiding Standards in the Estimation of Programme HR Needs

250. **Effective Human Resource Development Planning for the Legislature, Representation, and Oversight programme hinges on accurately estimating the education and skills needs of legislative bodies in line with international benchmarks and standards.** This estimation is guided by several key standards and principles, which ensure that legislative personnel are well-prepared to meet the demands of their current roles as well as the future challenges and opportunities. Anticipating future skills needs based on emerging trends, technological advancements, and evolving legislative priorities is thus critical. Developing training programmes that are specifically tailored to the identified needs of the legislative workforce is key. This includes creating modules that address specific skills gaps, such as legislative drafting, policy analysis, public speaking, and stakeholder engagement. These key international standards and benchmarks provide a framework for ensuring that legislative bodies meet globally recognised best practices in terms of education and skills development as shown in Table 6.50.

Table 6.50: Guiding Standards for the Estimation of HR Needs for Legislature, Representation and Oversight

Occupation	Recommended Standards
Legislator/Member of Parliament (MP)	1 per 100,000 residents
Legislative Aide/Assistants	1 per 100,000 residents
Parliamentary Counsels	1 per 100,000 residents
Committee Staffers	1 per 50,000 residents
Constituency Office Managers	1 per 50,000 residents
Parliamentary Clerks	1 per 50,000 residents
Auditor Generals	1 per 500,000 residents
Legislative Analysts	1 per 100,000 residents
Ethics Officers	1 per 100,000 residents
Public Relations Officers	1 per 50,000 residents
Researcher/Policy Analysts	1 per 50,000 residents
Legislative Coordinators	1 per 50,000 residents
Communication Directors	1 per 100,000 residents
Legislative Interns	1 per 50,000 residents
Constituency Representatives	1 per 20,000 residents
Legal Advisors	1 per 50,000 residents
Political Advisors	1 per 100,000 residents
Press Secretaries	1 per 100,000 residents
Budget Analysts	1 per 100,000 residents
Compliance Officers	1 per 100,000 residents
Government Relations Officers	1 per 100,000 residents

Occupation	Recommended Standards
Constituency Caseworkers	1 per 20,000 residents
Parliamentary Liaisons	1 per 100,000 residents
Advocacy Coordinators	1 per 50,000 residents
Civic Engagement Specialists	1 per 100,000 residents
Elections Officers	1 per 50,000 residents
Campaign Managers	1 per 50,000 residents
Pollsters	1 per 100,000 residents
Ethics Committee Staffers	1 per 100,000 residents

6.2.16.3. Education and Skills Gaps for the Programme

251. **Inadequate technical expertise, particularly in fields of legal research, policy analysis, and administrative support, undermines MPs' capacity to effectively engage with constituents and address their concerns.** Identifying and addressing education and skills gaps is fundamental to the success of the Legislature, Representation, and Oversight programme. These gaps hinder legislative effectiveness, transparency, and the ability to meet the diverse needs of constituents. Addressing these gaps involves a systematic approach of assessing the current capabilities and identifying areas for improvement. The success of this programme hinges on a diverse team of skilled professionals, including researchers, policy analysts, legal experts, and administrative staff, crucial for supporting MPs and ensuring the efficient functioning of parliamentary committees. Table 6.51 shows the HR Gaps for Legislature, Representation and Oversight Programme.

Table 6.51: Estimated 5-year HR Gaps for Legislature, Representation and Oversight Programme

Occupations Title	Estimated 5-year Gaps					Entry-Level Education	Status
	2025/26	2026/27	2027/28	2028/29	2029/30		
Anti-Corruption Specialists	14	16	18	20	22	Master's	
Budget and Fiscal Analyst	15	17	18	15	10	Master's	
Legislative Analyst	12	15	17	14	11	Master's	
Legislative Draftsmen	20	25	27	22	18	Master's	
Anti-Trafficking Specialists	14	16	18	20	22	Master's	
Counterterrorism Experts	130	140	150	160	170	Master's	
Crisis Negotiators	80	90	100	110	120	Master's	
Cybercrime Investigators	100	110	120	130	140	Bachelor's	
Cybersecurity Analysts	120	115	110	105	100	Bachelor's	
Cybersecurity Architects	60	55	50	45	40	Master's	
Data Privacy Experts	80	75	70	65	60	Bachelor's	
Educational Policy Analysts	140	130	120	110	100	Master's	
Educational Research Analysts	160	140	120	100	80	Master's	
Emergency Response Strategists	25	30	35	40	45	Master's	
Environmental Policy Analysts	150	145	140	135	130	Master's	
Environmental Policy Researchers	30	35	40	45	50	PhD	
Human-Computer Interaction Specialists	60	55	50	45	40	Master's	
Infrastructure Investment Analysts	20	15	10	5	5	Bachelor's	
International Relations Experts	40	50	60	70	80	Master's	
National Security Analysts	25	35	45	55	65	Master's	
Public Health Genetics	60	70	80	90	100	Master's	
Public Health Nutrition	90	100	110	120	130	Master's	
Public Security Management Specialists	40	45	50	55	60	Master's	
Risk Management	35	30	25	20	15	Bachelor's	
Technology Policy Analysts	50	45	40	35	30	Master's	
Tourism Policy Analysts	50	40	30	20	10	Master's	
Tourist Service Quality Assessors	20	10	10	10	10	Master's	

Occupations Title	Estimated 5-year Gaps					Entry-Level Education	Status
	2025/26	2026/27	2027/28	2028/29	2029/30		
Financial Economists	109	126	147	162	186	Bachelors	
Transport Economists	69	75	84	89	92	Bachelors	
Researchers / Economist	203	226	267	289	305	Bachelors	
Policy Analyst	109	129	153	178	194	Bachelors	
Auditors	167	189	205	227	265	Bachelors	
Counselling and Guidance	210	220	240	260	280	Bachelor's	
Criminal Justice	320	340	360	380	400	Bachelor's	
Economics	280	290	300	310	367	Bachelor's	
Economics (Advanced)	102	112	130	138	142	Master's	
Human Rights	214	221	227	234	241	Bachelor's	
International Development	106	120	130	143	152	Master's	
International Relations	257	264	272	280	289	Bachelor's	
Investment Management	274	282	290	299	308	Bachelor's	
Journalism	900	1,040	1,060	1,080	1,200	Bachelor's	
Law Enforcement	257	264	272	280	289	Diploma	
Parliamentary Legal Advisors	97	105	121	135	154	Bachelor's	
Parliamentary Budget Officer	32	35	24	21	15	Bachelor's	
Public Policy	260	280	309	480	514	Master's	
Advocacy occupations	(595)	(560)	(525)	(490)	(455)	Bachelor's	
Banking and Insurance	(700)	(665)	(630)	(595)	(560)	Bachelor's	
Community Development	(1,225)	(1,295)	(1,400)	(1,470)	(1,575)	Bachelor's	
Development Studies	(1,200)	(1,400)	(1,600)	(1,800)	(2,200)	Bachelor's	
Lawyers/Advocates General Practice	(600)	(820)	(932)	(1,139)	(1,540)	Bachelor's	
Political Science	(750)	(770)	(806)	(867)	(902)	Bachelor's	
Public Administration	(350)	(420)	(490)	(560)	(700)	Bachelor's	
Public Relations	(1,020)	(1,110)	(1,260)	(1,360)	(1,490)	Bachelor's	
Public Relations Specialists	(260)	(250)	(240)	(230)	(220)	Bachelor's	
Librarian (Parliamentary Library)	(873)	(921)	(963)	(984)	(1,045)	Bachelor's	
Administrative Assistants	(980)	(1,024)	(1,176)	(1,265)	(1,342)	Bachelor's	
Records Officers	(768)	(790)	(871)	(923)	(987)	Bachelor's	
Office Attendants	(882)	(922)	(1,058)	(1,139)	(1,208)	Bachelor's	
Data Entry Clerks	(742)	(783)	(819)	(836)	(888)	Bachelor's	
Research Assistants	(917)	(967)	(1,011)	(1,033)	(1,097)	Bachelor's	
ICT Support Staff	(1,068)	(1,116)	(1,282)	(1,379)	(1,463)	Bachelor's	

*Source: NPA HR Projection Model. *** Figures in brackets represent over supply, otherwise, net demand*

6.2.16.4. Interventions to Address the Programme HR Gaps

252. Under this programme, the NDPIV-HRDP will prioritise the following interventions as illustrated in Table 6.52.

Table 6.52: HRD Interventions for Legislature, Representation and Oversight and respective actors

Interventions/Strategies	Responsible Institutions
i. Establish specialised training programmes in legislative drafting and legal research	Parliamentary Training Institute
ii. Partner with universities and law schools for advanced policy analysis courses	Ministry of Education and Higher Institutions
iii. Conduct workshops on best practices in policy formulation and legislative procedures	ULS
iv. Implement mentorship programmes pairing junior staff with experienced legislators and legal experts	Parliamentary Service Commission

Interventions/Strategies	Responsible Institutions
v. Develop online resources and e-learning platforms for continuous learning	ICT Department of Parliament
vi. Facilitate exchange programmes with other parliaments to share knowledge and experience	Inter-Parliamentary Union
vii. Organise certified courses in public financial management and auditing	MoFPED
viii. Collaborate with accounting bodies for specialised training in budget analysis	ICPAU
ix. Hold regular workshops on fiscal policy and financial oversight practices	Parliamentary Budget Office
x. Implement on-the-job training with experienced financial analysts and auditors	OAG
xi. Develop simulation exercises on budget scrutiny and financial oversight	Parliamentary Budget Office
xii. Facilitate access to financial management software and tools	ICT Department of Parliament
xiii. Conduct media and public speaking training for legislators and staff	Parliamentary Training Institute
xiv. Establish community outreach programmes to improve constituent engagement	Parliamentary Outreach Department
xv. Provide courses on digital communication and social media management	ICT Department of Parliament
xvi. Implement advocacy workshops focusing on policy influence and stakeholder engagement	Civil Society Organizations
xvii. Develop guidelines and training materials on effective communication strategies	Parliamentary Communication Office
viii. Facilitate town hall meetings and public forums for direct interaction with constituents	Constituency Offices
xix. Develop a comprehensive professional development framework for legislative staff	Human Resource Department of Parliament
xx. Raise the minimum qualification for political leaders at the different levels	MoPS, LG Service Commission, Parliamentary Commission, Electoral Commission
xxi. Establish leadership training programmes in collaboration with leadership institutes	National Leadership Institute
xxii. Create diversity and inclusion training workshops to promote an inclusive work environment	EOC
xiii. Implement regular performance reviews and career development planning	Human Resource Department of Parliament
xiv. Facilitate gender sensitivity and cultural competency training	Gender and Social Development Department
xxv. Develop a mentoring and coaching system for continuous professional growth	Parliamentary Service Commission
xvi. Establish a Programme Skills Coordination Committee (PSCC) for the Legislature, Representation, and Oversight Programme to determine the programme's skills needs and skills standards.	Programme Secretariat
xvii. Mainstream Human Resource Development Planning in the Institutions' Strategic Plans to identify and prioritise critical skills and education needs and soft skills requirements to meet the	All MDAs and LGs

Interventions/Strategies	Responsible Institutions
present and future manpower needs within the Programme.	
viii. Develop Human Resource Development Planning Guidelines for Ministries, Departments and Agencies as well as Local Governments	NPA, MoFPED
xix. Build the Human Resource Development Planning capacities of Planning Units and Departments in the Ministries, Departments and Agencies as well as Local Governments within this programme.	NPA, MoFPED
xxx. Integrate human resource development into institutional strategic plans.	All MDAs and LGs

6.2.17. Development Plan Implementation Programme

6.2.17.1. Introduction

253. **The Development Plan Implementation Programme (DPI) requires a well-equipped and skilled workforce to ensure effective implementation of its socio-economic objectives.** As Uganda seeks to achieve the goals outlined in the NDPIV, the success of infrastructure projects, local revenue enhancement, and job creation initiatives depends heavily on the availability of a competent and capable human resource base. Human resource development is, therefore, a central focus of the DPI, aiming to address the skills gaps in key sectors such as engineering, project management, and technology. The programme emphasises the importance of continuous capacity building to meet the growing demands of Uganda's evolving economy. An initial assessment of the current human resource landscape will help identify the skills shortages that must be addressed to facilitate effective implementation.

254. **There is a significant shortage of skilled professionals required to drive DPI initiatives, particularly in technical fields.** The demand for expertise in project management, financial analysis, and infrastructure development far exceeds the available supply of trained professionals, which presents a substantial challenge to the DPI's success. This human resource gap is particularly pronounced in areas critical to the execution of large-scale infrastructure projects and public investment management. The shortage of these technical skills not only slows down the pace of project implementation but also limits the DPI's ability to deliver on its goals of socio-economic transformation. Addressing these shortages is essential for improving project efficiency, increasing local revenue generation, and ensuring the sustainability of development outcomes.

255. **To meet the DPI's human resource needs, targeted efforts are required to build workforce capacity and bridge skills gaps.** The success of the DPI hinges on a comprehensive approach to human resource development that includes specialised training, professional development, and retention strategies. Aligning the programme's human resource objectives with international frameworks such as the Sustainable Development Goals (SDGs) and Agenda 2063 underscores the importance of building a capable workforce that can contribute to Uganda's long-term development. Adequate staffing in fields such as engineering, technology, and project management will ensure that the DPI's core objectives of improving service delivery, infrastructure development, and job creation are met. Detailed projections of the human resource needs and skills requirements for the DPI over the next five years are outlined in Table 6.53.

6.2.17.2. Guiding Standards in the Estimation of Program HR Needs

256. **Adhering to international standards and conducting a comprehensive workforce analysis is fundamental for estimating human resource needs for the DPI.** This process requires a thorough assessment of current skill levels, workforce demographics, and emerging trends in critical sectors, such as project management, financial management, and infrastructure development. The workforce analysis identifies key technical skills that are essential for the success of the DPI, including stakeholder engagement, risk management, and data analysis. By identifying these skill gaps early on—such as those in public sector management and infrastructure planning—the DPI can ensure that the workforce is not only equipped to meet immediate programme demands but also remains flexible and capable of adapting to future challenges as the economy evolves.

257. **Aligning human resource estimates with global benchmarks provides a structured and objective framework for workforce planning and capacity building.** International standards, such as staffing ratios for roles like project managers, data scientists, public policy analysts, and social development specialists, offer critical benchmarks for recruitment, training, and retention strategies. By leveraging these global standards, Uganda can ensure that both technical and strategic capacities are developed in alignment with global best practices. This alignment also emphasises equitable workforce distribution, addressing regional disparities and ensuring that key sectors and regions have access to skilled professionals. Ultimately, this approach enhances the DPI's capacity to drive sustainable development by ensuring that the right mix of talent is available to support the programme's long-term objectives. The guiding standards in the estimation of this programme's human resource needs are summarized in Table 65.

Table 6.53: Guiding standards for the estimation of HR needs for Development Plan Implementation

Occupation Title	International Standards
Project Managers (Public Sector)	0.5 per 10,000 population in urban areas
Data Scientists	2.0 per 10,000 population in urban areas
Public Sector Management Experts	0.8 per 10,000 population in public institutions
Infrastructure Planning Specialists	1.2 per 10,000 population in urban areas
Public Policy Analysts	0.6 per 10,000 population in urban areas
Budget Analysts	0.5 per 10,000 population in government institutions
Public Financial Management Specialists	0.7 per 10,000 population in urban areas
Investment and Project Development Officers	0.3 per 10,000 population in public sector investments
Risk Management Specialists	1.0 per 10,000 population in public institutions
Monitoring and Evaluation Specialists	0.4 per 10,000 population in urban areas
IT Systems Specialists	1.0 per 10,000 population in public and government offices
Capacity Building Specialists	0.7 per 10,000 population in key government agencies
Quality Assurance Specialists	0.6 per 10,000 population in public institutions
Grants and Contracts Managers	0.5 per 10,000 population in regional and district offices
Environmental Management Specialists	0.4 per 10,000 population in urban areas
Government Legal Advisors	0.3 per 10,000 population in public institutions
Policy Implementation Officers	0.5 per 10,000 population in urban areas
Social Development Specialists	0.5 per 10,000 population in urban areas

Occupation Title	International Standards
Operational Researchers	0.7 per 10,000 population in key development programmes
Governance and Accountability Advisors	0.4 per 10,000 population in governance institutions
Resource Mobilization Specialists	0.5 per 10,000 population in public institutions
Economists (Government Policy)	1.0 per 10,000 population in government economic departments
Local Government Administrators	0.6 per 10,000 population in regional and local governments
Development Plan Coordinators	0.5 per 10,000 population in development coordination roles
Statisticians (Public Sector)	0.5 per 10,000 population in urban areas
Procurement Specialists	0.5 per 10,000 population in public procurement offices
Gender Specialists	0.4 per 10,000 population in public sector and government offices
Accountants and Financial Auditors	1.0 per 10,000 population in urban areas

6.2.17.3. Education and Skills Gaps for the Program

258. **While significant strides have been made in capacity building across Ministries, Agencies, and Local Governments (MALGs), substantial human resource gaps remain**. Critical shortages are particularly apparent in the areas of planning, monitoring and evaluation (M&E), financial management, and project management. For instance, by 2030, it is projected that Uganda will require approximately 460 specialised planners across various sectors and MALGs to ensure effective coordination and integration of development plans. However, only around 120 qualified planners are currently available. Similarly, the DPI programme anticipates needing about 1,050 monitoring and evaluation specialists who are not readily available. Effective implementation of Uganda's National Development Plans, including NDPIV and the attendant NHRDP, requires a robust and well-coordinated human resource base across all sectors and levels of government. The Development Plan Implementation (DPI) Programme is critical to ensuring that the strategic objectives and goals outlined in these plans are successfully executed.

259. **However, the achievement of these goals is contingent upon addressing several human resource challenges that currently impede efficient plan implementation**. Other areas where the country faces critical acute human resource shortages include financial managers, procurement experts, and project managers, all of which are essential for ensuring efficient resource allocation, transparent procurement processes, and timely project delivery. These shortages hinder the ability of MALGs to effectively implement development plans, monitor progress, and evaluate outcomes, thereby affecting the overall performance of the DPI programme. Conversely, there is an oversupply of personnel in less specialised roles, such as administrative support staff and data entry clerks. For instance, the DPI programme has reported an excess of approximately 1,800 administrative personnels, which represents a significant imbalance when compared to the more technical roles that are in short supply. This oversupply of general staff contrasts sharply with the acute need for specialised professionals capable of driving development initiatives. The detailed skills and occupation gaps for the programme are outlined in Table 66.

Table 6.54: Estimated 5-year occupation and skills gaps for the Development Plan Implementation

Occupation Title	Status	Five-Year Estimated Gap	Entry-Level Education
Public Sector Management Experts		131	Master's/ Bachelor's
Infrastructure Planning Specialists		380	Master's/ Bachelor's
Public Policy Analysts		108	Master's/ Bachelor's
Budget Analysts		135	Master's/ Bachelor's
Public Financial Management Specialists		162	Master's/ Bachelor's
Investment and project development officers		197	Master's/ Bachelor's
Project Managers (Public Sector)		209	Master's/ Bachelor's
Risk Management Specialists		324	Master's/ Bachelor's
Monitoring and Evaluation Specialists		250	Master's/ Bachelor's
IT Systems Specialists		108	Master's/ Bachelor's
Data scientists		104	Bachelor's
Capacity Building Specialists		421	Master's/ Bachelor's
Quality Assurance Specialists		342	Bachelor's
Grants and Contracts Managers		196	Bachelor's
Environmental Management Specialist		244	Bachelor's
Government Legal Advisors		163	Bachelor's
Policy Implementation Officers		284	Bachelor's
Social Development Specialists		432	Bachelor's
Operational Researchers		674	Bachelor's
Governance and Accountability Advisors		277	Master's/ Bachelor's
Resource Mobilization Specialists		236	Master's/ Bachelor's
Economists (Government Policy)		292	Master's
Local Government Administrators		110	Bachelor's
Development Plan Coordinators		25	Master's
Statisticians (Public Sector)		192	Bachelor's
Procurement Specialists		(560)	Bachelor's
Gender Specialists		(213)	Master's/ Bachelor's
Accountants and Financial Auditors		(200)	Bachelor's

Source: *NPA HR Projection Model. *** Figures in brackets represent over supply, otherwise, net demand*

6.2.17.4. Interventions to Address the Programme HR Gaps

260. The Plan under this programme will prioritise the following interventions as illustrated in Table 6.55.

Table 6.55: HRD Interventions for the Development Plan Implementation Programme and Respective Actors

Intervention	Implementing MDAs
i. Develop specialised training programmes for project management and implementation techniques.	MoFPED, MoPS
ii. Establish mentorship programmes linking experienced professionals with emerging leaders.	MoFPED
iii. Create a network of project management professionals for knowledge sharing and capacity building.	MoFPED
iv. Facilitate workshops on leadership and team management skills.	MoFPED
v. Develop online training modules accessible to professionals across the country.	MoFPED
vi. Introduce data analysis courses in collaboration with local universities and technical colleges.	MoFPED, MoES
vii. Launch workshops on data utilization for decision-making in public policy and economic development.	MoFPED
viii. Create a data literacy programme for public officials to enhance their analytical skills.	MoFPED
ix. Partner with tech companies to provide hands-on training in advanced data analytics tools.	MoFPED

Intervention	Implementing MDAs
x. Conduct training sessions on effective communication and negotiation techniques for public servants.	MoFPED
xi. Develop engagement frameworks for effective collaboration with community stakeholders.	MoFPED
xii. Organize public forums to discuss project goals and gather community input.	MoFPED
xiii. Establish innovation hubs that support the development of local solutions through collaborative projects.	MoFPED
xiv. Encourage partnerships with private sector actors to enhance skills and knowledge transfer.	MoFPED
xv. Encourage partnerships with private sector actors to enhance skills and knowledge transfer.	MoFPED
xvi. Facilitate competitions for innovative solutions to local challenges with rewards for winners.	MoFPED
xvii. Mainstream human resource development planning into strategic plans of MDAs.	All MDAs and Local Governments
xviii. Establish a Programme Skills Coordination Committee (PSCC) to oversee the skills needs assessment.	Programme Secretariat
xix. Develop a comprehensive database of skills and training needs for effective workforce planning.	All MDAs in the Programme
xx. Integrate human resource development into institutional strategic plans. Each institution (MDAs/LGs) under this programme should develop a chapter on Human Resource needs to identify and prioritise critical skills and education needs as well as soft skills requirements to bridge the occupational gaps within this programme.	All MDAs and LGs under this programme

PART 3: PLAN IMPLEMENTATION, MONITORING AND EVALUATION

CHAPTER 7: PLAN IMPLEMENTATION, FINANCING AND RISK MANAGEMENT

7.1. Introduction

261. **The successful implementation of this plan centres around a strong coordination framework, financing and robust risk management approaches.** This chapter outlines the critical components required to ensure that the plan's objectives are fully achieved. The chapter details the coordination, roles, and responsibilities of various stakeholders involved in the plan's implementation, the financial strategy aligned with national development frameworks, and the mechanisms in place to ensure financial sustainability. Furthermore, the chapter addresses the potential risks that could impede the implementation process and lays down mitigation strategies for any potential disruptions. The integration of risk management into the broader implementation and financing structure is crucial for ensuring resilience in the face of economic, political, and social uncertainties.

7.2. Implementation Framework

262. **The implementation framework for this Plan is designed to align with the NDPIV.** The NDPIV emphasises that successful development depends on a comprehensive implementation cycle, which encompasses strategic planning, prioritisation, budgeting, execution, monitoring and evaluation, auditing, and effective coordination. The Plan will be operationalised through structured modalities that ensure clear and coordinated efforts by key stakeholders. These modalities are guided by the strategic mandates of relevant Ministries, Departments, and Agencies (MDAs) and private sector institutions. This framework ensures that the Plan's interventions are effectively managed and executed, contributing to the broader goals of the NDPIV. The Plan implementation framework will be built around the following key components:

i) **Annualised Implementation Approach.** The plan will be implemented on an annualised basis to allow for flexibility and adaptability. Each Ministry, Department, and Agency (MDA) will develop annual work plans specifying key activities, targets, and timelines for the year. Funding for the Plan interventions will be allocated annually, with adjustments based on performance and emerging priorities. Comprehensive reviews will be conducted each year to assess progress, identify challenges, and refine implementation strategies for the following year.

ii) **Alignment with NDPIV Programme Implementation Action Plans (PIAPs).** The plan will be aligned with the Programme Implementation Action Plans (PIAPs) of the NDPIV to ensure consistency and coherence. All human resource development interventions and actions will be integrated into the NDPIV PIAPs to ensure alignment with Uganda's national development goals. MDAs responsible for implementing the Plan activities will ensure that their work aligns with the specific objectives outlined in the PIAPs. Budgeting for the Plan activities will be synchronised with PIAP priorities to ensure optimal funding and efficient implementation across sectors.

iii) **Multi-Stakeholder Collaboration.** Successful implementation of the plan will require collaboration among various stakeholders. The private sector will play a central role in supporting skills development, training initiatives, and co-financing programmes. Partnerships with civil society organisations and international development partners will provide technical expertise and additional resources to support the Plan interventions. Building institutional capacity is essential for effective implementation. MDAs and LGs involved in human resource development will undergo continuous capacity-building

initiatives to enhance their ability to implement the plan. MDAs will receive training in project management, data collection, and evaluation to ensure effective monitoring and accountability in the implementation of the Plan initiatives.

iv) **Decentralised Coordination and Implementation.** Decentralised implementation will be crucial in addressing regional and local labour market needs. Localized coordination will ensure that interventions address the specific labour market demands of different regions and sectors. Local governments will collaborate with the training institutions through the Ministry of Education and Sports to deliver education and training programmes tailored to regional contexts and employment demands.

7.3. Coordination Mechanism

263. **The National Human Resource Development Planning Framework (NHRDPF) for Uganda outlines a robust coordination mechanism to ensure a systematic, coordinated, and guided approach to Human Resource Development (HRD).** This mechanism is designed to promote a continuous flow of information, foster commitment to HRD agenda, and establish partnerships that align labour market supply with demand. The following measures will be implemented to enhance the implementation of the National Human Resource Development Plan (NHRDP).

i) **Strengthening the National Steering Committee (NSC) for Human Resource Development Planning.** The National Human Resource Development Planning Framework establishes the National Steering Committee (NSC) as the apex body within the coordination framework. The NSC is tasked with providing overarching policy and strategic direction for HRD initiatives. Comprising high-level decision-makers, including heads of institutions from key ministries, local governments, academia, the private sector, and civil society organisations, the NSC operates under the chairmanship of the Minister in charge of Planning. The Minister maintains direct communication with senior leadership to ensure alignment with national priorities. The National Planning Authority (NPA) serves as the secretariat for the NSC, offering essential administrative and technical support. The NSC's role includes harmonising priorities and preventing duplication or overlap in HRD programmes and policies.

ii) **Enhancing the National Technical Working Group (NTWG) for Human Resource Development Planning**. The National Technical Working Group (NTWG) is a multi-sectoral body responsible for providing technical expertise and supporting the implementation of the NSC's strategic decisions. Chaired by the Permanent Secretary/Secretary to the Treasury, the NTWG includes representatives from key ministries, agencies, local governments, development partners, civil society, the private sector, academia, and research institutions. The NTWG is supported by the NPA, which provides technical and logistical assistance. This group ensures clear coordination, effective information-sharing, and harmonization of HRD activities among all stakeholders, both public and private.

iii) **Strengthening Programme Working Groups (PWGs) and Local Government Working Committees (LGWCs).** The Programme Working Groups (PWGs) are essential for the coordination and implementation of the NDPIV-HRDP. PWGs align human resource development initiatives within their sectors with national priorities, ensuring that the Plan's objectives are systematically integrated and achieved. They facilitate sector-wide collaboration, address human resource gaps, and ensure a unified approach across various programmes. PWGs bring together government ministries, local governments, private sector representatives, Civil Society Organizations (CSOs), and development partners. By promoting collaboration, PWGs reduce duplication of efforts and optimize resource utilization, addressing both the supply and demand sides of the labour market.

iv) **Strengthening the Role of the Inter-agency Committee for Human Resource Development (HRD).** The Inter-agency Committee for Human Resource Development plays a pivotal role in the successful implementation of the Plan. This committee, consisting of key stakeholders from various ministries, government agencies, educational institutions, the private sector, and civil society organizations, serves as a coordinating body to ensure a holistic and collaborative approach to workforce planning and development. The committee facilitates coordination among different governmental bodies involved in HRD, such as the Ministries of Education, Labour, and Trade. By ensuring that policies across sectors align with the Plan's goals, the committee helps avoid duplication of efforts and promotes synergies among various development programmes and sectors. In summary, the coordination mechanism outlined in the Plan aims to create a streamlined and efficient approach to human resource development by enhancing communication, collaboration, and policy alignment across all relevant stakeholders.

7.4. Stakeholder Roles and Responsibilities

264. **Ensuring effective implementation of this plan requires clear definition and portrayal of roles and responsibilities among various stakeholders.** Each stakeholder group plays a crucial role in ensuring that the objectives of the Plan are achieved. Through defining these roles and responsibilities, the Plan ensures that all stakeholders are actively involved and contribute to the successful implementation of planned initiatives, ultimately contributing to the national transformation agenda. To establish the roles and responsibilities of different stakeholders, focus areas were identified for each strategic intervention to provide strategic guidance to the responsible Ministries, Agencies and Local Governments (MALGs) as well as the non-government and private sector-based institutions. Therefore, the roles and responsibilities of stakeholders are highlighted in the implementation matrix presented in Table 7.1.

Table 7.1: Stakeholder Implementation Roles and Responsibilities

Action No.	Action to be implemented	Lead Implementing Institution	Other Contributors
Intervention 1.1: Increase accessibility to quality educational and training opportunities across all tiers of the educational system.			
1.1.1	Increase enrollment and retention rates in formal education at all levels.	Ministry of Education and Sports (MoES)	- MoFPED - E&T Institutions - LGs
1.1.2	Invest in educational infrastructure development, such as school buildings, libraries, and laboratories at all levels and provide the required education instruction materials.	Ministry of Education and Sports (MoES)	- MoFPED - Development Partners - LGs
1.1.3	Expand financial aid to ensure access for disadvantaged groups and underprivileged communities such as Karamoja.	Ministry of Education and Sports (MoES)	- MGLSD - NGOs - CBOs
1.1.4	Implement school feeding programmes to improve nutrition and attendance rates, especially in primary and secondary schools.	Ministry of Education and Sports (MoES)	- MAAIF - World Food - WFP - LGs
1.1.5	Implement targeted remedial programmes to address learning gaps and improve educational outcomes for disadvantaged students.	Ministry of Education and Sports (MoES)	- NCDC - LGs - NGOs - CBOs
1.1.6	Improve the capitation grant to effectively deliver the required education services and	Ministry of Finance, Planning, and Economic	- MoES - LGs

Action No.	Action to be implemented	Lead Implementing Institution	Other Contributors
	this should take regard to locational differences.	Development (MoFPED)	
1.1.7	Increase the availability and affordability of higher education opportunities (including scholarships, grants, and student loans) to expand access for qualified Ugandans.	Ministry of Education and Sports (MoES)	- MoFPED - HESFB - E&T Institutions
Intervention 1.2: Address the critical education and skills gaps to meet the current and projected HR needs at national and global levels.			
1.2.1	Produce and publish national scarce skills and occupation report to highlight critical scarce qualifications and skills needs in the country every two years.	National Planning Authority (NPA)	- UBOS - MoES
1.2.2	Identify, develop, and implement new education and training programmes and curriculum to meet qualification and skills shortages with no training available in the country, in line with the Scarce Skills Report.	Ministry of Education and Sports (MoES)	- NCDC - PSFU - LGs
1.2.3	Develop a Uganda National Qualification Framework to standardize skill levels and enhance recognition of qualifications across sectors.	Ministry of Education and Sports (MoES)	- NCHE - UNEB
1.2.4	Develop and implement training programmes tailored to international standards and market demands, ensuring that skilled professionals are equipped with the necessary expertise to excel globally.	Ministry of Education and Sports (MoES)	- PSFU - LGs - Development Partners
1.2.5	Centralize admission to TVET and tertiary institutions to link TVET and tertiary education to the national development priorities.	Ministry of Education and Sports (MoES)	- NCHE - UBTEB - NPA - LGs - E&T Institutions
1.2.6	Enhance the quality and relevance of higher education programmes through accreditation, curriculum review, and collaboration with industry players.	National Council for Higher Education (NCHE)	- MoES - PSFU - Development Partners
1.2.7	Link financing for education and training, award of government scholarships, and student loans to scarce qualifications and skills needs of the country relevant to national priorities.	Higher Education Students' Financing Board (HESFB)	- MoES - MoFPED - NPA - LGs
1.2.8	Undertake regular reviews of curricula at all levels of education and training to accommodate changing labour market needs and promote critical thinking, problem-solving, and digital literacy skills.	National Curriculum Development Centre (NCDC)	- MoES - PSFU - NPA - MoGLSD - Development Partners
1.2.9	Integrate soft skills that support modern work in training programmes such as communication, computer literacy, customer care, problem-solving, work attitudes, and ethics.	Ministry of Education and Sports (MoES)	- NCDC - MoGLSD - NPA - PSFU
1.2.10	Integrate career guidance and counselling in all levels of education to guide students in the selection of their career paths.	Ministry of Education and Sports (MoES)	- UNEB - MoGLSD - NPA - E&T Institutions

Action No.	Action to be implemented	Lead Implementing Institution	Other Contributors
1.2.11	Re-orient the unemployed labourforce by reskilling them and certifying their skills to facilitate their transition into employment.	Ministry of Gender, Labour, and Social Development (MGLSD)	- MoES - NPA - TVET
1.2.12	Establish a programme for cross-border apprenticeships, internships, and knowledge exchanges to provide hands-on learning experiences and exposure to different work cultures and practices.	Ministry of Education and Sports (MoES)	- MoFA - PSFU - MoGLSD - Development Partners
1.2.13	Strengthen external employment services to facilitate externalization of skilled manpower through international collaborations, training partnerships, and knowledge exchange.	Ministry of Gender, Labour, and Social Development (MGLSD)	- MoFA - MoIA - Development Partners
1.2.14	Address the skills needs of the cultural and creative industries as engines of economic growth and job creation, particularly for youths and women.	Ministry of Gender, Labour, and Social Development (MGLSD)	- MoES - National Culture Council - Development Partners
Intervention 1.3: Develop and implement a comprehensive Teacher development and welfare programme focused on aligning educational outcomes with labour market needs.			
1.3.1	Revise teacher training curricula to equip teachers with skills and knowledge relevant to current labour market demands.	Ministry of Education and Sports (MoES)	- NCDC - Teacher Education Institutions (Colleges, Universities)
1.3.2	Establish a teacher continuous professional development programme for continuous upskilling of teachers to adapt to emerging industry trends and technologies.	Ministry of Education and Sports (MoES)	- NTCs - UNATU -Development Partners (UNESCO)
1.3.3	Integrate Career Guidance and Counseling into Teacher Roles to increase teachers' capabilities of guiding students toward career paths aligned with labour market needs.	Ministry of Education and Sports (MoES)	- UNEB - Career Guidance and Counseling Unit - Schools and Teacher Training Colleges
1.3.4	Improve teachers' welfare to reduce the opportunity cost of teaching as a career and restore teaching as a prestigious profession.	Ministry of Education and Sports (MoES)	- MoPS - MoFPED
1.3.5	Recruit and train qualified teachers and instructors, particularly in remote and underserved areas, to ensure high-quality education delivery especially in the areas of teaching practices and pedagogy.	Ministry of Education and Sports (MoES)	- LGs - Teacher Training Colleges - Development Partners
1.3.6	Enhance teacher welfare by providing housing and other incentives to attract and retain qualified educators.	Ministry of Education and Sports (MoES)	- MoPS - MoFPED - LGs
Intervention 1.4: Promote a culture of lifelong learning, adult education programmes and continuous professional development opportunities.			
1.4.1	Expand access to adult education by establishing community learning centres that offer flexible learning options such as evening classes, weekend workshops, online courses, and distance learning programmes.	Ministry of Education and Sports (MoES)	- LGs - NGOs/CBOs - Development Partners

Action No.	Action to be implemented	Lead Implementing Institution	Other Contributors
1.4.2	Establish a recognition and accreditation system for prior learning and adult education experiences to assess and certify the skills and competencies acquired through informal and non-formal learning experiences.	Ministry of Education and Sports (MoES)	- NCHE - UVQF
1.4.3	Establish recognition programmes to celebrate individuals and organizations that demonstrate commitment to lifelong learning and professional development.	Ministry of Education and Sports (MoES)	- MGLSD - PSFU - LGs
1.4.4	Create mechanisms for recognition of non-formal and informal learning achievements to incentivize lifelong learning and skills development.	Ministry of Education and Sports (MoES)	- NCHE - UVQF - LGs
1.4.5	Implement supportive policies and initiatives at the national, regional, and local levels to promote lifelong learning and continuous professional development.	Ministry of Education and Sports (MoES)	- MoGLSD - LGs - Development Partners
1.4.6	Facilitate access to affordable childcare services to enable parents, especially mothers, to participate in adult education and professional development activities.	Ministry of Gender, Labour, and Social Development (MGLSD)	- MoES - LGs - NGOs - CBOs
1.4.7	Offer short-term and modular training courses in emerging fields and technologies to facilitate continuous learning and adaptation to changing market demands.	Ministry of Education and Sports (MoES)	- PSFU - LGs - Development Partners
Intervention 2.1: Develop, popularise, and implement the Uganda Vocational Qualifications Framework (UVQF)			
2.1.1	Develop and operationalize the Uganda Vocational Qualifications Framework (UVQF) Standards and Guidelines.	Ministry of Education and Sports (MoES)	- UBTEB - NCHE
2.1.2	Conduct nationwide awareness and sensitization campaigns to increase awareness and understanding of the UVQF among stakeholders.	Ministry of Education and Sports (MoES)	- LGs - NGOs - CBOs - Development Partners
2.1.3	Train vocational educators and assessors on the UVQF to deliver and assess according to UVQF standards.	Uganda Business and Technical Examinations Board (UBTEB)	- MoES - PSFU
2.1.4	Strengthen the standardization and certification programme to make Uganda's labour force employable and competitive.	Uganda Business and Technical Examinations Board (UBTEB)	- MoES - NCHE
2.1.5	Integrate UVQF into national education and training programmes across the country.	Ministry of Education and Sports (MoES)	- NCDC - LGs
2.1.6	Enhance the quality and relevance of TVET curricula through partnerships with industry stakeholders, professional associations, and accreditation bodies.	Ministry of Education and Sports (MoES)	- UBTEB - PSFU
2.1.7	Create pathways and dedicated scholarship programmes for TVET graduates to pursue further education to enhance their skills.	Ministry of Education and Sports (MoES)	- HESFB - LGs
2.1.8	Develop and operationalize a public awareness campaign to tackle the negative mindset against vocational and technical	Ministry of Education and Sports (MoES)	- UBTEB - NGOs - CBOs

Action No.	Action to be implemented	Lead Implementing Institution	Other Contributors
	training, raising TVET's brand to attract youths to TVET education.		- LGs
Intervention 2.2: Expand and Modernize TVET Infrastructure Nationwide			
2.2.1	Conduct a nationwide needs assessment for TVET infrastructure to identify areas with the highest demand for TVET expansion.	Ministry of Education and Sports (MoES)	- UBTEB - LGs
2.2.2	Upgrade existing TVET institutions with modern equipment and technology to enhance learning environments that meet industry standards.	Ministry of Education and Sports (MoES)	- PSFU - LGs - Development Partners
2.2.3	Construct new TVET centers in underserved regions to increase access to TVET, especially in rural and remote areas.	Ministry of Education and Sports (MoES)	- UNRA - LGs - Development Partners
2.2.4	Establish ICT hubs in TVET institutions for digital skills training to improve TVET graduates' employability.	Ministry of Education and Sports (MoES)	- UCC - LGs - ICT stakeholders
2.2.5	Create specialised TVET centers focused on emerging industries (e.g., renewable energy, technology) to offer specialised training opportunities in high-demand sectors.	Ministry of Education and Sports (MoES)	- PSFU - Industry Associations - Development Partners
2.2.6	Establish industry-led apprenticeship programmes and internship opportunities to facilitate hands-on learning and job placement for TVET graduates.	Uganda Business and Technical Examinations Board (UBTEB)	- PSFU - Industry Stakeholders - LGs
Intervention 2.3: Develop Industry-Aligned TVET Curricula and Programmes			
2.3.1	Strengthen and operationalize industry advisory committees for each TVET sector to provide regular industry input on curriculum design and updates.	Ministry of Education and Sports (MoES)	- UBTEB - PSFU - Industry Associations
2.3.2	Update existing TVET curricula to include current industry trends and technologies that reflect current and emerging labour market demands.	Ministry of Education and Sports (MoES)	- NCDC - UBTEB - Industry Stakeholders
2.3.3	Incorporate mandatory internships and apprenticeships in all TVET programmes to offer hands-on experience for students, improving their job readiness.	Uganda Business and Technical Examinations Board (UBTEB)	- MoES - PSFU - Industry Stakeholders
2.3.4	Develop short-term, modular courses for specific industry skills to offer flexibility for learners to acquire targeted skills quickly.	Ministry of Education and Sports (MoES)	- UBTEB - LGs - Industry Associations
2.3.5	Introduce entrepreneurship training within TVET curricula to equip TVET graduates with skills to start their own businesses.	Ministry of Education and Sports (MoES)	- PSFU - UNEDC - Industry Stakeholders
Intervention 2.4: Implement Inclusive TVET Access Programmes			
2.4.1	Launch scholarship programmes targeting marginalized groups to increase enrollment of marginalized groups in TVET programmes.	Ministry of Education and Sports (MoES)	- HESFB - PJAB - LGs - NGOs/CBOs
2.4.2	Develop flexible learning schedules (e.g., evening classes) for non-traditional learners to improve access to TVET for working adults and others with time constraints.	Ministry of Education and Sports (MoES)	- UBTEB - LGs

Action No.	Action to be implemented	Lead Implementing Institution	Other Contributors
2.4.3	Establish community-based TVET centers in rural areas to increase local access to TVET, reducing the need for relocation.	Ministry of Education and Sports (MoES)	- LGs - Development Partners - NGOs/CBOs
2.4.4	Develop and implement TVET programmes specifically for persons with disabilities to increase employability for persons with disabilities.	Ministry of Education and Sports (MoES)	- UBTEB - National Council for Disability Affairs - NGOs/CBOs
Intervention: 2.5 Enhance Public-Private Partnerships (PPP) in the delivery of TVET in Uganda			
2.5.1	Establish PPP frameworks to support TVET funding and resource sharing to increase resources and financial support for TVET programmes.	Ministry of Education and Sports (MoES)	- PSFU - UBTEB - Development Partners
2.5.2	Develop joint training programmes between TVET institutions and industry partners to deliver programmes that meet specific industry needs and enhance employability of TVET graduates.	Uganda Business and Technical Examinations Board (UBTEB)	- MoES - PSFU - Industry Associations
2.5.3	Create a PPP-based apprenticeship and internship centralized platform for matching students with industry opportunities.	Uganda Business and Technical Examinations Board (UBTEB)	- MoES - PSFU - Industry Associations - LGs
2.5.4	Involve the private sector in TVET curriculum design and review to reflect industry changes.	Ministry of Education and Sports (MoES)	- UBTEB - PSFU - Industry Associations
2.5.5	Organize annual TVET-Industry Partnership Summits to strengthen the collaboration between TVET institutions and industry.	Ministry of Education and Sports (MoES)	- UBTEB - PSFU - Industry Stakeholders
Intervention 3.1: Strengthen Policy and Regulatory Frameworks for business development in the country			
3.1.1	Review and streamline business registration processes to reduce bureaucratic hurdles and fast-track business registration for startups.	Ministry of Trade, Industry and Cooperatives	- URSB - PSFU - LGs
3.1.2	Simplify tax regulations for startups and SMEs to increase compliance and reduce financial burden on small businesses.	Uganda Revenue Authority (URA)	- MoFPED - UIA
3.1.3	Expand the services of one-stop business support centers to different parts of the country to enhance access to information and services for entrepreneurs.	Uganda Investment Authority (UIA)	- MTIC - LGs
3.1.4	Develop policies to protect Intellectual Property (IP) rights to enhance protection and commercialization of innovations.	Uganda Registration Services Bureau (URSB)	- MTIC - UNCSC
3.1.5	Establish monitoring and evaluation mechanisms to track employment, entrepreneurship, and innovation initiatives.	Ministry of Gender, Labour and Social Development	- UBOS - NPA - MoFPED
3.1.6	Develop and implement a national mentorship program connecting experienced entrepreneurs with aspiring ones.	Ministry of Trade, Industry and Cooperatives	- PSFU - UIA - Local Business Associations
Intervention 3.2: Enhance access to finance for startups and small enterprises			

Action No.	Action to be implemented	Lead Implementing Institution	Other Contributors
3.2.1	Create a government-backed fund for startups and SMEs to increase access to seed funding and growth capital.	Ministry of Finance, Planning and Economic Development (MoFPED)	- UIA - PSFU
3.2.2	Develop and expand existing microfinance programmes targeting rural and underserved entrepreneurs to enhance financial inclusion and support for grassroots businesses.	Ministry of Gender, Labour and Social Development (MoGLSD)	- MFSC - NGOs/CBOs - LGs
3.2.3	Establish seed funding programmes and venture capital initiatives to support early-stage startups and innovative projects.	Uganda Investment Authority (UIA)	- MoFPED - PSFU
3.2.4	Introduce credit guarantee schemes to reduce lending risks and increase the willingness of banks to lend to small businesses.	Bank of Uganda (BoU)	- MOFPED - UBA
3.2.5	Provide financial literacy training to entrepreneurs to improve financial management and sustainability of small businesses.	Ministry of Trade, Industry and Cooperatives (MTIC)	- UMRA - PSFU
3.2.6	Facilitate access to export financing for SMEs to expand market opportunities and revenue growth for small businesses.	Ministry of Trade, Industry and Cooperatives	- UEPB - UIA
Intervention 3.3: Develop Infrastructure to Support Business Growth and Connectivity			
3.3.1	Expand and modernize transportation networks (airports, roads, railways, ferries, bridges) to improve logistics and market access for businesses.	Ministry of Works and Transport	- UNRA - UCAA
3.3.2	Invest in reliable and affordable energy supply to provide consistent power supply for industrial and business operations.	Ministry of Energy and Mineral Development	- UEGCL - UETCL
3.3.3	Invest in digital infrastructure, including broadband internet connectivity, mobile technology, and e-commerce platforms, to enable digital entrepreneurship and remote work opportunities.	Ministry of Information, Communication and Technology	- UCC - Private Telecommunications Companies
3.3.4	Develop fully functional business parks and industrial zones with shared facilities to provide affordable and well-equipped spaces for SMEs and startups.	Uganda Investment Authority (UIA)	- MTIC - LGs
3.3.5	Create co-working spaces and incubators in urban centers to offer collaborative environments for startups and entrepreneurs.	Ministry of Trade, Industry and Cooperatives	- PSFU - Local Business Associations
3.3.6	Improve water and sanitation infrastructure in business areas to enhance health and productivity in business environments.	Ministry of Water and Environment	- NWSC - LGs
Intervention 3.4: Foster innovation and technology adoption across sectors and businesses			
3.4.1	Establish innovation hubs and incubators in key regions to increase support for startups and innovation-driven enterprises.	Ministry of Trade, Industry and Cooperatives	- UIA - PSFU
3.4.2	Provide R&D grants and tax incentives for innovative projects to increase investment in research and development leading to new products and services.	Ministry of Science, Technology and Innovation	- UNCST - MoFPED

Action No.	Action to be implemented	Lead Implementing Institution	Other Contributors
3.4.3	Promote technology transfer through international partnerships to increase access to advanced technologies and know-how for local businesses.	Ministry of Trade, Industry and Cooperatives	- UNCST - MoICT&NG - Development Partners
3.4.4	Support digital transformation initiatives across industries to increase productivity and market competitiveness through technology adoption.	Ministry of Information, Communication and Technology	- UCC - PSFU - MoICT&NG
3.4.5	Create a national innovation and technology fund to offer financial support for tech-driven startups and innovation projects.	Ministry of Finance, Planning and Economic Development (MoFPED)	- UIA - PSFU - MoICT&NG
3.4.6	Organize national innovation competitions and awards to recognize and promote innovation across sectors.	Ministry of Trade, Industry and Cooperatives	- UNCST - PSFU - MoICT&NG
Intervention 4.1: Strengthen the national and institutional frameworks for manpower planning and coordination			
4.1.1	Strengthen the Manpower Planning Coordination function within the National Planning Authority and the decentralized planning units.	National Planning Authority (NPA)	- MoFPED - MoPS - LGs
4.1.2	Expand the mandates of Programme Working Groups and build the capacities of PWG members to handle manpower planning and prioritization at the programme level.	National Planning Authority (NPA)	- PWG secretariats - MoFPED - CSOs
4.1.3	Develop and implement comprehensive national and institutional human resource development plans.	National Planning Authority (NPA)	- MOEs - MOPS - MoGLSD - MoFPED
4.1.4	Develop and implement a National Human Resource Development Policy.	National Planning Authority (NPA)	- MOEs - MOPS - MoGLSD - MoFPED
4.1.5	Conduct capacity-building programmes for staff involved in manpower planning.	National Planning Authority (NPA)	- MOEs - MOPS - MoGLSD - MoFPED
4.1.6	Establish inter-agency task forces for specific workforce sectors and programmes.	National Planning Authority (NPA)	- MOEs - MOPS - MoGLSD - MoFPED
4.1.7	Streamline the issuance of work permit processes in line with skills availability in the country guided by the NHRDP.	Ministry of Internal Affairs	- NPA - MOEs - MoGLSD - MoFPED
Intervention 4.2: Establish a framework for timely production and analysis of labour market statistics and information.			
4.2.1	Develop and implement a comprehensive, centralized, and integrated Labour Market Information System (LMIS) platform.	Ministry of Gender, Labour and Social Development (MoGLSD)	- NPA - UBOS - PSFU - FUE
4.2.2	Strengthen the collection, management, and reporting of administrative data.	Uganda Bureau of Statistics (UBOS)	- NPA - MoGLSD - PSFU

Action No.	Action to be implemented	Lead Implementing Institution	Other Contributors
			- FUE
4.2.3	Undertake the administration of regular (such as quarterly and annual) labour and employment surveys.	Uganda Bureau of Statistics (UBOS)	- NPA - MoGLSD - PSFU - FUE
4.2.4	Design and implement a capacity development programme for strengthening the collection, analysis, and reporting of labour market statistics.	Uganda Bureau of Statistics (UBOS)	- NPA - MoGLSD - PSFU - FUE
4.2.5	Develop a Uganda National Talent Register (UNTR) for all professionals to capture and provide real-time information concerning the demand and supply of talent/skills.	Ministry of Labour, Employment and Industrial Relations	- NPA - MoGLSD - PSFU - FUE - UBOS
4.2.6	Develop and regularly update a robust web-based system for human resource projections and employment tracking.	National Planning Authority (NPA)	- NPA - MoGLSD - PSFU - FUE - UBOS
Intervention 4.3: Enhance collaboration between education providers, employers, and government.			
4.3.1	Conduct and facilitate regular dialogue forums between academia, employers, and policymakers.	National Planning Authority (NPA)	- MoES - MoGLSD - PSFU - FUE - MoFPED - Higher Education Institutions
4.3.2	Develop and implement a national skills recognition framework in collaboration with industry players.	Ministry of Labour, Employment and Industrial Relations	- MoES - MoGLSD - PSFU - FUE - MoFPED
4.3.3	Conduct regular sector or programme-specific workforce demand and supply analyses and projections.	National Planning Authority (NPA)	- PWGs - MoES - MoGLSD - PSFU - FUE - MoFPED - Industry Associations
4.3.4	Organize stakeholder forums to discuss workforce gaps and development strategies.	National Planning Authority (NPA)	- PWGs - MoES - MoGLSD - PSFU - FUE - MoFPED - Academia
4.3.5	Develop a national monitoring and evaluation (M&E) framework for workforce development.	National Planning Authority (NPA)	- OPM - MoES - MoGLSD - PSFU - FUE - MoFPED - Academia

Action No.	Action to be implemented	Lead Implementing Institution	Other Contributors
Intervention 4.4: Create a cohesive and well-coordinated capacity-building programme that aligns domestic and foreign support with national development goals.			
4.4.1	Establish a dedicated national capacity-building coordination unit to oversee and coordinate all capacity-building programmes, ensuring alignment with national development goals.	Ministry of Finance, Planning and Economic Development (MoFPED)	- MOPS - NPA - MoES - MoGLSD
4.4.2	Develop a centralized online platform to list all domestic and foreign-funded education and training opportunities, manage applications, and communicate results, ensuring transparency, streamlined processes, and equitable access for all candidates.	Ministry of Education and Sports	- MOPS - NPA - MoES - MoGLSD - Development Partners
4.4.3	Develop and launch a dedicated and centralized online portal that consolidates all training and professional development opportunities for public servants, enabling them to easily access training information, apply, and track their application status.	Ministry of Public Service (MoPS)	- OPM - NPA - MOES
4.4.4	Establish a platform and conduct an annual stakeholder forum bringing together government agencies, foreign donors, and private sector partners to review and align capacity-building efforts with national priorities.	Ministry of Finance, Planning and Economic Development (MoFPED)	- OPM - NPA - MOES - Development Partners
4.4.5	Create formalised partnerships between domestic and foreign governments, development partners, and multinationals to fund and implement education and skills training programmes that address critical skills gaps.	Ministry of Education and Sports	- MOPS - NPA - MoGLSD - Development Partners
4.4.6	Develop a programme to harness the potential of diaspora communities, including skills transfer, knowledge exchange, networking, information sharing, and investment in education and training initiatives.	Ministry of Foreign Affairs	- MOPS - NPA - MoGLSD - Diaspora Organizations

7.5. Financing Strategy and Mechanisms

265. **The financing strategy for this plan is aligned with the NDPIV Medium-Term Expenditure Framework (MTEF) and integrated within the Programme Implementation Action Plans (PIAPs) of various programmes.** The is designed to ensure the effective implementation of interventions without the need for additional resources beyond what is already allocated in the national framework. This strategy aligns closely with the National Development Plan IV (NDPIV) and leverages the Medium-Term Expenditure Framework (MTEF), a key tool for ensuring fiscal discipline and resource allocation efficiency. By integrating the NDPIV-HRDP interventions into the Programme Implementation Action Plans (PIAPs) of various programmes, the financing of the plan is streamlined, making use of existing financial structures rather than creating a need for extra resources.

266. **The integration of the Plan's interventions into the Ministries, Agencies, and Local Governments (MALGs) work plans and budgets is central.** This embedded approach will ensure that human resource development becomes an ongoing, central focus of national

development activities. Rather than treating it as an additional, standalone initiative, it is a core component of the annual work plans across MALGs. This alignment with existing programmes means that the primary funding source for the Plan interventions will be the MTEF. The MTEF, a three-year rolling budgetary framework, is central to Uganda's budgetary process, providing a comprehensive approach to fiscal management by aligning policy, planning, and budgeting. It ensures that resources are directed towards priority areas, such as human resource development, without stretching the national budget.

267. **A key aspect of this financing strategy is the government's commitment to mobilising sufficient resources to implement the Plan.** The government recognizes that public funding alone cannot suffice and, therefore, will actively engage the private sector and development partners to supplement these efforts. The private sector, as projected in NDPIV, will play an instrumental role in providing additional funding. This is in line with Uganda's broader strategy to leverage private sector investment to complement public sector efforts in key areas like education and workforce development. The engagement of private enterprises in financing training programmes, vocational education, internships, and apprenticeships will help bridge the funding gap and ensure that the skills developed align with labour market needs.

268. **The integration of Plan interventions into the national and sub-national budgets through the MTEF and PIAPs lays the foundation for budgetary sustainability**. Aligning the plan's activities with Uganda's broader fiscal and budgetary processes, helps government to ensure that human resource development is treated as an ongoing priority within the existing financial structures. This financial sustainability approach helps to mitigate the risk of funding shortfalls by making human resource initiatives a permanent fixture in the government's expenditure plans, rather than relying on ad hoc or temporary funding sources.

269. **Development partners, including United Nations agencies, multilateral and bilateral organizations, and civil society, are also expected to be significant contributors to the financing of this plan.** These partners have traditionally played a vital role in supporting human resource development initiatives in Uganda and will continue to do so in the implementation of the Plan. The primary mode of external support will be through basket funding. Basket funding is a pooled funding mechanism where multiple donors contribute to a common pool, typically managed by the government. This approach is advantageous because it reduces fragmentation in funding, enhances coordination among donors, and aligns external support with national priorities. Basket funding can be directed either as contributions to the national budget or as targeted funding for specific MALGs, in line with the Programme-Based Approach (PBA). The PBA ensures that all interventions are part of a broader, coordinated strategy for national development, with clear outcomes and measurable impacts.

270. **Technical assistance from development partners will also play a critical role in complementing financial resources.** Beyond direct funding, development partners will contribute through capacity-building initiatives, knowledge transfer, and institutional strengthening. This technical support is essential in building a well-educated, skilled, and productive workforce. The focus on technical assistance highlights the need for long-term sustainability of the Plan's outcomes, ensuring that Uganda not only secures the financial resources but also develops the institutional capacity to manage and implement the plan effectively.

271. **In summary, the financing strategy of the Plan is comprehensive and well-aligned with national development frameworks**. It leverages the MTEF and integrates seamlessly into the existing work plans and budgets of MALGs. Through a combination of public funding, private sector investment, and support from development partners, the plan is well-positioned to achieve its objectives without requiring additional financial resources. Basket funding and technical

assistance will further strengthen the implementation process, ensuring that Uganda develops a skilled, productive workforce to meet its long-term development goals.

7.6. Risk Management

272. **Risk management is a foundational element in ensuring the successful implementation of this plan.** The plan addresses critical challenges in education, employment, and workforce development in Uganda, which require a careful and proactive approach to managing potential risks. These risks, which could emerge from economic fluctuations, social resistance, technological advancements, or regulatory changes, have the potential to derail the achievement of key Plan objectives if not properly managed. The complexity of building a well-trained, employable workforce in a rapidly changing global and domestic environment underscores the need for a robust risk management framework. From economic downturns that may affect government funding for education to social resistance to reforms in the education system, stakeholders must anticipate these challenges and craft strategies to mitigate their impact. Technological risks, such as outdated infrastructure and training programmes, are particularly critical in sectors like Technical and Vocational Education and Training (TVET), which are pivotal for meeting labour market demands. Table 7.2 highlights the critical identified risks, risk category, likely causes, possibility of occurrence and mitigation strategies.

Table 7.2: Risk Assessment, Analysis and Management

NDPIV-HRDP Objective	Risk	Type of risk	Causes	Risk			Mitigation	Lead Actor
				Probability	Impact	Risk Rating		
Strengthen the alignment of the National Education and Training System with Current and Future Labour Market Needs	Economic Downturn	Economic	Reduced Government funding and economic instability affecting resource allocation for education.	Medium	High	Severe	a) Diversify funding sources b) Advocate for sustained or increased budget allocations c) Prioritise essential programmes	MoFPED, NPA & MoES
	Resistance to Change in Curriculum	Social/Cultural	Cultural and institutional inertia in adopting new educational frameworks.	Medium	Medium	Moderate	a) Engage stakeholders early. b) Provide incentives for change c) Offer training and capacity-building programmes	MoES, NCDC
	Teacher Shortages	Human Resource	Insufficient recruitment and retention of qualified teachers.	Medium	High	Severe	a) Enhance teacher training and professional development. b) Improve teacher welfare and working conditions. c) Implement targeted recruitment campaigns	MoFPED, MoES, MoPS & NPA
	Limited Access to Lifelong Learning	Educational/Access/Technological	Inadequate infrastructure and resources for adult education and continuous professional development.	Low	High	Moderate	a) Invest in infrastructure for adult education. b) Develop flexible learning programmes. c) Partner with the private sector for resources.	MoES, NGOs & Private Sector
Revolutionise and increase access to Technical and Vocational Education and	Outdated TVET Curriculum	Educational/Access/Technological	Slow adaptation to industry needs and technological advancements.	Medium	High	Severe	a) Regularly update curricula based on industry input. b) Foster industry-academic partnerships. c) Invest in modern training equipment.	MoES, Skills Councils, UMA & Private Sector

NDPIV-HRDP Objective	Risk	Type of risk	Causes	Risk			Mitigation	Lead Actor
				Probability	Impact	Risk Rating		
Training (TVET) to enhance employment and employability Limited access for marginalised groups	Inadequate TVET infrastructure	Infrastructure/ Resource	Lack of investment in modernising and expanding TVET facilities.	Low	High	Moderate	a) Secure funding for infrastructure development. b) Encourage private sector investment in TVET. c) Leverage Public-Private Partnerships (PPP)	MoFPED, UIA &MoES
	Low public perception of TVET	Social/Cultural	Cultural bias favouring traditional academic education over vocational training	Medium	High	Severe	a) Launch public awareness campaigns b) Highlight successful TVET graduates. c) Integrate TVET promotion into school systems	MoICT &NG, MoGLSD, MoES& NCDC
	Limited Access for Marginalized Groups	Social/Cultural	Socio-economic barriers prevent equal access to TVET programmes.	Medium	Very High	Critical	a) Implement inclusive access programmes. b) Provide scholarships and financial aid. c) Develop targeted outreach programmes	MoES, & MoGLSD
Create an Enabling Ecosystem for Employment, Entrepreneurship, and Innovation	Regulatory Bottlenecks	Regulatory/Administrative	Complex and restrictive policies hinder business development.	Medium	Medium	Moderate	a) Simplify and streamline regulatory processes. b) Engage stakeholders in policy reform. c) Monitor and adapt regulations regularly.	UIA. NPA, URSB, URA & MoTIC
	Limited Access to Finance	Economic	Challenges in obtaining financing for startups and small enterprises.	High	Very High	Critical	a) Expand financial inclusion initiatives. b) Encourage microfinance and venture capital. c) Develop government-backed loan programmes.	BoU, UDB & MoFPED

NDPIV-HRDP Objective	Risk	Type of risk	Causes	Risk			Mitigation	Lead Actor
				Probability	Impact	Risk Rating		
	Infrastructure Deficiencies	Infrastructure/ Resource	Inadequate infrastructure for business growth and connectivity.	Medium	High	Severe	a) Invest in critical infrastructure. b) Leverage PPP for infrastructure development. c) Prioritise infrastructure in underserved areas.	MoWT, UIA & MoLG
	Slow Adoption of Innovation and Technology	Technological/ Innovation	Resistance to or lack of awareness about new technologies.	Medium	High	Severe	a) Promote technology adoption through incentives. b) Provide training and support for businesses. c) Foster a culture of innovation through education.	NITA-U, UIRI & MoES
Establish an integrated manpower planning ecosystem	Weak coordination among stakeholders	Governance/Coordination	Fragmented communication and collaboration between Government, education providers, and employers.	High	Medium	Severe	a) Establish formal coordination frameworks. b) Enhance communication channels between stakeholders. c) Regularly review and adjust collaboration efforts	NPA, MoES & MoGLSD
	Inadequate labour Market data	Data/Information	Delays and inadequate labour market statistics and information.	High	High	Critical	a) Invest in robust data collection and analysis tools. b) Train staff in data management. c) Ensure timely dissemination of labour market information.	UBoS, NPA & MoGLSD

NDPIV-HRDP Objective	Risk	Type of risk	Causes	Risk			Mitigation	Lead Actor
				Probability	Impact	Risk Rating		
	Delayed implement ation of the National Skills Recognitio n Framework	Regulatory/Ad ministrative	Complexity in aligning industry needs with academic qualifications.	High	Medium	Severe	a) Establish a task force for continuous monitoring. b) Engage industry leaders in the framework design. c) Pilot the framework with select industries.	MoES NPA, UMA&NC DC

Key to Colour Themes

Impact:		Very low	Low	Medium	High	Very High
Probability	**Very High**	Moderate	Severe	Severe	Critical	Critical
	High	Sustainable	Moderate	Severe	Critical	Critical
	Medium	Sustainable	Moderate	Moderate	Severe	Critical
	Low	Sustainable	Sustainable	Moderate	Moderate	Critical
	Very low	Sustainable	Sustainable	Sustainable	Moderate	Severe

7.7. Conclusion

273. **Successful implementation of the plan relies heavily on strong coordination, effective financing mechanisms, and comprehensive risk management strategies.** Chapter 7 highlights the importance of the integration of NDPIV-HRDP interventions within national and local structures, which are aligned with the Medium-Term Expenditure Framework (MTEF), to optimize resource use. The financing strategy emphasizes a multi-stakeholder approach, engaging the private sector and development partners to secure adequate funding, especially through mechanisms like basket funding. Risk management identifies challenges and proposes mitigation strategies, emphasizing monitoring, transparency, and adaptive approaches. Addressing capacity gaps, institutional coordination, and financial sustainability will be essential for achieving the plan's long-term goals, supporting the development of Uganda's human resources and achieving the envisaged socio-economic transformation.

CHAPTER 8: MONITORING, EVALUATION AND REPORTING MECHANISMS

8.1. Introduction

274. **Strong Monitoring, Evaluation and Reporting (M&E) is critical to achieving the strategic goal and objectives of the plan.** These mechanisms are designed to ensure that Human Resource Development (HRD) efforts are effectively contributing to Uganda's national development agenda. The NDPIV-HRDP's M&E framework is aligned with NDPIV's principles of inclusivity, transparency, and evidence-based decision-making, ensuring that progress is tracked, results are communicated, and necessary adjustments are made to meet the plan's objectives.

8.2. Monitoring Framework

275. **The monitoring processes will integrate seamlessly with the NDPIV M&E framework.** Monitoring will involve systematic data collection, analysis, and reporting on key performance indicators (KPIs) linked to the HRD initiatives. Implementing sectors and Ministries, Departments, and Agencies (MDAs) will develop specific monitoring strategies that align with the broader NDPIV goals. These strategies will be operationalized through detailed work plans that outline timelines, responsibilities, and expected outcomes. Implementing agencies will collect data on HRD-related KPIs regularly. This data will be analyzed to assess progress against NDPIV targets. At the end of each quarter, review meetings will be conducted to evaluate progress, identify challenges, and recommend necessary adjustments to keep the Plan on track. Field visits will be conducted to verify the accuracy of reported data and to gather qualitative insights on the ground-level implementation of HRD initiatives.

276. **The monitoring framework is designed to ensure accountability, early issue detection, and informed decision-making, consistent with NDPIV priorities.** The primary objectives include tracking the progress of Plan activities, providing early warnings for any deviations, informing policy adjustments, and ensuring the efficient utilisation of resources. By aligning with the NDPIV, the framework helps maintain focus on achieving national development targets and allows for timely intervention when necessary. Key Performance Indicators (KPIs) aligned with the NDPIV results framework will be used to measure progress in human resource development. These KPIs will be critical in assessing various dimensions of human resource development, including employment rates, skills development, public service delivery, health workforce availability, and education outcomes. Each KPI will be defined with specific baselines, targets, and timelines to facilitate regular assessments and ensure that the Plan remains on course to contribute effectively to the NDPIV goals. The results framework will integrate these indicators into a cohesive system that tracks both immediate outputs and long-term outcomes, ensuring alignment with the NDPIV's strategic objectives.

8.3. Evaluation Processes

277. **Evaluation will be conducted systematically to assess the effectiveness, impact, and sustainability of Plan interventions, in line with NDPIV standards.** The evaluation process will include mid-term and end-of-term evaluations to measure progress, identify successful strategies, and recommend improvements. These evaluations will employ a mix of quantitative and qualitative methods, ensuring a comprehensive assessment. Stakeholder involvement will be a key component, with evaluations designed to incorporate feedback from all relevant parties, including government agencies, civil society, and development partners. This approach ensures that the evaluations provide a holistic view of the Plan's contributions to the NDPIV's overarching goals.

278. **The evaluation framework is tailored to measure the relevance, effectiveness, and impact of Plan in achieving NDPIV's human resource development goals.** It aims to assess whether the interventions are meeting their intended objectives, the extent of their impact on national development indicators, and the sustainability of the outcomes achieved. The evaluation will also generate insights and lessons learned, which will be invaluable for informing future human resource development policies and programmes. This framework is crucial for ensuring that the Plan not only aligns with but also contributes substantively to the NDPIV. The evaluation framework will comprise a robust set of criteria, data collection methods, and stakeholder involvement strategies to ensure comprehensive assessments. The key components will include:

i) **Evaluation Criteria.** Focused on relevance, coherence, efficiency, effectiveness, impact, and sustainability, these criteria will guide the evaluation of Plan interventions.

ii) **Data Collection Methods.** A combination of quantitative and qualitative techniques, including surveys, interviews, focus groups, and document reviews, will be used to gather comprehensive data.

iii) **Stakeholder Involvement.** The evaluation process will engage a wide range of stakeholders, including government officials, civil society, beneficiaries, and development partners, ensuring that diverse perspectives are incorporated into the analysis.

iv) **Reporting.** The findings from the evaluations will be documented in detailed reports, which will include recommendations for future interventions and strategies for scaling successful initiatives.

279. **Impact studies will be conducted to evaluate the broader socio-economic effects of the NDPIV-HRDP interventions, with a focus on contributing to NDPIV objectives.** These studies will assess the economic, social, gender, and regional impacts of the Plan. For example:

i) **Economic Impact.** Evaluating how the Plan has influenced economic growth, job creation, and income distribution across different regions.

ii) **Social Impact.** Assessing improvements in social indicators such as education, health, and social inclusion because of Plan initiatives.

iii) **Gender Impact.** Examining the impact of Plan interventions on gender equality, including the empowerment of women and girls in alignment with NDPIV's gender objectives.

iv) **Regional Impact.** Analysing how Plan initiatives have affected regional development, particularly in underserved and rural areas, contributing to the balanced development goals of NDPIV.

8.4. Reporting and Accountability

280. **The reporting structures are designed to ensure that information flows seamlessly from implementation teams to national decision-making bodies, consistent with NDPIV** requirements**.** A clear hierarchy of reporting will be established to facilitate efficient communication and accountability. Implementation teams will be responsible for generating regular progress reports. These reports will help provide oversight and policy guidance, ensuring that the Plan's progress is consistently monitored and aligned with the NDPIV. A variety of reports will be produced to ensure comprehensive tracking of Plan progress and to maintain accountability at all levels. These include:

i) **Quarterly Labour Force Status Report (QLFSR).** The Quarterly Labour Force Status Report will be produced every quarter to provide timely updates on key labour force indicators, including employment, unemployment, underemployment, and workforce participation rates. This report is to offer real-time data reflecting the current state of the labour market, enabling the government to respond swiftly to emerging challenges. Through tracking short-term changes, the report will help ensure that government interventions and policies are aligned with the most pressing workforce needs, allowing for agile and responsive decision-making in labour management. The report will also detail sectoral employment distributions and highlight regional disparities, providing a snapshot of how different parts of the country and various industries are performing. This regular update is crucial for identifying labour market shifts and enabling timely policy adjustments. To enhance data availability and reliability, UBOS is tasked with conducting Quarterly Labour Force Surveys, creating a comprehensive employment and labour statistics database. This will support more effective planning, policy formulation, and reporting on employment and skills development in Uganda.

ii) **The Annual Jobs Report (AJR)**. The Annual Jobs Report to be produced every year, will focus on tracking job creation across different sectors and regions, offering a year-on-year analysis of the labour market. It will highlight both job creation and job losses across industries, examining which sectors contribute most to employment growth. This report will assess the employment intensity of economic growth, identifying high-potential sectors and providing insights to help policymakers formulate targeted employment policies. The report will offer a comprehensive analysis of Uganda's employment landscape, including changes in unemployment rates and sector-specific employment trends in key areas like agriculture, manufacturing, and services. It will also evaluate the effectiveness of national employment policies and provide recommendations for increasing job creation, particularly in emerging sectors. Special attention will be given to addressing unemployment challenges, especially among youth and rural populations, ensuring that the workforce grows in line with economic demands.

iii) **The Annual Scarce Skills Report (ASSR).** The Annual Scarce Skills Report to be produced every, year will focus on identifying critical skill shortages within the labour market. This report highlights areas where demand for specific skills exceeds supply, pinpointing the skills most in demand and evaluating the efforts needed to address these gaps. By outlining specific occupations and skills in short supply, the report is crucial for guiding national training and reskilling initiatives. It provides valuable insights for directing resources effectively, ensuring

that the workforce is equipped with the necessary skills for economic growth. Moreover, the report aligns the annual loan scheme and government scholarships with the critical skills required by the economy. The Scarce Skills Report supports the planning efforts of tertiary education institutions by fostering alignment between the supply of graduates and the demand for essential skills. It also lays the groundwork for an education system responsive to the evolving needs of industry and the economy. Additionally, the report streamlines work permit issuance processes based on the availability of skills within the country.

iv) **The Biennial Employment and Skills Status Report (BESSR).** The Employment and Skills Status Report shall be produced every two years, to provide a comprehensive analysis of Uganda's employment landscape and workforce skills. It will assess labour market trends, including employment rates and sectoral shifts while evaluating the alignment between current workforce skills and the demands of emerging industries. The report identifies critical skill gaps and examines how well the workforce is prepared to meet the country's long-term development goals. This report will serve as a key resource for national policy development, particularly in employment creation and skills enhancement. By highlighting the gap between available skills and market demand, it guides educational and training institutions in adapting curricula to better prepare the workforce for evolving industry needs. Additionally, the report tracks job creation, skills development, and short- and medium-term skill requirements. Led by the National Planning Authority (NPA) in collaboration with stakeholders like UBOS, EPRC, MoGLSD, MoES, UIA, and PSFU, the report ensures accurate data collection and analysis. This coordinated approach aids policymakers in addressing skills gaps and enhancing job creation strategies, ensuring workforce development aligns with the country's economic goals.

8.5. Results Framework

281. **The Results Framework will be essential for monitoring and evaluating progress throughout the Plan's implementation, ensuring compliance with Section 13(7) of the Public Finance Management Act, 2015**. This framework is designed to assess outcomes at various levels, with Table 8.1 focusing on results at the goal and national strategic intervention levels. By clearly outlining how the planned interventions are expected to lead to the desired results, the framework provides a structured approach to track progress and make necessary adjustments. It serves as a vital tool for ensuring that the objectives of the Plan are effectively met.

Table 8.1: Results Framework for the NDPIV-HRDP

Strategies	Actions	Indicators	Baseline 2023/24	Targets					Means of Verification	Responsible Institution
				2025/26	2026/27	2027/28	2028/29	2029/30		
SO1: To Strengthen the alignment of the national education and training system with current and future labour market needs										
1.1 Increase accessibility to quality educational and training opportunities across all tiers of the educational system.	Invest in educational infrastructure development (construct, rehabilitate and equip), such as classrooms, teacher houses, libraries, and laboratories at all levels.	Number of schools constructed in each of the gazetted parishes.	14,600	40	40	60	30	30	EMIS	MoES,LGs/ KCCA
		Number of existing public primary schools rehabilitated.	2,656	60	102	102	102	102	Annual Reports	MoES,LGs/ KCCA
		Number of new secondary schools constructed in sub counties without	-	26	26	26	26	26	Annual Reports	MoES,LGs/ KCCA
		Number of existing government owned or government aided secondary schools rehabilitated, renovated, and expanded	166	24	24	24	24	24	Annual Reports	MoES/ KCCA
	Expand financial aid to ensure access for disadvantaged groups and underprivileged communities such as Karamoja	Enrolment rate in primary schools in Karamoja	25,734	28,307	31,137	34,251	37,676	41,444	EMIS	MoES
		Enrolment rate in secondary schools in Karamoja	13,892	15,281	16,809	18,489	20,337	22,370	EMIS	MoES
	Implement school feeding programmes to improve nutrition and retention rates, especially in primary and secondary schools.	% of Schools providing feeding to children	34%	50%	50%	50%	50%	50%	Reports	OPM (UNAP secretariat)

Strategies	Actions	Indicators	Baseline 2023/24	Targets					Means of Verification	Responsible Institution
				2025/26	2026/27	2027/28	2028/29	2029/30		
	Implement targeted remedial programmes to address learning gaps and improve educational outcomes for disadvantaged students.	Number of teachers trained in remedial education programme	20	1000	1000	1000	1000	1000	Annual Reports	MoES/ KCCA/LGs
	Increase the availability and affordability of higher education opportunities (including scholarships, grants, and student loans) to expand access for qualified Ugandans.	National admissions and scholarship Policy developed	0	0	0	1	0	0	MoES report	MoES, NPA
1.2 Address the critical education and skills gaps to meet the current and projected HR needs at national and global levels.	Produce and publish a national scarce skills and occupation report to highlight critical scarce qualifications and skills needs in the country every two years.	National Scarce Skills report developed	0	1	1	1	1	1	NPA	NPA
		Number of copies of the report printed	0	500	500	500	500	500	NPA	NPA
	Develop a Uganda National Qualification Framework to standardise skill levels and enhance recognition of	Uganda National Qualification Framework developed	0	0	1	0	0	0	MoES report	MoES

Strategies	Actions	Indicators	Baseline 2023/24	Targets					Means of Verification	Responsible Institution
				2025/26	2026/27	2027/28	2028/29	2029/30		
	qualifications across sectors.									
	Develop a centralised admissions system for TVET and tertiary institutions aligned with national development priorities.	A national central admission system for higher education established	0	0	0	1	0	0	MoES report	MoES
	Annual Status report on NDPIV-HRDP Education and Skills development report produced	Annual Status report on NDPIV-HRDP Education and Skills development report developed	0	1	1	1	1	1	NPA	NPA
	Produce Employment and Skills Status report	Employment and Skills Status report developed			1		1		NPA	NPA
	Develop and publish an annual jobs report	Annual jobs report developed	0	1	1	1	1	1	NPA	NPA
		Number of the annual jobs report produced	0	500	500	500	500	500	NPA	NPA
	Develop and implement a criterion for financing critical skills to link allocation of scholarships and loan financing to critical skill needs identified in the plan	Availability of a criterion for financing critical skills to link allocation of scholarships and loan financing to critical skill needs identified in the plan	0	1	0	1	0	0		NPA
	Integrate robust career guidance and	Number of schools provided with support	120	180	220	260	320	400	MoES	MoES

Strategies	Actions	Indicators	Baseline 2023/24	Targets					Means of Verification	Responsible Institution
				2025/26	2026/27	2027/28	2028/29	2029/30		
	counselling at all levels of education to guide students in the selection of their career paths.	services (guidance and counselling)								
	Establish a programme for cross-border apprenticeship s, internships, and knowledge exchanges to provide hands-on learning experiences and exposure to different work cultures and practices.	An apprenticeship and job placement policy and programme developed and implemented		1	1	1	-	-	MoES APR	MOES, Universitie s
	Strengthen external employment services to facilitate externalisation of skilled manpower through international collaborations, training partnerships and knowledge exchange.	Number of people employed through labour externalisation programme disaggregated by age, gender, nationality and refugee status	11,291	20,000	21,000	22,000	23,000	24,000	MGLSD Annual Report, EEMIS	MGLSD
	Address the skills needs of the cultural and creative industries as engines of economic growth and job	Proportion of jobs created by the culture and creative industries	386,000	508,800	631,600	754,400	877,200	1,000,000	MGLSD, UNESCO, EAC Mapping study	MGLSD

Strategies	Actions	Indicators	Baseline 2023/24	Targets					Means of Verification	Responsible Institution
				2025/26	2026/27	2027/28	2028/29	2029/30		
	creation, particularly for youths and women.	Percentage of the population employed in the arts, entertainment and recreation	0.20%	0.20%	1.40%	2.60%	3.80%	5%	UBOS (NLFS)	MGLSD
Develop and implement a comprehensive Teacher development and welfare programme focused on aligning educational outcomes with labour market needs.	Revise teacher training curricula to equip teachers with skills and knowledge relevant to current labour market demands.	Number of TVET Trainers and Assessors retooled on the revised TVET curriculum and programmes	230	600	800	1000	1200	1500		MoES
		Number of Curricula Development/Reviews Supported Annually	1	3	3	3	3	3		STI-OP
	Establish a teacher continuous professional development programme for the continuous upskilling of teachers to adapt to emerging industry trends and technologies.	Number of Pre-primary teachers trained in-service through CPDs	8,270	211	302	390	401	450	EMIS	MoES
Promote a culture of lifelong learning, adult education programmes	Expand access to adult education by establishing community learning centres that offer flexible learning options such as	Number of functional Community Learning Centers operationalised	11	16	16	16	16	16	IMIS	MoGLSD
		Number of persons participating in adult learning and community education programmes	5,651	5,651	5,651	5,651	5,651	5,651	MGLSD Annual Report	MGLSD, LGs

Strategies	Actions	Indicators	Baseline 2023/24	Targets					Means of Verification	Responsible Institution
				2025/26	2026/27	2027/28	2028/29	2029/30		
and continuous professional development opportunities .	evening classes, weekend workshops, online courses, and distance learning programmes.									
	Offer short-term and modular training courses in emerging fields and technologies to facilitate continuous learning and adaptation to changing market demands.	Number of modularized TVET programmes rolled out	27	90	90	90	90	90	Annual Reports	MoES
SO 2: Reform and increase access to Technical and Vocational Education and Training (TVET) to enhance employment and employability of Ugandans										
Develop, popularise, and implement the Uganda Vocational Qualifications Framework (UVQF).	Develop the UVQF Standards and Guidelines	TVET qualification framework developed	0	1	1	1	1	1	MoES report	MoES
	Strengthen the standardisation and certification programme to make Uganda's labour force employable and competitive.	Number of internationally accredited TVET training institutions	5	5	5	5	5	5	MoES report	MoES
	Enhance the quality and relevance of TVET curricula through partnerships with	Number of new TVET Curricula developed	-	4	4	4	6	8	Annual Reports	MoES

Strategies	Actions	Indicators	Baseline 2023/24	Targets					Means of Verification	Responsible Institution
				2025/26	2026/27	2027/28	2028/29	2029/30		
	industry stakeholders, professional associations and accreditation bodies.									
Expand and Modernize TVET Infrastructure Nationwide	Upgrade existing TVET institutions with modern equipment and technology to enhance learning environments that meet industry standards.	No. of TVET institutions rehabilitated, expanded and equipped	21	8	8	9	9	9	MoES report	MoES
	Construct new TVET centers in underserved regions to increase access to TVET, especially in rural and remote areas.	Number of TVET Institutions constructed and equipped	9	9	9	9	9	9	Annual Reports	MOES
	Establish industry-led apprenticeship programmes and internship opportunities to facilitate hands-on learning and job placement for TVET graduates.	Number of MoUs signed between employers providing work-based training and training institutions		6	6	6	6	6	MoES	MOES
Develop Industry-	Operationalise the TVET Council and	TVET Act operationalised	-	1	-	-	-	-	Annual Reports	MOES

Strategies	Actions	Indicators	Baseline 2023/24	Targets					Means of Verification	Responsible Institution
				2025/26	2026/27	2027/28	2028/29	2029/30		
Aligned TVET Curricula and Programmes	Sector Skills Expert Committees to oversee the implementation of TVET and provide regular industry input on curriculum design and updates.									
	Update existing TVET curricula to include current industry trends and technologies that reflect current and emerging labour market demands.	Number of new TVET Curricula developed	4	4	4	4	6	8	Annual Reports	MoES
	Develop short-term, modular courses for specific industry skills to offer flexibility for learners to acquire targeted skills quickly.	Number of modularized BDS courses rolled out for TVET assessments		50	50	50	50	50	UBTEB Annual Report	UBTEB, MGLSD, MoFPED, Development Partners
Implement Inclusive TVET Access Programmes	Launch scholarship programmes targeting marginalized groups to increase their enrollment in TVET programmes.	Affirmative action government sponsorship scheme increased from 1000 undergraduate students to 3000 students	1000	1000	1000	1000	1000	1000	MoES Report	MoES
	Establish community-based TVET centres in rural areas to increase	Number of TVET Institutions operationalised	20	12	7	22	12	12		MoES

Strategies	Actions	Indicators	Baseline 2023/24	Targets					Means of Verification	Responsible Institution
				2025/26	2026/27	2027/28	2028/29	2029/30		
	local access to TVET, reducing the need for relocation.									
	Develop and implement TVET programmes specifically for persons with disabilities to increase their employability	Number of vulnerable/special groups in employment aggregated by age, gender, disability, refugee status, displacement-PWD (%)	21%	25	26	28	30	35	MGLSD Annual Report	MGLSD
Enhance Public-Private Partnerships (PPP) in the delivery of TVET in Uganda	Develop joint training programmes between TVET institutions and industry players to deliver programmes that meet specific industry needs and enhance the employability of TVET graduates.	Number of knowledge transfer partnerships established between HEIs and industries	16	28	20	30	40	45	MoES Report	UBTEB
	Create a PPP-based apprenticeship and internship centralised platform for matching students with industry opportunities.	Number of students successfully matched with apprenticeship and internship opportunities using the centralised platform.	100	300	350	400	450	500	MoES Report	MoES
SO 3: Strengthen an enabling ecosystem for employment creation, entrepreneurship, and innovation.										
Strengthening Policy and	Expand the services of one-stop business	Number of Tier 4 institutions participating	100	300	600	900	1200	1500	UMRA Report	UMRA

Strategies	Actions	Indicators	Baseline 2023/24	Targets					Means of Verification	Responsible Institution
				2025/26	2026/27	2027/28	2028/29	2029/30		
Regulatory Frameworks for business development in the country	support centers to different parts of the country to provide entrepreneurs with access to information and services.	in credit information sharing mechanism.								
	Develop policies to protect intellectual property (IP) rights and enhance the protection and commercialisation of innovations.	Net Change in Intellectual Property Rights Payments (USD, Million)	15	3	5	7	9	11	UMRA	URSB
Enhance access to finance for startups and small enterprises	Create a government-backed fund for startups and SMEs to increase access to seed funding and growth capital.	Uptake of start-up credit (%)		40	45	50	60	80	MFPED-FSD	UDB, Post bank, MSC and HFB
	Develop and expand existing microfinance programmes targeting rural and underserved entrepreneurs to expand financial inclusion and support for grassroots businesses.	Number of new Private businesses accessing funds from UDB	1022	1100	1175	1250	1350	1500	UDB report	UDB
	Provide financial literacy training to	Number of CIS Accounts	131563	157876	181557	208790	229670	252636	CMA report	CMA

Strategies	Actions	Indicators	Baseline 2023/24	Targets					Means of Verification	Responsible Institution
				2025/26	2026/27	2027/28	2028/29	2029/30		
	entrepreneurs to improve financial management and the sustainability of small businesses.									
	Facilitate access to export financing for SMEs to expand market opportunities and revenue growth for small businesses.	Number of Micro, Small, and Medium Enterprises (MSMEs) supported with access to finance, capacity building, and market access interventions.	-	3,208	1,399	-	-	-	MGLSD Annual Report	MGLSD, KCCA
Develop Infrastructure to Support Business Growth and Connectivity.	Invest in a reliable and affordable energy supply to provide a consistent power supply for industrial and business operations.	No. of km of transmission lines constructed	4519	6.3	130.5	437	257	134	ESI Reports, UETCL Asset	UETCL
		No. of high voltage transformation capacity added to the grid (MVA)	6605	350	950	1400	500	240	UEDCL report	ERA, UEDCL, UETCL
	Invest in digital infrastructure, including broadband internet connectivity, mobile technology, and e-commerce platforms, to enable digital entrepreneurship and remote work opportunities.	National broadband coverage with a minimum speed of 8 Mbps, %	55%	58%	62%	65%	67%	70%	UCC report	UCC

Strategies	Actions	Indicators	Baseline 2023/24	Targets					Means of Verification	Responsible Institution
				2025/26	2026/27	2027/28	2028/29	2029/30		
	Create co-working spaces and incubators in urban centres to offer collaborative environments for startups and entrepreneurs.	No. of incubators and accelerators established	113	166	190	217	247	280	UIRI Annual Performance Report	UIRI
	Improve water and sanitation infrastructure in business areas to enhance health and productivity in business environments.	Number of industries supported to comply to wastewater standards	30	30	35	40	45	50	Annual Programme Performance Report, Quarterly performance reports	MWE, UCPC, NWSC
Foster innovation and technology adoption across sectors and businesses	Establish regional innovation hubs and incubators to increase support for startups and innovation-driven enterprises.	Number of incubation centres established	6	8	9	9	10	10	MoES report	MoES, Universities
	Support digital transformation initiatives across industries to increase productivity and market competitiveness through technology adoption.	Number of SMEs using e-Commerce platforms	10	20	35	45	55	60	UEPB Annual Performance Report	UEPB

Strategies	Actions	Indicators	Baseline 2023/24	Targets					Means of Verification	Responsible Institution
				2025/26	2026/27	2027/28	2028/29	2029/30		
SO 4:Enhance coordination and effectiveness of manpower planning and development.										
Strengthen the national and institutional frameworks for manpower planning and coordination	Develop and implement a comprehensive national human resource development plan.	Availability of a comprehensive National Human Resource Development Plan	1	0	0	0	0	1	NPA report	NPA
	Support MDAs and LGs to incorporate human resource planning into their Strategic Plans.	Percentage of MDA and LG plans with integrated human resource planning	0	20%	25%	50%	75%	100%	NPA report	NPA
	Streamline the issuance of work permit processes in line with skills availability in the country guided by the NDPIV-HRDP.	Guidelines on the issuance of work permits in line with NDPIV HRDP in place	0	0	0	0	0	0	NPA report	NPA
Establish a framework for timely production and analysis of labour market statistics and information.	Develop and implement a comprehensive, centralized and integrated LMIS platform	Functional labour market information system (LMIS) that includes refugee data in place	0	1	0	0	0	0	MGLSD report	MGLSD
	Develop and regularly update a robust web-based system for human resource	Availability of a robust web-based system for human resource projections and employment tracking	0	1	0	0	0	0	NPA report	NPA

Strategies	Actions	Indicators	Baseline 2023/24	Targets					Means of Verification	Responsible Institution
				2025/26	2026/27	2027/28	2028/29	2029/30		
	projections and employment tracking									
Enhance collaboration between education providers, employers, and government.	Conduct and facilitate regular dialogue forums between academia, employers, and policymakers.	Percentage of employers satisfied with training provided by TVET	0	25	30	32	35	40	Graduate Tracer Studies	MOES/Education and Training Institutions
		Percentage of employers satisfied with training provided by Higher education	0	40	42	45	48	50	Graduate Tracer Studies	MOES/Education and Training Institutions, Universities

8.6. Conclusion

282. **A robust Monitoring, Evaluation, and Reporting framework is essential for the successful implementation of this plan and its alignment with NDPIV.** By aligning with the NDPIV framework, the Plan ensures that its interventions are contributing effectively to national development goals. Continuous learning, accountability, and transparency are key to driving progress and ensuring that the Plan meets its intended objectives, ultimately supporting Uganda's broader development agenda as outlined in NDPIV.

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