



NATIONAL HUMAN RESOURCE DEVELOPMENT PLAN 2020/21 - 2024/25

Theme:

“Positioning Uganda’s Human Resources to deliver the Industrialization Agenda for Inclusive Growth, Employment and Wealth Creation”





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FOREWORD

This 5-year National Human Resource Development (NHRD) Plan for 2020/21-2024/25 provides a roadmap for developing the required human resources for the envisaged transformation in Uganda. The human resources will possess the right knowledge, skills, and behavioral competencies.

Over the years, human resource development planning in Uganda has attracted limited attention. Consequently, the functionality of the country's labour market faced several challenges, including:

- (1) Rising skills and education qualifications mismatches between what the labour market demands and what the education and training institutions produce;
- (2) Rising unemployment and underemployment especially among the youths forcing many into low-paying and non-decent work as means of survival, and
- (3) absence of a harmonized approach to linking education and training institutions outcomes to the country's development priorities, among others.

However, over the past two decades, the government has placed much attention on undertaking and deepening reforms to enhance the effectiveness of labour market functionality. In the first National Development Plan (NDPI) covering 2010-2015, the government focused on human capital development as a cornerstone for sustainable development.

Consequently, under Human capital development, four key strategic focus

areas were prioritized, namely: (1) promoting compulsory Universal Primary Education and post-primary education and training; (2) increased enrollment and retention of girls and boys at all levels of education; (3) Undertaking curriculum review with a focus on competitive skills development, and (4) Promotion of work ethics and culture.

In the second National Development Plan (NDPII, 2015-2020), government further prioritized Human Capital Development as one of the five fundamentals for social-economic transformation. Specifically, the NDPII focused on among others:

- (1) Massive Skills Training Programmes;
- (2) Redesigning Curricula;
- (3) Strengthening education for science and technology;
- (4) Stocking libraries in primary and secondary schools; and
- (5) increasing enrollment in tertiary and higher education.

In 2018, the Cabinet approved the National Human Resource Development Planning Framework (NHRDPF) to provide further processes, structures, and mechanisms for integrated Human Resource development planning. Consequently, the third National Development Plan (NDPIII, 2020-2025) becomes the first development plan to fully integrate human resource development into the National development planning processes.

The NDP III adopted an integrated human resource development planning approach to build up the country's skills base and



streamline national education and training systems.

Therefore, the production of this 5-year National Human Resource Development Plan (NHRDP) is a great landmark for the country. This plan will help to position Uganda's Human Resources to take centre stage in the industrialization agenda for inclusive growth, employment, and wealth creation. The goal of this Plan is:

“Increased stock of knowledgeable, skilled and productive Human Resources in Uganda.”

The plan provides estimates of the human resource requirements by national development programs. This was the basis for the strategic interventions and focus areas designed to provide Ugandan nationals with the required education and skills to meet the current and future job demands. Therefore, the interventions in this plan are expected to increase the stock of educated and skilled human resources for the country in line with the national development agenda.

I wish to acknowledge and appreciate the National Planning Commission (NPC) of Namibia's for the technical support in developing our model for Human resource projections. I also acknowledge the support of all government institutions, Development Partners, the Private sector, Civil Society organizations and the public for their contribution towards preparing this maiden HRD Plan. This Plan shall guide the government, the private sector, and education and training institutions on how to invest in critical education and skills fields to meet the current and emerging developmental needs.

For God and My Country.

Prof. Pamela Kasabiiti Mbabazi (PhD)
Chairperson, National Planning Authority

PREFACE

The National Human Resource Development Plan (NHRDP) is produced as an attendant plan to the third National Development Plan (NDPIII). It is not a standalone plan and is anchored on the strategic direction of the NDPIII and the lessons learned from previous development plans. The NHRDP is designed to provide a comprehensive overview of the country's human resource situation, policy parameters and strategic direction as well as the implementation, monitoring and evaluation frameworks for sustainable human resource development.

Human Resource Development Planning in Uganda has been a journey of mixed experiences over the years, and the field has hitherto attracted limited attention. However, the past two decades have witnessed several reforms aimed at enhancing the functionality of the country's labour market.

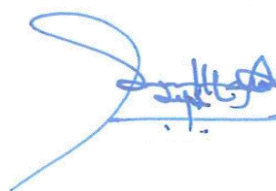
The breakthrough was in 2018 when the Cabinet approved the National Human Resource Development Planning Framework (NHRDPF). This framework provides processes, structures, and mechanisms for integrated human resource development planning. The NHRDPF articulates the country's long-term human resource development planning needs, in terms of production of the 30-year National Human Resource Strategy, the 10-year National Resource Plans; the 5-year national human development plans, and the 5-year MDA and LG human resource development plans.

Therefore, the NDP III becomes the first development plan to fully integrate Human Resource Development

planning into the national development planning processes. This 5-year National Human Resource Development Plan is intended to increase the stock of educated, skilled, and productive human resources for the country.

The Plan is based on the results of the macro model for human resource projections developed by the National Planning Authority. The model utilizes the National Manpower Survey data and the National Household Survey data collected by the Uganda Bureaus of Statistics within the framework of the International Standards Classification of Occupations (ISCO) and the UNESCO International Standard Classification of Education (ISCED). The human resource projections produced for the selected programmes point to the country's skills/education qualification needs over the next 5 years.

For God and My Country.



Joseph Muvawala (Ph.D.)
Executive Director
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EXECUTIVE SUMMARY

BACKGROUND

National Human Resource Development Planning is a field that has been neglected for decades. Yet, a coherent system for human resource development is an indispensable component of the country's development process. Human Resource Development involves investments in human resources in a planned and systematic manner to achieve the country's desired goals and objectives.

As a result, the country has continued to experience several labour market challenges. These include:

- 1) Continuing skills and education qualifications mismatches and gaps between what the labour market demands and what the education and training institutions produce.
- 2) Continuing unemployment and underemployment of Ugandans especially the youths.
- 3) Weak alignment of education and training financing to the human resource development needs of the country.
- 4) Low enrollment in technical and vocational training institutions is occasioned by increased enrolment into higher education institutions of learning, among others.

This plan is thus produced to address the education and skills mismatches and gaps to improve the functionality of the country's labour market. In addition, this will help to achieve the country's development agenda through streamlining the education and training system in view

of the national, regional, and global development trends and priorities.

Eventually, this will help to ensure that Ugandans are provided with the necessary education and training to meet the current and future job demands at national, regional, and global levels.

APPROACH IN PRODUCING THE NHRD PLAN

The development of this plan is based on the macro model for Human Resource Projection for Uganda. The National Planning Authority developed the model with a benchmark of best practices from Namibia and South Africa. The model has three components:

- 1) Manpower demand module;
- 2) Manpower supply module and,
- 3) Manpower gaps module.

The demand module takes stock of the available jobs and projects the number of jobs likely to be created over time based on the macro-economic projections of NDPIII.

The supply module on the other hand, takes stock of the available workforce by level of education and skills and projects the likely trend of labour supply over time.

The Manpower Gaps module compares the manpower supply and manpower demand and determines the manpower gaps for the country over time.

The model helps to articulate the manpower demand, manpower supply, and manpower gaps in line with the macroeconomic projections of the NDP III. In addition, the model helped to



articulate the manpower gaps in all the programmes of the NDPIII.

The Classification of occupations and education in this plan was based on international standards. These include The International Standard Classification of Occupations (ISCO) and the International Standard Classification of Education (ISCED). This classification framework provides a basis for international comparison of education and occupation categories with other countries.

STATUS OF SKILLS SUPPLY IN UGANDA

The plan has mapped out skills supply in three broad classifications: acute skills shortages, moderate skills shortages and excess skills supply. These are elaborated below:

Acute skills shortages- these are education and skills fields for which the country faces critical shortages and no training is available in the country. The demand for such skills exceeds current supply and, in some cases, demand is projected to rise sharply. Examples of such skills include Nanotechnologists; Space archaeology specialists; Planetary science specialists; Astronomy specialists; Robotics Technicians and specialists; Transport Planning specialists; Nuclear Physicists; Multilateral Agreement Negotiations Specialists; Plastic Surgeons; Colon and Rectal Surgeons; Heart Surgeons, Brain Surgeons and Geriatric Medicine Specialists.

Other areas where the country faces acute shortages include Computerized Mine Design Specialists; Drilling Engineers; Reservoir Engineers; Reservoir Geologists; Refinery Engineers; Pipeline

Engineers; Mechatronic engineers; Geophysical Technician; Hydroponics; Airline management specialists; Ecotourism specialists; Atmospheric Scientists; Applied groundwater modelling specialists; Ophthalmic Laboratory specialists; Plastic Technology specialists; Power System Dynamics and Control specialists; Astrobiology specialists, among others.

Moderate skill shortages are education and skills fields for which training is available in the country. Still, the supply is less than the country's current and projected Human Resource demands. Examples of such skills include General medicine doctors; Dental Technologists; Medical Imaging and Therapeutic Equipment Technicians; Midwives; Registered Nurse; Agri-chemists; Agricultural Entomology specialists; Food microbiologists; Food Technology and Processing specialists; Soil Science specialists; Software Developers; Systems Analysts; Scientific researchers; Clinical research specialists; Animal Geneticists; Multimedia Artists and Animation specialists.

Other areas where the country faces moderate skills shortages include Geologists and geophysicists; Engineering Chemists; Engineering Physicists; Cartographers and surveyors; Chemical Engineers; GIS and Remote Sensing specialists; Renewable Energy specialists; Chemical Plant and System Operators; Airline management specialists; Graphic Designing specialists; System auditors; Spatial Planning Specialists; Secondary School Science Teachers, Primary School Mathematics and English Teachers; Air Conditioning and Refrigeration Mechanics; Plumbers and Pipe Fitters;



Floor Layers and Tile Setters; Bakers, Pastry-cooks, and Confectionery Makers among others.

Excess skills supply represents the education and skills fields relevant to national development, but supply exceeds the current and projected demand. Examples of such skills include: Accounting professionals; Social Work and Counselling Professionals; Community Development professionals; Psychologists; Human Resource professionals; Secondary School Arts Teachers; Welders and Flame Cutters; Building and Related Electricians; Electrical Line Installers and Repairers; and Allied health professionals.

Other areas where the country faces excess skills supply include: Forest and Conservation Workers; Butchers, Fishmongers and Related Food Preparers; Tailors, Dressmakers, Furriers and Hatters; Food and Related Products Machine Operators; Crop Farm Labourers; Fishery and Aquaculture Labourers; Hand Packers; Metal Processing Plant Operators; Cement, Stone and Other Mineral Products Machine Operators; Car, Taxi and Van Drivers and Motorcycle Drivers; Lifting Truck Operators; Production/Operations Supervisor (Manufacturing); Environmental and Occupational Health Inspectors and Associates; among others.

However, in many fields where excess/surplus of human resources exist, labour is not certified to meet the international certification standard and requirements. Therefore, skills certification and standardisation should be given the utmost attention it deserves to make Uganda's labour force competitive not only locally or regionally but also

internationally since labour externalisation has proved to be one of the biggest foreign exchange earners of the country if well planned and managed.

STRATEGIC DIRECTION OF THE NHRD PLAN

The goal of this Plan is: **“Increased stock of knowledgeable, skilled and productive Human Resources in Uganda.”**

The goal will be pursued under the theme:

“Positioning Uganda’s Human Resources to take a centre stage in the industrialization agenda for inclusive growth, employment and wealth creation.”

The Plan is produced to address the significant challenges facing human resource development in Uganda along the human capital development value chain. To increase the stock of knowledgeable, skilled, and productive human resources in Uganda, this plan has been produced under four strategic pillars:

- 1) Skills Development
- 2) Education and Training
- 3) Labour market information and data management, and
- 4) Institutional coordination of HRD.

The NHRD Plan is anchored on four objectives, including:

- 1) Identifying the critical education and skills gaps for employment and employability in the country as well as emerging economic activities.
- 2) Reviewing and determining the appropriateness of Uganda’s education



- and training system in addressing the country's current and projected skills mismatches and gaps.
- 3) Assessing the comprehensiveness and frequency of labour market data and information collected and produced in Uganda.
 - 4) Appraising the existing coordination and institutional structure for Human Resource Planning and Development in Uganda.

GAME CHANGERS OF THE PLAN

The following are the top game changers of the NHRD plan.

- i. **Centralization of admission to BTVET and tertiary institutions and link financing for education and training to scarce qualifications and skills needs.** The mandate of the Public Joints Admissions Board (PJAB) should be expanded to play this role. This will help to link BTVET and tertiary education to the national development priorities of the country.
- ii. **Link financing for education and training to scarce qualifications and skills needs of the country relevant to national priorities.** The awarding process of government scholarships and grant students' loans should be revised and be based on qualifications and skills in shortage as identified in this plan and as contained in the national scarce skills list.
- iii. **Decommercialize education and training services to reduce the unnecessary competition especially among primary and secondary schools.** The commercialization of education has completely altered the

purpose of education and this has led to loss of value of education and promoting cram work with limited child creativity.

- iv. **Development of a Uganda National Talent Register (UNTR) for all professionals.** This register will capture and provide real time information concerning the demand and supply of talent/skills/manpower at every point in time. The Uganda National Talent Register (UNTR) shall be in line with the international standard classification of occupations and education (ISCO & ISCED). It should be integrated with the Oil and Gas Talent Register as well as other relevant information systems such as the Teacher Management System among others.
- v. **Establish centres of excellence for skills development at national, district and regional levels that are tailored to the development agenda of the country.** For example, centres of excellence in Tourism, Agriculture, Manufacturing, ICT, Oil and Gas, Health, and STI, should be prioritized to drive rapid skills development and re-skilling Uganda's labour force to reduce.
- vi. **Integrate soft skills that support modern work into regular education and training programmes.** The critical soft skills such as: communication; computer literacy; customer care; problem-solving; work attitudes; and ethics should be incorporated into the formal education and training curriculum.



- vii. **Standardization and certification of Uganda's labour force.** The Directorate of Industrial Training (DIT) should develop, popularize, and implement the Uganda Vocational Qualifications Framework (UVQF) to assess and award certification and accreditation to Uganda's labour force.
- viii. **Regulate and facilitate the movement of people in and out of the country.** This will help to keep track of stock of the country's human resources and continue to ensure and maintain internal security, peace, and stability to provide a conducive environment for the country's human resources to produce at full potential
- ix. **Production and publication of an annual national scarce skills and occupation report.** This report shall highlight critical scarce qualifications and skills needs in the country. The purpose of the report is to inform, inter alia: human resource planning and development; resource allocation and prioritization; the development of relevant qualifications, programs, and curricula; and international recruitment strategies.
- x. **Streamlining the coordination and institutional framework for Human Resource Planning and Development in line with the national development agenda.** To-date, there is no clear mechanism on how institutions are coordinating to ensure a coherent human resource development and job creation agenda. Yet robust institutional coordination for human resource development planning is key for achieving common labour market outcomes.
- xi. **Restriction of issuance of work permits in occupations where skilled Ugandans exist in line with the national scarce skills list.** The Plan has proposed a review of work permit guidelines to grant work permits and waivers of work permit fees to foreign workers in line with the skills identified as scarce as contained in the national scarce report and agreeable by all relevant stakeholders.

IMPLEMENTATION OF THE NHRD PLAN

The implementation modality of this Plan is in line with the implementation framework of the NDP III. The implementation modalities of interventions and priorities in the NHRD plan are guided by the strategic mandates of key implementing Ministries, Departments, and Agencies (MDAs) as well as the private sector-based institutions.

The implementation of interventions in this plan is expected to contribute to NDPIII results, including an increased share of the national labour force employed from 47.5 percent to 62.4 percent; increased net annual number of jobs created from 424,125 to 585,858; increased Human Development Index scores from 0.52 to 0.64; increased number of employers satisfied with the BTVET and higher education and training from 40 percent to 65 percent. In addition, the implementation of planned interventions is anticipated to result in increased labour productivity (as measured by GDP per worker USD) from 2,212 to 3,114; from 7,281 to 9,413; from 3,654 to 4456 for agriculture, industry, and service sectors, respectively; and more alignment of



government scholarships and students' loan scheme to the national skills needs in line with this plan.

FINANCING MECHANISMS OF THE NHRD PLAN

The financing of this plan and financing strategy is in line with the NDP III medium-term expenditure framework.

All the interventions of this plan are integrated with the Programme Implementation Actions Plans (PIAPS) of different programmes. Therefore, no extra resources will be required to implement the plan. The financing of the various interventions under this NHRDP will be integrated into the national, MDA and LGs work plans and budgets.

Consequently, all interventions of this plan will be funded through the Medium-Term Expenditure Framework. Government shall ensure mobilization of adequate financing, together with the engagement of the private sector and the development partners. All implementing MDAs and

LGs are to prioritize the interventions of this plan in their annual work plans and budgets.

MONITORING AND EVALUATION MECHANISMS

The Monitoring and Evaluation mechanism of this Plan is in line with NDP III. Each implementing institution will periodically report on specific Human Resource Development outputs, initiatives, and targets within the existing government reporting system.

Specific strategies for monitoring, evaluating, and reporting will be detailed in the work plans of implementing MDAs. In addition, the implementing MDAs will develop specific M&E strategies and M&E plans for the various interventions under their dockets. The successful implementation of interventions under this NHRDP will require comprehensive and timely reporting, monitoring, and evaluation (M&E) of effort in line with the existing governance mechanisms.

ABBREVIATIONS AND ACRONYMS

BTVET	Business, Technical and Vocational Education and Training
CNDPF	Comprehensive National Development Planning Framework
CSOs	Civil Society Organizations
EAC	East African Community
HR	Human Resources
LGs	Local Governments
LGWCs	Local Government Working Committees
LMIS	Labour Market Information System
MDAs	Ministries, Departments and Agencies
MEACA	Ministry of East African Community Affairs
MoFPED	Ministry of Finance Planning and Economic Development
MoGLSD	Ministry of Gender, Labour and Social Development
MoPS	Ministry of Public Service
MSC	Microfinance Support Centre
MTEF	Medium Term Expenditure Framework
NCHE	National Council for Higher Education
NDP	National Development Plan
NDPI	First National Development Plan
NDPII	Second National Development Plan
NDPIII	Third National Development Plan
NCDC	National Curriculum Development Centre
NHRDP	National Human Resource Development Plan
NHRDPF	National Human Resource Development Planning Framework
NHRDS	National Human Resource Development Strategy
NPA	National Planning Authority
NSC	National Steering Committee
NTWG	National Technical Working Group
OPM	Office of the Prime Minister
PEAP	Poverty Eradication Action Plan
SDGs	Sustainable Development Goals
SNE	Special Needs Education
SHRDP	Sectoral Human Resource Development Plans
SWCs	Sectoral Working Committees
UPE	Universal Primary Education
USE	Universal Secondary Education
UVQF	Uganda Vocational Qualifications Framework
UDB	Uganda Development Bank

GLOSSARY OF CONCEPTS AND DEFINITIONS

1. **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.
2. **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.*'
3. **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.
4. **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.
5. **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.
6. **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.
7. **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).
8. **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.

- 9. 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.
- 10. 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.
- 11. 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.
- 12. International Standard Classification of Occupations (ISCO)** is a tool for organizing 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.
- 13. The 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.
- 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 BTVET sub sector through flexible training /learning modules.



CHAPTER ONE

BACKGROUND AND CONTEXT TO NATIONAL HUMAN RESOURCE DEVELOPMENT PLANNING

1.1 NATIONAL HUMAN RESOURCE DEVELOPMENT PLANNING IN UGANDA: A historical perspective, status, and earlier attempts

National Human Resource Development Planning in Uganda has over the years been a journey of mixed experiences. Between the 1930s and 1970s, the field of human resource development planning attracted limited attention in the country from the political and technical arms of government. Consequently, integration of human resource development planning in the country's development planning remained minimal. This is partly explained by the classical and neoclassical economists' belief of the time that market forces of demand and supply would clear the labour market. Whereas this may be true, it happens with a lag and in the labour market, this lag tends to be too large and distortive, requiring proper planning based on forecasting. In addition, there was limited appreciation that human resource development planning would play a significant role in realizing optimal labour market outcomes. Around the 1980s and early 2000s, various efforts were undertaken by the government to enhance the functionality of Uganda's labour market.

The first Human Resource Rehabilitation and Development Plan was developed in 1987. The plan aimed at rehabilitating the public service, to make it an effective and dependable instrument of government. One of the major concerns of the government was the way human resource planning and development was being conducted. This plan recommended among others the establishment of the Department of Manpower Planning in the Ministry of Planning and Economic Development (MoFPED) and conducting a national manpower survey in 1989. Further to that, the government introduced fundamental reforms in 1997, through the Poverty Eradication Action Plan (PEAP) which prioritized among others the need for a healthy and well-educated population as a necessary condition for development. In the same year, the government introduced Universal Primary Education (UPE) to, among others, make education equitable and eliminate disparities and inequalities, but also ensure completion of the primary cycle of education and reduce poverty by equipping every individual with basic skills. These reforms contributed to a rapid expansion of primary and secondary education through the introduction of USE. The BTVET and tertiary education and training also expanded.

However, despite such reforms, the functionality of the labour market still faces several challenges in the country. These include:

- i) Continuing skills and education qualifications mismatches and gaps between what the labour market demands and what the education and training institutions produce.
- ii) Continuing unemployment and underemployment of Ugandans especially the youths, with many being forced into non-productive and non-decent work as a means of survival.



- iii) Weak alignment of education and training financing to the human resource development needs of the country. For example, several scholarship programmes still finance non-priority skills needs.
- iv) Low enrollment in technical and vocational training institutions occasioned by increased enrolment into higher education institutions of learning (degree-awarding institutions). This does not rhyme with the human resource skills needs of the country where more technicians are required.
- v) Absence of a harmonized approach of linking education and training institutions outcomes to the development priorities of the country.
- vi) Limited integration of work-based training into the education and training system in terms of apprenticeship, industrial attachments, internship, and certification of the different trades at different levels both in formal and informal sectors.
- vii) High rates of school dropout at all levels of education, high teenage pregnancy and child marriage as well as a rising number of youths who are Neither in Employment nor in Education and Training (NEETs).
- viii) Limited access to quality Early Childhood Care and Education (ECCE), primary and secondary education coupled with low numeracy and literacy rates especially at primary and secondary school levels.
- ix) Absence of a functioning system for collection and analysis of regular labour market statistics and information.
- x) Low (below ‘living wage’) salaries and other remunerations in most occupations, particularly in the public sector.
- xi) Wide disparities/differences in salaries and other remunerations across the board. This has often resulted in low morale, unrest, and undesirable industrial actions by workers in several entities.

Over the past two decades, government has focused more on consolidation and deepening reforms for effective labour market functionality. The first National Development Plan (NDPI (2010-2015) focused more on human capital development as a cornerstone of sustainable development with four key strategic focus areas, namely: (1) promoting compulsory Universal Primary Education and post-primary education and training; (2) increased enrollment and retention of girls and boys at all levels of education including technical and vocational training; (3) curriculum review with a focus on competitive skills development, and (4) promotion of work ethics and culture.

The second National Development Plan (NDPII 2015-2020) further prioritized human capital development as one of the key fundamentals for social-economic transformation. The NDPII focused more on addressing the challenges of human capital



along its value chain¹. Specifically, the NDPII focused on, among others, (1) massive skills training programmes; (2) redesigning the education and training curricula for the formal education system and vocational training institutions; (3) strengthening education for science and technology; (4) stocking libraries in primary and secondary schools; and (5) increasing enrollment in tertiary and higher education.

However, despite the focus, there was no clear framework to guide the country on mainstreaming human resource development planning into the national and sub-national development planning and the budgeting processes. Therefore, less impact was created over the NDP I and NDPII period with regards to targeted human resources development as the economy continued to register labour market mismatches. Thus, in line with Comprehensive National Development Planning Framework (CNDPF), in 2018 Cabinet approved the National Human Resource Development Framework (NHRDPF)² which provided processes, structures, and mechanisms for comprehensive integration of Human Resource Development Planning in the development process through the following instrument, namely, a 30 year Human Resource Strategy in line with 30-year National Vision, 10-year Human Resource Plan guided by 10 year national development plans; 5-year Human Resource Development Plan guided by 5 year national development plans as well as 5-year MDA, and LG human resource Development, aligned to 5 year institutional development plan.

The third National Development Plan (NDPIII 2020-2025) becomes the first development plan of its kind to adopt an integrated human resource development planning approach. The NDPIII provided for streamlining education and training in relation to the national, regional, and global agenda and trends. As such this 5-year National Human Resource Development Plan (NHRDP) which is an annex to NDP III, provides a roadmap for helping the country to develop human resources that possess the right skills, in the right numbers at the right time. The plan also provides estimates of the human resource requirements by national programmes as a basis for the strategic interventions, policies, and priority areas designed to provide nationals with the required education and skills to meet the current and future job demands. The interventions in this plan are therefore expected to increase the stock of educated, skilled, and productive human resources to serve the country, the region, and the world at large.

1.2 LEARNING FROM INTERNATIONAL EXPERIENCE

International experience shows that concerted human resource development has driven the rapid economic transformation of many fast-growing economies. Many countries especially the Asian tigers have over the years taken human resources to be both

¹ The value chain approach along the life cycle focusses on building a well-balanced human resource that is healthy, educated and properly skilled in a concerted effort of all socioeconomic transformational stakeholders in the different branches of Government, Private Sector and the Civil Society.

² See the approved National Human Resource Development Framework for Uganda in annex 1



a capital and a primary source of economic growth. For example, the economic success of Japan, Taiwan, Singapore, and South Korea has been primarily attributed to their concerted efforts to pursue national human resource development policies designed to support their countries' economic development strategies. Other countries such as India, Malaysia, and Japan have also invested heavily in developing human resources suitable for their specific needs and characteristics.

Different countries have pursued different national human resource development planning agendas and processes. This is influenced by culture, history, economy, population, politics, education systems, social security, natural resources, and technologies. In addition, different countries have provided different systematic legal support to realize the National Human Resource Development Plan (NHRDP). For example, the Basic Act for Human Resource Development mandates the Korean government to establish a master plan for Human Resource Development every five years. According to this master plan, all the heads of central government agencies must formulate and implement annual Human Development Plans.

In the case of the United States, five-year HRD plans have been implemented since 1993 in accordance with the Government Performance and Result Act (GPR). According to the GPR, each federal agency is mandated to create a five-year strategic human development plan. Furthermore, the Workforce policy framework explores ways to combine HRD plans and real employment. Thus, the United States links human resources development and vocational training to the labour market needs, enhancing national competitiveness. In Barbados, human resource development planning was initially driven by various agencies without an overarching coordination strategy. This hindered effective national human resource development efforts. As a response, Barbados instituted a coordinated and multi-sectoral Human Resource Development Plan to harmonize efforts for human capital development.

Few African countries have attempted to articulate the supply and demand in the same plan. Mauritius, for example, developed the first National Human Resource Development Plan (NHRDP) in 2007 that provided estimated demand for manpower in terms of different skills and knowledge and thereafter developed proactive human resource development policies. Namibia followed the same path by producing a 10-year National Human Resource Plan that encompasses a comparative analysis of labour supply and labour demand to estimate occupational imbalances within the Namibian economy until 2025. South Africa also developed its first comprehensive countrywide Human Resource Development Strategy (HRDS) adopted in 2001, aiming at maximizing the potential of the people of South Africa, through the acquisition of knowledge and skills, to work productively and competitively to achieve a rising quality of life for all, and to set in place an operational plan, together with the necessary institutional arrangements, to achieve this. The current Human Resource Development Strategy for South Africa (HRD-SA) runs from 2010-2030.



The key lessons from the different countries' experiences include:

- i) **National human resource development planning is conducted as a tool for harmonizing education and training in line with labour market needs.** National human resource development planning has helped countries link education and skills development to employment and thus socio-economic transformation.
- ii) **Different countries apply different approaches to human resource development planning.** While some have adopted a centralized approach, others have adopted a decentralized and sometimes a tripartite approach which brings employers, workers, and government based on country variations, peculiarities, and government policies. For example, Bhutan, Namibia, Botswana, Mauritius, and Canada have adopted a centralized approach. In contrast, countries such as Barbados, the USA, India, South Africa, and Tanzania have adopted a decentralized or mixed approach to human resource development planning. However, there is no standard and recommended approach to HRD planning and both approaches have inherent strengths and weaknesses. Therefore, countries adopt an approach that better suits their needs and socio-economic conditions.
- iii) **Full participation of key stakeholders is critical to the effective implementation of the human resource plans.** The implementation approach of South Africa's NHRDP is premised on ownership and buy-in from the implementing departments and entities. Countries such as Bhutan, Barbados, and Namibia have taken similar approaches in their National Human Resource Plans to promote coordination and buy-in from different stakeholders in implementing various aspects of the National Human Resource Plans.

Uganda has adopted a hybrid human resource development planning approach involving a bottom-up and top-down (decentralized and centralized) method. This approach allows articulating both the labour supply and demand while involving key stakeholders at all levels. These include players from the central government, higher and lower local governments, civil society organizations, and the private sector.

1.3 LINKAGE OF THE NHRD PLAN TO GLOBAL, REGIONAL AND NATIONAL DEVELOPMENT AGENDAS

1.3.1 Uganda's HRD Plan and the Global Development Agenda

This National Human Resource Development Plan is in line with the Global Deal, which aims to address the challenges in the global labour market and enable all people to benefit from globalization. A Global Deal is one of the global agendas with multi-stakeholder partnerships that encourages governments, businesses, unions, and other organizations to make commitments to enhance the functionality of the labour markets in different countries.



This plan is also aligned to the 2030 Sustainable Development Goals (SDGs), especially Goal 8, which targets achieving the desired human resources with employable skills. Goal 8 of the SDGs on “Decent work and economic growth” focuses on promoting inclusive and sustainable economic growth, employment, and decent work for all. This goal aims at, among others creating decent jobs, enhancing entrepreneurship, creativity, and innovation, reducing the proportion of youth not in employment, education, or training, and developing and operationalizing a global strategy for youth employment and implementation of the ILO Global Jobs Pact.

1.3.2 Uganda’s HRD Plan in view of Africa and Regional Development Agenda

The Africa Development Agenda is enshrined in the Africa Agenda 2063, which aims at achieving a peaceful, integrated and prosperous continent driven by its citizens. The Uganda National Human Resource Development Plan is aligned to this agenda mainly in aspirations 1 and 6. In particular; aspiration 1 focuses on a prosperous Africa, based on inclusive growth and sustainable development” and aims at ensuring that Africa’s human capital is fully developed as its most precious resource through sustained investments along the human capital value chain; Aspiration 6, on the other hand, is about Africa, whose development is people-driven, relying on the potential of African people, especially its women and youth, and caring for children. This aspiration” aims at ensuring that Africa’s youth are guaranteed full access to education, training, skills and technology, health services, jobs, and economic opportunities.

The East African Community (EAC) Vision 2050 is the overarching regional socio-economic transformation and development agenda. This vision recognizes that well-educated, enlightened, and healthy human resources are essential to facilitate development. This implies that the East African Community requires an enabling environment for education and skills development to implement its goals successfully. In addition, the EAC Vision 2050 recognizes that Investment in human capital is critical for wealth creation and employment. Therefore, achieving the aspirations and priorities enlisted in Agenda 2063 and the EAC Vision 2050 necessitates adequate planning for Uganda’s human resources.

1.3.3 Uganda’s HRD Plan and the National Development Agenda

Uganda’s National Development Agenda is spelt out in the National Development Plans as provided in the Comprehensive National Development Planning Framework (CNDPF). The CNDPF comprises five principal elements: 30-year national vision, 10-year National Development Plans, 5-year National Development Plans, 5 Year Programme Implementation Action Plans (PIAP), and Local Government Development Plans and Annual Workplans and Budgets. However, the CNDPF approved by the cabinet in 2007 did not provide a framework for integrated Human Resource Development Planning in Uganda. As a result, the National Human Resource Development Planning Framework (NHRDPF) was produced in line with the CNDPF to comprehensively address human resource development.



With Cabinet's approval of the NHRDPF in 2018/19, National Development Plans are not complete without attendant National Human Resource Development Plans. The HRD Plan articulates the human resource requirements in line with the planned priorities at a national, programme, or local government (LG) level. Therefore, the NHRDPF is implemented through the 30-year National Human Resource Development Strategy in line with the 30-year Vision; 10-year National Human Resource Plans in line with the 10-year National Development Plans; the 5-year National Human Resource Development Plans in line with the 5-year NDPs; the 5-year MDAs and LG HRD Plans in line with MDA strategic plans and LGDPs as well as Program Implementation Action Plans (PIAPS), annual work plans and budgets.

1.4 THE RATIONALE FOR THE 5 YEAR NHRDP

The rationale of this plan is to operationalize the Human Resource Development Strategy of the third National Development Plan (NDPIII). This will help to address the education and skills mismatches and gaps to improve the functionality of the labour market in the country. This will be possible by streamlining the education and training system by considering national, regional, and global development trends and priorities. Eventually, this will help to ensure that Ugandans are provided with the necessary education and training to meet the current and future job demands at national, regional, and global levels.

1.5 APPROACH

The development of this plan is based on the general conceptualization and components of the macro model for Human Resource Projection for Uganda. The National Planning Authority developed the model after benchmarks from Namibia and South Africa to support the assessment of the labour market in terms of labour supply and labour demand and to guide the identification and projections of the skills gaps based on various parameters. The Uganda model (*see figure 1*) has three (3) components or modules: (1) the Manpower demand module, (2) the Manpower supply module, and (3) the Manpower gaps module. The demand module takes stock of the available jobs and projects the number of jobs likely to be created over time in line with the macro-economic projections of NDPIII. The supply module on the other hand, takes stock of the available workforce by the level of education and skills and projects the likely trend of labour supply over time. The Manpower Gaps module compares the manpower supply and manpower demand and determines the manpower gaps for the country over time as illustrated in Figure 1 and Annex 2.

The conceptualization of this plan is 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. This classification framework provides a basis for international comparison of education and occupation categories with other countries. The model thus helped to articulate the manpower supply, the manpower demand, and manpower gaps in all the NDPIII programmes up to level 4 of international classification in line with the macroeconomic projections of NDPIII.



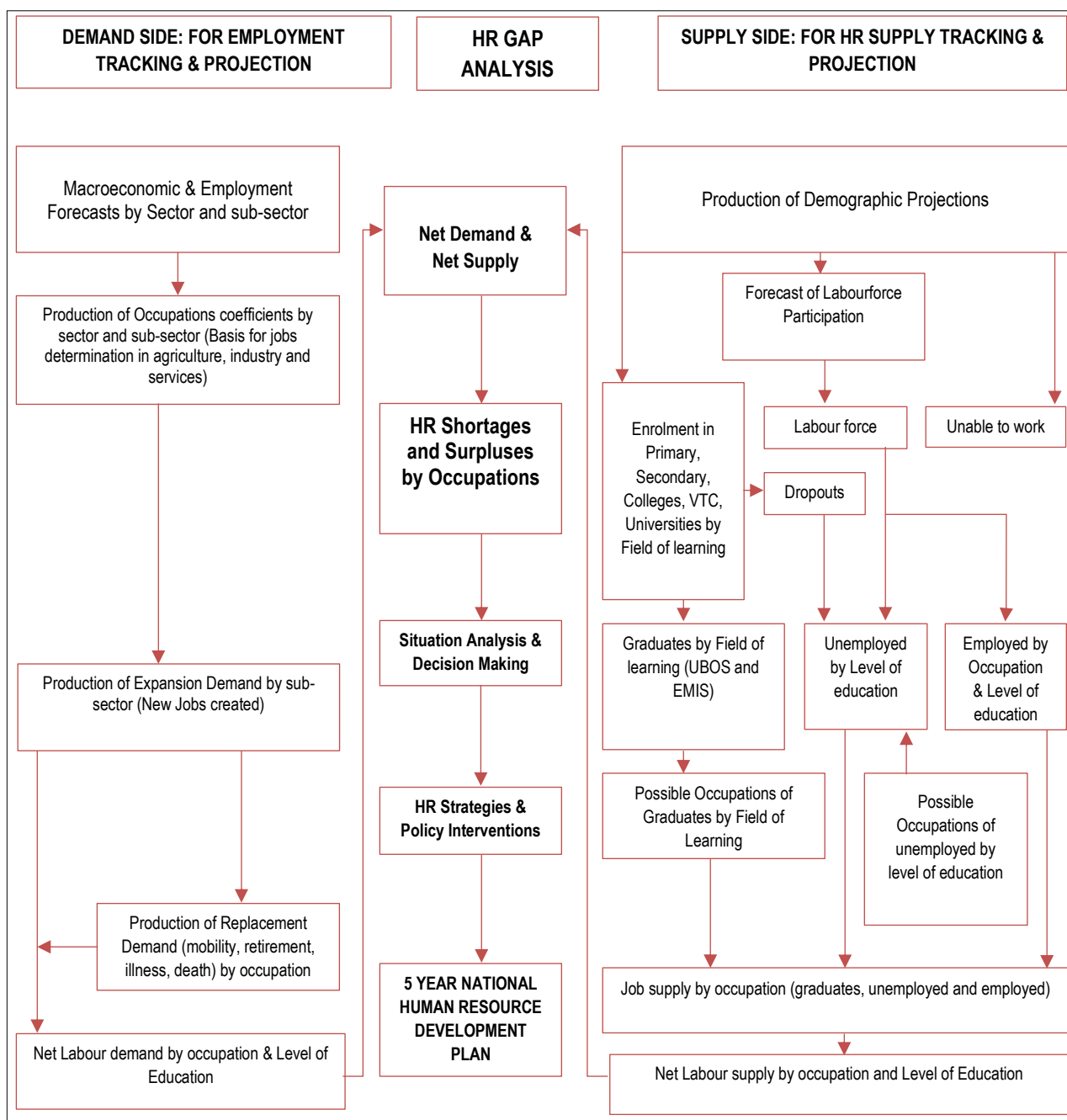
Additional levels 5 and 6 of the model are being developed to guide further and help localize the International Classification of Occupations to reflect Uganda's local occupations. The major constraint in using the model is the lack of adequate and more disaggregated data to help further articulate lower-level occupations and skills. The problem will be solved by working with UBOS and other stakeholders to improve survey and census instruments and consistently collect the required administrative data.

1.6 STRUCTURE OF THE PLAN

The rest of the plan is as follows: Chapter two presents the National Situation Analysis on economic growth, employment, and the general labour market profile. Chapter three presents the strategic direction for the next 5 years. Chapter four presents the human resource needs articulation by programmes. Chapter five presents the implementation modalities of the plan and in chapter six, the reporting, monitoring, and evaluation mechanisms of the plan are presented.



Figure 1: Conceptualization of Human Resource Development Planning for Uganda



Source: NPA 2019 (See annex 2 for detailed model description)



CHAPTER TWO NATIONAL SITUATION ANALYSIS



The chapter provides a situation analysis about:

1. Economic Growth and Employment
2. The Key Labour Market Indicators &
3. The Human Resource Development Mechanism for Uganda

Uganda's GDP per capita stands at 878 USD (2020)

Pre-covid average GDP growth was 5.02% for the period 2013-19.

Uganda's Population is estimated at 41million people (2020).

Working age population has increased to 20.7 million in 2019 from 16.5 million in 2013.

The country has registered sectoral shifts in terms of contribution to GDP but no significant shifts in sectoral contribution to employment.



2.1 ECONOMIC GROWTH AND EMPLOYMENT CREATION

2.1.1 Overview of Uganda's economic performance

Uganda is a low-income country with a GDP per capita of 878 USD (2018/19) and average GDP growth of 5.02% from 2013-2018. However, the economy has steadily grown over the last three decades except for the COVID-19 pandemic, which slowed growth to 3.1% in 2019/20. According to NDP III targets, the economy is anticipated to grow by an average of 6.2% from 2020-2025 through accelerated post-COVID-19 economic recovery measures.

However, the growth trend has not created enough decent and productive jobs to keep up with the rising labour force. For instance, between 1991-2016, average employment growth (estimated at 2.7%) lagged far behind GDP growth (estimated at 6.8%), implying that GDP growth was not adequately driving job growth. Moreover, the employment elasticity for Uganda is estimated at 0.04%, indicating that, on average, a percentage point increase in the GDP growth rate results in only 400 jobs instead of 10,000 jobs. This compares unfavorably with neighbouring Kenya, whose GDP growth (3.7%) is closely linked to the employment growth rate (3%). Therefore, the NDPIII targets for the new jobs corresponding to the growth and jobs strategy are about 2.5 million with an annual average of about 512,000 jobs with the highest number of jobs expected to come from services, agriculture, and industry sectors, respectively.

Similarly, the sectoral contribution to GDP growth does not commensurate with their employment shares. For example, in 2000, agriculture contributed 42% to the total GDP and employed 80% of Uganda's labour force. To date, agriculture contributes about 24% to the total GDP but employs over 60% of the country's population. Similar transformations have taken place in industry and services over time. For example, the service sector which is the highest contributor to GDP (47.6%), only employs 25% of the labour force, whereas industry which contributes 20.3% to GDP, absorbs 6.9% of the total labour force.

The major challenge in relation to growth and employment at the sectoral level is two-fold: (1) Sectors that have contributed most to the recent economic growth episodes are not necessarily labour-intensive. For example, communication and financial services which have raised their productivity, have become less labour-intensive. Hence, they have not created a significant number of new jobs for a rapidly growing labour force, and (2) Sectors that employ the most important proportion of the workforce have not necessarily achieved high productivity gains. This is particularly the case for the agriculture sector, where output has grown at only about 1.2% per year, despite a 6.0% annual increase in agricultural employment, suggesting a significant decline in productivity.

Employment creation in economic growth remains a central theme in the national development agenda. This is well reflected in the Uganda Vision 2040 and the NDP III with government focus on opportunities that are critical for the desired job-rich growth over the medium term. Efforts under the two previous National Development Plans (NDPI & NDPII) towards employment creation were majorly in terms of skilling Ugandans, especially the youths through the skilling Uganda Project, provision of startup capital for self-help projects,



and increasing market access and value addition through the Youth Livelihoods Programme (YLP); Presidential Initiative on Skilling Girl Child Programme; Youth Venture Capital Fund (YVCF); Uganda Women Entrepreneurship Programme (UWEP), to mention but a few.

2.1.2 Uganda's National Agenda for Employment Creation

Uganda's macro-economic strategy has focused more on economic growth and price stability as primary objectives, hoping that jobs would automatically be created. Therefore, for many years, employment creation remained a secondary objective and was often taken as an outcome of interventions implemented by various government and non-government players. As a result, priority sectors for economic growth have always been chosen according to their growth potential without consideration of their decent job growth potential or their push factors that could produce derived demand for labour in the wider market systems. Consequently, the number and quality of jobs have remained far less than those seeking employment.

Over the past decade, government has committed to prioritizing decent and productive employment for inclusive and sustained economic development through tripartite arrangements. The creation of decent work and productive employment opportunities and the enabling of the population to take up more productive jobs are at the core of Uganda's Vision 2040 which aims to guide the country towards a competitive and upper-middle-income country by 2040. The first National Development Plan (NDPI) was a first attempt to address employment issues more coherently. The NDPI strongly emphasized infrastructure (power, road, and rail) development with job creation as an outcome variable in these sectors.

However, emphasis on employment creation was much stronger in the second National Development Plan (NDPII). NDPII prioritized investments and interventions in the five economic sectors that were perceived as sectors with strong growth and employment potential. These included agriculture, tourism, minerals/oil and gas, infrastructure, and human capital development. In both the NDPI & NDPII, a significant number of interventions were initiated with the hope of having a positive impact on economic growth and employment. Several large-scale public investment programmes were implemented with employment creation intent. Among them are skills development measures such as the Skilling Uganda program, financing and credit schemes such as the Youth Livelihoods Programme (YLP), Presidential Initiative on Skilling Girl Child Programme; Youth Venture Capital Fund (YVCF) and the Uganda Women Entrepreneurship Programme (UWEP) as well as initiatives to modernize agriculture such as National Agriculture Advisory Services (NAADS) and Operation Wealth Creation (OWC). Other measures included increasing access to cheap credit (e.g., through the UDB and MSC), increasing investment in education and training and building infrastructure to spur expansion in investment toward job creation. However, most of these initiatives are yet to yield returns as they are not tackling employment issues directly; and interventions have been majorly stressing the supply side of the labour market rather than the demand side.

Uganda's third National Development Plan (NDPIII) is premised on employment creation for rapid socioeconomic transformation. The job creation strategy for this plan



focuses on expanding and diversifying economic growth while maintaining macroeconomic stability to create increased demand for labour. In addition, the plan aims to increase investment in productive areas, promote Foreign Direct Investment (FDI) and expand exports with a focus on supporting small and medium enterprises (SMEs) to access export markets while supporting small domestic firms to grow into small and then large firms. The country's employment creation agenda thus focuses on developing an economy that attracts and nurtures larger domestic firms, attracts more foreign direct investment, implements the Import Replacement Agenda to minimize jobs exportation, leverage urbanization for better jobs, prioritize regional investment and accelerates the transformation of agriculture by connecting smallholders with value-chains. NDPIII also prioritizes streamlining and reforming the current YLP and UWEP programmes to help women and youths find employment.

The NDP III job strategy aims at creating 2.5 million jobs over the course of a 5-years period through the 18 programmes. This will translate into an annual average of about 512,000 jobs. The highest number of jobs (1.313 million) are expected to come from the services sector with the Trade subsector contributing the most significant proportion. Agriculture is expected to be the second-highest contributor to jobs (796, 411 jobs), followed by industry, whose largest share of jobs is expected to arise from manufacturing. The job creation strategy in NDP III prioritizes expanding economic activities across the board and increasing labour productivity.

The NDP III has also adopted an integrated Human Resource Development Planning Approach as part of the employment creation agenda. The 5-year National Human Resource Development Plan (NHRDP) has been developed as an attendant plan to the NDP III to help forecast human resource requirements within the Programmes and suggest measures to help streamline the formal and informal education and training systems to respond to skills gaps in the identified programmes promptly. The NHRDP quantifies the occupations and skills the country needs over the short to medium term within the macro-economic framework. The plan shows the skills mismatches that have long characterized Uganda's labour market and measures and interventions therein.

2.2 UGANDA'S LABOUR MARKET PROFILE

This section highlights the performance of Uganda's economy regarding the Key Labour Market Indicators (KLMI). It provides an overview of the population, working-age population, Labour force, and Labour Force Participation, Unemployment, Employment & Employment-to-Population ratio among other selected indicators. The section also provides highlights of Labour market information and data management practices in Uganda as a basis for emerging issues and proposals thereof.

2.2.1 Key Labour Market Indicators (KLMI)

i) Population structure

Uganda has one of the world's youngest and fastest-growing populations, which is creating high pressure on job creation. The total population of Uganda is estimated at



nearly 41 million people (2020), of which 51% are female, and projected to reach 100m by 2050. The gradual increase of the country's population has a direct bearing on labour force growth and pressure on jobs in the labour market. The high population size also increases the cost of providing social services infrastructure and raises insecurity threats due to high levels of unemployment.

Over three-quarters of the population are below the age of 35 years, of which 45% are below 14 years, and 31% are between the ages of 15 -30 years. This youthful population implies that Uganda has the potential to benefit from the demographic dividend. This will be possible if the country continues to prioritization of sectors with a high propensity for job creation and investment in education and training.

The rural population is gradually reducing, currently estimated at about 73% of the total population, which indicates urbanization is taking course. For example, between 2016/2017 and 2019/2020, a decline of 2% was registered and many people, especially youths, are shifting to urban areas. The migration is mainly due to the poor living conditions and lack of enough paid employment opportunities in rural areas and partially attributed to create new districts and cities. This trend calls for continued preparedness to boost economic growth and empower the private sector to set up enterprises to increase labour demand of urban firms and provide a market for agricultural products.

ii) Working age population and Labour Force Participation

Uganda's working-age population increased to 21.4 million in 2019/20 from 19.1 million in 2016/17. The proportion of the working-age population engaged in productive activities and for-profit is about 52%, while 47% are involved in subsistence agriculture, forestry and fisheries. The country's labour force is estimated at 11.7 million in 2019, excluding those engaged in subsistence agriculture, forestry and fisheries.

The country's labour force is dominated by individuals who have partially attended or completed primary school, estimated at 51.7%. This is followed by those that partially attended and completed secondary level estimated at 27% while graduates of post-secondary level are estimated at 13.5%. The labour force without formal education stands at 7.9%. This has a bearing on the population category's production, productivity and usefulness.

Labour Force Participation Rate (LFPR)³ stood at 43% in 2019/20 and was higher in urban areas at 52% than in rural areas at 39%. LFPR in Uganda is higher for males than females in rural and urban areas. This implies more active participation of the male and urban population in the labour market than the female and rural counterparts. Further evidence shows that the labour force participation rate increases with increasing education attainment, justifying the need for concerted efforts to improve access to all education and training levels.

³ LFPR measures the section of working population in the age group of 14-64 in the economy currently employed or seeking employment expressed as a proportion of the total working-age population



Age-specific participation rate shows that the labor force participation rate is higher for the young population, mainly the youth aged 15-35.

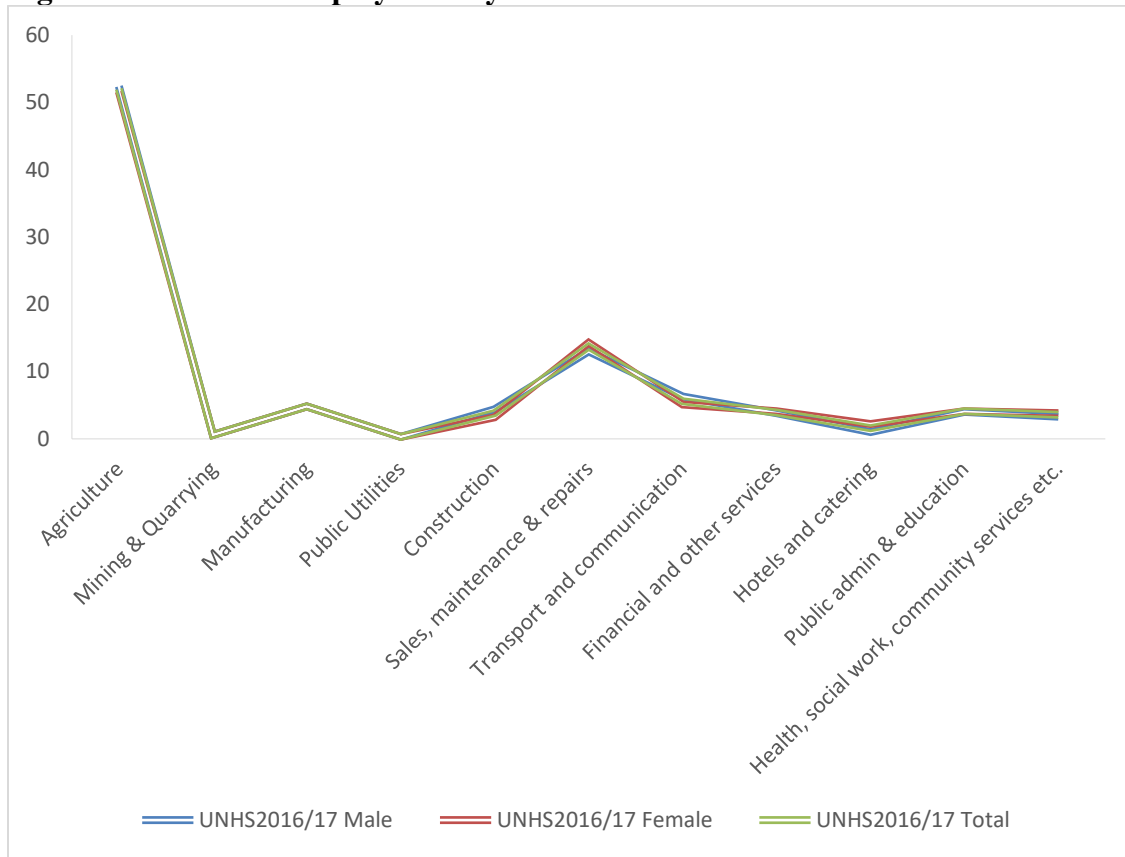
LFPR across different regions shows that peri-urban Kampala has a higher participation rate than other regions. Kampala city has the most significant proportion of the labour force where by the share of the labour force in Kampala is more than half of all-region. This means greater attention needs to be given to the city to allow people to earn a better living. Now with such higher participation in the labour force, we need to focus on creating decent employment across the country's different regions.

iii) Employment by sector

The country has registered sectoral shifts in terms of contribution to GDP but such shifts have not translated into a proportionate sectoral contribution to employment. The share of the labour force employed in the agricultural sector has been reduced from 67.6% in 2005/2006 to 60.7% in 2019/2020, registering a 6.9 percentage points reduction in the same period. Food crop production, majorly for consumption, accounts for 84% of the employment in the agriculture sector, affirming the causal relationship between the peasantry and the subsistence nature of the agricultural sector and production. This is a significant focus area under the NDPIII trajectory mainly through agro-industrialization and related programs towards improved production, productivity, and employment creation. In terms of the share of the labour force employed within the industry sector between 2016/17 to 2019/20, there is a gradually increase from 6.4% to 13.9%, while the service sector, on the other hand increased from 22.4% to 46.3%. Significant gender differences are noticed within the industry sector where the findings show that the sector is more male dominated with a 3.7 percentage point difference.



Figure 2: Persons in employment by sector

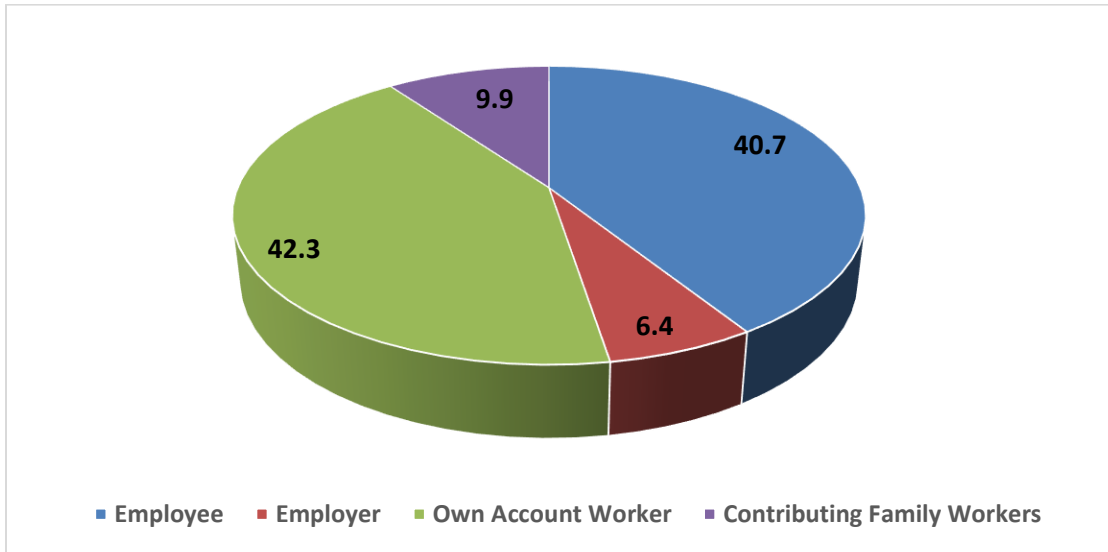


Source: UNHS 2016/17

The largest proportion of the employed labourforce in Uganda is own-account workers (42.3%) in 2019/20 and accounts for 38 percent of the total labourforce (see Figure 3). Employees, on the other hand, account for about 40.7% of the employed while 9.9% are contributing family workers. Own account workers are mainly women and the youth within the age brackets of 15-35 years and they are largely within the agricultural sector. The danger of having labour force with such characteristics is that, they engage in low-paying jobs, at the same time have little capacity to pay tax and therefore, remain largely informal which adversely affects economic development. A deliberate effort by government to reduce the proportions of own-account workers and contributing family workers in the labour market is paramount to ensure movement from a large informal sector to a higher-income sectors, with high job growth within the development agenda. As such, government is strategically promoting industrialization agenda to move many Ugandans engaged in rain-fed and low-productive agriculture into higher productive industries and service jobs.



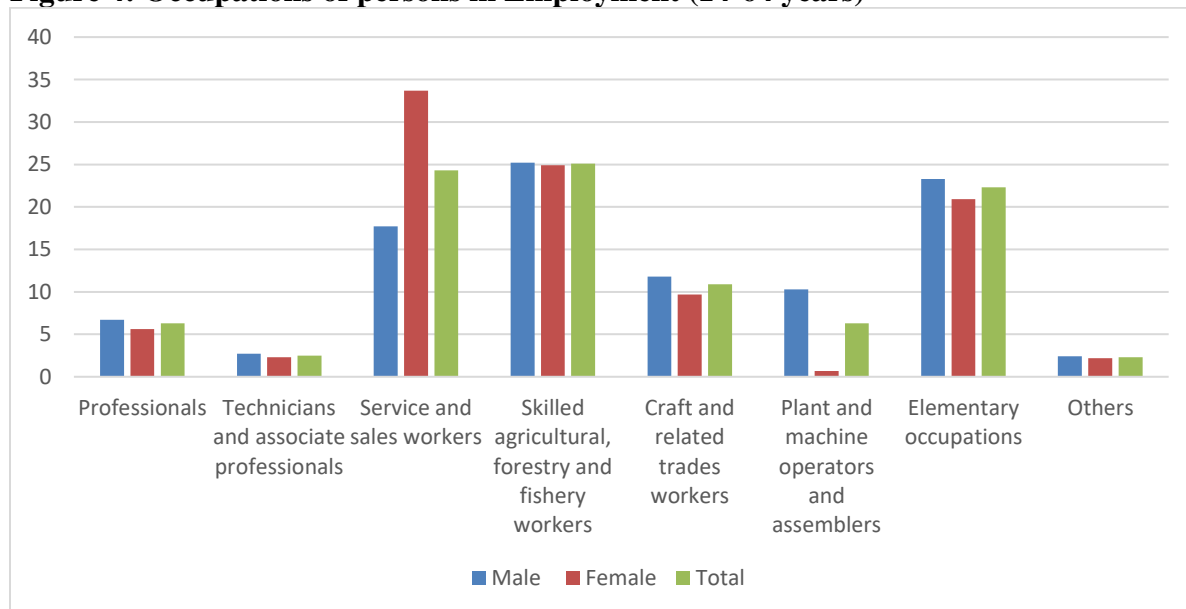
Figure 3: Status in Employment of main job of the working Population



Source: UNHS 2019/20

Further, the analysis of occupations of persons in employment show that majority of workers are employed in the services and agriculture related occupations as well as elementary occupations (Figure 4). Evidence further shows that occupations which requires high qualifications such as professional occupations and technicians and associate professionals are fewer compared to other occupations with no major gender disparities. Therefore, Uganda’s challenge remains the need to boost the capacity of the economy to create more professional and technician occupations among others.

Figure 4: Occupations of persons in Employment (14-64 years)



Source: UNHS 2019/20



In terms of public and private sector employment, the public sector accounts for a third of the total formal sector employment estimated at 1.5m (2019). The employment in the public sector is composed of persons employed in the traditional civil service, teaching service at all levels, the Police, Prisons, Public and the staff in Local Governments. Employment in the private formal sector is majorly in the Education Sector, Manufacturing, and Trade and Repairs establishments among others. Government through the NDPIII agenda will continue to increase private sector formal employment through formalisation, commercialization and growth of the priority sectors of the economy.

Only 0.01% of the labour force is externalized and majorly to the Middle East countries. Labour externalization in the country is essential for creating jobs and strengthening ties between countries for enhanced trade, employment and increased remittances. The externalization prospects have been majorly for semi-skilled labour force mainly housemaids, security guards, carpenters, masons, steel fixers, general helpers, merchandisers, salespersons, technicians, drivers, administrators, and dog handlers. With improved externalization strategy and free movement of workers, more opportunities especially for the young people will be availed in the global labour market for skilled and highly skilled workforce. This will require benchmarking to learn from countries that have successfully developed a strategy to tap into global employment opportunities at the same time reaped big over the past years in terms of remittances and employment of their nationals such as India, China, and the Philippines.

iv) Hours of Work by the Employed Persons

There is unequal distribution of hours spent on productive work between men and women in Uganda. Men spend more time in productive work (5 hours) compared to women (3 hours). In addition, about 33% of employed persons, work normal average hours (8-11), while contributing family workers, work less than normal hours (7 per day) on average. Also, 85% of the skilled agricultural, forestry and fisheries workers spend on average less than 8 hours per day in employment of the main job. The occupations of plant and machine operators and assemblers, as well as service and sales workers spend the longest hours on work (11 hours) on average per day. Further, the working population spends on average about four (4) hours of the day on productive work, six (6) hours on unpaid work, and thirteen (13) hours on unproductive work. In the category of unpaid work, majority of the time is spent on learning and unpaid domestic services for household and family members. The unequal distribution of unpaid care work between women and men has far-reaching implications on the achievement of gender equality and represents a brake on women's economic empowerment.

v) Vulnerability employment

Nearly half of the total working-age population (52%) are in vulnerable employment⁴. The vulnerable employment is higher among workers in the agriculture sector due to factors such as low productivity and small acreage under production. Most of the agricultural

⁴ Vulnerable employment represents the sum of own-account workers and contributing family workers who are highly susceptible to insufficient earnings, low productivity and they often work in messy work conditions that undermine their fundamental rights. This category is engaged in low paying jobs at the same time have little capacity to pay tax and therefore largely remain informal which adversely affects economic activities and development.

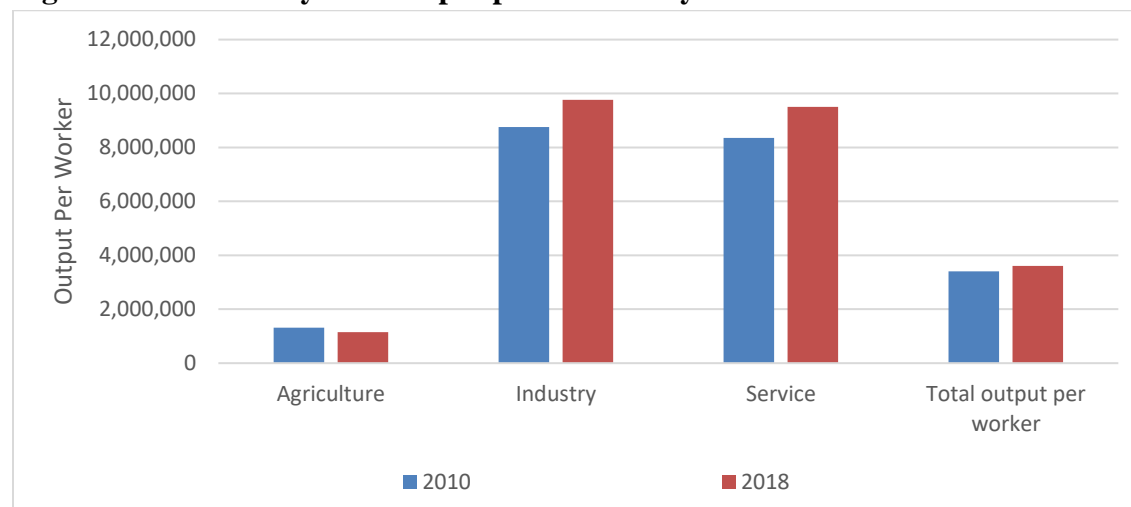


households focus mainly on producing food for their own consumption rather than income-generating agricultural activities. Most of the farms in Uganda are small with over 58% of the farmers cultivating less than one hectare. Other vulnerable workers are in construction, manufacturing, mining and quarrying, public utilities mainly as casual labourers. There were more females (62%) than males (45%) in vulnerable employment and at the same time more in rural (56%) than urban (45%) residents. These obstacles collectively have led to low productivity hence trapping majority in a vicious cycle of poverty. Therefore, high proportions of workers in vulnerable employment imply that more people are living in poverty. The persons in vulnerable employment are also linked to low level of education and training attainment.

vi) Productivity

The country has experienced robust growth, generally at the macro level, where the capita-labour ratio and inter-sector shift are driving productivity while total factor productivity is acting in the opposite direction. Sectoral disaggregation shows that the growth in productivity is largely driven by services and industry sectors whose productivity remains above average as shown in Figure 5. Despite the high productivity in the Service and Industry, there has been a reallocation of labour from industry to services. Agriculture has experienced the highest decline in productivity and it remains below the average of the three-sector productivity. The decline in agriculture productivity has undermined overall productivity growth.

Figure 5: Productivity and Output per Worker by Sectors



Source: NPA 2019

Since agriculture remains a host of most of the working population, the decline in its productivity is likely to exacerbate working poverty. The continuation of this trend undermines aggregate productivity and might become a stumbling block to the attainment of structural transformation. Movement of labour out of agriculture positively contributes to aggregate productivity while the movement of labour out of industry hurts aggregate productivity growth. Therefore, there is need to facilitate the movement of labour from



agriculture to industry and maintain the labour in industry through skilling and reskilling of the labour force. This should be guided by a thorough assessment of the skills requirement of the industrial sector based on the national development agenda.

vii) Wages and Compensation Costs

The median wage of an employee in Uganda is estimated at UGX 200,000 per month (2020) with some gender-based differentials. The median wages of the employed persons in urban areas is estimated at UGX 300,000 compared to the rural counterparts at UGX 130,000 due to various factors. These include: better profitability of the urban-based business that allows for payment of higher wages compared to the rural ones. Relatedly, the median wage of public sector employees was estimated at UGX 510,000 while in Private Sector was UGX150,000. Given the profitability motive of the private sector, the low pay is partly explained by the larger percentage of the workforce available for employment but majority with low skills or semi-skilled. Also, the availability of a large pool of unemployed youths contributes to low wages in the private sector given the high competition for the few jobs and willingness to work at the ongoing wage rates. Notwithstanding the low pay in the private sector, most employees in private sector do not provide for pension and social security as part of social protection.

There is a higher pay-off associated with higher level of education and training in Uganda. Employees with no formal schooling and those up to secondary education earn lower than their counterparts with some specialization by 33%, 48% with post-secondary education and 74% for the degree training. The implication of this is two-fold, first, there is need to increase the educational attainment at different levels, at the same time reorient the graduates in excess supply to acquire skills in related practical areas. Second, concerted efforts towards skilling the un-educated and school dropouts should be pursued rigorously and timely if inequality in wages based on educational attainment is to be reduced.

There are numerous issues related to wages and or remuneration in Uganda especially in the public sector. These are manifested in the form of low, stagnant and unjustifiable variations in wages. For some professions, wages have been characterized to be low to sustain acceptable or minimum standards of living. More still, the variations in wages for similar cadres in public service and statutory agencies remain an issue of concern. The varying and in some cases low wages in the public sector have in the recent past caused increased wage demands especially due to the rise in trade union activity as well as the general cost of living. Therefore, in the absence of a proper means of wage setting, the public sector is likely to encounter recurrent demands for increased wages.

There is a perception of wider wage disparities within the public service with those in the higher cadres earning disproportionately higher salaries. Also, within certain levels in the public service, education and experience do not seem to account for differences in wages as they should. Because of these perceptions, and coupled with the rising cost of living various groups of public servants have “downed their tools” to demand higher wages. It is believed that unjustifiable wage variations within the public service lower morale, and in effect, service delivery.



However, understanding wage differences in the public sector is quite challenging, as wages alone may not explain the problem. This is because higher wages in some institutions may not necessarily induce movement of employees from seemingly low wage paying institutions. There is need to examine in detail other non-wage related benefits/factors like job security, social security, work facilitation, contractual obligations and performance targets, among others. Indeed, there appears to be variations in other non-wage related benefits like social security provisions and contract requirements.

This, therefore, implies that dealing with public sector wage differentials requires a comprehensive approach. This would entail the review and harmonization of not only wages, but also other related work benefits as well as reviewing how the wages compare with the private sector wages as well as public sector wages for other countries within the region.

viii) Time-related underemployment

There is underutilization of labour (time-related underemployment)⁵ estimated at 12%, and this reduces the overall productivity in the country. The underutilization of the productive capacity of the labour force was higher in the rural areas (14%) than urban areas (8%). This is majorly because, rural subsistence nature of activities which are carried mainly in the morning and spending the rest of the day idle. Males have higher time-related underemployment rate (13%) compared to females (11%). The level of this underemployment is inversely proportional to the level of education, reducing from 15% among those with no formal education to 5% among those with university degrees and above (*See Table 1*). Further, analysis shows substantial variations in time-related underemployment for persons with disability. The time-related underemployment rate of male persons with disabilities is higher (17%) than that for females (11%). Therefore, if Uganda’s productivity is to improve above the Sub-Saharan average, there is need to create full-time employment for all those that need them across all sector of the economy.

Table 1: Time-related Underemployment rate for employed persons

Background Characteristics	Male	Female	Total
Residence			
Rural	15.0	12.0	13.7
Urban	8.4	8.1	8.2
Education Attainment			
No education	23.3	11.0	15.2
Primary	15.0	12.4	13.9
Secondary	11.0	9.9	10.6
Post-primary/secondary specialized Training	4.1	8.1	5.9
Degree and Above	6.9	2.5	5.3
With Skill or Specialization			
With trade or technical skill and Specialization	6.3	5.8	6.1
With trade or technical skills only	13.7	13.9	13.8
With Specialization only	4.4	7.3	6.6

⁵ Persons are in time related underemployment if they are employed but are working only for few hours and are available to work for more hours.



None	14.6	10.8	12.9
Disability Status			
With disability	17.1	10.5	13.9
Without disability	11.7	10.7	11.3
Age group			
14-17	8.7	10.9	13.9
18-30	12.3	11.1	11.7
31-64	13.7	10.1	12.2
15-24	12.0	9.9	11.1
15-35	11.2	11.3	11.2
Total	12.7	10.6	11.8

Source: LFS, 2016/17

ix) Unemployment Status

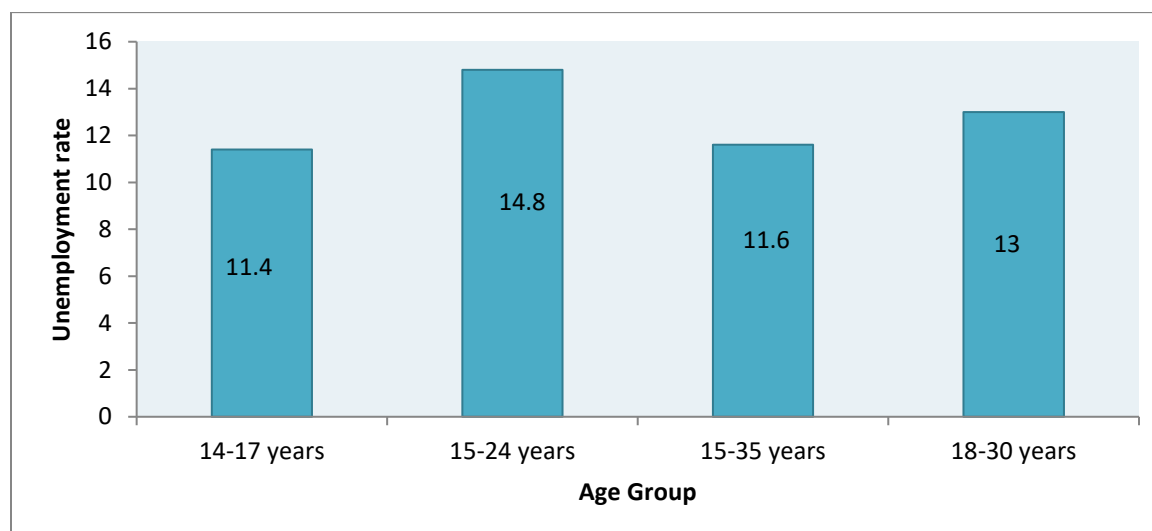
About 8.8 percent (796,000) of the population aged 14-64 are unemployed in Uganda (2019/20). The unemployment rate of the female population (8.9%) is higher than that of the male population at 8.7%. The Elgon and Acholi Uganda regions have the highest unemployment rate (at about 19% and 17% respectively) and Buganda North Region the lowest of five percent. By education, the lowest unemployment rate is observed among persons with non-formal education (6.6%) and highest among persons with some primary education (about 9.1%). Persons with specialization have a lower unemployment rate (5%) compared to those with skills only (10%). The unemployment rate is slightly higher in rural areas (10%) than in urban areas (9%). The lowest unemployment rate is observed among persons with post-primary/post-secondary specialized training (3%) and highest among persons with Primary education (about 12%). Persons with specialization have a lower unemployment rate (5%) compared to those with skills only (10%).

x) Youth Unemployment in Uganda

Youths in Uganda are twice as likely to be unemployed compared to any other age cohort. The unemployment rate among the youth aged 18-30 years is estimated at 13%, followed by 15-35 years at 11.9% and 14-17 years at 11.4% (see figure 6). This is attribute to slow job creation potential of the economy despite the high economic growth and the skills and education mismatches which limits their ability to effectively contribute to national development. Relatedly, unemployment increases with the level of education attained as evidenced in the low rates among youth with no education compared to those with primary education (6.6% and 8.8% respectively). These are followed by those with some secondary (8.7%), completed secondary and post-secondary and higher (9%). This paradox is partly due to lack of relevant skills for the currently job demand in the labour market and the poor attitude of those with higher education attainment who are more selective regarding the type of job they are willing to accept, which explains their comparatively higher unemployment rates.



Figure 6: Youth Unemployment rate (%)



Source: NLFS 2016/17

The share of youths who are Neither in Employment nor in Education or Training (NEETs) has also continuously increased (46.7% of the youths/3.65 million). This presents a substantial hurdle for the achievement of the demographic dividend. The share of youth who are NEET in Uganda is high at 41% and the share among young women is nearly as twice that of young men at 50.5% and 29% respectively. The proportion of the youths who are NEET has consistently been higher among females as compared to the male individuals with major gender differentials noticed. Further, higher proportions of the youth who are NEET are observed from regions of Greater Kampala, the Northern and Western regions. Policy actions thus need to be directed towards reinforcing the labour market participation especially with regards to discouraged workers and women. This calls for interventions to ensure that the youthful population is productively utilized. A focus on this share of NEET youth will also provide a platform on addressing several vulnerabilities faced by the youth including challenges such as unemployment, under-employment, low-quality jobs, job insecurity, and long transitions to stable and satisfactory employment.

In conclusion, this section has provided highlights of Uganda's economy regarding the key selected Labour Market Indicators. It has provided an overview of the selected indicators. In the section that follows, the highlights of labour market information and data management practices in Uganda is presented.



2.2.2 Labour Market Information and Data Management in Uganda

The efficient and effective functioning of labour market does not happen by coincidence but is systematically planned. Planning for effective labour market functioning significantly depends on the availability of the labour market information and statistics. The Uganda Bureau of Statistics (UBOS) has previously carried out labour market surveys including: The National Labour force and Child Activities Survey; Uganda Time use Survey; National Labour Force Survey; Uganda Manpower Survey (MPS), and School to Work Transition Survey. In addition, since 2009, Annual Urban Labour Force Surveys covering Kampala and the surrounding areas have been conducted. The Urban Labour Force Survey (ULFS) has been expanded into Annual Labour Force Surveys (ALFSs) with additional coverage of the rural areas starting with the financial year 2016/17.

The labour module which is part of the Uganda National Household Survey (UNHS) complements the earlier surveys by providing information on the employment situation of people living in the same household. The survey is traditionally conducted every three years and allows the calculation of poverty lines, household-based poverty ratios, and headcounts for various target populations but does not allow for detailed analysis of labour market trends to inform decent and productive employment creation. Also, the UNHS is not timely enough to capture rapid changes in the labour market structure. The most recent UNHS (2019/20) MPS (2016/17), ALFS (2019/20), and UNHS provide some labour statistics on key labour market indicators that follow to some extent the labour statistics recommendations and standards of the ILO, as spelled out in the International Conference of Labour Statisticians (ICLS) 19.

The Uganda Vision 2040 and its subsequent operationalization plans (NDP I and NDP II) all recognized the urgent need for timely and reliable statistics and information on labour market in the country. The national plans (NDP I and NDP II) subsequently recommended and NDP III continue to recommend the establishment of a fully functional Labour Market Information System (LMIS⁶). The rationale for setting up the LMIS is to facilitate the collection, analysis, dissemination and use of labour market statistics and information. This is required for the formulation and implementation of employment-driven and poverty reduction policies and programmes/plans as well as support human resource development planning at all level. Among the principles of the NHRDPF as approved by Cabinet in 2018 is developing a well-functioning LMIS which further underscores its urgency.

The Ministry of Gender, Labour and Social Development (MoGLSD) is by law responsible for labour market and employment issues in Uganda. Further, the Ministry is charged with the responsibility of developing and overseeing the operationalization of a fully-fledged LMIS with five (5) components, namely, A Job Matching Data Base, External Employment Management Information System, Internal Employment Information System, Labour Claim Information System and Labour Officer Information Sharing System. To date,

⁶ A Labour Market Information System (LMIS) 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 designed to reduce the information deficit on the labour market, to enhance information flow between job searchers, employers offering jobs and the institutions offering training and qualification programs.



however, only two components of the LMIS are operational which further limits the collection, access, management, and analysis of timely and quality labour market information. This implies that there is a need to fast-track the development and implementation of a fully functional LMIS for Uganda.

Further to note, the collection of Information on the labour demand side (statistics of businesses) is given little attention to-date. Uganda's economic growth has generated inadequate jobs in recent years and hence business statistics would be vital in guiding policy intervention that can stimulate job-rich growth. Available business information is largely outdated with the last comprehensive Establishment Census (COBE) conducted in 2010. The Uganda Bureau of Statistics (UBOS) does not conduct establishment surveys on a regular basis which limits the availability of reliable and timely demand-side labour statistics.

The above efforts towards collection and management of timely and reliable labour statistics notwithstanding, the current labour market situation and trends are very hard to measure precisely and in-depth based on existing statistics. Labour statistics provided from UBOS and other sources, especially on the sector and local government levels are hard to analyze due to the challenges emanating from its insufficiency and unreliability. Existing labour market analyses are mostly conducted in ad-hoc ways and are mainly of descriptive nature. Thus, the analysis of trends in employment and the structural transition for certain groups of people becomes difficult. The relevance of collecting and managing labour market information to the functionality of the labour market system cannot be over-emphasized. The other challenges relating to labour statistics include:

- a) The inadequacies in the current statistics framework hinders the development of a systematic labour market information analysis to inform robust policies and targeted interventions at all levels. This fact also significantly affected the design of employment objectives and targets under the national development agenda.
- b) There is also lack of a well-coordinated method of collecting and transmitting administrative data to UBOS. This reduces the data quality standards and accessibility for users in the wider labour market system. To-date, there is a vast amount of administrative labour market-relevant statistics produced by MDAs and LGs but not coordinated and streamlined within the statistics framework. Thus, information is not quality assured for labour market information analysis. While several households, labour force and enterprise surveys are conducted by UBOS, these remain expensive and at times untimely at the expense of the relatively cheap administrative data, which would allow further data disaggregation but it is not prioritized.
- c) Inadequate qualified and skilled labour economists and statisticians to conduct in-depth analysis of the available labour statistics to support evidence-based human resource planning. Non-statisticians and inappropriately skilled labour statistics users regularly intensify the misalignment between labour statistics produced by referring to unverified statistics.



- d) To date, there is no comprehensive national LMI reference database in place (LMIS) in Uganda that stores selected key labour market indicators and other relevant labour market information and its meta-information in one place and is accessible by all key users of information.

2.3 HUMAN RESOURCE DEVELOPMENT SYSTEM FOR UGANDA

A coherent system for turning human resources into human capital along its life cycle is an essential component of the development process world over and Uganda in particular. This is because, every development process is driven by a human factor. Sustainable Human Resource Development (HRD) involves investment in human resources in a planned and systematic manner along the human capital life cycle to achieve the country's desired goals and objectives. This in turn calls for the articulation of the national human resource development agenda along the human capital value chain to ensure that healthy, skilled, and ethical individuals are channeled in the right sectors of the economy at the right time in the right numbers.

Uganda's formal education and training system follows a 3-7-4-2-3 model starting with ECD which lasts for a maximum of 3 years. This is followed by seven years of primary education, four years of ordinary secondary, and two years of advanced secondary education. Advanced secondary education is followed by 3-5 years of tertiary/university-level education. In 2007, the Government of Uganda (GoU) initiated the Universal Post Primary Education and Training (UPPET) to absorb the growing number of primary school graduates and increase universal access to post-primary education. The UPPET programme provides primary school completers to choose to either join lower secondary or post-primary Vocational Education and Training.

Similarly, in 2011, the GoU introduced the Universal Post 'O' Level Education and Training (UPOLET) Program to further absorb the growing number of 'O' level graduates and increase universal access to post 'O' level education and training. Under UPOLET Program, 'O' level completers either join Advanced secondary or post 'O' level Business Technical Vocational Education and Training (BTVET). Since the inauguration of the UPPET and UPOLET programmes, several achievements have been realized mostly regarding increased access as manifested in increased senior one intake as well as enrolments in other classes for secondary and BTVET institutions respectively. There is thus a need to consolidate these achievements especially in terms of increased access to BTVET education, but also focus on enhancing the quality of training over the next 5-10 years. In the subsections that follow, critical aspects for each level of education are presented as the basis for the interventions for enhancing Human Resource Development (HRD) along with all levels of education and training.

2.3.1 Early Child Care and Education (ECCE) in Uganda

Early Child Care and Education (ECCE) is the first critical level for developing a productive and dynamic human resource. This level is the basis for the physical, cognitive,



social, and emotional development and transformation of a child and a crucial component of effective primary education system. According to the Education Act, 2008, ECCE provision and financing were left to the private sector and parents while the government's role has been restricted to curriculum support and standards enforcement. The legal and regulatory framework exists to support the development of ECD including the ECD policy 2007, Education Act of 2008, and the National Integrated Early Childhood Development policy of 2016 which elaborates ECD in terms of Daycare centres; Home-based centres; Community centres, and Preprimary.

Between 2014 and 2016, the number of ECCE centres increased by 37%, about 91% of which are nursery schools with only 8% community-based schools. This has translated into an increase in enrolment in this subsector. Overall, 608,973 children are enrolled in pre-primary schools in Uganda (301,523 boys and 307,450 girls), which is an increase of nearly eight times compared to the enrollment in 2007/08. The improvements were attributed to increased advocacy for early childhood development and social campaigns to stakeholders on the significance of supporting their children in all aspects of education. The number of qualified teachers in the ECD sub-sector has improved from 16,741 in 2015 to 23,669 teachers in 2017. Out of the 23,699 pre-primary teachers recorded, 3 out of 4 have either a certificate or a diploma in nursery teaching. The Pupil Classroom Ratio (PCR) and Pupil-Teacher Ratio (PTR) stands at 27 and 22, respectively as of 2017. Despite the progress made, several challenges that require attention for the effective building of the required human capital for the country remain, these include:

- (i) Limited access to ECCE services, with over 80% of the children between 3-5 years outside ECCE.
- (ii) Poor quality of infrastructure and learning materials in ECCE.
- (iii) Poor training of ECD caregivers.
- (iv) Limited supervision and enforcement of regulatory and quality assurance systems for ECCE standards.
- (v) Although there is improvement in the number of ECCE centres, the enrolment in ECD is still low with high disparity between rural and urban areas.

2.3.2 Primary Education System in Uganda

Primary education is the second level of basic education and is the largest sub-sectors of education in Uganda in terms of enrolment estimated at 90%. Primary education plays a vital role in the acquisition of functional literacy, numeracy, communication skills, and several other skills that are important for social development. Further, primary education helps the children to gain and maintain sound mental and physical health. The policy and legal framework stem from the 1992 Government White Paper on Education (GWPE), the 1995 Constitution which gives a right to each child to basic education, and the Universal Primary Education (UPE) in 1997.



To date, Uganda has over 20,500 primary schools and enrollment has persistently increased the introduction of Universal Primary Education programme in 1997. This programme Policy has contributed to boosting the number of children in primary education. Gross enrollment in primary schools increased from a total of 3.1 million in 1996 to 5.3 million in 1997, an increase of 73 percent in only one year. The gross enrollment continued growing ever since, marking 8.6 million in 2016, however, 7.4 million pupils (83.7 percent of the pupils who are enrolled) are within the official primary school age of 6 to 12 years old which implies that nearly 15.2 percent are outside the cohort. The primary leavers who transit to secondary school stand at 58% while 3% join post-primary BTVET and 39% drop out of school and or repeat. The country has over 207,238 primary school teachers, of which 62% are in government schools while 38% are in private schools.

Despite the progress made, several fundamental issues are still affecting primary school education and thus compromise the quality of education; these include:

- (i) **Low completion rates with a cohort survival of 32% which implies that only 3 out of 10 children who enroll in P1 will complete the seven-year cycle.** This is attributed to factors including the poor quality of school and classroom environments, fees, limited parental participation in the education of their children, lack of universal school feeding, poor quality school management, and negative cultural beliefs towards the education of the girl child, among others. Government efforts in recent years, to address the challenge of drop out and low completion rates have included; provision of tuition-free UPE, construction of primary schools in over 90% of all parishes, recruitment of more teachers, provision of more teaching and learning materials, and payment of registration fees for examinations, among others.
- (ii) **Poor learning outcomes.** The National Assessment of Progress in Education (NAPE) report (2018) indicated that 55% and 49.9% of the P3 learners were rated proficient in numeracy and literacy respectively. In P6, 50.9% and 53.1% of learners were rated proficient in numeracy and literacy, respectively. This implies that between 45% and 50% of the primary school pupils do not attain the defined academic competencies. This implies a poor foundation for human resources and a direct bearing on the quality of labour market entrants over time.
- (iii) **Congestion in schools is reflected in the higher pupil classroom ratios (PCR) and pupil-teacher ratios (PTR).** Most Ugandan primary schools are congested and this compromises the quality of teaching and learning environments. Whereas the PTR is moderate at 43:1 and PCR at 53:1, there are wider variations between government schools at 70:1 compared to private schools of 29:1. Some schools have over 200 learners in a class and are taught by one teacher. The other quality indicators remain poor including pupil textbook ratio (3:1) with many learners having no space to sit and write; and low capitation against the increasing cost of providing primary education.
- (iv) **The Capitation grant provided to schools is still low and has not kept pace with the pupil enrollment numbers.** The increase in the nominal UPE capitation grants has not been responding to the increase in the enrollment rates. In real terms, UPE capitation



grants per pupil have reduced significantly. For example, the real per pupil capitation grant decreased from UGX85.5 in 2001/02 to UGX35.3 in 2014/15. These amounts are extremely too low for meaningful delivery of education services. The UPE evaluation by NPA showed that, the current per pupil capitation of 10,000-14,000 UGX for rural and urban schools respectively is still low to deliver meaningful results. Accordingly, the UPE evaluation recommended a capitation of 59,500 and 63,500 UGX for rural and urban schools respectively.

- (v) **There are salient teacher issues that continue to constrain quality improvement in primary education.** Whereas the government has achieved a 96% level of teachers with qualification status in schools, most teachers lack appropriate skills to plan, teach, assess, and provide career counselling. For instance, 57% of the teachers do not plan for teaching, 40.4% of those that attempt to plan do not have the skills to produce quality lesson plans that are fit for the purpose, 37% of the teachers assess learners without reference to the curriculum and over 50% could not teach vocational skills.
- (vi) **Inspection and support supervision remain a challenge within the primary subsector.** The inspection function is acutely under-resourced both in terms of human and financial resources to deliver its mandate effectively and efficiently.
- (vii) **There are challenges related to the thematic curriculum at primary level that need to be addressed.** For example, lack of textbooks and other learning materials, poorly-trained teachers, poor attitude from parents and transition from local language to English in primary five. In addition, the curriculum and the examination modality tests pupil's capacity to memorize which undermines learners' motivation to engage in creativity and innovativeness.

2.3.3 Secondary Education in Uganda

Secondary education is the 2nd largest sub-sector of the education and training system in Uganda. Secondary education provides the optimum setting to prepare young people, predominantly adolescents, for healthy and productive adult lives, including participation in social, political, and economic spheres. For Uganda to compete in the global economy, a significant number of its citizens need secondary education to acquire the specific skills and aptitudes necessary for an increasingly technology-driven marketplace. Uganda's secondary education constitutes an ordinary level that comprises four (4) years and an advanced level that comprises two (2) years. The provision of secondary education in Uganda is enshrined in the 1995 Constitution which made it obligatory for the government to provide basic education to all its citizens as a basic right. The introduction of Universal Secondary Education in 2007 increased access and created opportunities for particularly poor students to attend secondary schools.

As of 2019, Uganda had over 3,500 secondary schools of which 64% are owned by the private sector. In addition, 79.8% of all secondary schools are within a radius of 1km and only about 0.6% are within the radius of 5kms. This implies that most secondary schools are accessible to students and surrounding communities. The number of students studying in



secondary schools increased by 12 percent, from 1.23 million in 2009/10 to 1.37 million in 2016/17. Lower secondary schools enroll 1.24 million students, while only 135,500 (10%) study in upper secondary. Before the introduction of the Universal Secondary Education Policy in 2007, enrollments grew by four percent per year on average. Following the introduction of the Policy, there is sustained increase in enrollment at lower secondary level.

Net secondary school Enrollment Ratio is still low at about 24%, implying that majority of those who complete primary do not enroll for secondary at the right age of 13 years. Student Classroom ratio improved between 2012 and 2018 from 55:1 to 49:1, respectively. Student-Teacher Ratio (STR) of secondary schools is highest in government secondary schools at about 24:1 vis-à-vis the private secondary schools at 20:1; however, these numbers mask wide regional disparities. It is often 1:8 in remote districts like Karamoja and closer to 1:70 in crowded urban schools. Graduate teachers account for 51.9% in all secondary schools while about 41.7% are under grade V which is the minimum qualification for secondary teachers. However, the completion rate remains below desired 100% target; for example, the senior four completion rate stands at about 42.1% in 2018 up from 30% in 2005.

Despite significant improvements in the provision of secondary education in Uganda, this sub-sector is still marred with several challenges that should be addressed, including:

- (i) **Learning outcomes are on a declining trend**, according to the National Assessment of Progress in Education conducted since 2008. The proportion of students proficient in English dropped from 81.9 percent in 2008 to 43.1 percent in 2013, while in Math from 69.4 to 41.5 percent.
- (ii) **Inadequate funding of secondary schools** especially USE schools due to very low per capita expenditure of UGX 123,000 per year since USE inception vis-à-vis the rising cost of living.
- (iii) **Low quality of the teaching workforce leading to poor learning outcomes.** Whereas the curriculum for lower secondary has been significantly improved, teachers were not adequately prepared to deliver it. The current focus of teaching is centred around memorization of the curriculum, with limited effort towards pedagogical understanding, skills, and strategies that are necessary to bring about learning among secondary students. In recent years, several teacher interventions are in place that is to improve teacher effectiveness for enhanced quality learning outcomes. Some of the key strategies to address teacher issues include enhancement of teachers' salaries; recruitment of more teachers, and provision of continuous professional development, particularly for science teachers.
- (iv) **High failure rates in sciences.** In 2005, the Government introduced the science education policy which made it mandatory to offer STEM⁷ subjects at the lower secondary level. Nonetheless, this was not backed up by a proportionate increase in

⁷ Science, Technology, Engineering and Mathematics



recruited science teachers, science infrastructure including laboratories among others. These have compromised the teaching and learning of science leading to perpetually poor science outcomes at the lower secondary schools. This has significant ramifications on human resource development given that the government’s strategy is to focus education towards producing scientists and innovators.

Table 2: Percentage Learners who sat and failed key science subjects

Subject	2015	2016	2017	2019	Average
Physics	58.3%	68.1%	59.6%	48.3%	58.6%
Chemistry	57.2%	59.9%	40.9%	53.5%	52.9%
Biology	59.3%	54.9%	44.5%	46.5%	51.3%

Source: MoES Taskforce on PLE, UCE and UACE Performance (2017)

- (v) Other challenges in the secondary school subsector that inhibit human resources development efforts include:
 - a) High school dropout rate especially for a girl child due to among others teenage pregnancies, tuition fees, few secondary schools available close to home, limited family support, poor school WASH facilities particularly for girls, and culture that favours education of boys over girls.
 - b) Core infrastructure gaps including classrooms, teacher housing, laboratories, and workshops, etc.
 - c) Challenges related to the lower secondary level curriculum and the examination modality which tests student’s capacity to memorize undermine learners’ motivation to engage in creative, innovative, and critical thinking.

2.3.4 Business, Technical and Vocational Education and Training in Uganda

The Business, Technical, and Vocational Education and Training (BTJET) is the subsector responsible for skills development in the Education sector. Technical-vocational education and training are important to produce critical skills in Uganda. Skills enable individuals to increase productivity and raise incomes. A skilled workforce enables enterprises to increase their productivity and profits which in turn enables the economy to expand, grow and create more jobs. Uganda’s BTJET is a three-tier system that comprises; craftsman level training offered by technical schools and institutes, technician level training offered by technical colleges, and graduate engineer level training offered by universities.

Uganda’s Education system has different opportunities for progression to BTJET along the education value chain. Completers of primary education can either proceed to ordinary secondary or opt for a three-year craftsman training offered in farm and technical schools as well as vocational centres or a four-year training in community polytechnics. Completers of Uganda Certificate of Education (UCE) have four alternative avenues for further education and training, namely: enrolling in a two-year advanced course at a technical institute; joining a two-year primary teacher training programme in Primary Teachers’ Colleges (PTCs);



joining any of the government departmental training institutes which offer a variety of technical and professional courses under different ministries or accessing Advanced secondary education that leads to the Uganda Advanced Certificate of Education (UACE). On the other hand, UACE completers currently have several promotional avenues, namely: enrolling in a two-year course at the Uganda Technical Colleges (UTCs); proceeding to the Uganda College of Commerce; joining a two-year course in a National Teachers' College (NTC), or proceeding for university education.

Uganda has to date recorded considerable progress under the BTVET sub-sector in terms of skills development for employment, enhanced productivity, and growth. Overall enrollment increased to 45,153 in 2018 up from 39,712 in 2014, however, female enrollment remains low partly because of the widespread gender stereotypes associated with education and training under the BTVET sub-sector. Over the same period, the number of BTVET institutions has gradually increased to 178 institutions and the number of private institutions has increased to 90 from 15. In turn, this has increased accessibility to BTVET training. By 2017, at least 90 districts had at least one BTVET institution and the facilities are gradually being equipped to provide quality training. The sub-sector is gradually adopting the competence-based education and training framework as opposed to the examination-based curriculum to enable students to achieve competencies required in the labour market.

However, the BTVET sub-sector is still faced with a myriad of challenges and the following are singled out for emphasis in this plan:

- (i) Low enrollment in TVET institutions due to among others negative attitudes, qualification requirements, and tuition fees.
- (ii) Rigid, supply-driven curriculum that is non-responsive to the ever-changing skills demand. This has been mainly due to the limited participation of the industry in the planning, training, and assessment of TVET trainees
- (iii) Inadequate financing. TVET education in Uganda is mainly funded by development partners. Such a funding model is unsustainable. Whereas the BTVET Act (2008) creates the training levy as a source of financing, this is yet to be implemented.
- (iv) Poorly trained TVET instructors and the difficulty to hire and retain industry practitioners as TVET instructors
- (v) Poor standards in some TVET institutions due to ageing existing infrastructure and general lack of core up-to-date infrastructure
- (vi) Unclear career paths available for TVET graduates

2.3.5 Higher Education in Uganda

The higher education system in Uganda is comprised of three sub-sectors, namely, universities, Other Degree Awarding Institutions (ODAI), and Other Tertiary Institutions (OTI). The Universities and Other Tertiary Institutions Act 2001 was the first legal framework that pertained to higher education. The Act defined tertiary and higher education to include both public and private universities and other tertiary institutions that



provide post-advanced secondary education, offering courses of study leading to the award of certificates, diplomas, and degrees, conducting research and publication. The Act also established the National Council of Higher Education (NCHE) for quality assurance of all tertiary institutions.

To date, the university subsector has a total of 9 public and 42 private institutions (2019) leading to a total of 51 universities in Uganda. This subsector accounts for 70% of the enrollment. On the other hand, Other Degree Awarding Institutions (ODAI) have a total of 10 institutions of which 9 are private and 1 is public and this sub-sector accounts for only 3% of enrollment. The Other Tertiary Institutions category (OTI) comprises 160 institutions and accounts for 26.5% of enrollment. The most popular category with the highest student enrollment is Business and Commerce, which accounts for 27,932 or 41.6% within OTIs. The average share of ownership of these institutions by the public sector is 27% while the private sector dominates about 73%.

Total enrollment is estimated at about 310,236 in 2019 and the Gross Enrollment Ratio (GER⁸) is estimated at 6.73%. This GER is far below the world average of 24% and the preferred 40% that is essential for economic advancement. The university subcategory alone enrolls 66% in arts-related fields and 37% in science-related programmes which is below the minimum requirement of 40% of students registering in Science and Technology (UNESCO). Within the OTI subcategory, most students are enrolled in business/commercial colleges (41.6%) and the students mainly pursue arts and humanities-based programmes (60%) and 40% to science and technology (mainly computer science and related courses). The total number of academic staff in the higher education sub-sector stood at about 13,038 in 2018 and the number of academic staff with Ph.D. in higher learning institutions increased to 1,755 in 2015/16 from 1,579 in 2014/15. The university sub-category has the highest proportion of Ph.D. holders at 91.2%, while ODAI has the least at 3.4%.

The universities and affiliated colleges produce the largest number of graduates compared to all other training institutions. For example, in 2015, the universities and affiliated colleges graduated 68,610 students out of the total 130,790 graduates followed by Vocational and Technical Colleges as well as Colleges of Commerce and Business Studies that produced 27,110 and 12,410, respectively. Projections indicate that Universities and Affiliated Colleges will graduate about 84,238 in 2020 and about 123,774 in 2025, other factors remaining the same.

Although there are considerable improvements in the provision of higher education in Uganda, this sub-sector is still flawed with a multitude of challenges. These include among others:

- i) **Limited alignment between university admissions and the national skills gaps.** According to the State of Higher Education report (2017/18), 63% of total enrollment

⁸ GER or Gross Enrolment Ratio for tertiary education is the number of students enrolled in Uganda's tertiary education level as a percentage of the population of official school age for the tertiary education level.



in universities was in the already saturated humanities while only 37% enrolled in STEM disciplines. This contradicts the government's strategy for increasing enrollment and graduation in STEM disciplines

- ii) **Inadequate funding for both recurrent and development expenditures.** Public funding to higher education remains at about 0.3% of GDP which is below the internationally recommended share of at least 1%. Most institutions operate on a stringent budget and are not able to adequately meet their staff costs. This forces the academic staff to moonlight to other universities to earn extra money to make ends meet. The result of this behaviour is a decline in the dedication to scholarship and teaching.
- iii) **There is inadequate funding for Research and Development.** Research and development distinguish universities from other institutions of learning; however; this component has continued to be neglected. In fact, 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. 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 very low thus innovations that tackle societal challenges are hardly produced from these higher learning institutions.
- iv) **Relatedly, there is over reliance on government and tuition fees as a means of funding.** However, there are several other means of financing education and training globally. For example, alumni, industries, philanthropists, research funds competitively won by academic staff, etc. There is therefore need to rethink funding channels in higher institutions of learning beyond government and tuition fees.
- v) **Inadequate physical infrastructure to match the increasing enrollments including special needs children.** For instance, most lecture rooms are overcrowded, books, computers, and other types of equipment are in short supply. Some academic staff members do not have offices where they can individually interact with students. The increment of students enrolled in higher learning institutions has not been matched by corresponding increases in facilities such as lecture rooms, halls, seminar rooms, laboratories, and equipment for science-based subjects. Such insufficient facilities and a high student-lecturer ratio compromise the academic quality.
- vi) **Inadequate human resources with Ph.D. qualifications to undertake teaching, research and innovation.** By 2017/18, only 18% of the University academic staff had PhDs while the majority (45%) having master's degrees. This is below the NCHE standards that require 60% and 70% or more of academic staff to hold PhDs and Master's degrees respectively to produce appropriately trained graduates.

2.3.6 Lifelong learning and non-formal education and training in Uganda

Lifelong learning and non-formal education have increasingly become vital due to rapid economic changes and changes in the functionality of the labour market. The need to



cope-up with the fast-changing world calls for continuous acquisition of new knowledge, skills, and attitude. The frontloading of skills through initial training for a single lifetime qualification is no longer enough in the context of the rapidly changing skills needs. Non-formal education and training is partially a lifelong form of education that takes place before and after formal education. This is undertaken in the context of families, work-places, clubs, and web-based communities, among others. Also, training is adapted to the needs of the students or situation to maximize learning and minimize other elements which occupy formal schooling practices. Lifelong Learning and Non-Formal Education are well enshrined in the GWPE⁹ of 1992, the 1995 Uganda Constitution, as well as in the Uganda Education Act 2008 as alternative education opportunities for those who are out of formal education.

Currently, non-formal education in Uganda encompasses three categories: Non-Formal Basic Education for children and youths; Community Development Basic Learning Initiatives, and Basic Adult Literacy and Continuing Literacy. The Ministry of Education and Sports (MoES) together with the Ministry of Gender, Labour and Social Development (MGLSD) are implementing these programmes with the aim of improving adult literacy in the country. For example; the Alternative Basic Education for Karamoja (ABEK) and the Functional Adult Literacy (FAL) Programme, respectively. The Functional Adult Literacy (FAL) Programme forms the biggest proportion of Non-Formal Education in Uganda. Functional Adult Literacy provides skills in reading, writing, and numeracy integrated with practical knowledge and skills with the use of local language as the medium of instruction. Evidence shows that the Karamoja sub-region has the lowest enrollment rate among all the regions while Kampala tops all the regions in adult literacy. The adult literacy rates among both males and females in Uganda are higher in urban areas than in rural areas and the urban-rural gap in adult literacy is wider among females.

There are other skilling programmes and initiatives such as the Presidential Initiative on Skilling the Girl Child 2017, the Skills Development Facility (SDF¹⁰) under the Private Sector Foundation Uganda (PSFU) among others. However, just like mainstream formal education in Uganda, lifelong learning and non-formal education and training are also faced with a range of challenges, including:

- (i) **The linkage between informal and formal education is still minimal at all levels.** The provision of formal and non-formal educational programmes has taken a parallel trend with minimal integration and no systematic mechanism to equate the two. For example, evidence shows that formal primary schools and ABEK centres are distanced from each other.
- (ii) There is a misconception surrounding the result of non-formal education such as under the Functional Adult Literacy Programme. Most of the women yearn and end up looking for employment in the formal private and public sectors yet job opportunities require higher qualification. This indicates that there is an underlying common

⁹ Government White Paper on Education

¹⁰ The SDF is a 5-year project which supports short-term employer led training and recognition of prior learning and increased access to internships & TVET.



perception that a person is only trained to be employed rather than identifying and creating opportunities like being a local entrepreneur and participating in lower-level leadership at the end of such training programmes.

- (iii) **Irregular attendance for non-formal education programmes.** Evidence shows that there is poor daily attendance of enrolled beneficiaries for such programmes. Domestic duties carried out by children and women conflict with school attendance, affecting more girls than boys. It is also no exception that children miss classes because of casual but paid employment to support their families. This inconsistency in attending classes compromises the quality of the learning outcomes.
- (iv) **Data remains very minimal and scattered on Non-Formal Education which limits planning and monitoring performance.** This scantiness is with regard to enrolments and progression across the programmes; learning outcomes; data on the transition to formal schools; evidence of successful absorption into the formal system; and impact of NFE experience (including supplementary skills development) on children's lives. Evidence-based interventions are rarely used to inform decision-making.
- (v) **Insufficient funding to run Non-Formal Education programmes.** The vocational training programmes for the youth are expensive because of the type and number of materials required. Even in the functional literacy class, many students attend but are unable to learn or concentrate because they lack the basic materials such as books, papers, and pens.

2.4 FINANCING MECHANISM FOR EDUCATION AND TRAINING IN UGANDA

Financing of education and training along the value chain is a shared responsibility of government, development partners, private sector, NGOs, community, and the households. In 2016/17, households contributed more than half of education expenditures at 3.6% out of 6.3% of GDP spent on education and training (*see figure 7*). Households' contribution is estimated at about 57% of total education financing through fees and other payments to schools. These are most significant in private schools and at the secondary level.

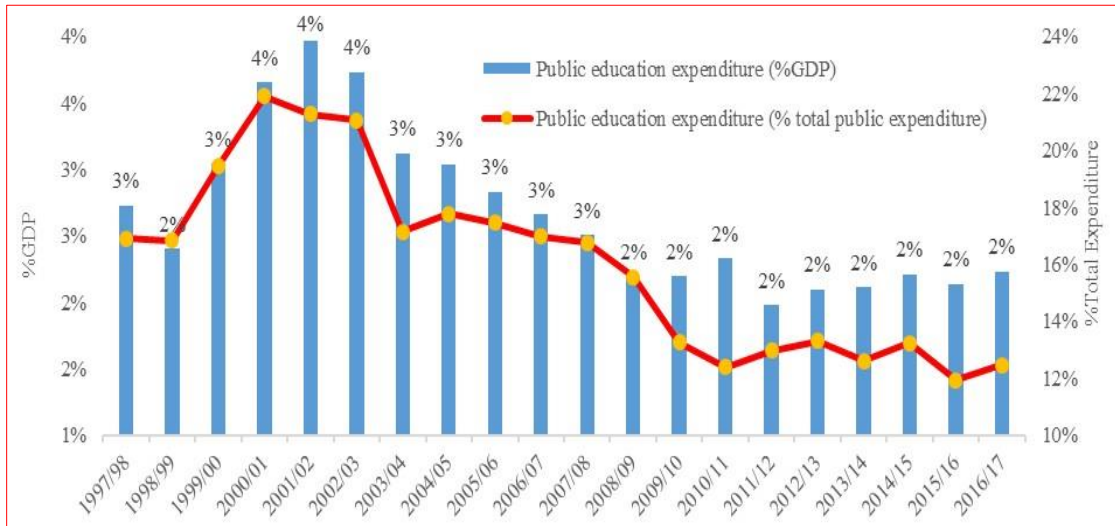
Public expenditure on education as a proportion of total public expenditure has declined over time from a record high of 22% in 2001 to about 13% in 2017¹¹. This partly explains the progressive increase in out-of-pocket expenditure¹² across the entire education sub-sectors. For example, out-of-pocket expenditure increased from UGX 1.56 Million in 2009/10 to UGX 2.44 Million in 2013/14 across all levels of education and training subsector (see Table 3).

¹¹ See Figure 7

¹² Out of pocket is the proportion of expenditure incurred by household/individuals towards education and training

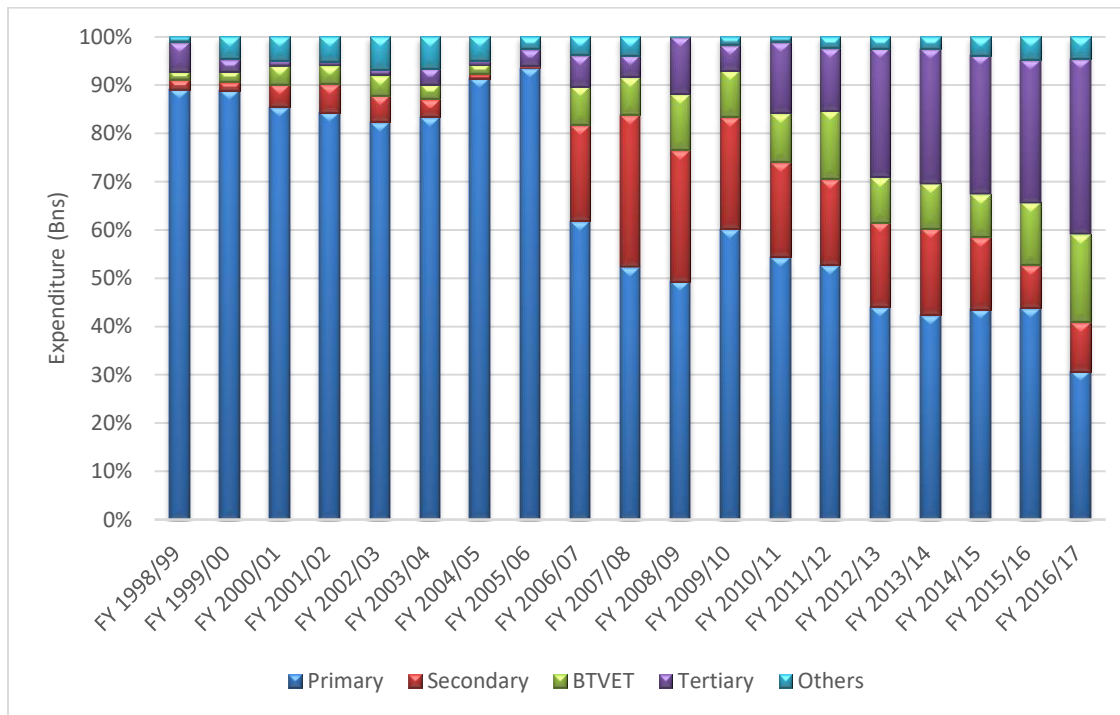


Figure 7: Share of Public Expenditure on Education



Source: Financing and Costing of UPE Report, 2018

Figure 8: Public education expenditure by sub-sector



Source: MoES, MTBF

Uganda’s expenditure on the education sector across all levels has been highest in the primary sub-sector and accounts for more than UGX 50 billion annually. The share of public expenditure allocated to education increased at the inception of UPE in 1997 to a record peak of 30% in 2000 (see Figure 8). It is noted however that, for the last five years, public expenditure on BTVET has continuously increased which indicates their increasingly



significant role in Uganda’s labour market. Across all education levels, donor development expenditure in Uganda’s secondary sub-sector increased tremendously from 2007 reaching its peak in 2011/12 before declining significantly in 2015. Figure 8 shows public expenditure on the various education sub-sectors and is highest for primary followed by tertiary sub-sector over the last five years.

2.4.1 Out of Pocket Expenditure on Education in Uganda

The out-of-pocket expenditure¹³ in Uganda has steadily increased across all education sub-sectors from UGX 1,567,296 in 2010 to about UGX 2,441,539 in 2014. The rise in out-of-pocket is partly explained by changing government priorities over the years, which has seen the share of public expenditure allocated to education declining as seen in Figure 7. However, out-of-pocket expenditure has been highest in primary, followed by secondary and tertiary sub-sectors as presented in Table 3. However, it should be noted that private sector investment especially in the pre-primary, primary, and secondary education sub-sectors has over the years increased exponentially. This partly explains the rise in the ECD centres, primary and secondary schools’ country-wide.

Table 3: Out of Pocket Expenditure on Education

Education Level	2009/10	2010/11	2011/2012	2012/13	2013/14
Pre-primary	58,802	25,651	51,522	64,708	66,617
Primary	599,419	587,721	764,480	837,123	960,868
Secondary	564,292	571,420	698,696	744,446	810,331
Teacher Training Education	21,103	22,118	27,143	28,060	28,884
BTVET	16,404	22,363	27,772	36,585	33,759
Tertiary Education	307,276	328,392	402,230	417,837	541,080
Total	1,567,296	1,557,665	1,971,843	2,128,759	2,441,539

Source: NEA, 2016

2.4.2 Government Sponsorships in public universities in Uganda

The Government of Uganda sponsors 4,000 new students each year to join public universities at different entry schemes. The biggest proportion of students on government scholarships joins public universities on the national merit scheme for direct entry, while others join on mature age and diploma entry schemes, district quota system, scheme for persons with disabilities, and those endowed with sports talent. To address the socio-economic disparities and increase access to government university scholarships, the Ministry of Education and Sports revised the admission policy for government sponsorship in the academic year 2005/2006 and provided 75% of the total number of the slots for government sponsorship to be competed for on merit nationally all over the public universities. The 25% are distributed to cater for talented sportsmen/sportswomen (40 slots), persons with disabilities (blind, deaf, those using mobility appliances, physical disability, chronic medical problems such as those with Sickle cell, Anaemia, Asthma, Epilepsy, Albino) (64 slots) and

¹³ Out of pocket is the proportion of expenditure incurred by household/individuals towards education and training



896 slots are competed for through the district quota with preference given to candidates who sit A-level examinations at schools located in their home districts.

All Government-sponsored students are entitled to a welfare allowance. This caters for their meals and accommodation expenses which have remained constant for over two decades at UGX 4,000 per day for breakfast, lunch, and dinner, UGX 40,000 per week for accommodation, and UGX1,000 per day from Monday to Friday for transport. However, to date, the number of students in public universities has increased tremendously. For example, from 140,098 in 2012 to 186,412 in 2016. This growth in student numbers is constraining the government's ability to pay for all the tuition and personal needs for students to cater for their university education. In addition, there are other scholarship initiatives that continue to sponsor several students at different levels to pursue studies. However, there is no clear framework that links the human resource and skills development needs of the country to the different scholarship programmes offered in the country.

2.4.3 Students' Loan Scheme for financing Higher Education in Uganda

Another important source of higher education financing in Uganda is through the Student's Loan scheme where about 2,000 new students each year are financed to join institutions of higher learning at diploma and undergraduate levels. The Ministry of Education and Sports started implementing the Students Loan Scheme in 2013/14 for students enrolled in Higher Institutions of Learning to increase equitable access to Higher Education in Uganda and to support qualified students who may not afford the cost of higher education in terms of tuition, research/functional fees, aids and appliances for PWDs. Specifically, loans are provided to higher education students majorly to increase equitable access to Higher Education for all Ugandans; to support qualified students who cannot afford Higher Education; to ensure regional balance in Higher Education services for all Ugandans, and to develop and support programmes which are deemed critical to national development. The student loans scheme is applicable to students pursuing accredited programmes at the diploma and undergraduate levels.

Since 2014, about 12,200 students have so far been financed under this scheme, and on average, about 1,500 students are awarded study loans by the government under the Students' Loan Scheme. Accordingly, the government of Uganda has over the years increased the allocation to Higher Education Students' Financing Board (HESFB). For example, in the financial year 2019/2020, the government allocated an additional amount of UGX 2.4 billion rising the total allocation to HESFB to UGX 30.2 Billion. However, there is no clear evidence to indicate the extent to which the higher education financing loans are aligned to the National Development Priorities.

2.5 EDUCATION QUALIFICATIONS GAPS AND SKILLS MISMATCHES IN UGANDA

The education qualifications gaps and skills mismatches represent one of the most overbearing factors for the Ugandan labour market. These mismatches have potential adverse effects at both the individual, firm, and macro levels. At the individual level, high



skill mismatches are likely to affect wages and salaries, reduce job satisfaction and increase the likelihood of frequent job changes. At the firm level, the inability to find skilled workers to perform required jobs has important repercussions on firm dynamism, productivity and profit, global competitiveness, and growth. At the macro level, structural skill deficits can lead to a country's loss of competitiveness and exacerbate unemployment problems. High and persistent levels of unemployment, together with job vacancies that remain unfilled, are often attributed to mismatches between jobs and skills which are often driven by low-quality education, demographic change, rapid technological development, absence of linkages between education systems and employers, new sources of job creation and new forms of work organization. Regardless of the cause, skills mismatch can negatively affect labour market outcomes, workers' productivity, competitiveness, and economic growth.

Uganda's education and training system has not produced enough numbers of skills and qualifications that are in high demand in line with the development trends and priorities.

For example, in 2015, only 18% of the total graduates (24,550 students) graduated with diplomas and 48,290 students graduated with certificates in different fields. Evidence has shown that the largest number of jobs created in Uganda over the past two (2) decades only require a certificate or a higher diploma, but these skills are not produced in enough numbers. The implication of this finding is that most of the graduates in Uganda are prepared for white collar jobs whose growth has been constrained over the past two decades rendering the country to register a jobless growth. This partly explains the rising woes by graduates who cannot find jobs even after 10 years of graduation, this makes many graduates lose optimism and thus become discouraged workers which reduces the country's labour force participation rates in comparison with other countries with developed and developing labour markets such as Sweden, South Korea, Singapore, Japan, and China.

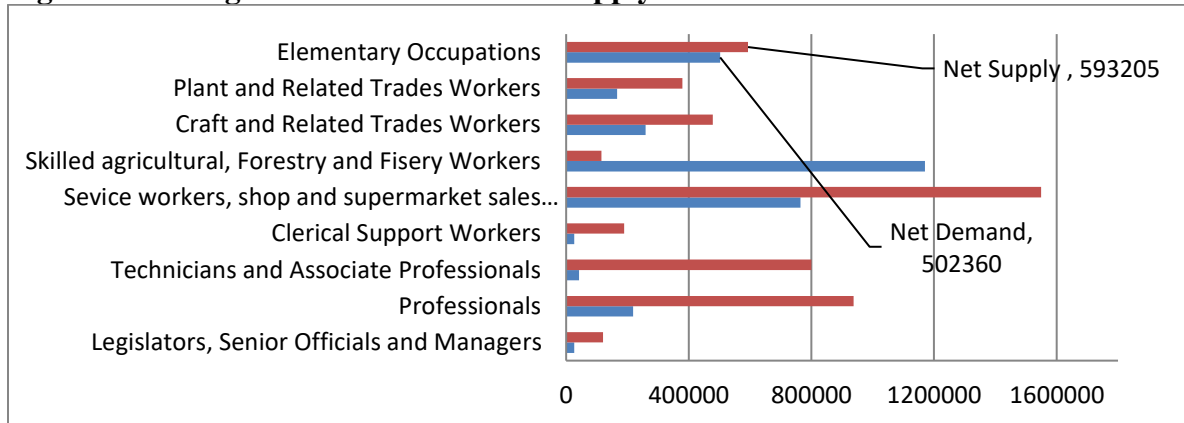
To quantify the critical human resource gaps in line with the national development agenda, a macro model for Human Resource Development Planning was developed (see Annex 2 for model details). The model which is a tool for forecasting occupational skills gaps over time has a set of two interlinked strands that calibrate the occupational demand and supply sides of the labour market. The demand side determines the total labour force that is needed based on the development demands of the economy while the supply side determines the flow of labour that is available on the labour market. The two sides of the model are connected to determine the imbalances in the labour market.

The imbalances from the model project that, across the ten (10) broad occupations classification at Level 1, some critical occupations are over-supplied while others are under-supplied. For example, there is an undersupply of skilled agricultural, forestry, and fishery workers, metal, machinery, and related trade workers (*see figure 9*). This implies that the current education and training does not provide the required market-oriented knowledge and skills in the transport and storage as well as crop and animal sub-sector to enable a shift from subsistence agriculture and other related fields which contribute to worsening the skills shortages. In the next 5 years, job deficiency will be largely driven by an excessive supply of service workers, shop and supermarket sales workers, followed by technicians and associate professionals, and professionals. Based on the analysis, it is recommended that measures be



taken to increase the supply of skilled agriculture, forestry, and fisheries workers. In this regard, vocational education geared towards agriculture is highly recommended. However, there is need to ensure that the quantity of jobs created does not compromise on the quality of the jobs. There is also a need for measures to increase employment creation particularly for service workers, technicians, and associate professionals.

Figure 9: Average Labour Demand and Supply 2020-2025



The NHRD Plan has taken the same programmatic approach adopted by NDP III and the critical skills gaps have been produced in line with these programmes. The qualifications and skills required for effective implementation of planned programme interventions are articulated under each programme in Chapter four. Effective implementation of the programmes will require that the country pays special attention to the human resource requirements of the specific programme.

2.6 INSTITUTIONAL COORDINATION FOR HUMAN RESOURCE PLANNING AND DEVELOPMENT

Robust institutional coordination for human resource development planning is key for achieving common labour market outcomes. To date, there is inadequate coordination of human resource development planning and policy frameworks to streamline and rally stakeholders to the overall national priorities. For instance, there are many institutions that are charged with human resource development and employment. Some of these include the Ministry of Gender, Labour and Social Development (MoGLSD); Ministry of Education and Sports (MoES); Ministry of Public Service; workers and employers’ organizations; Ministry of Local Government (MoLG); Ministry of Finance, Planning and Economic Development (MoFPED); National Planning Authority (NPA); Uganda Bureau of Statistics, other government MDAs, Private sector, Development Partners, Community Based Organizations (CBOs); and Non-Governmental Organizations (NGOs), among others.

To-date, there is no clear mechanism on how institutions are coordinating to ensure a coherent human resource development and job creation agenda. Particularly, there is no well-articulated implementation mechanism in place to ensure coordination and mainstreaming of human resources development and employment-related interventions by the



various institutions to achieve a unified goal. In this plan, an attempt has been made to envisage the critical institutions and their roles for better coordination and commitment to human resource development aspirations and strengthening working partnerships on labour market supply and demand issues.

2.7 CONCLUSION AND EMERGING ISSUES FROM THE SITUATION ANALYSIS

In a nutshell, this chapter has provided a detailed situation analysis on Uganda's economic performance, provided a sectoral decomposition of Uganda's GDP and employment; highlighted a glance at Uganda's labour market profile and the human resource development processes for the country. From the analysis undertaken, the following are major emerging issues that are worth attention over the short to medium term.

- i) **The Skills triangle for Uganda is inverted. The country has more graduates than technicians and technologists with diploma and certificates.** Yet the country requires more technicians and technologists to support the managers to produce goods and services. This is occasioned by the limited enrolments in TVET institutions. For example, in 2015, only 18% of the total graduates (24,550 students) graduated with diplomas and 48,290 students graduated with certificates in different fields compared to 68,610 (52% of total students) who graduated with degrees in the same year despite government effort to expand BTVET and sensitizing Ugandans on its merits. However, the largest number of jobs created over the last 2 decades require a certificate or diploma.
- ii) **There are rampant skills & education qualifications mismatches between what the labour market demands and what the education and training institutions produce.** About 60% of the Uganda's labour force has low levels of education attainment than what is demanded in the labour market. Approximately 86.5% of the labour force have secondary education and below, 59.6% are primary seven graduates & 7.9% have no formal education. The big concern is that the average education attainment of Uganda's labour force is less than the average labour market requirement. This kind of labour force experiences a big challenge in terms of being absorbed in the labour market without the necessary skills. This results into increased risk of unemployment, underemployment, and job insecurity.
- iii) **There is inadequate certification and standardization of the different trades at different levels both in formal and informal sectors.** In many fields where, excess supply of human resources exist, labour is not certified to meet the international certification standard and requirement. This is coupled with inadequate integration of work-based training into the education and training system in terms of apprenticeship, industrial attachments and internship.
- iv) **Whereas Uganda has had impressive economic growth over the last three decades, employment growth has consistently lagged economic growth implying that economic growth is not providing adequate job growth.** This, therefore, calls for deliberate employment planning as opposed to the narrative that employment will by default happen as the country pursues economic growth.



- v) **Relatedly, whereas the past two decades have been associated with structural transformation within the Ugandan economy in terms of contribution to GDP, it has not translated into a proportionate sectoral contribution to employment.** Hence there is an inverse relationship between sectoral contribution to GDP and employment creation.
- vi) **Sectors that have contributed most to the recent economic growth episodes in Uganda are not necessarily labour-intensive.** For example, communication and financial services which have raised their productivity, have become less labour-intensive, and hence, they have not created a great number of new jobs for a rapidly growing labour force.
- vii) **Sectors that employ the largest proportion of the workforce in Uganda have not necessarily achieved high productivity gains.** This is particularly the case for the agriculture sector where output has grown at only about 1.2% per year, despite a 6.0% annual increase in agricultural employment, suggesting a significant decline in productivity.
- viii) **Despite the existence of many institutions that are charged with the planning and implementation of human resource development and employment creation interventions,** these operate in an ad-hoc manner and without a clearly articulated coordination mechanism.
- ix) **The poor learning outcomes at basic education levels threaten the development of the required human resources for the country.** More learners drop out and those who remain in the system attain below the defined competence levels which limits their transition and uptake of STEM subjects and other higher-level training.
- x) **Uganda has one of the youngest and fastest-growing populations in the world and among the top four (4) globally.** The implication of this youthful population is that Uganda will benefit from the demographic dividend if enough investment in improving the quality of human capital is undertaken.
- xi) **The idle youth who are Neither in Employment nor in Education or Training (NEETs) are estimated at 46.7% (2019) and this present a substantial hurdle for the achievement of the demographic dividend.** Although the trend of the NEETs declined by 2 percentage points from 2016/17, the number is still high and worrying. Policy actions should be directed towards reinforcing the labour market participation as well as education and training especially of the youths.
- xii) **The proportion of working age population that is outside the labourforce (neither employed nor unemployed) stands at 47% (8.9 Million) in 2019.** The major categories of those under outside the labourforce are: discouraged workers (49.5%) and contributing family workers (31.2%), while fulltime students total to 6.5%. This explains the declining contribution of labour in the national output (GDP) currently estimated at 37% as compared to capital (51%) as factors of production.



- xiii) **The quality of jobs in Uganda remains low, with 78% of the labour force engaged in vulnerable employment.** Most jobs in the country are characterized by low pay and job insecurity which remains a strong hindrance to the country's jobs transformation agenda. In addition, the country has registered an impressive economic growth over the last three decades, but this growth has not resulted into creation of adequate jobs. The implication of this situation is that, economic growth in Uganda is not providing adequate job growth. This, therefore, calls for deliberate employment planning as opposed to the narrative that employment will happen by default as the country pursues economic growth agenda.
- xiv) **Uganda has one of the highest rates of school dropout rates, especially at the primary school level in Africa.** The high dropout rate is attributed to poverty and high out of pocket expenditure (57%), education-related costs and inadequate learning infrastructure. Therefore, further efforts need to be geared towards enforcing student retention in school and also putting the necessary requirements for such labour force to fit well in the current labour market.
- xv) **There is a weak alignment of education and training financing to the human resource development needs of the country.** There is no framework that links the human resource and skills development needs of the country to education financing including loans and scholarships from the government, development partners, and non-state actors. This partly explains the high number of people outside the labourforce, continuing unemployment and underemployment of Ugandans especially the youths, with many being forced into non-productive and non-decent work as a means of survival. It is, therefore, necessary to realign government financing, awarding government scholarships and grant students loans under the current students' loan scheme based on qualifications and skills in shortage as identified in this 5-year NHRDP and the annual scarce skills report.
- xvi) **Low enrollment in technical training institutions occasioned by increased enrollment into degree-awarding institutions.** Artisans (skilled craft workers) are in short supply in the country and enrollment in BTVET institutions remains below-installed capacity. This does not rhyme with the human resource skills needs of the country where more technicians are required. This is mainly due to the absence of a harmonized approach of linking education and training institutions' outcomes to the development priorities of the country and the negative mindset on BTVET programmes.
- xvii) **Absence of a functional national labour statistics framework to guide the collection of regular labour market statistics and information.** As a result, labour market statistics are collected intermittently leading to lack of timely data and information to inform and monitor job creation efforts and forecasting the human resource needs of the country.
- xviii) **Continuing skills and education qualifications mismatches and gaps between what the labour market demands and what the education and training institutions produce.** About 60% of Uganda's labour force has low levels of educational attainment



than what is demanded in the labour market. The big concern is that the largest share of the labour force is dominated by those with some primary levels. The average education attainment of Uganda's labour force is less than the average labour market requirement. This kind of labour force experiences a big challenge in terms of being absorbed in the labour market without the necessary skills and such individuals dominate the self-employment and low paying jobs. This is an indicative of increased risk of unemployment, underemployment, and job insecurity.



CHAPTER THREE

STRATEGIC DIRECTION FOR THE NATIONAL HUMAN RESOURCE DEVELOPMENT PLAN (2020-2025)

3.1 INTRODUCTION

Uganda’s development agenda for the next five years (2020-2025) focuses on sustainable industrialization for inclusive growth, employment, and wealth creation based on a programme-based approach to planning and budgeting. Within the national agenda, this plan addresses human resources development issues as a fundamental and opportunity factor to enhanced production and productivity across all sectors and programmes of the economy. This will ultimately turn Uganda’s human resources into human capital along the human capital cycle through proper coordination with all stakeholders. Over the next 5 years, the country intends to focus on rationalizing human resource development policies, systems and structures. The stock of available skills guides this, skills demand and supply as well as the future skills projection so that Ugandans not only take advantage of a rapidly changing global environment but also participate in it actively.

3.2 THEME, GOAL, AND OBJECTIVES OF THE NHRD PLAN

3.2.1 The Theme of the National Human Resource Development Plan

The theme of this plan is “Positioning Uganda’s Human Resources to deliver the industrialization agenda for inclusive growth, employment and wealth creation.”

3.2.2 The Goal of the NHRD PLAN

The goal of this Plan is “Increased stock of knowledgeable, skilled and productive Human Resources in Uganda.”

3.3 STRATEGIC THRUST OF THE NHRD PLAN

The National Human Resource Development Plan (NHRDP) is conceptualized around the augments of the Human Capital Development Value Chain (HCD-VC). The HCD-VC is an approach that focuses on building a well-balanced human resource that is educated, appropriately skilled, and healthy in line with the socio-economic transformation agenda of the country. The HCD-VC postulates that the accumulation of human capital contributes to the growth process directly by augmenting labour with skills and attitudes in the production process. Therefore, in the context of this plan, the development of a well-balanced human resource that is educated, properly skilled, and healthy with good values and attitudes will focus on the different stages of the human capital lifecycle.

3.4 OBJECTIVES OF THE NHRD PLAN

The NHRDP has four (4) strategic objectives prioritized to position Uganda’s human resources to take a centre stage in the industrialization agenda for inclusive growth and employment creation. These include:



- i) Identify the critical education and skills gaps for employment and employability in the country's existing and emerging economic sectors and activities.
- ii) Review and determine the appropriateness of Uganda's education and training system in addressing the country's current and projected skills mismatches and gaps.
- iii) Assess the comprehensiveness and frequency of labour market data and information management in Uganda.
- iv) Appraise the existing coordination and institutional structure for Uganda's Human Resource Planning and Development.

3.5 STRATEGIC INTERVENTION OF THE NHRD PLAN

This plan prioritizes four (4) strategic interventions to provide nationals with the necessary skills to meet current and future job demands. These include:

- i) Address the critical education and skills gaps to meet the current and projected HR needs of the country.
- ii) Streamline national education and training system to meet the current and projected education and training needs of the country.
- iii) Establish a framework for timely production and analysis of labour market statistics to support formulation and monitoring job creation efforts and projection of HR needs of the country.
- iv) Streamline the coordination and institutional framework for Human Resource Planning and Development in line with the national development agenda.

3.6 NATIONAL HUMAN RESOURCE DEVELOPMENT STRATEGIC PRIORITIES

The strategic focus areas in this 5-year NHRD Plan are intended to guide the budgetary allocation towards the prioritized interventions. The focus areas by intervention are articulated as follows:

a) Address the critical education and skills gaps to meet the current and projected HR needs at national and global levels. In the context of this plan, the priorities under this intervention include:

- i) **Produce and publish national scarce skills and occupation report to highlight critical scarce qualifications and skills needs in the country every after two years.** The report aims to inform, inter alia: human resource planning and development; resource allocation and prioritization of development of critical skills; the development of relevant qualifications programmes and curricula review and development; and international recruitment strategies.
- ii) **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/manpower at every point in time.** The Uganda National Talent Register (UNTR) should align with the international standard classification of occupations and



education (ISCO & ISCED). In addition, it should be integrated with the Oil and Gas Talent Register as well as other relevant information systems such as the Teacher Management System, among others.

- iii) **Develop a national programme for identifying and harmonizing support (domestic and foreign) towards education and skills development.** This will help to equip Ugandans with skills relevant to national development identified as scarce in the NHRDP and the scarce skills report.
- iv) **Establish and/or strengthen centres of excellence for skills development at national and district/regional levels tailored to the country's development agenda.** For example, centres of excellence in Tourism, Agriculture, Manufacturing, ICT, Oil and Gas, Health, and STI, among others. These centers of excellence should drive rapid skills development and re-skilling Uganda's labour force to reduce unemployment and underemployment levels.
- v) **Strengthen the standardization and certification programme to make Uganda's labour force employable and competitive.** The Directorate of Industrial Training (DIT) should develop, popularise, and implement the Uganda Vocational Qualifications Framework (UVQF) to assess and award certification and accreditation to Uganda's labour force to be employed in targeted sectors and projects. Where necessary, DIT should twin with internationally accredited Institutions to certify Ugandan workers to meet international standards.
- vi) **Develop, popularise, and implement the Uganda Vocational Qualifications Framework (UVQF).** This will help to produce relevant, highly competitive skills, and internationally competitive skills and institute mechanisms for the recognition of prior learning and wider certification of the informal sector competencies.
- vii) **Re-orient the excess labour supply** (the unemployed and those whose qualifications fall in the occupations with excess labour supply) by reskilling them and certifying their skills to take up job opportunities in fields where labour demand exceeds labour supply.
- viii) **Incentivize skills development in the private sector.** This will help enhance domestic organizations' competitiveness and improve national productivity (for example, operationalize the skills development levy and tax incentives).
- ix) **Undertake skilling, reskilling/retooling of Uganda's labour force in line with skills demand.** Ugandans, especially the youths should be reskilled/retooled in line with the skills demand to reduce the skills mismatch, reduce unemployment and increase the transition of NEETS into gainful employment both locally and internationally.
- x) **Review work permit guidelines to align issuance of work permits with the skills status report and the NHRDP.** This will enable proper granting of work permits and waivers of work permit fees to foreign workers in line with the skills identified as scarce as contained in the national scarce report and agreeable by all relevant stakeholders.



- xi) Attract scarce skills in the country especially for skills that are in short supply yet require long-term training for building local capacities.

b) Streamline national the education and training system to meet the current and projected education and training needs of the country. In the context of this plan, the priorities under this intervention include:

- i) **Decommercialize education and training services to reduce the unnecessary competition especially among primary and secondary schools.** The commercialization of education has completely altered the purpose of education and this has led to loss of value of education and promoting cram work with limited child creativity.
- ii) **Identify, develop and implement new education and training programmes and curriculum to meet the qualification and skills shortages with no training available in the country in line with the NHRDP/ Scarce Skills Report.**
- iii) **Centralize admission to BTVET and tertiary institutions to link BTVET and tertiary education** to the national development priorities.
- iv) **Link financing for education and training to scarce qualifications and skills needs** of the country relevant to national priorities.
- v) **Award government scholarships and grant students' loans under the current student's loan scheme based on qualifications and skills in shortage** as identified in this plan and as contained in the national scarce skills list.
- vi) **Improve the capitation grant¹⁴ to effectively deliver the required education services and this should take regard to locational differences.** This is because, the unit cost of education is higher in urban compared to rural areas.
- vii) **Establish a Public-private partnership to offer relevant and high-quality BTVET programmes.** The partnership should cover various areas, such as curriculum development, faculty support, testing resources, internship support, and financial support. Cost-sharing programmes would minimize cost and ensure private sector commitment towards developing more realistic training programmes
- viii) **Integrate soft skills that support modern work in training programmes.** The critical soft skills include communication, computer literacy, customer care, problem-solving, work attitudes, and ethics. These skills should be incorporated into the formal education curriculum.
- ix) **Improve teachers' welfare to reduce the opportunity cost of teaching as a career and restore teaching as a prestigious profession.** By drastically changing the way teachers are taught and remunerated and restoring teaching as a prestigious profession, it will attract the best brains into teaching and thus better education outcomes.

¹⁴ The UPE evaluation by NPA showed that, the current capitation of 10,000-14,000 Uganda shillings is too low to deliver meaningful results. Accordingly, the UPE evaluation by NPA recommended a capitation of 59,500 and 63,500 Uganda shillings for rural and urban schools respectively



- x) **Build capacity of training institutions to provide relevant education and training considering the emerging technological advancement and changing labour market needs** (such as the 3rd and 4th industrial revolution). The education and training institutions should be re-oriented and capacitated to adapt to the changing labour market situations.
- xi) **Revise the framework/criteria for development and approval of new courses offered by education and training institutions** to include other key stakeholders such as the Ministry of Public Service, NPA, NCDC, Private sector umbrella bodies, among others. This will resolve the duplication of courses offered by training institutions and ensure development of programmes in line with national priorities.
- xii) **Balance the production and development of professionals across all priority professions** as identified in the National Scarce Skills Report/NHRD Plan.
- xiii) **Establish and fully equip vocational and technical institutions in each sub-county** and attract youths towards skills development to increase the number of technicians produced.
- xiv) **Develop and operationalize a publicisation campaign to tackle the negative mindset against vocation and technical training, raise BTVET's brand** and identity to attract youths to BTVET education to increase the number of technicians produced.
- xv) **Undertake effective investments in physical education and sports following strategic planning** and a revised policy framework.
- xvi) **Promote partnerships between education and training providers and employers** to increase the integration of work-based training into the education and training system.
- xvii) **Strengthen partnerships between education and training providers and the private sector** for the development of applied research and business incubators.
- xviii) **Provide the required physical infrastructure, instruction materials and human resources at all levels of Education and Training** including Special Needs Education.
- xix) **Promote partnerships between primary and secondary schools with tertiary institutions and employers for career guidance** at a young age to increase students' innovativeness, creativity, and participation in higher education.
- xx) **Develop and implement lifelong learning programmes targeting both the employed and the unemployed persons** to pursue skills training in fields that are in short supply as identified in this plan as well as emerging skills need due to structural and technological shifts.
- xxi) **Strengthen and integrate entrepreneurship education and training at all levels of education** to ensure that learners are equipped with relevant business development skills including financial literacy, bookkeeping, proposal writing, sales and marketing as well as standardization and quality management.
- xxii) **Support and guide institutions of higher learning to design and implement education programmes** that are relevant to the national skills requirements.



- xxiii) **Integrate career guidance and counselling in all levels of education** to guide students in the selection of their career paths.
- xxiv) **Support partnerships/twinning between international and local universities and other institutions of higher learning** especially in the areas of research, pedagogy, curriculum and staff, and student development
- xxv) **Strengthen general education at pre-primary, primary, secondary and tertiary levels** to enhance learner's ability to think critically, develop communication skills and stimulate their capacities for creative and innovative thinking.
- xxvi) **Promote regular reviews of curricula to accommodate the needs of the private sector and industrial dynamics** at all levels of education and training to address the skills mismatches.
- xxvii) **Introduce TVET training as part of the one-year compulsory National Service Programme** immediately after Advanced level of education before enrolling for further education.
- xxviii) **Operationalize the internship and apprenticeship framework** and coordinate the implementation of workplace-based learning and initiatives.

c) Establish a framework for timely production and analysis of labour market statistics to support formulation and monitoring job creation efforts and projection of HR needs in the country. The priorities under this intervention include:

- i) **Develop and operationalize the National Labour Market Statistics Framework for Uganda.** This framework will guide the type and frequency of labour market data and information to be collected. The Framework for National Labour Market Statistics for Uganda will define which labour statistics collection tools can be strengthened and integrated into the national statistics systems for the country and provide for mechanisms on leveraging administrative data.
- ii) **Strengthen the collection, management and reporting of administrative data.** With the rising cost of surveys and census, the UBOS should leverage on the wide spectrum of administrative data and information collected by different institutions. This will increase the frequency of reporting on key labour market indicators such as labour, employment, wage and earnings among others.
- iii) **Undertake the administration of regular labour and employment surveys.** The National Manpower Survey (NMS) should be conducted every five years as provided in the approved NHRDP Framework. This will provide up-to-date information and a better understanding of the country's human resource capacity, utilization, and needs. In addition, the National Labour Force Survey (NLFS) should be undertaken on a year-to-year basis except for a year when the Uganda National Household survey is to be conducted. An independent National LFS is the backbone for labour statistics in the country to provide insights about the performance of the economy regarding labour and employment.



- iv) **Design and implement a capacity development programme for strengthening collection, analysis, and reporting of labour market statistics.** This will help to inform planning, formulation, implementation, and monitoring of active labour market policies (ALMP). The lack of expertise in data analysis of labour force surveys is a major drawback in the production of labour market statistics in Uganda. As a result, the data collected are not fully analyzed, and sometimes not analyzed at all. This thus necessitates the need to build and strengthen the capacity of key stakeholders to undertake thorough and timely labour market data analysis.
- v) **Establish a comprehensive and functional Labour Market Information and Analysis System (LMIAS).** To date, Uganda lacks a comprehensive national LMIAS as a reference database in place that stores selected key labour market indicators and other relevant labour market information and its meta-information in one place that can be accessible by all key users of information. The LMIAS should provide quantitative and qualitative information and intelligence on the labour market, which can assist labour market agents in making informed plans, choices, and decisions. LMIAS is intended to assist the government to inform labour market policies concerning: closing the skills gaps; evaluating results of labour-related policies and programmes and providing key indicators on demand and supply of labour in general.
- vi) **Develop and regularly update a robust web-based system for human resource projections and tracking.** This will aid comprehensive skill analysis and determine the national skills gaps to guide the development of local capacities and award of work permits to foreign workers.

d) Streamline the coordination and institutional framework for Human Resource Planning and Development in line with the national development agenda. In the context of this plan, the priorities under this intervention include:

- i) **Operationalize and strengthen the Policy Implementation Coordination Committee under the Office of the Prime Minister to also handle Human Resource Development Planning issues.** To avoid duplication of efforts, this committee should provide policy and strategic guidance and oversight on Human Resource Development Planning activities in line with the approved National Human Resource Development Planning Framework (*See coordination pyramid in annex 4*).
- ii) **Operationalize and strengthen the Technical Implementation Coordination Committee under the office of the prime minister to also handle Human Resource Development Planning issues.** This should have representation of key accounting officers from LGs, MDAs, development partners, civil society, non-governmental organisation (NGOs), faith-based organisation (FBOs), the private sector, academia and selected research institutions to deliberate on HRPD issues. This committee should advise the Policy Implementation Coordination Committee on strategic matters relating to HRPD in the country. The approved National Human Resource Development Planning Framework provides clear roles of both the Policy Implementation Coordination and the Technical Implementation Coordination Committees (*See coordination pyramid in annex 4*).



- iii) **Establish and operationalize Programme Skills Coordination Committees (PSCCs).** The Programme Skills Coordination Committees (PSCCs) will consist of working groups of technical officers that will drive the development of the demanded skills in the respective programmes and will bring together all the relevant stakeholders for workforce development at programme level. The PSCCs will be an advisory, membership-based, and non-statutory body with representatives from the public and private sectors. The PSCCs will advise on skills prioritization at the program level based on skills needs identified. The PSCCs will produce regular reports on how the education and training institutions adequately address the identified skills needs in the program (*See coordination pyramid in annex 4*).
- iv) **Fast-track the development of the MDA Strategic Plans with an integrated HRD Planning approach to determine the skills needs and gaps.** These skills gaps should be aligned to the national skills gaps identified in the NDP III and the NHRDP and line with the ongoing and projected investments and projects. The required interventions should accompany this to bridge the identified skills gap in the MDAs. NPA should also develop the Human Resource Development Planning Guidelines for MDAs and LGs to support them in developing their respective HRD Plans.
- v) **Regulate and facilitate the movement of people in and out of the country.** This will help to keep track of stock of the country's human resources and continue to ensure and maintain internal security, peace, and stability to provide a conducive environment for the country's human resources to produce at full potential
- vi) **Review and strengthen the policy and legal framework for Uganda's labour market.** This will help to enhance and streamline its functionality (Employment Act and Policy, OSH Act, Public service Act, Public service training policy, LG Capacity Building Policy, among others).
- vii) **Harmonize the Policy, Legal and Institutional Framework** for the country's human resource planning and development.
- viii) **Rationalize employment and remuneration in the public sector** to ensure harmonization of wages and benefits as well as career progression.
- ix) **Develop a science and non-science-based education and occupation classifications framework.**
- x) **Develop the Human Resource Development Planning Guidelines** to support MDAs/LGs in developing their respective HRD Plans.
- xi) **Develop a National Employment Strategy and Action Plan** with specific targets for employment generation and key outputs.
- xii) **Coordinate the implementation of workplace-based learning and coordinate initiatives** to ensure that soft skills and attitude building is integrated with workplaces to enhance labour productivity.
- xiii) **Coordinate the implementation of Human Resource (HR) priority programs and projects within the MTEF** and undertake to monitor of HR planning and development initiatives.



- xiv) **Mobilize and solicit technical and financial support for the country's HR development programmes and strategies** to achieve the desired development goals and targets.
- xv) **Review, develop and strengthen the policy, legal and regulatory framework for labour externalization** to tap into the global employment opportunities (e.g., Externalization of labour Bill/Act, Policy, Capacity Development, MoUs, among others).
- xvi) **Negotiate for training opportunities for employees in the public and private sectors** and provide the necessary support for Ugandans to undertake training abroad.
- xvii) **Fast-track the Implementation of Provisions of Employment (Recruitment of Uganda Migrant Workers) Regulations, 2021**, including the deployment of labour attaches in Saudi Arabia, Qatar, and United Arab Emirates.
- xviii) **Regularly review and provide guidance on implementing the EAC Common Market Protocol** which Uganda ratified in 2010, concerning free movement of labour, employment, and human resource development.

3.7 CONCLUSION

The strategic direction of the 5-year NHRDP has primarily focused on identifying ways of addressing the significant challenges facing human resource development in Uganda along the human capital development value chain. This has been undertaken through the four strategic pillars (intervention process) under the categories of:

- i) Prioritization of critical education and skills within the labour market framework,
- ii) Streamline the education and training system along the life cycle and lifelong approach,
- iii) Strengthening Labour Market Information, data management, system and framework, and
- iv) Institutional and coordination framework to ensure a harmonized approach to human resource planning and development.

Each pillar provides a comprehensive list of priority areas that, if implemented, will harness the potential of turning human resources into human capital to drive Uganda's industrialization agenda adequately. The subsequent chapter breaks down the qualifications and skills gaps within the NDP III programmes and provides HRD objectives and interventions to address the skills needs at the programme level.



CHAPTER FOUR PROGRAMME HUMAN RESOURCE NEEDS 2020-2025

4.1 INTRODUCTION

To analyze the country's critical education, qualification, and skills needs for the next 5 years, a macro model for human resource projections was developed. The model utilizes majorly the NMS data and the UNHS data collected by UBOS. The analysis is done within the frameworks of the International Standards Classification of Occupations (ISCO) and the UNESCO International Standard Classification of Education (ISCED). As a result, the programme's human resource projections are pointers to the key skills/education qualifications needs of the country in the next 5-10 years. Furthermore, the programme HR needs have been aligned to the projected investments and developments that will take place in the country over the next 5-10 years period within the rolling expenditure framework.

The occupation and skills gaps presented in this Plan are indicative but not the actual reflection of the labour market situation and aimed at providing a training direction based on the available data and country's social-economic trajectory. Going forward, quantifying the human resources needs of the country both in terms of quality and quantity will require collection of relevant, up-to date and disaggregated labour market information and data, as well as stakeholder engagement. Thus, the efficiency and precision of the macro model for HR projection is expected to improve subsequently.

To make the HR projections more representative of the country's labour market situation, localization of the model is being fast-tracked together with development of the Uganda Standard Classification of Occupations (USCO) framework. This follows a step-by-step coding of the new occupations at levels five (5) and six (6), beyond the conventional level-4 occupations based on ISCO. The development USCO framework, based on international best practices especially from South Africa will go a long way in localization of occupations and skills gaps. Therefore, NPA will conduct a wide stakeholder consultation to support finalization and publication of the USCO framework.

The estimated skills and occupational gaps as presented in all the programmes illustrate the difference between the occupational demand and occupational supply. The surplus occupations (negative values) imply that the supply for a given occupation outweighs its demand. On the other hand, the deficit occupations (positive value) indicates that the demand for a given occupation outweighs its supply. This interpretation cuts across all the occupational gaps across all the national development programmes as presented in this plan.

4.2 PROGRAMME HR REQUIREMENTS BETWEEN 2020-2025

In this plan, the key priority skills that are relevant for successful implementation of the proposed programmes in the third National Development Plan (NDPIII) are articulated. The skills gaps are presented for the following national development programmes with proposed interventions to close them:



1. Human Capital Development
2. Agro-Industrialization
3. Mineral Development
4. Tourism Development
5. Digital Transformation
6. Innovation, Technology Development, and Transfer
7. Integrated Transport Infrastructure and Services
8. Sustainable Housing and Urban development
9. Sustainable Energy Development
10. Natural Resources, Environment, Climate Change, Land and Water Management
11. Sustainable Development of Petroleum Resources
12. Manufacturing
13. Governance and Security
14. Public Sector Transformation
15. Community Mobilization and Mindset Change

The skills need for three national development programmes, namely, regional development, Private Sector Development, and Development Plan Implementation are not provided in this plan. This is because the skills need for these programmes are cross-cutting and are integrated in the skills needs articulation for the 15 programmes listed above. The effort under the human resource programme approach is to link the human resource needs to the national development plans priorities as set in NDPIII.



HUMAN CAPITAL DEVELOPMENT





4.2.1 Human Capital Development Programme

4.2.1.1 Introduction

A country that does not invest in its human capital mortgages its future. Well-educated, enlightened with requisite skills and healthy human resources are essential to facilitate economic development of the country. The availability of appropriate and adequate human resource facilitates increased production, productivity and technological growth, among other areas. Investing early in health, nutrition, early childhood development and basic education helps set the foundation to the development of the required human capital for the economy.

The Uganda Vision 2040 identifies human capital development as one of the fundamentals for accelerating the country's transformation agenda and opportunity for every individual to fulfill their desired potential and live a life of dignity. Several issues, however, are still affecting human capital development with diverse effects on low labour production and productivity mainly due to:

- (i) weak foundation for human resource development along the life cycle value chain;
- (ii) lack of appropriate knowledge skills and attitudes;
- (iii) poor population health and safety;
- (iv) poor population management;
- (v) limited social protection; and
- (vi) lack of institutionalized and integrated human resource planning and development within economic development to support job creation.

No country has achieved sustainable economic development without substantial investment in human capital. Education and skills development enrich people's understanding of themselves and the world. It improves the quality of their lives and leads to broad social benefits to individuals and society. Education and skills development enhance people's productivity, creativity and innovativeness at the same time promotes entrepreneurship and technological advances. Besides, it plays a very crucial role in securing economic and social progress and improvements in income distribution. Human capital development is one of the two major pillars of this plan together with employment creation.

There are still significant shortages of skills in priority fields of human capital development in Uganda. Some of the education and skills gaps need to be urgently addressed while others will require clear strategies within the overall national development framework. Among the critical skills shortages include professionals with skills in education and training to support societal knowledge development at all levels. In addition, there are declining staffing levels in health facilities, and increasing critical professional category given the population dynamics at the different stages of the life cycle. It is, therefore, important that the human capital programme provides appropriate strategies to support the attainment of the required qualified human resources to offer services to the country.

NDP III through the human capital development programme supports efforts towards improvements of productivity of labour for increased competitiveness and better quality



of life for all. The end results expected include, among others, increased proportion of labour force transiting to gainful employment; increased years of schooling; improved child and maternal outcomes; increased life expectancy; increased access to safe and clean water and sanitation; and increased access by population to social protection. The successful implementation of this programme is partly premised on key human resource requirements detailed in table 6 as guided by the human capital standard indicators based on international specifications in Tables 4 and 5.

4.2.1.2 Guiding principles in the estimation of Human Capital Development Programme HR needs

In estimating the requirements, the gaps and future trends in human capital programme, standard indicator of education and health sector have been used. This formed the basis for the strategic intervention for the next five years. The internationally recommended health standards, the recommended education and training standards as well as the existing domestic/local situation guided in the modelling. As detailed in Tables 4 and 5 and in line with NDPIII, the efforts are towards increasing human resources both in numbers and quality for effective service delivery in the face of an increasing population.

Table 4: Guiding assumptions for estimation of health workforce needs

Health Workforce standards	Recommended International Standard	Uganda' Status
Doctor/ Physicians to population ratio	1:1,000	1:25 000
Dentists to the population	1:7,500	1:175,000
Nurse-Patient Ratio	25:10,000	1:11 000
Nursing and midwifery personnel per 10,000 population	40:10,000	0.65:10,000
Doctor-to-patient ratio	1:1,000	1:25 000
Skilled health workers (Physicians and Nurses/ Midwives) per 10,000 Population	2.3:10,000	N/A
Doctor-to-patient ratio	1:1,000	1:25 000
Ratio of midwife to mother	1:2	1:16
Doctor-nurse ratio	1:5	N/A

Source: MoH, 2020 & WHO

Table 5: Guiding assumptions for estimation of teachers needs

Assumptions for teachers needs estimation				
ECD and Primary level Assumptions	2010	2015	2020	2025
Gross Intake Rate (GIR) for Primary one	158 %	145%	125%	110%
Primary Completion Rate (PCR)	57%	53%	60%	66.8%
Share of Repeaters (SoR)	11%	8%	5%	2%
Share of Enrollment in Private schools (SEP)	15.5%	17.5%	20%	24.5%
Pupil-Teacher Ratio (PTR) in Government schools	54:1	43:1	40:1	38:1
Pupil-Teacher Ratio (PTR) in private schools	26:1	29:1	33:1	35:1
Teacher Attrition Rate (TAR) in Government schools	4.0%	4.5%	5.0%	6.0%



Assumptions for teachers needs estimation				
Teacher Attrition Rate (TAR) in private schools	4.5%	5.1%	5.8%	6.5%
The official primary school-aged population (<i>Pop₆₋₁₂</i>)	6,538,950	7,544,200	8,186,500	9,301,700
Lower Secondary Assumptions	2010	2015	2020	2025
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	2010	2015	2020	2025
Share of Enrollment in Private schools (SEP)	62%	60%	58%	55%
Students-Teacher Ratio (STR)	28	26.5	20	25
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	2010	2015	2020	2025
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 Enrollment 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 BTVET Assumptions	2010	2015	2020	2025
Enrollment (% of Ordinary Secondary)	0.90%	1.4%	1.8%	2.20%
Enrollment (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 BTVET Key Indicators	2010	2015	2020	2025
Enrollment (% of Advanced Secondary)	6.4%	7.0%	7.8%	8.20%
Enrollment (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	2010	2015	2020	2025
Gross intake rate	18%	24%	29%	33%
Gross Enrolment Rate	7.10%	7.80%	8.20%	8.50%
University Enrollment (Number)	95,563	141,580	176,085	258,726
Pupil-Teacher Ratio	18.5	20.8	25.4	30
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)	46.50%	48%	50.10%	55.20%

Source: MoES, 2020 and NPA Projections



4.2.1.3 Major Skills and occupation gaps for HCD Program

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 as well as 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, education and training professions among others.

Further, the population of older persons (60+ years) that will need critical health care is projected to grow up 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; 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; Family Physicians, among others.

In addition, the population of women of reproductive age (15-49 years) is projected to grow to 12.101 million by 2025 and up to 14.071 million by 2030 up from 10.224 million in 2020. This population category requires adequate attention on the supply of skilled health workers especially nurses and midwives. Therefore, the manpower demands will rise for gynecologists and obstetricians; anaesthetists; emergency medicine specialists; ophthalmologists; paediatricians; and general medicine specialists, among others. Detailed occupation and skills need for the Human Capital Development Programme required over the next five years are highlighted in Table 6.

Table 6: Estimated 5-year occupation and skills gaps for HCD Program

Occupations	Estimated 5-Year Gaps				
	2020/2021	2021/2022	2022/2023	2023/2024	2024/2025
Education Managers					
School Principal (Including BTVET)	43	51	60	69	79
Faculty/ College Head	52	62	72	83	95
District Education Manager	86	103	120	139	159
Educational Rector	29	34	40	46	53
Educational Registrar	29	34	40	46	53
Departmental Head	46	55	64	74	85
University and Higher Education Teachers					
University Lecturer	98	144	193	245	299



Occupations	Estimated 5-Year Gaps				
	2020/2021	2021/2022	2022/2023	2023/2024	2024/2025
University Tutor	33	48	64	82	100
Vocational Education Teachers					
TVET Educator	575	642	716	795	879
Adult Education Teacher	256	285	318	353	391
Community Polytechs	447	499	557	618	684
Secondary & Primary school Teachers					
Arts Secondary Teachers	(8,536)	(9,469)	(10,447)	(11,461)	(12,509)
Science Secondary Teachers	5,691	6,313	6,964	7,641	8,339
Primary School Teachers	(17,572)	(20,583)	(23,910)	(27,501)	(31,327)
Early Childhood Educators	3,171	3,793	4,478	5,214	5,997
Specialist Medical Practitioners					
Anesthetists	69	75	80	86	92
Cardiologist	62	67	72	77	82
Emergency Medicine Specialist	44	48	51	55	59
Obstetrician and Gynaecologists	74	80	86	93	99
Ophthalmologist	102	111	119	128	137
Paediatrician	79	86	93	99	106
Pathologist	62	67	72	77	82
Psychiatrist	51	55	60	64	68
Radiologist	46	50	54	57	61
General Medicine Specialist Physician	88	96	103	110	118
Surgeon	58	63	68	73	78
Forensic Pathologist	46	50	54	57	61
Radiation Oncologist	42	46	49	53	57
Nuclear Medicine Specialist	74	80	86	93	99
Family Physician	56	61	66	71	75
Neurologist	53	57	62	66	71
Clinical Pharmacologist	85	92	99	106	113
Medical Geneticist	62	67	72	77	82
Plastic and Reconstructive Surgeon	88	96	103	110	118
Urologist	71	76	82	88	94
Public Health Specialist	35	38	41	44	47
Paediatrics Surgeon	44	48	51	55	59
Orthopaedic Surgeon	26	29	31	33	35
Neurosurgeon	32	34	37	40	42
Otorhinolaryngologist	88	96	103	110	118
Dermatologist	53	57	62	66	71
Microbiologist	23	25	27	29	31
Physicians	53	57	62	66	71
ENT Specialists	35	38	41	44	47
Anatomist	23	25	27	29	31
Medical illustration professionals	35	38	41	44	47
Nursing and Allied Health Professionals					
Registered Nurse (Surgical)					



Occupations	Estimated 5-Year Gaps				
	2020/2021	2021/2022	2022/2023	2023/2024	2024/2025
Oncology Nurse	10	11	13	16	21
Obstetric Nurse	11	15	14	17	16
Transplant Nurse	9	11	11	12	14
Plastic Surgery Nurse	5	7	8	10	12
Cardiac Cath Lab Nurse	12	12	13	13	14
Nurse Anesthetist	21	21	25	25	26
Otorhinolaryngology Nurse	14	13	15	17	18
Perianesthesia Nurse	6	7	8	9	11
Registered Nurse (Operating theatre)					
Anaesthetic Nurse	25	28	26	29	31
Recovery Nurse	33	35	35	38	42
Operating Theatre Nurse	21	21	25	25	26
Operating Room Nurse	35	38	44	51	55
Registered Nurse (Mental Health)					
Child and Adolescence Mental Health Nurse	18	22	26	30	35
Psychogeriatric Care Nurse	14	13	15	17	18
Psychiatric Nurse	35	38	44	51	55
Psychopaedic Nurse	14	13	15	17	18
Psychiatric Rehabilitation Nurse	7	8	8	9	12
Drug and Alcohol Nurse	21	21	25	25	26
Registered Nurse (Critical Care and Emergency)					
Emergency / Trauma Nurse	12	12	13	13	14
Coronary Care Unit Nurse	5	8	9	10	12
Intensive Care Nurse	35	38	44	51	55
Acute Care Nurse	21	21	25	25	26
Registered Nurse (Developmental Disability)					
Registered Mental Retardation Nurse	14	13	15	17	18
Palliative Care Nurse	35	38	44	51	55
Rehabilitation Nurse	18	22	26	30	35
Orthopaedic Nurse	7	8	8	9	12
Registered Nurse (Medical)					
Prison Nurse	25	25	28	33	35
Nursing Prison Officer	10	15	20	25	30
Hospital Nurse	30	33	37	41	43
General Nurse	18	22	26	30	35
Practice Nurse	10	15	20	25	30
Registered Compressive Nurse	14	13	15	17	18



Occupations	Estimated 5-Year Gaps				
	2020/2021	2021/2022	2022/2023	2023/2024	2024/2025
Registered Nurse (Community Health)					
Health Education and Promotion Nurse	14	13	15	17	18
Clinic Nurse	35	38	44	51	55
Remote / Rural Area Nurse	18	22	26	30	35
Occupational Health Nurse	7	8	8	9	12
Industrial / Factory Nurse	30	33	37	41	43
Nurse Clinician	16	22	27	30	35
Primary Health Care Nurse	10	15	20	25	30
Registered Psychiatric	25	25	28	33	35
Enrolled Nurses	(140)	(160)	(180)	(200)	(230)
Enrolled Psychiatric	18	21	25	29	32
Allied Health Professionals					
Allied health professional (higher diploma)	(82)	(86)	(91)	(94)	(97)
Allied health professional (diploma)	(292)	(286)	(291)	(294)	(297)
Allied health professional (certificate)	(382)	(386)	(391)	(394)	(397)
Allied health diagnostic	82	86	91	94	97
Other allied health associate professionals	(242)	(246)	(251)	(254)	(257)
Midwives					
Registered Midwives	35	38	42	44	45
Enrolled Midwives	(181)	(189)	(192)	(195)	(199)
Traditional/Lay midwives	(220)	(232)	(243)	(254)	(261)
Dentists					
Dentists	30	29	33	38	51
Dental Technologist	18	21	26	30	36
Oral Hygienist	71	77	83	90	96
Physiotherapists	108	120	132	144	155
Medical Imaging and Therapeutic Equipment Technicians					
Medical Diagnostic Radiographer	13	15	16	17	19
Medical Radiation Therapist	9	10	11	12	13
Nuclear Medicine Technologist	5	6	6	6	7
Sonographer	9	10	11	12	13
Anaesthetic Technician	12	13	14	15	16
Cardiac Technician	9	10	11	12	13
Operating Theatre Technician	7	8	8	9	10
Audiometrist	9	10	11	12	13
Dialysis Technician	7	8	8	9	10
Neurophysiological Technician	11	12	13	14	15
Renal Technician	8	8	9	10	11
Intensive Care Technician	5	6	6	7	7



Occupations	Estimated 5-Year Gaps				
	2020/2021	2021/2022	2022/2023	2023/2024	2024/2025
Orthopaedic Technician	5	5	6	6	7
Health Technical Support Officer	8	9	10	11	12
Medical Electronic Equipment Operator	8	8	9	10	11
Electroencephalographic Technician	9	10	11	12	13
Radiation Laboratory Technician	10	11	12	12	13
Orthotist or Prosthetist	7	8	8	9	10
Pulmonology Clinical Technologist	11	12	13	14	15
Reproductive Biology Clinical Technologist	9	10	11	12	13
Cardiothoracic Perfusion Clinical Technologist	11	12	13	14	15
Occupational Therapy Technician	8	8	9	10	11
Orientation and Mobility Practitioner	11	12	13	14	15
Medical Technician	564	613	665	721	779
Medical Technologist	376	409	444	481	519
Ambulance Workers					
Ambulance Officer/drivers	257	282	310	341	376
Intensive Care Ambulance Paramedic / Ambulance Paramedic	314	345	379	417	459

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

Regarding the population of primary school-going children (6-12 years), it is projected to grow to 9.301 million by 2025 and 10.369 million people by 2030 up from 8.186 million children in 2020. This, coupled with the effects of school closures due to the covid-19 pandemic, the need to have more teachers need not mention. Further, the population of teenagers who are of secondary school-going age (13-19 years) is projected to grow to 7.812 million by 2025 and up to 8.722 million by 2030 up from 7.136 million in 2020. In line with the government’s strategy of increasing: primary completion rate; transition rate from P7 to S1; survival rate from S1 to S4; as well as reducing: teacher attrition rate; teacher workload and the average number of students per stream, the country will need more District Education Managers; Educational Registrars; Departmental Heads; Adult Education Teachers; Early Childhood Educators; Primary School Teachers; Arts Secondary Teachers, and Science Secondary Teachers.

The NDP III provided interventional strategies under the human capital development programme. This is within the efforts of reducing the burden of communicable diseases, preventing and controlling non-communicable diseases, positioning Uganda as a medical tourism destination in the region as well as improving the functionality of the health system to deliver quality and affordable preventive, promotive, curative and palliative health care services requires proper futuristic planning to envision the quality and quantity of human resources that will be needed.

In addition, successful implementation of several core projects detailed below will require the availability of adequate and skilled human resources. For example; Multi-sectoral Community Health Promotion and Prevention Project; developing a Centre of Excellence for cardiovascular services; developing regional oncology centres in Gulu and



Mbarara; Basic Requirements and Minimum Standards (BRMS) for educational institutions; and Skills for Employment and Productivity, among others. Successful implementation of these projects will have implications for the type and calibre of human resources. Therefore, MDAs under this programme and LGs will require to prioritize training people in the above skills areas under their respective MDA and LG HR Development Plans over the next 5 years within the MTEF.

4.2.1.4 Human Resource Development Objectives for the HCD Programme

The goal of this programme is to develop skilled and competent human resources necessary to increase production and productivity of the population for increased competitiveness and better quality of life for all. The specific objectives of this programme are:

- (i) To align education and training with the changing needs of the labour market in line with the national development agenda
- (ii) To streamline the strategic planning and implementation of Human Capital Development priority programme interventions.
- (iii) To produce appropriate skilled and ethical labour force for the country.
- (iv) To fast-track the certification process of priority skills to international level in all the national development programmes
- (v) To institutionalize Human Resource Development planning among the MDAs within the Human Capital Development Programme

4.2.1.5 Specific interventions for the HCD Programme

- (i) Institutionalize training of ECD caregivers at public PTCs and enforce the regulatory and quality assurance system of ECD standards.
- (ii) Accelerate education and training of the urgently needed skills in strategic growth areas in all the national development programmes.
- (iii) Establish a Programme Skills Coordination Committees (PSCC) for the Human Capital Development Programme¹⁵. The Committees shall determine skills needs and skills standards of the programme.
- (iv) Each institution (MDAs) under the Human Capital Development Programme shall develop a 5-year Human Resource Development Plan in line with their strategic plan and MDA HRDP Guidelines.
- (v) Prioritization of the identified critical skills and education needs as well as soft skills requirements to meet the present and the future manpower needs within the Programme.
- (vi) Centralize and link higher education admissions and financing to the priority needs as identified in the NDPIII and in this Plan.

¹⁵ See Annex 3 for the roles of the Program Skills Coordination Committees.



- (vii) Mainstream a Dual Training System for TVET and university training such that training is institutional-based and work-based.
- (viii) Adopt and rollout a flexible demand driven TVET system.
- (ix) Internationalize TVET training by supporting technical colleges to gain international accreditation.
- (x) Fast-track international certification of skills available in the country to enhance the capacity of human resources.
- (xi) Develop a framework for institutionalizing talent identification, development, nurturing and professionalization.
- (xii) Streamline policy, legal and regulatory framework to unblock the education and training system to deliver the required human capital in the labour market.



AGRO-INDUSTRIALIZATION PROGRAMME





4.2.2 Agro-Industrialization Programme

4.2.2.1 Introduction

To date, agriculture remains a major source of livelihood to a big proportion of the population in Uganda. Most of the working population is engaged in agriculture, forestry, and fishing (65%). However, the potential of the agricultural sector to create gainful employment has yet to be fully harnessed. Agriculture's performance in terms of production and productivity has been unsatisfactory as 33% of the working population or 6.3 million people, and 31% of the youth, is still engaged in smallholder subsistence activities vulnerable to climatic conditions and price changes. The number of people employed in agriculture has increased over time, but labour productivity (output per worker) in agriculture is lower than the national average. National agricultural output has grown at only 2% annually over the last five years, compared to agricultural output growth of 3% to 5% in other EAC members, and 3.0% annual growth in Uganda's population over the same period. Therefore, raising agricultural productivity must be the cornerstone of a strategy for jobs and economic transformation in Uganda. This must be coupled with the faster movement of young workers from agriculture employment into higher productivity manufacturing and service jobs.

Over time, Uganda has created better jobs and higher labour incomes from agri-business, agro-processing, and food exports than wage jobs in the agricultural primary production. Large food manufacturing firms in Uganda have provided better-paid jobs than agricultural primary production. In 2018, about 362,000 Ugandans were employed in formal jobs in the food manufacturing and food and beverage services sectors. There are multiple promising trends for value addition and job creation in Uganda's agri-food sector; a booming domestic and regional demand for higher-value foods, dietary shifts into higher value and more processed foods, and increasing vertical integration of smallholders into agriculture value chains. The evidence suggests policies must concentrate initially on increasing opportunities on-farm, from subsistence to commercial farming, as well as encourage private investment in agriculture and agro-processing, providing public goods including infrastructure such as investment, research, and extension services. For agricultural production to increase, farmers should be equipped with key technical skills through modular and hands-on training for market-oriented production.

Agro-Industrialization thus offers a great opportunity for Uganda to increase household incomes and improve the quality of life of Ugandans. The NDP III identified an agro-industrialization programme to increase the commercialization and competitiveness of agricultural production and agro-processing. For this to be realized, several education fields, skills, and occupations are projected to be at the centre and remain relevant in the short to medium term (*see table 7*). These include: Agri-chemists; Agriculture Education Services specialists; Horticultural Therapists; Environmental Engineers; Food researchers; Agriculture Biotechnologists; Biochemists; Food microbiologists, and Animal Geneticists. This is expected to result in increased export value of selected agricultural commodities, increased sector growth, increased labour productivity in the agro-industrial value chain, and increased proportion of households that are food secure. Therefore, effective implementation of this programme will require that the country pays special attention to its human resource



requirements. In that regard, key skills and competencies are required to fully implement this programme and realize expected results.

4.2.2.2 Major competency gaps for the Agro-Industrialization Programme

The identified occupation and skills gaps for agro-industrialization are based on the national development agenda for the programme as well as the anticipated human resources due for replacement. The agricultural sector remains a cornerstone of Uganda’s economy and its contribution to employment in Uganda cannot be overemphasized. In 2019, the sector employed 61% of the total working population of which about 38% are youths employed in different agricultural activities. Despite being the highest employer, a large proportion of households (68.9%) is still stuck in the subsistence economy. This has left many farmers fetching low market prices and farmer organizations, which would assist in collective marketing and processing are weak with very low capital bases, but also lack managerial and technical skills for secondary processing.

The country thus needs to build the capacity of its human resource specifically for secondary processing and agro-processing in general. This is further worsened by shortages of standard and modern storage facilities that have led to relatively high post-harvest losses ranging from 30 to 40 percent for grains and other staples, and 30 to 80 percent for fresh fruits and vegetables. The manifestation of these challenges implies a continuation of low agricultural productivity, low-value addition hence fetching low farm gate prices thus making farmers even poorer. In this regard, the demand for occupation and skills need for this programme over the next five years are highlighted in Table 7.

Table 7: Estimated 5-year occupation and skills gaps Agro-industrialisation programme

Occupations Title	Estimated 5-year Gaps				
	2020/20 21	2021/20 22	2022/20 23	2023/20 24	2024/20 25
Agricultural and Forestry Production Managers					
Agricultural Farm Manager	58	66	75	84	92
Forestry Operations Manager	66	76	86	96	105
Forestry Operations Supervisor	41	47	54	60	66
Aquaculture Farm Manager	28	31	34	37	41
Farming, Forestry and Fisheries Advisers					
Agricultural Scientist	666	721	781	843	909
Forest Scientist	545	590	639	690	744
Wine Maker	606	656	710	767	826
Food and Beverage Scientist	1,211	1,312	1,419	1,533	1,652
Industrial and Production Engineers					
Industrial Engineer	245	265	286	307	327
Production Engineer	147	159	172	184	196
Energy Efficiency Manager	98	106	114	123	131
Chemical Plant Controllers					
Chemical Process Technician	17	21	24	22	22
Pharmaceutical Plant Controller	14	17	19	18	18
Field Crop and Vegetable Growers					
Agronomist	150	183	200	225	235
Tree and Shrub Crop Growers					



Occupations Title	Estimated 5-year Gaps				
	2020/20 21	2021/20 22	2022/20 23	2023/20 24	2024/20 25
Horticulturalist	135	175	210	229	250
Gardeners; Horticultural and Nursery Growers					
Nurseryperson	72	86	104	124	149
Animal Industry Specialists					
Poultry Industry and Business Specialists	241	273	310	352	399
Pig Industry and Business Specialists	226	256	291	331	374
Animal feed Industry and Business Specialists	189	214	243	277	313
Leather Industry and Business Specialists	267	302	344	390	442
Meat Industry and Business Specialists	311	352	401	456	516
Bee Industry and Business Specialists	263	298	339	385	436
Fish Industry and Business Specialists	226	256	291	331	374
Dairy Industry and Business Specialists	204	231	262	298	338
Animal Health Economists	334	378	430	488	552
Animal Health Specialists	482	545	620	705	798
Veterinary Epidemiologist	208	235	267	304	344
Laboratory Specialists	259	294	334	380	430
Wild Life Medicine Specialists	185	210	239	271	307
Entomologist	111	126	143	163	184
Veterinary Public Health Specialist	200	227	258	293	331
Apiarists and Sericulturists	109	130	150	171	190
Forestry and Related Workers					
Tree Feller	(1,250)	(1,237)	(1,222)	(1,206)	(1,188)
Forest and Conservation Workers	(1,301)	(1,287)	(1,272)	(1,255)	(1,237)
Aquaculture Workers					
Aquaculturist	92	120	144	172	207
Subsistence Farmers					
Hunter	(21)	(21)	(21)	(21)	(21)
Subsistence Crop Farmers	(164,584)	(163,491)	(162,201)	(160,748)	(159,150)
Subsistence Livestock Farmers	(2,693)	(2,612)	(2,517)	(2,409)	(2,290)
Subsistence Mixed Crop and Livestock Farmers	(39,969)	(39,926)	(39,876)	(39,820)	(39,759)
Subsistence Fishers, Hunters, Trappers and Gatherers	(1,382)	(1,293)	(1,188)	(1,069)	(938)
Butchers, Fishmongers and Related Food Preparers					
Red Meat De-boner	(742)	(715)	(684)	(649)	(612)
Butcher	(521)	(502)	(480)	(456)	(429)
Fishmonger	(316)	(304)	(291)	(276)	(260)
Bakers, Pastry-cooks, and Confectionery Makers					
Confectionary Baker	104	201	314	442	583
Pastry Cook	73	141	221	310	409
Confectionery Maker	44	85	134	188	248
Fruit, Vegetable and Related Preservers					
Fruit or Vegetable Preserver	(67)	(67)	(67)	(67)	(67)
Oil Expeller	(39)	(39)	(39)	(39)	(39)
Jam Maker	(28)	(28)	(28)	(28)	(28)
Tobacco Preparers and Tobacco Products Makers					



Occupations Title	Estimated 5-year Gaps				
	2020/20 21	2021/20 22	2022/20 23	2023/20 24	2024/20 25
Cigar Maker	8	9	10	12	15
Green Tobacco Storage Controller / Manager	12	12	14	17	20
Tobacco Processing Machine Operator	20	20	24	29	35
Tailors, Dressmakers, Furriers and Hatters					
Tailor	(10,782)	(11,864)	(13,140)	(14,578)	(16,160)
Furrier	(9,616)	(10,582)	(11,720)	(13,002)	(14,413)
Hat Maker	(5,828)	(6,413)	(7,103)	(7,880)	(8,735)
Wig Maker	(2,914)	(3,207)	(3,551)	(3,940)	(4,367)
Food and Related Products Machine Operators					
Fruit and Vegetable Processing Machine Operator	(53)	(51)	(49)	(46)	(43)
Distillery Process Machine Operator	(75)	(72)	(68)	(65)	(60)
Juice Extraction and Blending Process Machine Operator	(107)	(103)	(98)	(93)	(87)
Dairy Products Machine Operator	(50)	(48)	(46)	(43)	(40)
Bakery and Confectionary Products Machine Operator	(63)	(60)	(58)	(54)	(51)
Sugar Processing Machine Operator	(49)	(47)	(45)	(42)	(39)
Coffee and Tea Processing Machine Operator	(41)	(40)	(38)	(36)	(33)
Seed Processing Machine Operator	(75)	(72)	(68)	(65)	(60)
Milling Process Machine Operator	(39)	(37)	(36)	(34)	(31)
Tobacco Product Processing Machine Operator	(60)	(57)	(55)	(51)	(48)
Meat Processing Machine Operator	(41)	(40)	(38)	(36)	(33)
Seafood Processing Machine Operator	(51)	(49)	(47)	(44)	(41)
Grain Handling Operator	(83)	(80)	(76)	(72)	(67)
Sparkling Soft drink process machine operator	(89)	(85)	(81)	(77)	(72)
Wine processing machine operator	(57)	(55)	(53)	(50)	(46)
Cereals, snacks, pasta, and condiments machine process operator	(49)	(47)	(45)	(42)	(39)
Brew house Process Machine Operator	(62)	(59)	(57)	(53)	(50)
Food and Beverage Process Operator	(38)	(36)	(35)	(33)	(31)
Pulp and Papermaking Plant Operators					
Wood and Paper Manufacturing Machine Minder	39	47	62	80	104
Paper and Pulp Mill Operator	29	34	45	58	75
Wood Processing Plant Operators	(109)	(309)	(402)	(611)	(706)
Crop Farm Labourers					
Crop Production Farm Worker / Assistant	(1,535)	(1,135)	(663)	(131)	454
Irrigationist	(768)	(568)	(332)	(66)	227
Scout	(1,024)	(757)	(442)	(88)	303
Harvester / Picker	(921)	(681)	(398)	(79)	272
Pruner	(870)	(643)	(376)	(74)	257
Livestock Farm Labourers					
Animal Health Assistants	680	952	1,333	1,866	2,612
Forestry Labourers					
Firewood Cutter	(18)	(16)	(13)	(10)	(7)
Bush Clearing Contractor	(16)	(14)	(12)	(9)	(6)
Silviculture Forestry Worker	(12)	(10)	(9)	(7)	(4)
Fire Lookout	(21)	(19)	(16)	(12)	(8)
Forestry Contractor	(27)	(24)	(20)	(15)	(10)
Forestry Protection Officer	(21)	(18)	(15)	(12)	(8)



Occupations Title	Estimated 5-year Gaps				
	2020/20 21	2021/20 22	2022/20 23	2023/20 24	2024/20 25
Harvesting Forestry Worker	(16)	(14)	(12)	(9)	(6)
Tree Planter	(14)	(12)	(10)	(8)	(5)
Timber Getter	(12)	(11)	(9)	(7)	(5)
Sniper Forest	(26)	(22)	(19)	(15)	(10)
Forest Labourer / Hand / Pruner	(18)	(16)	(13)	(10)	(7)
Quality Controller of Forestry Contractors	(12)	(11)	(9)	(7)	(5)
Skiddy Forest	(11)	(10)	(8)	(6)	(4)
Bush Clearer Cutter	(20)	(17)	(14)	(11)	(8)
Stump Grabber	(18)	(16)	(13)	(10)	(7)
Sleeper Cutter	(21)	(18)	(15)	(12)	(8)
Hauling Engine Contractor Logging	(22)	(20)	(16)	(13)	(9)
Swampy	(16)	(14)	(12)	(9)	(6)
Prop Cutter	(26)	(22)	(19)	(15)	(10)
Topper Logging	(21)	(18)	(15)	(12)	(8)
Log Hauler Bush	(18)	(16)	(13)	(10)	(7)
Log Scaler	(12)	(10)	(9)	(7)	(4)
Log Raft Maker	(7)	(6)	(5)	(4)	(3)
Choker man / Choker woman	(8)	(7)	(6)	(5)	(3)
Log Assessor	(26)	(22)	(19)	(15)	(10)
Woodman	(16)	(14)	(12)	(9)	(6)
Fishery and Aquaculture Labourers					
Greaser	(188)	(194)	(198)	(200)	(209)
Fishing Boat Mate	(182)	(188)	(191)	(194)	(203)
Trawler Hand	(167)	(172)	(175)	(178)	(186)
Fish Baiter	(198)	(205)	(209)	(211)	(221)
Fisherman	(216)	(223)	(228)	(230)	(241)
Prawn Trawler Hand	(197)	(203)	(207)	(210)	(219)
Fresh Fish Farm / Hatchery Worker	(182)	(188)	(191)	(194)	(203)
Fresh Fish Hatchery Worker	(173)	(178)	(182)	(184)	(193)
Hand Packers					
Packer (Non-Perishable Products)	(478)	(475)	(472)	(469)	(465)
Meat Packer	(153)	(152)	(151)	(150)	(149)
Fish or Seafood Packer	(203)	(202)	(201)	(200)	(198)
Cheese Packer	(183)	(182)	(181)	(180)	(178)

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

The NDP III selected ten commodities on which value addition and agro-processing will be prioritized. These commodities include; coffee, tea, fisheries, cocoa, cotton, vegetable oil, beef, maize, dairy, and cassava. This implies that a technically skilled workforce will be required to take occupation along their respective value chains. Whereas the contribution of agro-processing to total manufacturing has increased from 20.7 percent to 39.3 percent, most of the agro-processing industries are operating below-installed capacity, thereby leading to limited value addition to most of the priority commodities. For instance, coffee (40 percent)–where over 95 percent of coffee is exported as raw unprocessed beans; fish (less than 30 percent)–where there is no plant undertaking secondary processing of fish into fish soluble, fish silage and fish oils; dairy (the 9 largest are operating at 57 percent of their capacity, with the overall average utilisation of installed capacity being 66 percent); tea at 60 percent; and



beef (less than 20 percent); Most maize mills (46.3 percent) have a capacity of 1-5 tonnes per day but many operate far below the installed capacity with a seasonal dimension. Lastly, whereas progress has been made in the domestic production of vegetable oil and its byproducts, there is still inadequate access to vegetable oil processing facilities.

More still, achievement of the key results for the agro-industrialization programme over the next five years will require qualified human resources in the right numbers. The key programme result areas include;

- i) Increase the total export value of processed agricultural commodities; coffee, tea, fish, dairy, meat, and maize (and its products) from; USD 0.935 billion to USD 2.7 billion;
- ii) Reduce the total value of imported cereals and cereal preparations, vegetable fats and oils, and sugar preparations from USD 931.1 million to USD 500 million;
- iii) Increase the agricultural sector growth rate from 3.8 percent to 6.0 percent;
- iv) Increase labour productivity in the agro-industrial value chain (value-added, USD per worker) from USD 2,212 to USD 3,114;
- v) Increase the number of jobs created per annum in agro-industry along the value chain by 180,000;
- vi) Reduction in the percentage of households dependent on subsistence agriculture as the main source of livelihood from 68.9 percent to 55 percent; and
- vii) Increase the proportion of households that are food secure from 60 percent to 90 percent.

However, achievement of these results through value addition and creating wider markets will largely rely on the availability of qualified human resources including; Veterinary Epidemiologists, Laboratory Specialists, Entomologists, Veterinary, Animal feed Industry and Business Specialists, Leather Industry and Business Specialists, Meat Industry and Business Specialists, Fish Industry and Business Specialists, Dairy Industry and Business Specialists and Animal Health Economists, among others.

4.2.2.3 Human Resource Development Objectives for Agro-Industrialization Programme

The goal of this programme is to develop competent and skilled human resources that will aid in the increased production, productivity, and value addition for increased food security, household incomes, and export earnings. The specific objectives of this programme are:

- i) To align education and training with the changing nature of the labour market needs in the agro industrialization programme for increased employability in the country.
- ii) To increase technical and professional expertise in the various fields of agro industrialization along the value chain for increased production and productivity gains.
- iii) To build the capacity of the subsistence and informal sector stakeholders/players in agro-industrialization so as to increase production and productivity.



- iv) To institutionalize Human Resource Development along the value chain of the agro-industrialization programme to meet the current and future manpower needs.

4.2.2.4 Specific Interventions to address competency gaps for the Agro-Industrialization Programme

- i) **Establish a Programme Skills Coordination Committee (PSCC)¹⁶ for the agro-industrialization programme.** The PSCC will bring together different technical officers representing different and relevant stakeholders for workforce development within the programme. The Agro-Industrialization Skills Committee shall guide the integration of Human Resource Development activities and interventions into the programme PIAP to meet the current and future manpower needs.
- ii) **Develop a 5-year Institutional (MDA/LG) Human Resource Development Plan in line with the institutional Strategic Plan and MDA HRDP Guidelines.** Each institution (MDA/LG) under this programme should develop a 5-year Human Resource Development Plan to identify and prioritize critical skills and education needs as well as soft skills requirements to bridge the occupational gaps within the agro industrialization programme.
- iii) **Establish internship, apprenticeship, and exchange programme in the prioritized strategic areas** within the agro-industrialization programme to build a pool of labour force to serve the country in the short and medium term.
- iv) **Strengthen and harmonize training efforts/ programmes for subsistence and informal sector workers** in modern agronomic practices to improve production, productivity, and household incomes.
- v) **Undertake on-farm and off-farm training for farmers** especially the youths and women along the value chain.

¹⁶ See Annex 3 for the roles of the Program Skills Coordination Committees. As mentioned earlier, these PSCCs will be working groups of technical officers that will drive the development of the demanded skills in the respective programs and will bring together all the relevant stakeholders for workforce development. The PSCC's shall be the central mechanism for coordinating school to industry linkages and provide work based experiential learning for skills development.



MINERAL DEVELOPMENT





4.2.3 Mineral Development Programme

4.2.3.1 Introduction

Uganda's economic objectives concerning infrastructure development, employment generation, and economic transformation are explicitly linked with the development of the minerals sector. Uganda's mineral deposits have a tremendous potential to cause economic growth and transformation and contribute to GDP. In addition, the sub-sector can create employment since it employs about 26.5% of Uganda's population directly or indirectly. Production of Development Minerals represents a major contribution to the Ugandan economy and is undertaken by operators of various levels, from artisanal and small-scale mining (ASM) to medium-scale mining (MSM) and large-scale mining (LSM).

The artisanal and small-scale mining operations play a significant role in the contribution of the sector to the Ugandan economy and the labour market. This is large because ASM are responsible for the production of an estimated 83% of all Development Minerals (by value) in the country. ASM production equates to 5.3 times the value of estimated medium and large-scale production for these minerals. Almost 390,000 Ugandans are directly employed in ASM production of Development Minerals, equating to almost 3% of the country's working-age population. This marks a 116% increase since 2008 estimates and is particularly significant considering high levels of under- and unemployment and the growing proportion of youth entering the workforce annually. Production of clay bricks, sand, stone aggregate, dimension stone, kaolin, salt, and pozzolana constitute a growing source of the rural and peri-urban employment in this sub-sector.

Despite the successes registered in this industry, there are still some challenges that must be addressed to realize the short and medium term plans of the country. Regarding mining/extraction, about 80 percent of the subsector is dominated by small miners, using obsolete methods of mining due to lack of capital to invest in the requisite equipment to carry out activities on a large scale. The informality of the sector further limits government support and participation in the sector. In addition, there are inadequate human resources especially in the areas of mines inspection and monitoring. With relatively low skill levels and financial investment required for entry into ASM, the sector continues to mainly operate at an artisanal level, employing basic and often environmentally damaging and occupationally risky technologies and methods. This both perpetuates the low incomes derived from work in the sector and impedes the capacity of miners to invest in improvements.

Mining and its world of work in Uganda are changing, and universities must keep up with the changing needs of the industry. There is growing redundancy of old skills with a mounting need for new, more relevant skills-sets which is attributed to a global switch to a mining industry defined by technology and innovation. This is a challenge for universities and skills providers, who must develop relevant curricula and keep up with the growing demand for future-ready graduates; they must also assist with re-skilling, up-skilling and retooling of the current workforce in mining at all levels, including leadership, problem-solving as well as cognitive skills. This is causing universities and skills providers to re-imagine and reengineer their qualifications, as well as how to deliver and certify them.



The third National Development Plan has identified the mineral development programme as one of its key 18 programmes to increase the exploitation and value addition to selected resources for job-rich industrialization. The key expected results of this programme include: reducing the volume and value of imported iron and steel and inorganic fertilizers; increasing the volume and value of refined gold exports and copper; increasing investment in the exploration and processing of selected minerals; and creating more jobs in the mining sub-sector. For effective implementation of this programme, the ability to develop new skill sets and adapt existing ones to rapidly respond to technological changes will be crucial.

4.2.3.2 Major competency gaps for the Mineral Development Programme

The estimation of the human resource gaps for the mineral development programme is principally based on the projected economic expansion and the programme’s strategic direction for the next five years in line with the national agenda. A case in point is that the contribution of the mining and quarrying sub-sector to the industry GDP is projected to expand from 7.3% in 2019/20 to 8.5% in 2024/25. This is in line with the goal of the mineral development programme in the NDP III and the prioritized focus areas. The goal of the mineral development programme is to increase the exploitation and value addition to selected resources for job-rich industrialization. This has implication on the type, kind and quality of human resources that will be required in the country over the short to medium terms.

In addition, the programme strategic interventions focus areas will have a direct bearing on the nature and level of human capital required. This will require systematic human resources development planning to achieve the targeted interventions in the next five years, namely, increasing exploration and quantification of priority minerals and geothermal resources across the country; increasing investment in mining and value addition; expanding the mineral-based processing and marketing as well as strengthening the legal and regulatory framework as well as the human and institutional capacity. Detailed occupation and skills need for this Programme over the next five years are highlighted in Table 8.

Table 8: Estimated 5-year Occupation Gaps for the Mineral Development Programme

Occupations Title	Estimated 5-year Gaps				
	2020/20 21	2021/20 22	2022/20 23	2023/20 24	2024/20 25
Mining Managers					
Mining Operations Manager	(11)	(12)	(14)	(16)	(18)
Mineral Resources Manager	(12)	(14)	(16)	(18)	(20)
Rock Engineering Manager	(8)	(9)	(10)	(11)	(13)
Chemists					
Manufacturing Chemist	18	19	20	22	24
Pharmacologist (Non-clinical)	17	18	20	21	23
Geochemistry	16	17	18	20	21
Laboratory Chemist	19	20	22	23	25
Analytical Chemist	20	22	24	25	27
Industrial Chemist	18	20	21	23	25
Organic chemistry	17	18	20	21	23



Occupations Title	Estimated 5-year Gaps				
	2020/20 21	2021/20 22	2022/20 23	2023/20 24	2024/20 25
Physical chemistry	16	17	19	20	22
Industrial and Production Engineers					
Industrial Engineer	147	159	172	184	196
Industrial Engineering Technologist	74	80	86	92	98
Production Engineer	98	106	114	123	131
Production Engineering Technologist	88	96	103	110	118
Energy Efficiency Manager	83	90	97	104	111
Chemical Engineers					
Chemical Engineer	200	216	233	250	266
Chemical Engineering Technologist	116	126	135	145	154
Explosives and Dangerous Goods Inspector	84	91	98	105	112
Mining Engineers, Metallurgists and Related Professionals					
Mining Engineer	20	22	24	26	28
Mining Engineering Technologist	7	8	9	9	10
Metallurgical Engineer	18	20	21	23	25
Metallurgical Engineering Technologist	5	5	6	6	7
Metallurgist	9	10	11	12	13
Petroleum Engineer	12	13	14	16	17
Chemical and Physical Science Technicians					
Chemistry Technician	128	138	148	158	168
Physical Science Technician	84	91	98	104	111
Radiation Control/ Nuclear Monitoring Technician	57	62	66	71	75
Chemical Engineering Technicians	22	24	26	29	31
Mining and Metallurgical Technicians					
Mining Technician	9	10	11	11	12
Metallurgical or Materials Technician	4	4	5	5	5
Non-Destructive Testing Technician (NDTT)	5	5	6	6	6
Geophysical Technician	6	7	7	8	8
Mining Supervisors					
Mining Production Supervisor	14	17	21	25	30
Miner	51	61	73	88	106
Engineering Supervisor	10	12	14	17	20
Power Production Plant Operators					
Fossil Power Plant Process Controller	(4)	(5)	(6)	(6)	(7)
Hydro Power Plant Process Controller	(5)	(6)	(7)	(8)	(9)
Nuclear Power Plant Process Controller	(5)	(5)	(6)	(7)	(8)
Wind Turbine Power Plant Process Controller	(6)	(6)	(7)	(8)	(9)
Concentrated Solar Power (CSP) Plant Process Controller	(6)	(7)	(8)	(9)	(10)
Geothermal Technicians	(6)	(6)	(7)	(8)	(9)
Weatherization Installers and Technicians	(5)	(6)	(7)	(8)	(9)
Solar Photovoltaic Service Technician	(5)	(6)	(6)	(7)	(8)
Wind Turbine Service Technician	(1)	(1)	(1)	(2)	(2)
Chemical Processing Plant Controllers	(7)	(7)	(7)	(7)	(7)
Miners and Quarriers					
Mining Operator	(258)	(258)	(258)	(258)	(258)
Shotcretes	(229)	(229)	(229)	(229)	(229)
Mineral and Stone Processing Plant Operators					



Occupations Title	Estimated 5-year Gaps				
	2020/20 21	2021/20 22	2022/20 23	2023/20 24	2024/20 25
Mineral Processing Plant Operator	12	13	14	16	18
Jewellery Processing and Finishing Machine Operator	6	7	7	8	9
Diamond Cutter and Polisher	8	9	10	11	12
Gemstone Cutter	7	8	9	10	11
Gemstone Machine Operator	7	7	8	9	10
Cement, Stone and Other Mineral Products Machine Operators					
Concrete Products Machine Operator	(15)	(15)	(15)	(15)	(15)
Glass, Clay and Stone Manufacturing Machine Setter and Minder	(5)	(5)	(5)	(5)	(5)
Plaster Machine Operator	(13)	(13)	(13)	(13)	(13)
Cement Production Plant Operator	(7)	(7)	(7)	(7)	(7)
Concrete Batching Plant Operator	(9)	(9)	(9)	(9)	(9)
Industrial Diamond Polishing Machine Operator	(4)	(4)	(4)	(4)	(4)
Metal Processing Plant Operators					
Metal Processing Plant Operator	(19)	(19)	(19)	(19)	(19)
Metal Manufacturing Machine Setter and Minder	(8)	(8)	(8)	(8)	(8)
Abrasive Wheel Maker	(10)	(10)	(10)	(10)	(10)
Brake Lining Maker	(12)	(12)	(12)	(12)	(12)
Electroplater	(203)	(203)	(203)	(203)	(203)
Metal Machinist	(72)	(69)	(67)	(64)	(61)
Fitter and Turner	(54)	(52)	(51)	(49)	(46)

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

The priority focus areas of this programme also relate to the type of human resources that should be available both in terms of quality and quantity. The programme prioritizes within the next five years are as follows:

- i) Undertaking a detailed exploration and quantification of minerals and geothermal resources in the country;
- ii) Undertaking feasibility studies in priority mineral value chains to guide investment;
- iii) Formalizing and regulating the artisanal and small-scale miners to increase investment in the sector;
- iv) Strengthening professionalization of geoscientists and its associated professionals;
- v) Establishing and equipping state-of-the-art mineral testing laboratories;
- vi) Increasing public investment in priority mineral processing;
- vii) Increasing the levels of production of selected minerals to ensure adequate and consistent supply of raw materials;
- viii) Establishing a mineral certification mechanism for tin, tungsten and tantalite and gold; and
- ix) Enhancing the capacity to undertake quality assurance and standard inspection.

As a result, given Government focus in the next five years, the Country will need a pool of skilled workforce in the areas of Industrial and Production Engineering; Chemical Engineers; Mining Engineers, Metallurgists, and Related Professionals; Chemical and



Physical Science Technicians; Mining and Metallurgical Technicians; Power Production Plant Operators; Chemical Processing Plant Controllers; Mineral and Stone Processing Plant Operators, and Metal Processing Plant Operators. Therefore, MDAs under this programme and LGs should prioritize training people in the above skills areas under their respective MDA and LG HR Development Plans over the next 5 years. Also, skills such as Laboratory Chemists; Analytical Chemists; Industrial Chemists; Physical chemists; Mineral Processing Plant Operators and Abrasive Wheel Makers will remain centred over the next five (5) years (*see table 8*).

4.2.3.3 Human Resource Development Objectives for the Mineral Development Programme

The overall goal of the programme is to build a skilled labour force in the exploitation and value addition of selected mineral resources along every stage of the value chain through the following objectives:

- i) To align education and training with the changing nature of the labour market needs in the Mineral Development Programme to increase the exploitation and value addition to selected resources for job rich industrialization.
- ii) To realign the technical and professional expertise in the various fields of Mineral Development Programme guided by the national agenda.
- iii) To build the capacity of the artisanal and small-scale mining (ASM) sub-industry in the Mineral Development Programme.
- iv) To promote local content development as a way of enhancing national participation in the mineral industry.
- v) To institutionalize Human Resource Development along the value chain of the Mineral Development programme.

4.2.3.4 Specific interventions to address competency gaps of this Programme

- i) Establish a Programme Skills Coordination Committee (PSCC) for the Mineral Development Programme¹⁷. The PSCC shall determine skills needs and skills standards along the value chain within Mineral Development Programme.
- ii) Each institution (MDAs) under the Mineral Development Programme should develop a 5-year Human Resource Development Plan in line with its strategic plan and MDA HRDP guidelines to identify and prioritize critical skills and education needs as well as soft skills requirements to meet the present and the future manpower needs within the Programme.
- iii) Establish a deliberate and dedicated training program (with scholarships and training loan funds) in scarce and prioritized strategic areas within the Mineral Development Programme where no training available in the country.
- iv) Establish internship, apprenticeship, and exchange programme in the prioritized strategic areas within the Mineral Development Programme both within and between countries to boost skills transfer.

¹⁷ See Annex 2 for the roles of the Program Skills Coordination Committee.



- v) Strengthen and harmonize training efforts/ programme for subsistence/artisanal and small-scale mining (ASM) workers in modern mining practices to improve quality, production, productivity, and household incomes.
- vi) Build capacity of staff in the Directorate of Geology, Surveys, and Mines to focus and fully guide the upstream section of the industry especially in the explorations and surveys.



Tourism Development Program





4.2.4 Tourism Development Programme

4.2.4.1 Introduction

Tourism contributes significantly to a country's inclusive growth and development. This has manifested in a variety of ways; including increased foreign exchange earnings and job creation. In 2017, the overall contribution of travel and tourism to employment (including wider effects from investment, the supply chain, and induced income impacts) was 605,500 jobs, while in 2018 the numbers increased to 667,600 jobs. In 2019, Uganda's travel and tourism sector employed 536,600 people (5.8% of total employment), majorly in hotels, travel agencies, airlines, and other passenger transportation services (excluding commuter services). It also included, for example, the activities of the restaurant and leisure industries directly supported by tourists.

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 in key development supporting functions both in government and private sector, limited knowledge of 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 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, poor working conditions leading to high labour turn over in the programme. The program still has limited investment in skills development of existing workforce in the private sector and the fragmented tourism education and training across a multiplicity of stakeholders.

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.

Human Resource Development (HRD) planning in 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, plans, 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 the tourist services and products.

Tourism education and training should not only be built based on a consultative model only 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.

4.2.4.2 Major competency gaps for the Tourism Programme

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 terms. The tourism sector is projected to contribute 10.6% of GDP by 2024/25 up from 7.7% in 2019/20 although it has been the most hit by the covid-19 pandemic. Within the government post Covid recovery strategy efforts are in place to support the sector. In addition, the international arrivals are projected to increase to 1,950,000 by 2024/25 with the continued easing of the lockdown measures as the vaccination rates globally and domestically improve. Furthermore, the implementation of the NDPIII, programme prioritized focus areas will enhance Uganda's attractiveness as a preferred tourism destination leading to:

- i) Promoting domestic and inbound tourism;
- ii) Increasing the stock and quality of tourism infrastructure;
- iii) Developing, conserving, and diversifying tourism products;
- iv) Developing a pool of skilled personnel along the tourism value chain and ensuring decent working conditions,
- v) Enhancing regulation, coordination, and management of tourism.

In addition, the tourism programme in NDPIII prioritized strategic areas for the next 5 years that directly have implications on the type of human resources that should be produced. These are:

- i) Building a positive and competitive image of the destination by increasing market presence in key source markets and improving destination awareness in domestic and key source markets;
- ii) Building Market Structures to promote access to Source Markets through trade representation and Tourism Information centres;
- iii) Establish a Market Intelligence Framework to monitor trends and status of Tourism Growth;



- iv) Expanding, upgrading and maintaining tourism national transport infrastructure and services;
- v) Supporting the development and/or upgrade of accommodation and conference facilities of all types and sizes as well as leisure attractions and facilities;
- vi) Nurture local hospitality sector enterprises for participation in local, regional and global tourism value chains.

Detailed occupation and skills need for this Programme over the next five years are highlighted in Table 9.

Table 9: Estimated 5-year Critical Skills Gaps for Tourism Development Programme

Occupations Title	Estimated 5 Year Gaps				
	2020/20 21	2021/20 22	2022/20 23	2023/20 24	2024/20 25
Hotel Managers					
Hotel or Motel Managers	156	173	194	217	242
Guest House Managers	311	346	387	433	483
Reception Managers	237	264	296	331	369
Restaurant Managers					
Café (Licensed) or Restaurant Manager	247	247	247	247	247
Licensed Club Manager	494	494	494	494	494
Catering Production Manager	377	377	377	377	377
Reservations Manager	143	143	143	143	143
Chefs	950	1,019	1,094	1,174	1,259
Sports, Recreation and Cultural Centre Managers					
Betting Agency Managers	90	96	102	109	116
Gaming Manager	123	131	140	149	158
Cinema or Theatre Manager	148	157	167	178	190
Arts / Culture Manager	238	253	270	287	306
Sports Administrator	111	118	126	134	142
Amusement Centre Manager	143	152	162	172	184
Fitness Centre Manager	90	96	102	109	116
Facility Centre Manager	123	131	140	149	158
Club Membership Manager	148	157	167	178	190
Travel Consultants and Clerks					
Tourist Information Officer	239	244	249	254	259
Travel Consultant	195	199	203	207	211
Receptionists/Inquiry Clerks	521	531	542	553	564
Travel Guides					
Gallery/Museum Guides	303	309	315	321	328
Tour Guide	391	399	407	415	423
Cooks	(2,085)	(1,702)	(1,252)	(744)	(186)
Waiters					
Waiter	(724)	(648)	(580)	(519)	(465)
Cafe Worker	(764)	(684)	(612)	(548)	(490)
Bartenders					
Bar Attendant	(421)	(397)	(367)	(334)	(298)
Barista	(445)	(419)	(388)	(353)	(315)
Cleaning and Housekeeping Supervisors					



Occupations Title	Estimated 5 Year Gaps				
	2020/20 21	2021/20 22	2022/20 23	2023/20 24	2024/20 25
Hotel Service Manager	(688)	(616)	(551)	(493)	(442)
Housekeeping Service Manager	(229)	(205)	(184)	(164)	(147)
Commercial Housekeeper	(573)	(513)	(459)	(411)	(368)
Cleaning Practitioner	(633)	(731)	(847)	(977)	(1,120)
Potter or Ceramic Artist	1,810	2,090	2,420	2,791	3,200
Handicraft Workers in Textile, Leather and Related					
Textile, Leather and Related Materials Handicraft Workers	(866)	(808)	(742)	(669)	(589)
Process Engraver	763	908	1,079	1,271	1,483
Other Artistic and Cultural Associate Professionals					
Tattoo Artist	306	330	355	379	403
Light Technician	275	297	319	341	363
Stage Managers	582	628	674	720	766
Theatrical Dresser	478	515	553	591	629
Special Effects Person	367	397	426	455	484
Film Technician	340	367	394	422	449

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

In line with the strategic direction of the programme and the projected expansion of socio-economic activities, the critical human resources that will remain relevant over the medium term include: Tourism research specialists, reservation, ticket agents and travel clerks, tourism marketing specialists, Café (Licensed) or Restaurant Managers, Reservations Managers, Arts/Culture Managers, Tourist Information Officers, Travel Consultants, Gallery/Museum Guides, Tour Guides, Potter or Ceramic Artists, Textile, Leather and Related Materials Handicraft Workers, Process Engravers, Light Technicians, Theatrical Dressers, Special Effects Persons, Film Technicians, Chefs, Airline management specialists; Ecotourism specialists, GIS and Remote Sensing specialists, Tourism Products development and innovation specialists. Such tourism skills are required to help in developing tourism projects, monitoring tourism-related policies, measuring the contribution of tourism to the economy, construction, and maintenance of museums, preservation of plants and animals. The critical occupational gaps to support the implementation of the priority development plan in the tourism programme are presented in Table 9. Therefore, MDAs under this programme and LGs should prioritize training people in the above skills areas under their respective MDA and LG HR Development Plans over the next 5 years.

4.2.4.3 Human Resource Development Objectives for the Tourism Programme

The goal of this programme is to create a stock of skilled, and competent human capital for the range of tourism activities. The objectives of this programme are:

- i) To align education and training with the changing nature of the labour market needs within the Tourism Programme and related activities to create a pool of skilled personnel along the tourism value chain.



- ii) To increase technical and professional expertise in various fields of the Tourism Development Programme so as to drive tourism product innovation and creativity.
- iii) To institutionalize Human Resource Development along the value chain of the Tourism Development programme

4.2.4.4 Specific interventions to address competency gaps for the Tourism Programme

- i) Establish a Programme Skills Coordination Committee (PSCC) for the tourism development programme¹⁸. The PSCC shall determine skills needs and skills standards for the entire Tourism Programme.
- ii) Identify and prioritize of critical skills and education needs as well as soft skills requirements to meet the present and the future education and training needs within the Programme.
- iii) Each institution (MDAs) under the tourism development programme should develop a 5-year Human Resource Development Plan in line with its strategic plan and MDA HRDP Guidelines.
- iv) Establish a scholarship programme in scarce and prioritized strategic areas within the tourism development programme with no or scarce training available in the country.
- v) Establish internship, apprenticeship, and exchange programme in the prioritized strategic areas within the tourism development programme both within and between countries of cooperation.
- vi) Implement the revised curriculum at the Hotel and Tourism Training Institute (HTTI) and roll it out at a National level with full engagement of the private sector.
- vii) Train Ugandan diplomats and visa/consular staff to support tourism marketing and customer care.
- viii) Provide basic tourism training to taxi drivers and boda-boda riders to support tourism marketing and customer care.

¹⁸ See Annex 3 for the roles of the Program Skills Committee.



DIGITAL TRANSFORMATION PROGRAMME





4.2.5 Digital Transformation Programme

4.2.5.1 Introduction

Digital technology has been instrumental in Uganda’s development, connecting communities and businesses at both the local and international levels. The Ugandan information and technology industry has grown 19.7 percent on average each year since 2013, adding 2.5 percent annually to the country’s GDP and employing 1 million people. It is currently one of Uganda’s fastest growing sectors, recording double-digit growth over the last few years. This growth has largely been driven by the telecommunications subsector, which has attracted investment in mobile broadband networks and Internet-related infrastructure rollouts. Such investments have resulted into Uganda being one of the few African countries with 100% Global System for Mobile Communications (GSM) coverage and a cellular penetration of over 95%. Other sub-sectors include broadcasting, postal, information technology and information services, all of which have supported the larger ICT sector growth since their inception.

Despite the progress that the ICT industry has made in the country, the shortage of highly skilled professionals slows the pace at which the industry grows and reduce its contribution to productivity in other sectors of the economy. Human resource development is imperative for the local digital transformation industry to take root on a large scale in Uganda. For the country to achieve and maintain the position of an important player in the international ICT market, a large pool of skilled manpower (personnel/human resource?) is required for all components of the ICT industry geared to meeting both local and export needs. However, currently the professional ICT human resource in both public and private sectors is inadequate and lacks relevant professional skills.

There is a high rate of ICT illiteracy in both public and private sectors, which is characterized by a digital divide between urban and rural areas, as well as between men and women. Currently, the skills gap within the digital transformation programme is significant with the major contributing factor being deficiencies in the current education formal system that does not reflect the rapidly growing demands of the IT industry. Informal programmes and specialist IT schools are attempting to fill this shortcoming in advanced IT skills training and provision. Therefore, steps should be taken to address the disconnect between IT education providers and employers, with curricula adapted to reflect the needs of the IT industry more closely.

The importance of strengthening and enhancing skills to be successful in the digital economy in Uganda cannot be underplayed. Such skills range from basic to advanced digital skills. Uganda has an emerging IT ecosystem, including a growing crop of digital entrepreneurs, startups, and innovation centres and this requires a diversity of skills soon. These skills include data science and data analytics; network and information security; creative thinking, digital design and data visualization, digital project management, digital marketing tools, analytics tools as well as social media marketing while some newer positions will gain prominence as detailed in Table 10.



4.2.5.2 Major competency gaps for the Digital Transformation Programme

Under the Digital Transformation programme, the identified occupation and skill gaps are based on the 5-Year National Development Plan target, the anticipated replacement and expansion demand. While the total telephone subscriptions increased from 20.5 million in 2015 to 23.2 million in 2017 and the number of internet users also increased from 6.2 million users in 2015 to 9.8 million users in 2017, the internet penetration rate remains low at 25 percent. Also, broadband access in the country remains largely mobile and in 2017, of the total number of users only 10,273 were fixed broadband which resulted in a 0.1 percent fixed broadband penetration rate. The low fixed broadband access implies that there is little progress in promoting broadband access to anchor institutions like schools, libraries, health centres, and Local Government offices and that a critical mass of institutions and businesses are not using broadband services to be competitive. The low internet penetration has even hit hard the education and training institutions in Uganda during the Covid-19 period that forced the closure of the learning institutions. This is partly due to the limited ICT infrastructure that has made virtual learning an impossibility thus leaving learners out of school for two years. Detailed qualifications and skills need for the Digital Transformation Programme required over the next five years are presented in Table 10.

Table 10: Estimated 5-year Critical Skills Gaps for this Programme

Occupations Title	Estimated 5-Year Gaps				
	2020/2021	2021/2022	2022/2023	2023/2024	2024/2025
Information and Communications Technology Service Managers					
Chief Information Officer	(15)	(16)	(18)	(20)	(22)
ICT Project Manager	(64)	70)	(77)	(85)	(93)
Data Management Manager	15)	16)	(18)	(20)	(22)
Application Development Manager	15)	16)	18)	(20)	(22)
Information Technology Manager	64)	(70)	(77)	(85)	(93)
Information Systems Director	(27)	(30)	(33)	(36)	(40)
Telecommunications Engineers					
Telecommunications Engineer	134	143	152	163	174
Telecommunications Engineering Technologist	31	33	35	38	40
Telecommunications Network Engineer	31	33	35	38	40
Telecommunications Field Engineer	134	143	152	163	174
ICT Trainers	161	183	206	229	254
Information and Communications Technology Sales Professionals					
ICT Account Manager	(96)	(105)	(115)	(125)	(136)
ICT Business Development Managers	(145)	(158)	(172)	(187)	(204)
ICT Sales Representative	(169)	(184)	(201)	(219)	(238)
Systems Analysts					
ICT Systems Analyst	(132)	130)	(129)	(127)	(126)
Data Scientist	180)	178)	176)	(174)	(171)
Software Developers	(216)	(213)	(211)	(208)	(206)
Software Developer	347)	(344)	(340)	(336)	(332)
Programmer Analyst	(162)	(160)	(158)	(156)	(154)
Developer Programmer	(208)	(206)	(204)	(201)	(199)



Occupations Title	Estimated 5-Year Gaps				
	2020/20 21	2021/20 22	2022/20 23	2023/20 24	2024/20 25
Web and Multimedia Developers					
Multimedia Specialist	306	337	371	408	449
Web Developer	247	272	299	329	362
Computers Quality Assurance Analyst	287	309	332	354	377
Database Designer and Administrator	126	138	152	168	186
Systems Administrator	244	266	281	318	368
Computer Network Professionals					
Computer Network and Systems Engineer	277	305	336	369	406
Network Analyst	224	246	271	298	328
Transmission Engineer	166	182	201	221	243
Database and Network Professionals not Elsewhere Classified					
ICT Security Specialist	59	65	71	78	86
Technical ICT Support Services Manager	44	48	53	58	64

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

Over the next five years, the country will need a substantial number of skilled human resources (both in terms of quantity and quality) such as Telecommunications Engineers, Telecommunications Network Engineers, ICT Trainers, Multimedia Specialists, Web Developers, Computers Quality Assurance Analysts, Database Designers and Administrators and Systems Administrators, among others, to push the programme aspiration towards realizing the national goal. This will be necessary to achieve the NDPIII targeted results under this programme such as increasing ICT penetration from 25% to 50%, creating 30,000 direct jobs annually within the ICT sector; increasing local ICT innovation products developed and commercialized from 72 to 282; reducing the cost of ICT devices and services and providing 80% of government services online.

4.2.5.3 Human Resource Development Objectives for this Programme

The goal of the programme is to build a mass of ICT knowledge and skills that will lead to increased penetration and utilization of ICT services for social and economic development. The objectives of this programme are:

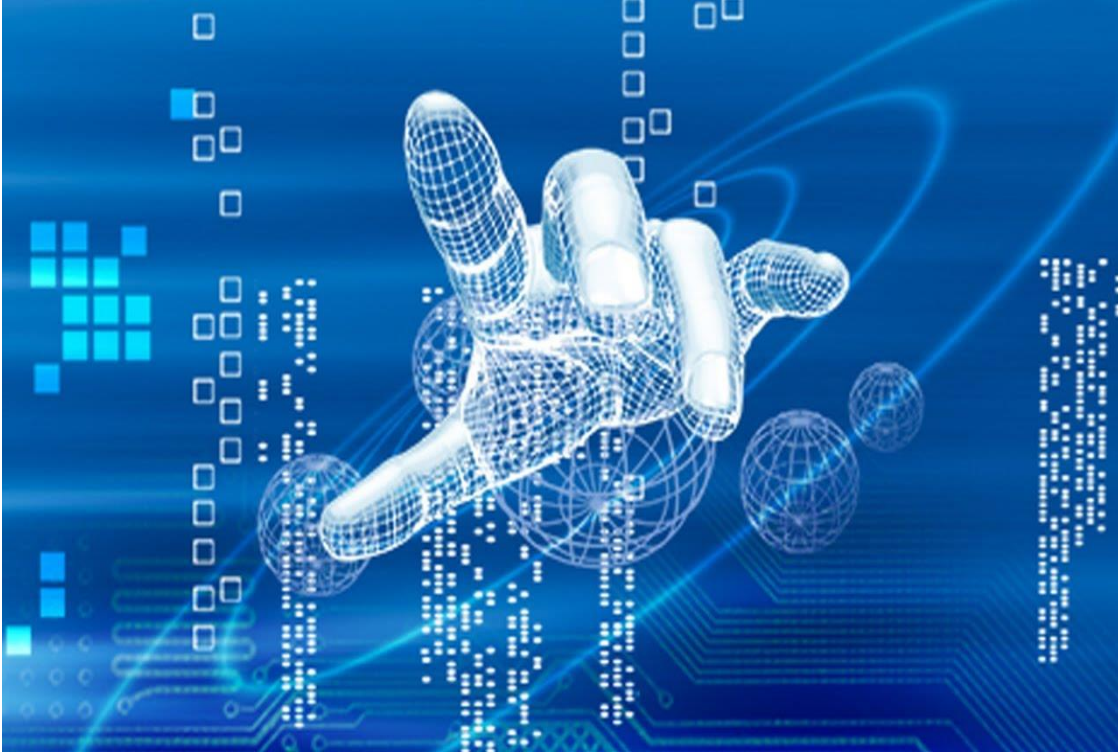
- i) To align education and training with the changing nature of the labour market needs in the ICT and Digital Technology Programme to drive production and productivity gains.
- ii) To increase technical and professional expertise in various fields in the ICT and Digital Technology Programme.
- iii) To institutionalise Human Resource Development along the value chain of ICT and Digital Technology Programme.



4.2.5.4 Specific interventions to address competency gaps for the Digital Transformation Programme

- i) Establish a Programme Skills Coordination Committee (PSCC) for Digital Transformation Programme¹⁹. The PSC shall determine the skills needs and skills standards for the entire ICT and Digital Technology Programme.
- ii) Each institution (MDAs) under the Digital Transformation Programme should develop a 5-year Human Resource Development Plan in line with its strategic plan and MDA HRDP guidelines to identify and prioritize critical skills and education needs as well as soft skills requirements to meet the present and the future manpower needs within the Programme.
- iii) Establish a scholarship programme in scarce and prioritized strategic areas within the Digital Transformation Programme with no training available in the country.
- iv) Establish internship, apprenticeship and exchange programme in the prioritized strategic areas within the Digital Transformation Programme both within and between countries.
- v) Review and implement ICT training curriculum at all levels of the education system in collaboration with the industry players.
- vi) Undertake training and re-training of all personnel in all MDAs in applying and using ICT to improve the delivery of services to the public.
- vii) Develop a programme for providing capacity building in basic digital literacy for all Ugandans to cope with the changing technology that is influencing all spheres of life.

¹⁹ See Annex 3 for the roles of the Program Skills Committees.



INNOVATION, TECHNOLOGY DEVELOPMENT AND TRANSFER PROGRAMME





4.2.6 Innovation, Technology Development and Transfer Programme

4.2.6.1 Introduction

Significant investment in human capital is needed for Uganda to transform into a knowledge economy soon. Enhancing science education is a strategic investment for Uganda that is aiming to create a critical mass of scientists and innovators to spur growth and development. Access to Science Technology and Innovation (STI) related disciplines within higher education institutions is increasing because of government's commitment to see that a greater proportion of graduates take science and engineering (S&E) courses. Despite growing science and technology enrollments in universities/colleges and efforts to boost the training of teachers, inadequate human resources in science and technology remains a challenge. Though Government policy interventions, enrollments have increased at all levels of, major leakages are found along the education and training value chain. Science education is also challenged by inadequacies infrastructure, few and poorly motivated teachers and an examination focussed curriculum that is devoid of innovation.

Technological advancement and scientific innovation are creating a paradigm shift in work force demands and are therefore re-defining the broad skill set necessary in Uganda's STI industry. The extraordinary changes in the nature and future of work, as well as living in a world that is increasingly digitalized and interconnected processes require the merging of hard skills and soft skills; linking content knowledge and mindsets acquired in the classroom, and career preparedness in terms of work-based learning. Science education offered in Uganda should promote interdisciplinary literacy, information literacy, intercultural literacy, international literacy, and inter-professional literacy; as well as skills, competencies, and mindsets for flexibility, adaptability, versatility, and resilience.

There is also need to improve innovation and technology through education curriculum reforms that speak to the industrial needs. The curricula of science courses need to be revised to bring them up to date with current industrial practice, tailor them to local context and align them to international norms. As enrollments on some programmes have increased, the teaching methodology also needs to undergo review to ensure that students are equipped with right skills that will foster graduate employability. As such, it is imperative for the Government of Uganda to create opportunities for industrial attachment for students, deepen industrial exposure, opportunities for training and internships in public science and research institutes, etc. and access to science centres.

The programme further seeks to promote the development of a well-coordinated STI eco-system by developing the requisite STI infrastructure and building human resource capacity. The programme is expected to: increase utilization and penetration of ICT, enhance R&D and innovation capacities and applications, and increase development, transfer and adoption of appropriate technologies and innovations. This will help Uganda to increase her Global Innovation Index from 25 to 35; increase Gross Expenditure on R&D as a percentage of GDP (GERD) from 0.4 percent to 1 percent; increase business enterprise sector spending on R&D (percent of GDP) from 0.01 percent to 0.21 percent; and increase the number of



Intellectual Property Rights registered per year from 2 to 50. This has implications on the kind of human resources that shall have to take a centre stage in this transformation agenda.

4.2.6.2 Major competency gaps for this Programme

The estimation of the human resource gaps over the next five years for the Innovation, Technology Development and Transfer Programme is primarily based on the projected economic expansion and replacement demand as well as the programme's strategic direction. In this era of ever-changing technology and new emerging technologies, innovation through R&D cannot be overemphasized. Uganda ranked at 102 out of the 129 countries in the 2019 Global Innovation Index (GII) compared to Kenya, Rwanda, and Tanzania ranked 77, 94 and 97, respectively. This position commensurate with the country's expenditure on research and development (R&D) of only 0.4 percent of GDP, business expenditure on R&D of 0.01 percent. Over the coming five years, the programme's targets:

- i) Increase the Global Innovation Index from 25.3 to 35.0;
- ii) Increase Gross Expenditure on R&D as a percentage of GDP (GERD) from 0.4 percent to 1 percent;
- iii) Increase business enterprise sector spending on R&D (percent of GDP) from 0.01 percent to 0.21 percent; and
- iv) Increase the number of Intellectual Property Rights registered per year from 2 to 50.

Based on the model for human resources projections, detailed qualifications and skills need for the Innovation, Technology Development and Transfer Programme are articulated in table 11.

Table 11: Estimated 5-year Occupation Gaps for this Programme

Occupations Title	Estimated 5-year Skills Gaps				
	2020/2021	2021/2022	2022/2023	2023/2024	2024/2025
Systems Analysts					
ICT Systems Analyst	(132)	(130)	(129)	(127)	(126)
Data Scientist	(180)	(178)	(176)	(174)	(171)
Software Developers	(216)	(213)	(211)	(208)	(206)
Software Developer	(347)	(344)	(340)	(336)	(332)
Programmer Analyst	(162)	(160)	(158)	(156)	(154)
Developer Programmer	(208)	(206)	(204)	(201)	(199)
Web and Multimedia Developers					
Multimedia Specialist	306	337	371	408	449
Web Developer	247	272	299	329	362
Total	1,053	1,158	1,274	1,402	1,542
Computers Quality Assurance Analyst	287	309	332	354	377
Database Designer and Administrator	126	138	152	168	186
Systems Administrator	(826)	(867)	(910)	(956)	(1,003)
Computer Network Professionals					
Computer Network and Systems Engineer	114	123	132	141	151
Network Analyst	132	142	153	163	174
Transmission Engineer	108	116	125	134	142



Occupations Title	Estimated 5-year Skills Gaps				
	2020/2 021	2021/2 022	2022/2 023	2023/2 024	2024/2 025
Database and Network Professionals not Elsewhere Classified	59	65	71	78	86
ICT Security Specialist	44	48	53	58	64
Technical ICT Support Services Manager	250	275	303	333	367
Information and Communications Technology Installers and Servicers					
Data and Telecommunications Cabler	188	196	205	214	224
Telecommunications Cable Jointer	225	235	246	257	268
Computer Engineering Mechanic / Service Person	363	379	396	414	432
Telecommunications Line Mechanic	169	176	184	193	201
Telecommunications Technician	218	227	238	248	259
Communications Operator	218	227	238	248	259
Other occupations not classified elsewhere					
Animal Geneticists	341	351	362	373	384
Astronomists	22	22	23	24	24
Big data analysts	22	22	23	24	24
Business intelligence (BI) analysts	19	19	20	21	21
Food researchers	28	31	35	38	41

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

Therefore, investing in the development of skilled human resources in STI is critical towards achieving the programme targets in the next five years. This will strategically position Uganda to benefit from the 4th Industrial Revolution as an integral part of the ongoing automation of traditional manufacturing and industrial practices, using modern smart technology. Efforts to establish partnerships between universities, research institutions and industry as a key driver of improving the overall ecosystem is necessary. This will go a long way in achieving the NDPIII programme focus of harnessing STI through developing a well-coordinated STI eco-system and realizing the corresponding targets.

4.2.6.3 Human Resource Development Objectives for this Programme

The goal of this programme is to produce human resources with the capacity to generate and effectively apply STI based on contemporary and future needs of society. The objectives of this programme are:

- i) To align education and training with the changing nature of the labour market needs in the Innovation, Technology Development and Transfer Programme.
- ii) To increase technical and professional expertise in various fields of the Innovation, Technology Development and Transfer Programme along the value chain.
- iii) To build capacity of small-scale, subsistence and informal stakeholders/players to boost Innovation, Technology Development and Transfer in the country.
- iv) To institutionalise Human Resource Development among the MDAs within the Innovation, Technology Development and Transfer Programme.



4.2.6.4 Specific interventions to address competency gaps for this Programme

- i) Establish a Programme Skills Coordination Committees (PSCC) for the Innovation, Technology Development and Transfer Programme²⁰. The Committees shall determine skills needs and skills standards for the programme.
- ii) Each institution (MDAs) under the Innovation, Technology Development and Transfer Programme should develop a 5-year Human Resource Development Plan in line with its strategic plan and the HRDP guidelines to identify and prioritize critical skills and education needs as well as soft skills requirements to meet the present and the future manpower needs within the Programme.
- iii) Establish a scholarship programme in scarce and prioritized strategic areas within the Innovation, Technology Development and Transfer Programme with no training available in the country
- iv) Establish internship, apprenticeship and exchange programme in the prioritized strategic areas within the Innovation, Technology Development and Transfer Programme both within and between countries.
- v) Build capacity of small scale and informal workers within the Innovation, Technology Development and Transfer Programme.

²⁰ See Annex 3 for the roles of the Program Skills Committees.



INTEGRATED TRANSPORT INFRASTRUCTURE AND SERVICES PROGRAMME





4.2.7 Integrated Transport Infrastructure and Services Programme

4.2.7.1 Introduction

Infrastructure plays an important role in contributing to a higher rate of Uganda's economic growth as it provides employment opportunities both indirectly and directly thus improving the standard of living. Transport infrastructure and services increase household incomes and quality of life by linking growth opportunities in agriculture, tourism and minerals, oil and gas among others. In Uganda, the transport sector is divided into major sub-sectors based on transport mode; railway transport, air transport, water transport and road transport. The road transport is the most dominantly used of transport for both freight and passenger services. When clearly aligned, infrastructural works in the transport sector provide limitless employment opportunities to skilled and semi-skilled personnel during the various stages of the infrastructure project cycles. The transport sector unlike other sectors cuts across various professions, as different skill sets are required at different stages of the project cycles thus enhancing the economy.

One of the key challenges that the programme faces is weak local content capacity due to weak local construction industry. About 80 percent of civil works contracts in Uganda are undertaken by foreign/International construction companies and a big portion of the construction requirements are imported. The local construction industry is weak in terms of equipment, technical and financial capacity. Consequently, the country is unable to develop a minimum threshold of competent national expertise for construction, operation and maintenance of national transport infrastructure. On average, about 28 percent of all road contracts signed are allocated to local contractors. Taking all other factors constant, foreign companies charge higher prices because they require a higher profit margin, and have a higher price for domestic risks. Therefore, improving the institutional capability, professional skills and ethical outlook of the different actors is crucial to the successful implementation of this programme.

The programme requires an array of qualified specialists, including planners, engineers, economists, management specialists, contractors and administrators among others. These personnel must be available in the required numbers, and imbued with the work ethic and integrity necessary to work for the public good rather than for individual or vested interests. Safe and sustainable transport and infrastructure services demand a new breed of transport and infrastructure professionals, with skills at advanced levels and cutting across domains. All these require a deeper and wider investment in human capital development to serve the industry particularly in the context of rapidly advancing STI.

4.2.7.2 Major competency gaps for the Integrated Transport Infrastructure and Services Programme

Labour supply and demand analysis points to different education and qualifications gaps that are critical to the delivery of this programme. The key skills shortages are likely to persist in occupations requiring Aircraft Navigator, Flight Engineer, Aeroplane Pilot, Flying Instructor, Helicopter Pilot, Balloonist, Air Traffic Controllers, Mechanical Engineer,



Mechanical Engineering Technologist, Aeronautical Engineer, Aeronautical Engineering Technologist, Ferry Engineering Technologist, Fossil Power Plant Process Controller, Hydro Power Plant Process Controller, Nuclear Power Plant Process Controller, Wind Turbine Power Plant Process Controller, Concentrated Solar Power (CSP) Plant Process Controller, Geothermal Technicians and Weatherization Installers and Technicians. Detailed qualifications and skills need for the Integrated Transport Infrastructure and services programme required over the next five years by field of study are further articulated table 12.

Table 12: Estimated 5-year Occupation and Skills Gaps for this Programme

Occupations Title	Estimated 5 Year Gaps				
	2020/20 21	2021/20 22	2022/20 23	2023/20 24	2024/20 25
Civil Engineering Technicians	312	326	340	355	370
Civil Engineering Technician	391	407	425	443	462
Surveying or Cartographic Technician	156	163	170	177	185
Town Planning Technician	234	244	255	266	277
Water Control Officer	286	299	312	325	339
Mechanical Engineering Technicians					
Mechanical Engineering Technician	251	261	273	284	296
Pressure Equipment Inspector	100	105	109	114	119
Aeronautical Engineering Technician	150	157	164	171	178
Civil & Mechanical Engineers and casual Labourers					
Civil Engineer	311	346	381	416	451
Civil Engineering Technologist	178	198	218	238	258
Casual Labourers	(1,119)	(1,220)	(1,329)	(1,449)	(1,580)
Mechanical Engineer	133	147	161	177	195
Mechanical Engineering Technologist	133	147	161	177	195
Aeronautical Engineer	249	274	301	331	364
Aeronautical Engineering Technologist	53	59	65	71	78
Ferry Engineering Technologist	98	108	118	130	143
Ferry/Ships' Deck Officers and Pilots					
Ship's Master	48	53	58	64	70
Ship's Officer	48	53	58	64	70
Ship's Surveyor	90	99	108	119	131
Marine Certification & Surveillance Manager	19	21	23	26	28
Boat Driver	128	141	155	170	187
Aircraft Pilots and Related Associate Professionals					
Aircraft Navigator	28	30	33	35	38
Flight Engineer	28	30	33	35	38
Aeroplane Pilot	9	10	11	12	13
Flying Instructor	13	14	15	16	18
Helicopter Pilot	24	26	28	31	33
Balloonist	17	18	20	21	23
Air Traffic Controllers	13	14	15	16	18
Earthmoving and Related Plant Operators					
Earthmoving Plant Operator (General)	385	401	418	436	455
Backhoe Operator	264	276	288	300	313
Bulldozer Operator	240	251	262	273	284



Occupations Title	Estimated 5 Year Gaps				
	2020/20 21	2021/20 22	2022/20 23	2023/20 24	2024/20 25
Excavator Operator	168	176	183	191	199
Grader Operator	313	326	340	355	370
Loader Operator	216	226	235	245	256
Mulcher Operator	168	176	183	191	199
Tunneling Machine Operator	188	196	204	213	222
Scraper Operator	120	125	131	136	142
Dragline Operator	168	176	183	191	199
Railway Track Master	313	326	340	355	370
Road Roller Operator	216	226	235	245	256
Dump Truck Operator	168	176	183	191	199
Power Production Plant Operators					
Fossil Power Plant Process Controller	41	44	48	53	58
Hydro Power Plant Process Controller	28	30	33	37	40
Nuclear Power Plant Process Controller	22	24	26	28	31
Wind Turbine Power Plant Process Controller	24	26	29	32	35
Concentrated Solar Power (CSP) Plant Process Controller	16	17	18	20	22
Geothermal Technicians	22	24	26	28	31
Weatherization Installers and Technicians	41	44	48	53	58
Solar Photovoltaic Service Technician	28	30	33	37	40
Wind Turbine Service Technician	22	24	26	28	31
Railway Brake, Signal and Switch Operators					
Railway Signal Operator	10	11	12	13	15
Train Controller	29	30	34	37	41
Car, Taxi and Van Drivers and Motorcycle Drivers					
Chauffeur	(518)	(601)	(697)	(809)	(938)
Taxi Driver	(1,900)	(2,204)	(2,556)	(2,965)	(3,440)
Emergency Vehicle Drivers	1,554	1,803	2,092	2,426	2,814
Delivery Driver (Motorcycle)	(2,072)	(2,404)	(2,789)	(3,235)	(3,752)
Bus and Tram Drivers					
Bus Driver	(111)	(119)	(131)	(144)	(159)
Charter and Tour Bus Driver	100	107	118	130	143
Passenger Coach Driver	(134)	(143)	(157)	(173)	(190)
Heavy Truck and Lorry Drivers					
Truck Driver (General)	(197)	(211)	(232)	(255)	(280)
Aircraft Refueller	20	21	23	25	28
Tanker Driver	(77)	(82)	(90)	(99)	(109)
Armored Personnel Carrier Operator	108	116	127	140	154
Road Construction Plant Operators	226	242	266	293	322
Crane, Hoist and Related Plant Operators					
Crane or Hoist Operator	(374)	(400)	(440)	(484)	(533)
Cable Ferry Operator	91	98	108	118	130
Dredge Operator	191	205	225	247	272
Lifting Truck Operators					
Lift Operator	(252)	(270)	(297)	(326)	(359)
Forklift Driver	(355)	(380)	(418)	(460)	(506)
Straddle Carrier Operator	(743)	(795)	(875)	(962)	(1,058)

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



Over the next five years, the integrated transport infrastructure and services programme targets: reducing the average travel time (min per Km) in GKMA from 4.1 to 3.5 which will require; reducing the freight transportation costs (per ton per km in USD) from 0.77 to 0.60 from the coast to Kampala on road; reducing the unit cost of building transport infrastructure, per Km; increasing the stock of transport infrastructure; increasing the average infrastructure life span as well as reducing the fatality and causality per the mode of transport from 3,689 to 3,289 on road and from 160 to 50 on water.

To achieve the above results, the integrated transport infrastructure and services programme prioritized several projects and interventions. These include:

- i) Implementing an integrated multi-modal transportation hub (air, rail, road, water);
- ii) Constructing and upgrading climate-proof strategic transport infrastructure;
- iii) Increasing the capacity of existing transport infrastructure and services;
- iv) Providing non-motorized transport infrastructure within urban areas;
- v) Rehabilitating and maintaining transport infrastructure;
- vi) Implementing a transport infrastructure planning and pim system;
- vii) Scaling up transport infrastructure and services information management systems;
- viii) Developing and strengthening transport planning capacity;
- ix) Promoting research, development, and innovation (rdi) including design manuals, standards, and specifications;
- x) Rehabilitating, upgrading, and extending the meter-gauge railway (including jinja/bukakata to bukasa inland port);
- xi) Constructing and upgrading cross border multi-modal transport infrastructure, among others.
- xii) These anticipated interventions and projects have direct and indirect implications on the type and quality of human resources that will be required in the country over the short to medium term.

4.2.7.3 Human Resource Development Objectives for this Programme

The goal of the programme is to attract competent and skilled manpower for sustainable efficient and effective operations and management of the transport system achieving sustainable transport development. The objectives of this programme are:

- i) To align education and training with the changing nature of the labour market needs in the Integrated Transport Infrastructure and Services Programme to efficiently execute the planned transport interventions.
- ii) To coherently plan and develop technical and professional expertise in various fields of the Integrated Transport Infrastructure and Services Programme for improved competitiveness and access within and out of the Country.
- iii) To institutionalize Human Resource Development Planning among the MDAs in the Programme through the development of MDA HRD Plan aligned to their strategic plans.
- iv) To develop and strengthen Transport Infrastructure and Services planning capacity in the country to promote local content in Uganda's Transport Infrastructure and Services Programme through in-service training, internship, apprentice among other areas.



4.2.7.4 Specific interventions to address competency gaps for the Integrated Transport Infrastructure and Services Programme

- i) Establish a Programme Skills Coordination Committees (PSCC) for Integrated Transport Infrastructure and Services Programme²¹. The Committees shall determine skills needs and skills standards of the programme.
- ii) Each institution (MDAs) under the Integrated Transport Infrastructure and Services Programme should develop a 5-year Human Resource Development Plan in line with their strategic plans and the HRDP guidelines prioritizing skills requirements to meet the present and the future manpower needs within the Programme.
- iii) Develop a training programme guided by skills and education skills need assessment as a basis for rationalizing scholarship and funding to support the acquisition of the required human capital.
- iv) Institute mechanisms to enhance internship, apprenticeship and exchange programmes in the prioritized strategic areas within the Integrated Transport Infrastructure and Services Program.

²¹ See Annex 3 for the roles of the Program Skills Committees.



SUSTAINABLE HOUSING AND URBAN DEVELOPMENT





4.2.8 Sustainable Urbanization and Housing Programme

4.2.8.1 Introduction

The urbanization and housing industry is crucial in contributing towards poverty alleviation and improvement of living standards of the people, and is one of the major employer in Uganda. Urbanization and housing development has significant backward and forward linkages with capacity to generate employment and enhancement of household income through; creation of industries in production of building materials, building construction, maintenance and related services. This programme has the potential of becoming the engine for sustainable socio-economic development in the country. Further, significant investment in this industry enhances macroeconomic stability as the resources are spent on capital rather than consumptive expenditure. It also has the potential to generate revenue through taxes on building materials, revenues from premium, rentals or property taxes and other fees.

Uganda's urban growth rate in 2019 was 5.2 percent and it is projected to be 26.5 percent in 2030. In addition, the urban population for the next 10 years (2020-2030) is further projected to grow by 69 percent, adding 8.1 million people to the country's cities. The rise in the urban population has exacerbated informal settlements (slums) which are occupied by over 60 percent of the urban population. Many urban areas in Uganda have expanded beyond their original spatial plans with many urban areas surrounded by vast sprawling unplanned settlements and have increasingly encroached on the wetlands and drainage corridors. To correct these Housing and Urban Development challenges, the programme set five objectives;

- i) Increase economic opportunities in cities and urban areas;
- ii) Strengthen urban policies, planning and finance;
- iii) Promote urban housing market and provide decent housing for all;
- iv) Enable balanced, efficient and productive national urban systems; and,
- v) Promote green and inclusive cities and urban areas.

Urbanization and housing development require a range of labour supply including skilled, semi-skilled and unskilled. Skilled labour includes disciplines such as Engineering, Architecture, Surveying, Planning, Financing and Management. The semi-skilled category includes technicians and artisans while the unskilled comprises of mainly casual labourers. There is, however, a limited number of housing professionals in the country, with the available few unevenly distributed in the country; many of the professional manpower favouring to work from Kampala and its neighbourhoods. Lack of skills affects productivity of the workers causing cost and time overruns especially in construction projects. The Government of Uganda needs to introduce regular and targeted training programmes of the labour force to improve their productivity.

The urban and housing industry is entering a period of transition as new construction technologies, energy devices and smart systems are mainstreamed leading to new skills and training needs. Given the range of potential changes in the urban and housing industry in terms of future new home power supplies, smart technologies, energy saving devices, the



coming period presents challenges but also exciting opportunities for new skill sets, workforce diversity, new entrants and their careers. The industry still requires a supply of expert site and craft skills. As such, the industry skills funders and Government of Uganda are at a confluence of having to address both the investment in skills supply and upskilling in private and public sector is required.

In view of the above, the programme seeks to increase economic opportunities in cities and urban areas; promote urban housing market and provide decent housing for all. It also seeks to promote green and inclusive cities and urban areas; enable balanced, efficient and productive national urban systems and strengthen urban policies, planning and finance. This will lead to a reduced urban unemployment rate from 14.4 percent to 9.4 percent; a reduced acute housing deficit of 2.2 million by 20 percent; decreased percentage of urban dwellers living in slums and informal settlements from 60 percent to 40 percent; decreased average travel time per km in GKMA from 4.1 min/km to 3.5min/km; increased proportion of tarmacked roads in the total urban road network from 1,229.7 km (6.1 percent) to 2,459.4 km (12.2 percent); and improved efficiency of solid waste collection from 30 percent to 50 percent. It is important to note that achievement of the key results in this programme is hinged on the existing qualifications and skills needs presented in Table 13.

4.2.8.2 Major competency gaps for the Sustainable Urbanization and Housing Programme

The occupation and skills gaps for the Sustainable Housing and Urban Development Programme are based on the projected socio-economic change, replacement demand and the programme's strategic direction. Therefore, the Government of Uganda needs to provide the training institutions with the necessary logistical support to deliver the required Human Resources under this programme as detailed in table 13. In addition, technical training, especially in vocational institutions, needs to be given special attention to establish quality of training.

Table 13: Estimated 5-year Occupation Gaps for this Programme

Occupation Title	Estimated 5-year Gaps				
	2020/2021	2021/2022	2022/2023	2023/2024	2024/2025
Building Architects					
Heritage Architect	35	38	41	45	48
Conservation Architect	69	76	82	89	96
Building Architect	242	265	289	312	335
Landscape Architects					
Landscape Designer	(187)	(163)	(110)	(102)	(93)
Landscape Planner	(83)	(72)	(49)	(45)	(41)
Garden Designer	(146)	(127)	(86)	(79)	(72)
Town and Traffic Planners					
Urban and Regional Planner	246	257	269	281	294
Traffic Planners and Analyst	43	45	47	50	52
Cartographers and Surveyors					
Cartographer	135	146	156	167	177



Occupation Title	Estimated 5-year Gaps				
	2020/2021	2021/2022	2022/2023	2023/2024	2024/2025
	1	2	3	4	5
Surveyor	317	341	365	390	414
Civil Engineering Technicians					
Civil Engineering Technician	385	446	517	600	696
Surveying or Cartographic Technician	171	198	230	267	309
Town Planning Technician	299	347	402	467	542
Electrical Engineering Technicians					
Electrical Engineering Technician	597	615	634	653	672
Electric Substation Operations Manager	179	185	190	196	202
Energy Efficiency Technician	418	431	443	457	470
House Builders	(6,120)	(5,866)	(5,566)	(5,227)	(4,855)
Bricklayers and Related Workers	(3,571)	(3,523)	(3,466)	(3,402)	(3,332)
Stonemasons, Stone Cutters, Splitters and Carvers					
Stonemason	(266)	(266)	(266)	(266)	(266)
Granite Cutter	(80)	(80)	(80)	(80)	(80)
Refractory Mason	(186)	(186)	(186)	(186)	(186)
Carpenters and Joiners	6,673	7,446	8,358	9,385	10,515
Roofers					
Roof Tiler	(270)	(270)	(270)	(270)	(270)
Roof Plumber	(347)	(347)	(347)	(347)	(347)
Roof Thatcher	(154)	(154)	(154)	(154)	(154)
Floor Layers and Tile Setters					
Wall and Floor Tiler	(428)	(391)	(357)	(326)	(298)
Floor Finisher	(75)	(69)	(63)	(57)	(53)
Plasterers					
Fibrous Plasterer	(655)	(603)	(554)	(510)	(469)
Plasterer	(1,965)	(1,808)	(1,663)	(1,530)	(1,408)
Insulation Workers	(129)	(119)	(94)	(69)	(39)
Plumbers and Pipe Fitters					
Plumber	443	494	554	621	694
Solar Installer	277	309	346	388	434
Fire Services Plumber	406	453	508	569	636
Heat Pump Installer	332	371	415	466	521
Pipe Fitter	388	432	485	543	607
Air Conditioning and Refrigeration Mechanics					
Air-conditioning and Refrigeration Mechanic	822	915	1,024	1,148	1,284
Refrigeration Mechanic	484	539	604	677	757
Painters and Related Workers	1,467	1,633	1,829	2,050	2,293
Building Structure Cleaners	(128)	(128)	(128)	(128)	(128)
Metal Moulders and Coremakers	234	261	293	330	370
Welders and Flame Cutters					
Pressure Welder	(1,862)	(1,676)	(1,508)	(1,358)	(1,222)
Welders	(6,517)	(5,866)	(5,279)	(4,751)	(4,276)
Fitter-welder	(2,128)	(1,915)	(1,724)	(1,551)	(1,396)
Gas welder and cutters	80	72	65	58	52
Building and Related Electricians					
Electrician	(699)	(664)	(631)	(600)	(570)
Electrical Installation Inspector	(175)	(166)	(158)	(150)	(142)



Occupation Title	Estimated 5-year Gaps				
	2020/202 1	2021/202 2	2022/202 3	2023/202 4	2024/202 5
Millwright	291	277	263	250	237
Electrical Line Installers and Repairers					
Electrical Line Mechanic	(191)	(164)	(141)	(121)	(104)
Cable Jointer	(236)	(203)	(175)	(150)	(129)
Avionics Mechanics	(145)	(125)	(108)	(92)	(80)
Radar Mechanics	(200)	(172)	(148)	(127)	(109)
Business Machine Mechanic	(136)	(117)	(101)	(87)	(75)
Electronics Mechanics and Servicicers					
Electronic Equipment Mechanics	138	152	169	187	207
Instrument Mechanics	204	225	249	276	306
Special Class Electrician	171	189	209	232	257
Radiotrician	145	160	177	196	217

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

The availability of skills as highlighted above will be vital in streamlining the Sustainable Urbanization and Housing Programme skills as projected by NDPIII in-terms of improving the efficiency of solid waste collection from 30% to 50%; increasing the proportion of tarmacked roads in the total urban road network from 1,229.7 km (6.1%) to 2,459.4 km (12.2%); and decreasing the average travel time per km in GKMA from 4.1min/km to 3.5 min/km.

4.2.8.3 Human Resource Development Objectives for this Programme

The goal of this programme is to invest in human resources that will deliver and monitor quality of inclusive, productive and liveable urban areas for socio-economic development. The objectives of this programme are:

- i) To align education and training with the changing nature of the labour market needs of the Sustainable Urbanization and Housing Programme to efficiently manage, operate and sustain a modern and dynamic housing and land administration system.
- ii) To increase technical and professional expertise in various fields of the Sustainable Urbanization and Housing Programme at all levels.
- iii) To institutionalize Human Resource Development among the MDAs within the Sustainable Urbanization and Housing Programme.
- iv) To develop and strengthen Housing and Urban Development Planning capacity in the country to boost Uganda’s Sustainable Urbanization and Housing Programme.

4.2.8.4 Specific interventions to address competency gaps for the Sustainable Urbanization and Housing Programme

- i) Establish a Programme Skills Coordination Committee (PSCC) for the Sustainable Urbanization and Housing Programme²². The Committee shall determine skills needs and skills standards of the programme.

²² See Annex 3 for the roles of the Program Skills Committees.



- ii) Each institution (MDAs) under the Sustainable Urbanization and Housing Programme should develop a 5-year Human Resource Development Plan in line with their strategic plan and the MDA HRDP guidelines to identify and prioritize critical skills and education needs as well as soft skills requirements to meet the present and the future manpower needs within the Programme.
- iii) Establish a scholarship programme in scarce and prioritized strategic areas within the Sustainable Urbanization and Housing Programme with no training available in the country.
- iv) Establish internship, apprenticeship and exchange programme in the prioritized strategic areas within the Sustainable Urbanization and Housing Programme.



SUSTAINABLE ENERGY DEVELOPMENT PROGRAMME





4.2.9 Sustainable Energy Development Programme

4.2.9.1 Introduction

The contribution of energy programme to employment in the country is through a three-pronged approach. This is mainly through direct employment for people employed in the institutions that regulate and run the energy programme like ERA, REA, UEGCL, UETCL and UEDCL; through supporting the establishment of businesses that solely depend on energy as key input for their production; and thirdly, supporting large scale industrial production, which creates employment opportunities. Supporting large scale production and small-scale businesses that use energy as a key input are the leading areas through which energy contributes to employment. Renewable energy sector has directly and indirectly contributed to employment of over 5.7m people in 2012 that increased to 8.3m people in 2016 with an anticipated increase to over 25m people by 2030. This has majorly happened in rural areas where there is limited access to the main grid. Most supported businesses include salons, phone charging points and electronics support, lighting systems, among others.

Uganda's energy industry has experienced fast growth in the recent years which has required continuous human resource training to accelerate the industry's innovation and technology diffusion. The purpose of continuous human resource training in the energy industry particularly the generation aspect is because of the increased desire for efficiency and effectiveness in electricity generation, transmission and distribution. While training is a critical component of improving electricity generation, the cost of sustaining it has been high since most of the training has been done outside the country. The high costs of training prohibit opportunities for training as many staff as possible and this has not only limited capacity building for the energy sector but also reduced chances for local content staff development and keeps human resource gaps for technical positions. This has left gaps in innovation management because most of the financial resources are spent on foreign training and creates challenges of looking for expatriates that come with the skills ready to work. This subsequently kills opportunities for high quality employment opportunities for the local staff in the energy industry. It is, therefore, imperative for the Government of Uganda to establish local centres of excellence that will improve access to high quality skills for the energy sector along its value chain, reduce the cost of training but without compromising the quality of capacity building.

The future skills landscape for the energy industry will require a diversity of skills given the new technologies and business models that create a constant churn of labour market disruption. These skills include basic electrical skills, wiring of buildings skills, skills in integrating direct and alternating current, skills in developing greenfield power projects, skills in developing power project proposals, solar installations and skills in energy efficiency. Other future required skills include carrying out feasibility studies, developing power purchasing agreements, power trading, designing and implementing interconnections, project management, financial modelling of energy projects, commercial contracts especially risk allocation between the public and private sectors, among others.



The NDPIII articulated the energy development programme as part of the 18 National programmes which aims to increase access to and consumption of clean energy. The key NDPIII expected results of this programme to include increased primary energy consumption; increased proportion of population accessing electricity; reduction in the share of biomass energy used for cooking; increased transmission capacity; and enhanced grid reliability. The successful implementation of this programme will partly require necessary human resource skills to drive the programme agenda as detailed in table 15.

4.2.9.2 Major competency gaps for the Sustainable Energy Development Programme

The NDP III is conscious of the fact that the availability of sustainable, reliable, affordable, and clean energy services is critical for economic growth, poverty reduction, as well as the social and cultural transformation of society. However, without the presence of adequate and appropriately skilled human resources, this remains a dream. Within this plan, the human resource requirements for this programme over the 5 years are projected based on the likely expansion of economic activities and the programme strategic direction in the short to medium terms. The strategic direction of this programme entails increasing access and consumption of clean energy by 2024/25. Specifically, the programme targets:

- i) increasing the contribution of energy to industry GDP from 5.075% in 2019/20 to 6.59% in 2024/25;
- ii) increasing primary energy consumption from 15.20 million tons of oil equivalent to 21.74 million tons in 2025;
- iii) increasing the proportion of the population with access to electricity from 24 percent in FY2018/19 to 60 percent;
- iv) increasing the share of clean energy used for cooking from 15 percent in FY2018/19 to 50 percent;
- v) Increase transmission capacity from 2,354km in 2018/19 to 4,354km of high voltage transmission lines; and
- vi) Increase national LPG uptake from the current 1 percent to 8 percent on the energy balance.

The targeted results as mentioned above are to be achieved through increasing electricity generation capacity, increasing access and utilization of electricity, increasing adoption and use of clean energy, and promoting utilization of energy-efficient practices and technologies. Specifically, the programme intends to

- i) Rehabilitate the existing transmission network,
- ii) Expand the transmission network to key growth economic zones,
- iii) Expand and rehabilitate the distribution network including rural and hard-to-reach areas,
- iv) Undertake preliminary development of large generation plants (construction for Ayago 840 MW, feasibility for Kiba 330 MW and Oriang 392 MW),
- v) Develop medium and small power plants (Muzizi HPP, Nyagak, biogas cogeneration),
- vi) Seek approvals for construction of a nuclear power generation plant,



vii) Adopt the use of electric transport solutions e.g. solar-powered motorcycles, bicycles, and tricycles, investing in LPG infrastructure among others.

This projected trajectory has several implications on the kind and quality of human resources that will be required in the country over the short to medium terms. Detailed qualifications and skills need for this programme required over the next five years by field of study are further articulated Table 14.

Table 14: Estimated 5-year Critical Occupation Gaps for this Programme

Occupations Title	Estimated 5-year Gaps				
	2020/20 21	2021/20 22	2022/20 23	2023/20 24	2024/20 25
Power Production Plant Operators					
Fossil Power Plant Process Controller	(8)	(10)	(11)	(12)	(14)
Hydro Power Plant Process Controller	(10)	(12)	(13)	(15)	(16)
Nuclear Power Plant Process Controller	(9)	(11)	(12)	(14)	(15)
Wind Turbine Power Plant Process Controller	(11)	(13)	(14)	(16)	(18)
Concentrated Solar Power (CSP) Plant Process Controller	(12)	(14)	(16)	(18)	(19)
Geothermal Technicians	(11)	(13)	(14)	(16)	(18)
Weatherization Installers and Technicians	(10)	(12)	(13)	(15)	(16)
Solar Photovoltaic Service Technician	(10)	(11)	(13)	(14)	(16)
Wind Turbine Service Technician	(2)	(2)	(3)	(3)	(3)
Electronics Engineers					
Electronics Engineer	(55)	(53)	(52)	(50)	(48)
Electronics Engineering Technologist	(45)	(44)	(42)	(41)	(39)
Meteorologists					
Hydrometeorologist	5	5	6	6	7
Weather Forecaster	2	2	3	3	3
Atmospheric Scientist	3	3	4	4	5
Climate Scientist	3	3	3	4	4
Climatologist	2	2	2	2	3
Atmospheric Modeller	2	2	2	3	3
Aviation Meteorologist	3	3	3	3	4
Boundary Layer Meteorologist	2	2	3	3	3
Broadcast Meteorologist	2	2	2	2	3
Air Pollution Meteorology	4	4	4	5	5
Chemical Oceanography	2	2	3	3	3
Climate Change Scientist	2	3	3	3	4
Chemical Engineers					
Chemical Engineer	228	247	266	285	304
Chemical Engineering Technologist	172	186	200	215	229
Geologists and Geophysicists					
Exploration Geologist	4	5	6	7	8
Geological Auditor	4	4	5	6	7
Geomorphologist	3	3	4	4	5
Engineering Geologist	5	6	7	8	10
Structural Geologist	6	7	8	10	12
Field Geologist	5	5	6	8	9
Marine Geologist	4	4	5	6	7



Occupations Title	Estimated 5-year Gaps				
	2020/20	2021/20	2022/20	2023/20	2024/20
	21	22	23	24	25
Hydrogeologist	3	3	4	5	6
Palaeontologist	3	3	4	4	5
Geological Planner	6	7	8	10	11
Petrologist	4	5	5	7	8
Geoscientist	3	3	4	4	5
Volcanologist	2	3	3	4	5
Mine Geologist	4	5	6	7	9
Environmental Geologist	4	5	5	7	8
Historical geology	3	3	4	4	5
Geological Oceanographer	5	6	7	8	10
Geochemist	4	4	5	6	7
Physical geologist	6	7	8	10	11
Field seismology Geophysicist	5	5	6	8	9
Seismologist	3	3	4	4	5
Marine Scientist	4	5	5	7	8
Physical Oceanographer	3	3	4	4	5
Geophysical Scientist	2	2	2	3	3
Fibre Technologist	4	4	5	6	7
Polymer Scientist	3	3	4	4	5
Chemical Engineering Technician	22	24	26	29	31
Chemical Processing Plant Controllers	(7)	(7)	(7)	(7)	(7)
Petroleum and Natural Gas Refining Plant Operators					
Refinery Pipeline Controller	7	8	8	9	9
Oil and Gas Well Treatment Controller	3	4	4	4	5
Petroleum Process Operator	4	5	5	6	6
Petroleum and Gas Refining and Pumping Controller	2	2	3	3	3
Refinery Process Technician	4	5	5	5	6
Gas Compressor Turbine Controller	4	5	5	5	6
Petroleum Blending Plant Controller	2	3	3	3	3
Oil, Gas and Pipe Tester	4	5	5	5	6
Petroleum Terminal Plant Controller	3	3	3	3	4
Oil Products Processor	4	5	5	5	6
Industrial Gas Production Controller	2	2	2	2	3
Gas Plant Operator	2	3	3	3	3
Oil Dispatcher Pipelines	4	4	5	5	5
Industrial and Production Engineers					
Industrial Engineer	147	159	172	184	196
Industrial Engineering Technologist	74	80	86	92	98
Production Engineer	98	106	114	123	131
Production Engineering Technologist	88	96	103	110	118
Energy Efficiency Manager	83	90	97	104	111
Electrical Engineers					
Electrical Engineer	253	286	319	353	387
Electrical Engineering Technologist	147	166	185	205	225
Energy Engineer	106	120	134	148	163
Electrical Engineering Technicians					
Electrical Engineering Technician	4,567	4,968	5,412	5,892	6,404



Occupations Title	Estimated 5-year Gaps				
	2020/20 21	2021/20 22	2022/20 23	2023/20 24	2024/20 25
Electric Substation Operations Manager	2,686	2,922	3,184	3,466	3,767
Energy Efficiency Technician	1,701	1,851	2,016	2,195	2,386
Solar Installer	92	108	124	140	156
Solar astrophysics	34	45	61	74	87

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

Rehabilitation of the existing transmission network and expanding the transmission network requires the presence of adequate skills. The nature and the type of skills required include, among others, Power Production Plant Operators; Electronics Engineers; Meteorologists; Chemical Engineers; Geologists and Geophysicists; Geomorphologists Engineering Geologists and Structural Geologists as well as qualified and certified drivers. The plan provides measures of addressing human resource gaps in these areas. On the other hand, the construction of a nuclear power generation plant, adoption of electric transport solutions such as solar-powered motorcycles, bicycles, and tricycles, and investing in LPG infrastructure requires the presence of an adequate supply of Nuclear Physicists; Energy Systems, and Climate Change specialists; Energy Geoscientists; Chemical and Physical Science Technicians; Petroleum Process Operator; Petroleum and Gas Refining and Pumping Controllers; Gas Compressor Turbine Controllers; Gas Plant Operators; Industrial and Production Engineers; Electrical Engineers; Electrical Engineering Technicians; Electric Substation Operators; Energy Efficiency Technicians; Solar Installers and Solar astrophysicists. Based on clear needs assessment, MDAs under this programme and LGs should prioritize training people in the above skills areas under their respective MDA and LG HR Development Plans over the next 5 years in line with the Ministry of Education and Sports Strategic development plan.

4.2.9.3 Human Resource Development Objectives for the Energy Development Programme

The goal of the programme is to develop a critical mass of locally-trained manpower/human resources with the requisite technical, economic and social-cultural skills in along the energy-industry value chain. The objectives of this programme are:

- i) To align education and training with the changing nature of the labour market needs of the energy- industry along its value chain.
- ii) To increase technical and professional expertise in various fields of energy industry along its value chain guided by priority areas identified in line with PIAPs and the Human Resource strategic development plans.
- iii) To create a pool of certified and qualified workforce to drive Uganda’s energy development requirements and productivity along the industry value chain.
- iv) To institutionalize Human Resource Development among the MDAs and LGs to support the quality and quantity of human resource within the energy- industry in Uganda.



4.2.9.4 Specific interventions to address competency gaps for the Sustainable Energy Development Programme

- i) Establish a Programme Skills Coordination Committee (PSCC) for the Sustainable Energy Development Programme²³. The Committee shall determine skills needs and skills standards of the programme.
- ii) Each institution (MDAs) under the Energy Development Programme to develop a human resource development needs assessment in line with PIAPs and overall development agenda; which will identify and prioritize critical skills and education needs as well as soft skills requirements to meet the present and the future manpower (human resource?) needs within the Programme.
- iii) Develop a framework for acquiring scholarship and securing funds to support the skills development as well as in service training in programmes with scarce and prioritized strategic areas in the Energy Development Programme.
- iv) Develop a mechanism based on established mechanisms to boost internship, apprenticeship and exchange programmes in the prioritized strategic areas within the Energy Development Programme as a means of building a pool of workforce to serve the country and beyond in the short, medium and long terms.
- v) Develop technical capacity in project analysis at design, promotion, implementation, contract management and sustainability in energy generation, distribution, operation and maintenance of power plants guided by needs assessment.

²³ See Annex 3 for the roles of the Program Skills Committees.



NATURAL RESOURCES, ENVIRONMENT, CLIMATE CHANGE, LAND AND WATER MANAGEMENT





4.2.10 Natural Resources, Environment, Climate Change, Land and Water Management Programme

4.2.10.1 Introduction

Natural resources and climate change management are vital to the reduction of disaster losses, achievement of enhanced household incomes and improvement of the quality of life of the population. Uganda being a natural resource-based economy is largely hinged on agriculture and nature-based tourism; the state of its environment and natural resources directly implicates the realization of development goals on income poverty, export volumes, inflation, and foreign exchange rate. This programme therefore not only contributes to the realization of the national development goal of increasing household incomes and quality of life but also contributes to the NDPIII objective of enhancing value addition in key growth opportunities.

Guided by the NDPIII period programme focus of reducing environmental degradation and the adverse effects of climate change while improving the utilization of natural resources for sustainable economic growth and livelihood security. The programme results towards conservation, restoration and management of land, water, environment, and natural resources are critical in harmonizing environmental, economic, and social opportunities for the benefit of present and future generations while maintaining and enhancing the quality of the land resource. The management of the various components of the programme requires the interplay of many factors resulting in sustainably managing water resources and wetlands, consolidating, and building on gains made in meteorological services, restoration, and conservation of forest cover, strengthening land management, use and planning, reducing pollution, managing and mitigating natural and man-made hazards.

4.2.10.2 Major competency gaps for this Programme

Just like for all other programmes, the occupation and skills gaps for Natural Resources, Environment, Climate Change, Land and Water Management programmes were based on the anticipated socio-economic changes and the program's strategic direction. The NDP III is cognizant of the fact that natural resource and climate change management are critical to the reduction of disaster losses, achievement of increased household incomes, and improvement of quality of life of the population. However, there have been mixed results in the performance of key elements of this programme. NDP III notes mixed results in conservation, restoration, and management of land, water, environment, and natural resources. There has been a significant reduction in the forest cover from 15% in 2010 to 9.5% in 2017 as well as wetland degradation and encroachment from 11.9% in 2012 to 10.9% in 2017. The restoration of forests and tree cover by natural regeneration or by plantation or agroforestry has not kept pace with the annual loss of forest cover and loss of individual trees. Uganda's forests supply 88% of all its energy needs, provide 61% of Uganda's tourism income and provide jobs for about 1 million people. As such, the goal of the programme is to reduce environmental degradation and the adverse effects of climate change as well as improve the utilization of natural resources for sustainable economic growth and livelihood



security. This has implications on the kind and quality of human resources that will be required in the medium term.

The delivery of this programme will require closing the critical human resource gaps to ensure achievements of targeted results. A detailed assessment of the occupation gaps for this programme is articulated in Table 16. However, further analysis will be required within the programme of the human resource needs for guidance of Ministry of Education and Sports on the areas to be beefed up in the education and training system. Effort will also be required to provide additional funds for the specialized training for now and future together with targeted external scholarships for training not available in the country. The occupational gaps which are not supplied or not adequately supplied face a high labour demand but their supply is either insufficient or training not available in the country. This, therefore, means that such occupations should be prioritized and directly re-orient training programmes towards producing qualified persons to work in those respective occupations. Those which are over-supply calls for re-training towards occupations facing high demand yet their supply remains low as presented in Table 15.

Table 15: Estimated 5-year Occupation Gaps for this Programme

Occupations Title	Estimated 5-year Gaps				
	2020/2021	2021/2022	2022/2023	2023/2024	2024/2025
Environmental Protection Professionals					
Conservation Scientist	148	160	174	188	204
Environmental Scientist	143	155	168	182	198
Earth and Soil Scientist	131	142	154	167	181
Air Quality Analyst	156	169	183	199	215
Water Quality Analyst	170	184	200	217	235
Biodiversity Planner	136	147	160	173	188
Transport Analyst	99	107	117	127	138
Cartographers and Surveyors					
Cartographer	231	249	267	284	302
Surveyor	222	239	256	273	290
Civil Engineering Technicians					
Civil Engineering Technician	2,231	2,415	2,600	2,786	2,973
Surveying or Cartographic Technician	2,066	2,236	2,408	2,580	2,753
Town Planning Technician	1,488	1,610	1,734	1,858	1,982
Water Control Officer	2,479	2,684	2,889	3,096	3,304
Incinerator and Water Treatment Plant Operators					
Water Plant Operator	23	25	27	30	33
Meteorologists	3	3	3	4	4
Hydrometeorologist	2	2	3	3	3
Weather Forecaster	3	3	4	4	5
Atmospheric Scientist	3	3	3	4	4
Climate Scientist	2	2	2	2	3
Climatologist	4	4	5	5	5
Atmospheric Modeler	3	3	3	3	4
Aviation Meteorologist	2	2	3	3	3
Boundary Layer Meteorologist	2	2	2	2	3
Broadcast Meteorologist	2	2	2	2	3



Occupations Title	Estimated 5-year Gaps				
	2020/2021	2021/2022	2022/2023	2023/2024	2024/2025
Air Pollution Meteorology	2	2	3	3	3
Chemical Oceanography	2	3	3	3	4
Climate Change Scientist	2	2	3	3	3
Environmental Geologist	15	18	22	26	32
Geomorphologist	11	13	15	18	22
Hydrogeologist	8	10	12	14	17
Geological Planner	10	11	14	16	20
Geoscientist	9	11	13	16	19
Volcanologist	8	10	12	15	17
Geochemist	9	11	13	16	19
Physical geologist	6	7	9	10	13
Seismologist	10	12	15	18	21
Geophysical Scientist	6	8	9	11	13
Plumbers and Pipe Fitters					
Plumber	332	371	415	466	521
Solar Installer	185	206	231	259	289
Gas Practitioner	462	515	577	647	723
Fire Services Plumber	129	144	162	181	202
Plumbing Inspector	240	268	300	336	376
Heat Pump Installer	314	350	392	440	492
Pipe Fitter	185	206	231	259	289
Environmental Engineers					
Environmental Engineer	177	192	207	222	237
Environmental Impact and Restoration Analyst	139	151	163	175	186
Environmental and Occupational Health and Hygiene Professionals					
Environmental Health Officer	27	35	43	52	61
Safety, Health, Environment and Quality (SHE&Q) Practitioner	19	24	30	36	43
Environmental Science Technician	18	20	21	23	24
Life Science Technician	12	13	14	15	15
Environmental and Occupational Health Inspector	184	199	234	248	283

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

Further, the strategic direction of this programme entails increasing the availability of adequate and reliable quality freshwater resources for all uses and increasing forest, tree, and wetland coverage, and restore and protect hilly and mountainous areas and rangelands. The programme targets increasing the land area covered by forests from 9.1 percent to 15 percent; increasing land area covered by wetlands from 8.9% to 9.57%; reducing land-related conflicts by 30%; increasing the percentage of automation of weather and climate network from 30% to 80%, among others, over the next five years. This will be achieved through strengthening conservation, restoration of forests, wetlands, and water catchments and hilly and mountainous areas; assuring a significant survival rate of planted tree seedlings; completing the rollout and integration of the Land Management Information System with other systems; strengthening the capacity of land management institutions in executing their mandate geared towards securing land rights; undertaking applied research and innovation on sustainable consumption and production to ensure resource use efficiency to reduce domestic



material consumption per capita; building capacity for climate change adaptation and mitigation including hazard/disaster risk reduction; increasing investment in value addition to environment and natural resources products and services, among others.

Successful implementation of the targeted interventions and projects to achieve the targeted programme results requires dedicated efforts towards human resource development. A case in point is the need to increase the availability of adequate and reliable quality freshwater resources for all uses and increasing forest, tree, and wetland coverage as well as restoring and protecting hilly and mountainous areas and rangelands. This requires critical skills such as Environmental Protection Professionals; Cartographers and Surveyors; Civil Engineering Technicians; Incinerator and Water Treatment Plant Operators; Plumbers and Pipe Fitters; Environmental Engineers; Environmental and Occupational Health and Hygiene Professionals. Further, assuring a significant survival rate of planted tree seedlings; strengthening the capacity of land management and undertaking applied research and innovation, as well as building capacity for climate change adaptation and mitigation, require skills such as Conservation Scientists, Environmental Scientists, Earth and Soil Scientists, Air Quality Analysts, Water Quality Analysts, Cartographers, Surveyors, Environmental Geologists, Geomorphologists, among others, as presented in Table 16. Therefore, MDAs under this programme and LGs should prioritize training people in the above skills areas under their respective MDA and LG HR Development Plans over the next 5 years.

4.2.10.3 Human Resource Development Objectives for this Programme

The overall Human Resource Development objective of this programme is to produce competent skilled, qualified human resources ‘to stop and reverse the degradation of Water Resources, Environment, Natural Resources as well as the effects of Climate Change on economic growth and livelihood security’. The specific objectives of the programme are:

- i) To align education and training with the changing nature of the labour market needs of Natural Resources, Environment, Climate Change, Land and Water Management Programme.
- ii) To expand the technical and professional expertise in various fields of Climate Change, Natural Resources, Environment, and Water Management.
- iii) To build capacity of the human resources required to maintain and/or restore a clean, healthy, and productive environment.
- iv) To institutionalize Human Resource Development among the MDAs within the Natural Resources, Environment, Climate Change, Land and Water Management Programme

4.2.10.4 Specific interventions to address competency gaps for this Programme

- i) Establish a Programme Skills Coordination Committee (PSCC) for the Natural Resources, Environment, Climate Change, Land and Water Management Programme²⁴. The Committee shall determine skills needs and skills standards of the programme.

²⁴ See Annex 3 for the roles of the Program Skills Committees.



- ii) Each institution (MDAs) under the Natural Resources, Environment, Climate Change, Land and Water Management Programme must develop a 5-year Human Resource Development Plan in line with their strategic plan to identify and prioritize critical skills and education needs as well as soft skills requirements to meet the present and the future manpower needs within the Programme.
- iii) Establish a scholarship programme in scarce and prioritized strategic areas within the Natural Resources, Environment, Climate Change, Land and Water Management Programme with no training available in the country.
- iv) Establish an internship, apprenticeship and exchange programme in the prioritized strategic areas within the Natural Resources, Environment, Climate Change, Land and Water Management Programme to build a pool of workforce to serve the country in the short, medium and long terms.



SUSTAINABLE DEVELOPMENT OF PETROLEUM RESOURCES





4.2.11 Sustainable Development of Petroleum Resources

4.2.11.1 Introduction

The NDPIII recognises that the oil and gas industry has the potential to transform Uganda's economy. Oil and gas are key pillars of the energy system and, as such, are drivers of economic and social development. Sustainable development of petroleum resources is also critical for enhancing value addition to oil and gas resources as one of the key growth opportunities. However, a number of challenges still stand in the way of sustainable exploitation of the petroleum resources in a timely manner. These include:

- i) limited human and institutional capacity to support oil and gas operations;
- ii) inadequate infrastructure to support the development of oil and gas resources;
- iii) un-harmonized legal and regulatory framework;
- iv) protracted negotiation for the Final Investment Decision (FID) between government and the International Oil Companies (IOCs).

Owing to these challenges, sustainable development of the petroleum resources programme was identified as one of the 18 National Development Programmes to attain equitable value from the petroleum resources and spur economic development in a sustainable manner. The key NDPIII expected results for this programme include: reducing the volume and value of imported petroleum and petroleum products, increasing revenue from the oil and gas sub-sector and its contribution to GDP as well as creating more employment opportunities for Ugandans along the petroleum value chain.

While the oil and gas industry has the potential to transform the economy, the availability of competent, professional and certified human resource is still critical. Given the complexity and technical nature of the industry, all the key players in this industry must take the initiative to train and tailor the skills of the employees to the specific needs of the industry. In emphasizing local content and employing locals/nationals in the industry, there is a gap where the current staffing levels for the government's relevant institutions in this industry including PAU, UNOC, MEMD stand at about 386 staff, compared to the required staff number of about 793. For example, PAU has 162 staff, and 121 vacant positions yet to be filled thus operating at a staffing capacity of 57.2%. It is, therefore, important to note that this capacity gap should be addressed especially with the already signed Final Investment Decision (FID) that might triple the work of these different institutions in this industry.

Further to note also, is to train staff and acquaint them with skills as required by the industry. It is estimated that the oil and gas industry can employ over 160,000 staff. These, however, must be skilled to work and deliver competitively to the international requirements and standards especially those engaged with international oil companies like Total E&P and CNOOC. Assessing the current staffing and the required staffing in the next five (5) years, the industry requirements and the gaps will drastically increase; thus, the relevant institutions and the nationals need to be prepared for that surge. It should be noted that successful



implementation of this programme is premised on the availability of human resources as detailed in Table 17.

4.2.11.2 Major competency gaps for Sustainable Development of Petroleum Resources

The occupation and skills gaps for Petroleum Resources are based on the projected socio-economic transformation in line with the programme strategic direction and the approximated labour that will need replacement due to movements, retirement, or death. To date, Uganda has an estimated 6.5 billion barrels of oil, of which 1.4 billion barrels are estimated recoverable. In addition, gas resources are currently estimated at 500 billion standard cubic feet (BCF). The NDP III notes that Petroleum Resources have the potential to transform Uganda's economy. With careful planning and implementation, the industry can contribute to all development indicators. The production of petroleum resources can foster economic and social development by providing access to affordable energy, opportunities for decent employment, business and skills development, increased fiscal revenues, and improved infrastructure.

The strategic direction of this programme entails fast-tracking the attainment of equitable value from the petroleum resources and spurs economic development in a timely and sustainable manner. Specifically, the programme targets increasing national storage for refined petroleum products from 99.1 million litres in 2019 to 150 million litres, increasing oil and gas revenue from UGX 62.98 billion to UGX 265 billion, increasing the percentage change in the amount of revenue from oil and gas by 2 percent, increasing the number of Ugandans employed in the oil and gas and related industries from 3,400 jobs in 2019 to 50,000 jobs as well as increasing the number of contracts awarded to Ugandan firms in the oil and gas value chain.

The above-targeted results are to be achieved through sustainable production and utilization of the country's oil and gas resources, enhancing local capacity to participate



in oil and gas operations, and promoting private investment in the oil and gas industry. Specifically, the programme intends to:

- i) Undertake further exploration and ventures of the Albertine Graben;
- ii) Undertake construction and operationalization of infrastructure projects in the Albertine;
- iii) Construct the Central Processing Facilities (CPFs) for Tilenga and Kingfisher projects;
- iv) Develop the Natural Gas Pipeline from Tanzania to Uganda to support EACOP, Iron Ore Industry, and other industrial and domestic uses;
- v) Establish inter and intra-sectoral linkages to ensure readiness to meet the needs in the oil and gas industry;
- vi) Develop and implement a marketing and promotional strategy for oil and gas projects, among others.

These anticipated projects and interventions have several implications on the type and quality of human resources that will be required in the country over the short to medium terms as shown in table 16.

Table 16: Estimated 5-year Critical Skills Gaps for this Programme

Occupation Title	Estimated 5-year Gaps				
	2020/2021	2021/2022	2022/2023	2023/2024	2024/2025
Petroleum and Natural Gas Refining Plant Operators					
Refinery Pipeline Controller	14	16	18	20	22
Oil and Gas Well Treatment Controller	11	13	14	16	18
Petroleum Process Operator	17	19	21	24	27
Petroleum and Gas Refining and Pumping Controller	11	13	14	16	18
Refinery Process Technician	16	18	20	23	26
Gas Compressor Turbine Controller	12	13	15	16	18
Petroleum Blending Plant Controller	15	17	19	21	23
Oil, Gas and Pipe Tester	11	12	14	15	17
Petroleum Terminal Plant Controller	13	14	16	18	20
Oil Products Processor	15	16	18	21	23
Industrial Gas Production Controller	14	15	17	19	21
Gas Plant Operator	13	14	16	18	20
Chemists					
Manufacturing Chemist	14	16	17	18	20
Pharmacologist (Non-clinical)	12	13	14	15	16
Geochemistry	12	12	13	14	16
Laboratory Chemist	24	26	28	31	33
Analytical Chemist	26	28	30	32	35
Industrial Chemist	25	27	29	31	34
Organic chemistry	13	14	15	17	18
Physical chemistry	14	15	16	18	19



Occupation Title	Estimated 5-year Gaps				
	2020/2021	2021/2022	2022/2023	2023/2024	2024/2025
Geologists and Geophysicists					
Exploration Geologist	9	10	11	12	13
Geomorphologist	8	8	9	11	12
Engineering Geologist	6	6	7	8	9
Structural Geologist	6	7	8	9	10
Field Geologist	6	7	8	9	10
Hydrogeologist	5	5	6	7	8
Geological Planner	4	5	5	6	7
Petrologist	6	7	8	9	10
Geoscientist	9	10	12	13	15
Volcanologist	8	8	9	11	12
Mine Geologist	4	5	5	6	7
Environmental Geologist	6	7	8	9	10
Historical geology	4	4	5	5	6
Geological Oceanographer	6	7	7	8	9
Geochemist	7	8	9	10	12
Physical geologist	8	9	10	11	12
Field seismology Geophysicist	4	5	5	6	7
Seismologist	4	5	5	6	7
Marine Scientist	8	9	10	11	12
Geophysical Scientist	6	7	8	9	10
Borehole geophysicist	7	8	9	10	11
Engineering geophysicist	4	5	5	6	7
Fibre Technologist	4	5	5	6	7
Polymer Scientist	6	7	8	9	10
Ceramics Scientist	4	5	5	6	7
Diamond Gemologist	6	6	7	8	9
Environmental Protection Professionals					
Conservation Scientist	89	96	104	111	118
Environmental Scientist	51	55	59	64	68
Earth and Soil Scientist	47	50	54	58	62
Air Quality Analyst	85	92	100	107	114
Water Quality Analyst	90	98	105	113	120
Park Ranger	87	95	102	109	116
Industrial and Production Engineers					
Industrial Engineer	152	165	177	190	203
Industrial Engineering Technologist	123	133	143	153	164
Production Engineer	113	122	132	141	151
Production Engineering Technologist	103	112	120	129	137
Mechanical Engineers					
Mechanical Engineer	105	117	130	142	155
Mechanical Engineering Technologist	85	94	104	115	125
Aeronautical Engineer	78	87	96	106	115
Aeronautical Engineering Technologist	71	79	88	96	105
Chemical Engineers					
Chemical Engineer	55	58	61	64	68
Chemical Engineering Technologist	101	107	113	119	126
Chemical and Physical Science Technicians					
Chemistry Technician	105	113	121	129	137



Occupation Title	Estimated 5-year Gaps				
	2020/2021	2021/2022	2022/2023	2023/2024	2024/2025
Physical Science Technician	84	91	98	104	111
Fragrance Evaluators/ flavorists	78	84	90	96	102
Radiation Control/ Nuclear Monitoring Technician	71	76	82	88	93
Chemical Engineering Technicians	22	24	26	29	31

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

Undertaking further exploration and ventures of the Albertine Graben and the construction and operationalization of infrastructure projects in the Albertine Region requires the presence of adequate skills such as Petroleum and Natural Gas Refining Plant Operators; Chemists; Geologists and Geophysicists; Environmental Protection Professionals; Industrial and Production Engineers; Mechanical Engineers; Chemical Engineers; Chemical and Physical Science Technicians, among others. In addition, construction of the Central Processing Facilities (CPFs) for Tilenga and Kingfisher projects and developing the Natural Gas Pipeline from Tanzania to Uganda requires a set of professions and skills such as Refinery Pipeline Controllers, Oil, and Gas Well Treatment Controllers, Petroleum Process Operators, Petroleum and Gas Refining and Pumping Controllers, Refinery Process Technicians, Gas Compressor Turbine Controllers, Petroleum Blending Plant Controllers, Petroleum Terminal Plant Controllers, Oil Products Processors, Industrial Gas Production Controllers, Gas Plant Operators, Manufacturing Chemists, Geochemists, Laboratory, and Analytical Chemists, Industrial Chemists, Geoscientists and Volcanologists, among others. Detailed qualifications and skills needed for the Sustainable Development of Petroleum programme are required over the next five years by field of study areas are shown in Table 17. Therefore, MDAs under this programme and LGs should prioritize training people in the above skills areas under their respective MDA and LG HR Development Plans over the next 5 years.

4.2.11.3 Human Resource Development Objectives for this Programme

The goal of this programme is to develop competent and skilled human resources required to attain equitable value from the petroleum resources and spur economic development in a timely and sustainable manner. The specific objectives to be pursued over the next five-year period are:

- i) To align education and training with the changing nature of the labour market needs in the Sustainable Development of Petroleum Resources Programme.
- ii) To expand the technical and professional expertise in various fields of sustainable development of petroleum resources.
- iii) To fast-track the international certification process of key priority skills in oil and gas
- iv) To institutionalize Human Resource Development Planning among the MDAs/LGs within the sustainable development of petroleum resources programme in line with the PIAPs and MDA/LGs strategic plans.



4.2.11.4 Specific interventions to address competency gaps for this Programme

- i) Establish a Programme Skills Coordination Committee (PSCC) for Sustainable Development of Petroleum Resources Programme²⁵. The Committee shall determine skills needs and skills standards of the programme.
- ii) Each institution (MDAs) under the Sustainable Development of Petroleum Resources Programme must develop a 5-year Human Resource Development Plan in line with their strategic plan to meet the present and the future manpower/human resource needs within the Programme based on needs assessment.
- iii) Fast-track the international certification and accreditation of Ugandans for employment and service provision in the development/phase of the oil and gas sector through twinning programmes and establishing accrediting institutions to offer certified skilling.
- iv) Establish a scholarship programme and a training fund to support the scarce and prioritized strategic education and training areas within the Sustainable Development of Petroleum Resources Programme.
- v) Establish an internship, apprenticeship and exchange mechanism to ensure the availability of a pool of workforce to serve the country in the short, medium and long terms within the Sustainable Development of Petroleum Resources Programme.
- vi) Build the capacity of the key training institutes in the country to provide the required numbers (with skills in the petroleum sector) as a benchmark from other countries.
- vii) Fast-track the implementation of the workforce skills development strategy for oil and gas to address the identified skills gaps.

²⁵ See Annex 3 for the roles of the Program Skills Committees.



MANUFACTURING PROGRAMME





4.2.12 Manufacturing Programme

4.2.12.1 Introduction

Uganda's industrial sector comprises of manufacturing, mining and quarrying, construction, and utilities sub-sectors, whose industries are either formal or informal. Uganda Vision 2040 notes that a strong and competitive industrial base is important to create employment, advanced technology and a resilient economy. However, Uganda's manufacturing sub-sector still lacks investment in the up-stream phases of manufacturing, which creates high value products that can penetrate international markets, are resilient to global price fluctuations and create high value jobs that have significant impact on the welfare of the citizens.

Manufacturing as a subsector of the industrial sector, is very critical in terms of its contribution to economic growth and development. This is because industry is looked at as the driver of growth in any economy in terms of job creation, increased domestic production which can utilise local raw materials and eventually increasing the value of manufactured exports for the economy. All this is brought about through a strong manufacturing subsector. This increases the income of the citizens, which eventually trickles down to the household levels, saves on forex expenditure on imports and increases foreign revenue earnings. Manufacturing touches every sector of the economy and thus has a high multiplier effect in terms of boosting economic growth; creating linkages across sectors and employing all categories of skilled personnel. The core of manufacturing human resource falls in the engineering field and the chain cannot be complete without the personnel in other fields coming in to complement the production team including marketing and advertising.

NDP III identified a manufacturing programme with a goal of increasing the product range and scale for import substitution and improved terms of trade. The programme seeks to increase share of labour force employed in the industrial sector from 7.4 percent to 10 percent; increase the share of manufacturing jobs to total formal jobs from 9.8 percent to 10 percent and increase the industrial sector contribution to GDP from 27.1 percent to 28.6 percent. It should, however, be noted that, successful implementation of this programme will require urgency to address the existing qualification and skills gaps as well as skills mismatches in the manufacturing programme, as detailed in Table 18.

4.2.12.2 Major competency gaps for the Manufacturing Programme

The occupation and skills gaps for the manufacturing programme are based on the projected socio-economic change and the programme's strategic direction. These identified occupations and skills needs are critical for the delivery of the programme planned results over the short and medium terms. The goal of this programme is to increase the range and scale of locally manufactured products for import substitution and increased exports. However, to date, Uganda's manufacturing sub-sector consists predominantly of end products, assembly, and raw material processing. Thus, many goods are imported as intermediate and capital goods to support production processes which, in turn, increases the country's import bill. Therefore, over the next 5-years, the key results to be achieved include:



- a) reducing the value of imported medical products and pharmaceuticals from USD 285.6 million to USD 200 million;
- b) increase the share of manufactured exports to total exports from 12.3% to 19.8%; increase
- c) the industrial sector contribution to GDP from 27.1% to 28.6%;
- d) increase the share of manufacturing jobs to total formal jobs from 9.8% to 10%;
- e) increase the share of the labour force employed in the industrial sector from 7.4% to 10%, and
- f) increase manufacturing value-added as a percentage of GDP from 8.3% to 10%.

To achieve the above results, the manufacturing programme prioritized several interventions and projects. These include:

- a) Constructing four (4) fully environmentally sustainable serviced industrial parks;
- b) developing the transport networks to support manufacturing especially in resources areas like Muko, Karamoja region (road, water, rail, and air);
- c) developing infrastructure linking the neighbouring countries especially DRC and South Sudan;
- d) supporting existing local manufactures for both medical products and pharmaceuticals;
- e) supporting existing sugar factories to produce industrial sugars;
- f) expanding the range of manufacturing standards and enforce applicable regulations;
- g) supporting the national conformity assessment system to attain international recognition through Accreditation;
- h) establishing four (4) border markets to facilitate trade with regional neighbours (especially at the South Sudan and Congo borders), among others.

Further, the program commits to specific core projects such as Industrial Parks Development; Automotive Assembly Project as well as Border Export Markets Project. These projects and the prioritized interventions require the presence of enough skills domestically to avoid losing jobs to foreign expatriates.

Table 17: Estimated 5-year Occupational Gaps for the Manufacturing Programme

Occupations Title	Estimated 5-year Gaps				
	2020/2021	2021/2022	2022/2023	2023/2024	2024/2025
Manufacturing Managers					
Manufacturer	(38)	(37)	(37)	(36)	(35)
Manufacturing Operations Manager	(37)	(36)	(36)	(35)	(34)
Engineering Manager	(34)	(33)	(33)	(32)	(31)
Power Generation Operations Manager	(40)	(40)	(39)	(38)	(37)
Manufacturing Quality Manager	(44)	(43)	(42)	(42)	(41)
Quality Manager	(40)	(39)	(39)	(38)	(37)
Metrologist	(37)	(36)	(36)	(35)	(34)
Quality Systems Auditor	(35)	(34)	(34)	(33)	(32)
Environmental Protection Professionals					
Conservation Scientist	148	160	174	188	204
Environmental Scientist	143	155	168	182	198
Earth and Soil Scientist	131	142	154	167	181



Occupations Title	Estimated 5-year Gaps				
	2020/2 021	2021/2 022	2022/2 023	2023/2 024	2024/2 025
Air Quality Analyst	156	169	183	199	215
Water Quality Analyst	170	184	200	217	235
Park Ranger	155	168	182	197	214
Brownfield Redevelopment Specialist	143	155	168	182	198
Toxicologist	67	73	79	86	93
Biodiversity Planner	68	74	81	87	95
Industrial and Production Engineers					
Industrial Engineer	147	159	172	184	196
Industrial Engineering Technologist	74	80	86	92	98
Production Engineer	98	106	114	123	131
Production Engineering Technologist	88	96	103	110	118
Energy Efficiency Manager	83	90	97	104	111
Environmental Engineers					
Environmental Engineer	193	210	226	242	258
Environmental Impact and Restoration Analyst	124	134	144	155	165
Advertising and Marketing Professionals					
Advertising Specialist	64	75	86	97	109
Market Research Analyst	24	28	32	37	41
Marketing Practitioner	28	33	38	43	48
Market Campaign Analyst	26	30	34	39	44
Manufacturing Supervisors					
Production / Operations Supervisor (Manufacturing)	(90)	(89)	(89)	(88)	(87)
Maintenance Planner	(68)	(67)	(67)	(66)	(65)
Power Production Plant Operators					
Fossil Power Plant Process Controller	(8)	(10)	(11)	(12)	(14)
Hydro Power Plant Process Controller	(10)	(12)	(13)	(15)	(16)
Nuclear Power Plant Process Controller	(9)	(11)	(12)	(14)	(15)
Wind Turbine Power Plant Process Controller	(11)	(13)	(14)	(16)	(18)
Concentrated Solar Power (CSP) Plant Process Controller	(12)	(14)	(16)	(18)	(19)
Geothermal Technicians	(11)	(13)	(14)	(16)	(18)
Weatherization Installers and Technicians	(10)	(12)	(13)	(15)	(16)
Solar Photovoltaic Service Technician	(10)	(11)	(13)	(14)	(16)
Wind Turbine Service Technician	(2)	(2)	(3)	(3)	(3)
Environmental and Occupational Health Inspectors and Associates					
Environmental and Occupational Health Inspector	248	268	289	310	331
Safety Inspector	177	192	207	222	237
Ammunition Technician	221	240	258	277	296
Mine Health and Safety Inspector	115	125	134	144	154
Magazine Master	124	134	145	155	166
Mechanical Machinery Assemblers	(197)	(194)	(189)	(184)	(179)
Crane, Hoist and Related Plant Operators					
Crane or Hoist Operator	11	12	14	16	19
Cable Ferry Operator	6	7	8	10	11
Dredge Operator	4	5	5	6	7
Lifting Truck Operators					
Lift Operator	(301)	(327)	(347)	(371)	(395)
Forklift Driver	(177)	(192)	(204)	(218)	(232)



Occupations Title	Estimated 5-year Gaps				
	2020/2 021	2021/2 022	2022/2 023	2023/2 024	2024/2 025
Straddle Carrier Operator	(112)	(122)	(129)	(138)	(147)
Mechanical Engineers					
Mechanical Engineer	173	193	213	234	255
Mechanical Engineering Technologist	102	113	125	138	150
Aeronautical Engineering Technologist	64	72	79	87	95
Mechanical Engineering Technicians					
Mechanical Engineering Technician	2,246	2,442	2,639	2,837	3,036
Pressure Equipment Inspector	1,321	1,436	1,552	1,669	1,786
Aeronautical Engineering Technician	837	910	983	1,057	1,131
Machinery Assembler	(197)	(194)	(189)	(184)	(179)
Product Assembler	60	73	87	104	122
Earthmoving and Related Plant Operators					
Earthmoving Plant Operator (General)	(14)	(17)	(19)	(20)	(21)
Backhoe Operator	(11)	(13)	(14)	(16)	(17)
Bulldozer Operator	(16)	(19)	(21)	(22)	(24)
Excavator Operator	(14)	(17)	(18)	(19)	(21)
Grader Operator	(9)	(11)	(12)	(13)	(14)
Loader Operator	(10)	(13)	(14)	(15)	(16)
Mulcher Operator	(13)	(15)	(16)	(18)	(19)
Tunnelling Machine Operator	(11)	(13)	(14)	(16)	(17)
Mobile Explosives Manufacturing Unit (MEMU) Operator	(9)	(11)	(12)	(13)	(14)
Scraper Operator	(9)	(11)	(11)	(12)	(13)
Dragline Operator	(11)	(13)	(14)	(15)	(16)
Railway Track Master	(12)	(15)	(16)	(17)	(19)
Road Roller Operator	(11)	(13)	(14)	(15)	(16)
Dump Truck Operator	(9)	(11)	(11)	(12)	(13)
Supply, Distribution and Related Managers					
Supply and Distribution Manager	(10)	(11)	(12)	(13)	(14)
Logistics Manager	(12)	(14)	(15)	(16)	(17)
Road Transport Manager	(11)	(12)	(14)	(15)	(16)
Warehouse Manager	(13)	(15)	(16)	(17)	(19)
Fleet Manager	(15)	(16)	(18)	(19)	(20)
Railway Station Manager	(13)	(15)	(16)	(17)	(19)
Airport Manager	(12)	(14)	(15)	(16)	(17)
Grain Depot Manager	(12)	(13)	(14)	(15)	(16)
Fuel Manager	(3)	(3)	(3)	(3)	(4)

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

Effective implementation of the planned interventions and projects to achieve the targeted results necessitates the availability of dedicated human resources in the right mix (both quality and quantity). For example, constructing the four (4) fully environmentally sustainable serviced industrial parks, developing the transport networks to support manufacturing and developing infrastructure linking the neighbouring countries requires sufficient supply of Manufacturing Operations Managers; Engineering Managers; Environmental Protection Professionals; Industrial and Production Engineers; Industrial Engineering Technologists; Environmental Engineers; Manufacturing Supervisors; Power Production Plant Operators; Environmental and Occupational Health Inspectors and



Associates; Mechanical Machinery Assemblers; Lifting Truck Operators; Mechanical Engineers; Mechanical Engineering Technicians; Machinery Assemblers; Product Assemblers; Earthmoving and Related Plant Operators. Further, the implementation of core projects such as the Industrial Parks Development; Automotive Assembly Project as well as Border Export Markets Project will necessitate the availability of skills such as Manufacturing Robotics Technicians and specialists; Material Engineers; Automotive Specialty Technicians; Civil Engineering specialists; Precision Instrument and Equipment Repairers, among others. Therefore, MDAs under this programme and LGs should prioritize training people in the above skills areas under their respective MDA and LG HR Development Plans over the next 5 years.

4.2.12.3 Human Resource Development Objectives for the Manufacturing Programme

The goal of this programme is to develop competent and skilled human resources required to increase the product range and scale for import replacement and improved terms of trade. Specifically, the objectives of the programme are:

- i) To align education and training with the changing nature of the labour market needs in the field of Manufacturing.
- ii) To expand the technical and professional expertise in various fields of Manufacturing for sustainable Business Development Services for manufacturing SMEs.
- iii) To fast-track the certification process of the priority skills to international level in the field of Manufacturing.
- iv) To institutionalize Human Resource Development among the MDAs within the field of Manufacturing.

4.2.12.4 Specific interventions for the Manufacturing Programme

- i) Establish a Programme Skills Coordination Committee (PSCC) for the Manufacturing Programme²⁶. The Committee shall determine skills needs and skills standards of the programme.
- ii) Each institution (MDAs) under the Manufacturing Programme must develop a 5-year Human Resource Development Plan in line with their strategic plan to identify and prioritize critical skills and education needs as well as soft skills requirements to meet the present and the future manpower (human resource?) needs within the Program.
- iii) Establish a twinning programme with internationally accredited institutions to offer certified skills training, entrepreneurship and incubation development.
- iv) Fast-track international certification of skills available in the country to enhance the capacity of human resources in manufacturing.
- v) Provide specialized short-term training to increase the diversity of the manufacturing workforce to become more resilient workforce.
- vi) Provide specialized training to entrepreneurs on the use of standards in production and use of clustering initiative.

²⁶ See Annex 3 for the roles of the Programme Skills Coordination Committees.



- vii) Establish a scholarship programme in scarce and prioritized strategic areas within Manufacturing Programme with no training available in the country.
- viii) Establish an internship, apprenticeship and exchange programme in the prioritized strategic areas within the Manufacturing Programme to build a pool of workforce to serve the country in the short, medium and long terms.



GOVERNANCE AND SECURITY PROGRAMME





4.2.13 Governance and Security Programme

4.2.13.1 Introduction

Good governance is the chief therapy for accelerated development in economic, political and social sectors of a nation. Efficient political and economic strands promote social order. A stable, predictable and secure political environment is a pre-requisite for socio-economic development. This involves protecting gains from internal instability and external aggression. The society fabrics at individual, household, community and national levels must be at peace for any development to take place. There is, however, a wide range of challenges that still exist; low respect for and observance of human rights and fundamental freedoms; delays in processing of bills into Acts of Parliament affecting the delivery of services, weak policy, legal and regulatory frameworks for effective governance; low recovery rate of public funds from individuals implicated in corruption and weak business support environment. In addition to those challenges, the programme stakeholders are currently facing human resources challenges especially the inadequate human resources which has negatively impacted on performance leading to slow a legislative process.

The NDPIII identified the governance and security programme to improve adherence to the rule of law and also to contain prevailing and emerging security threats. The programme seeks to strengthen policy, legal, regulatory and institutional frameworks for effective governance and security; strengthen the capacity of security agencies to address emerging security threats; strengthen people-centred security, legislation, justice, law, and order service delivery system. The programme envisages to achieve, among others, improvement in the corruption perception and democratic indices; increased case disposal rate; and increased percentage of districts with one-stop frontline JLOS service points. This has a bearing on the kind of human resources that shall have to take a centre stage in this transformation agenda. Successful implementation of this programme will require key human resource skills that are articulated under Table 19.

The Governance and Security programme needs to prioritize the following regarding human resource planning and skilling. Undertaking human resource development and increasing geographical spread of key institutions with specific attention to conflict areas to address the rising crime rates, engage in crime prevention activities and strengthen pilot initiatives including legislative reform, and case backlog reduction programs; there is need to increase the number of personnel to match caseload, retool the crime detection and investigation departments and enhance statistical forecasting of crime, increase the use of ADR especially in SIP II and develop, adopt and implement a programme wide capacity development strategy including human resource development; infrastructure development; information systems development; gender and diversity responses; and Leadership development, among others.

4.2.13.2 Major competency gaps for the Governance and Security Programme

The identified occupation and skill gaps for the Governance and Security Programme are based on priorities and targets enshrined in NDPIII as well as the anticipated



replacement and expansion demand. While the police have invested in mobilizing and empowering communities to prevent violence and crime through ICT using innovations that have led to a reduction in the crime rate from 667 in 2017 to 551 in 2019 for every 100,000, there is still a challenge of kidnaps and high profile murders whose investigations have not been concluded. This is partly due to the need for more sophisticated, technology-based and syndicated crime, the methods and skills required of law enforcement personnel. Also, the JLOS sector’s one-stop front-line service point is only in 66.7 percent of the district in Uganda which means that there is low access to the JLOS services in over 30 percent of the districts. Under this programme, NDPIII proposed several objectives including; Strengthening the capacity of security agencies to address emerging security threats; Strengthening people-centred security, legislation, justice, law, and order service delivery system; Strengthen transparency, accountability and anti-corruption systems; among others. The identified understaffing levels in the JLOS sector and across districts coupled with the need to achieve the program objective not disregarding the increasing demand for governance and security services, further accentuate the demand for human resources as detailed in Table 18 of this plan.

Table 18: Estimated 5-year occupation and Skills Gaps for this Programme

Occupations Title	Skills Gaps				
	2020/2021	2021/2022	2022/2023	2023/2024	2024/2025
Lawyers					
Attorney	148	196	152	114	180
Administrative Lawyers	277	302	330	361	394
Patent Attorney	112	126	131	148	156
Trade Mark Attorney	131	142	156	170	186
Tribunal Members	127	130	110	134	194
Advocates	219	226	231	238	263
Criminal lawyers	248	296	252	214	280
Legal Managers	152	166	181	198	217
Judges and Magistrates					
Judges	133	146	161	177	195
Magistrates	247	272	299	329	362
Legal Professionals Not Elsewhere Classified					
Adjudicator	133	146	161	177	195
Legislation Facilitator	80	88	97	106	117
Master of The Court	57	63	69	76	83
Family Court Registrar	72	79	87	96	106
Police inspectors, Detectives and other Related Legal Associates					
Legal Executive	385	424	466	512	564
Clerk of Court	231	254	280	307	338
Court Bailiff	165	182	200	220	242
Court Orderly / Court Registry Officer	209	230	253	278	306
Law Clerk	385	424	466	512	564
Trust Officer	231	254	280	307	338
Private Investigator	165	182	200	220	242
Associate Legal Professional	209	230	253	278	306
Labour Dispute Enforcement Agent	165	182	200	220	242



Occupations Title	Skills Gaps				
	2020/2021	2021/2022	2022/2023	2023/2024	2024/2025
Legal Secretary	178	194	212	233	257
Customs and Border Inspectors					
Customs Officer	95	105	115	126	139
Immigration Officer	156	171	189	207	228
Government Tax and Excise Officials					
Fraud Investigator	68	75	83	91	100
Tax Investigator	46	51	56	61	67
Government Social Benefits Officials					
Social Benefits Officer	95	105	115	126	139
Pensions Officer	80	88	97	106	117
Social Security Claims Officer	114	125	138	152	167
Government Licensing Officials					
Driving license examiner	173	190	209	230	253
Import-export Administrator	145	159	175	193	212
Passport Officer (Issuing)	145	159	175	193	212
Motor Vehicle Examiner	276	304	334	367	404
Police Inspectors and Detectives					
Forensic Detective	225	248	272	299	329
Detective Intelligence	315	347	381	419	461
Inspector (SAPS)	270	297	327	359	395
Drugs Officer	135	149	163	180	198
VIP Witness Protection Officer	165	182	200	220	242
Cartel Investigator	315	347	381	419	461
Detective Sergeant	315	347	381	419	461
Sergeant (SAPS)	420	462	508	559	615
Government Regulatory Associates Not Elsewhere Classified					
Labour Inspectors	179	197	217	239	263
Refugee Status Determination Officer	261	287	316	347	382
Environmental Practices Inspector	196	215	237	260	286
Weights and Measures Inspector	147	161	178	195	215
Censorship Inspector	179	197	217	239	263
Price Inspectors	98	108	118	130	143
Trade Mark Examiner	245	269	296	325	358
Fisheries Officer	147	161	178	195	215
Building Inspector	147	161	178	195	215
Train Examiner	196	215	237	260	286
Transport Operations Inspector	98	108	118	130	143
Gaming Operations Compliance Officer	310	341	375	412	453
Firefighters					
Fire Fighter	115	127	139	153	168
Hazardous Materials Removal Workers	58	63	70	77	84
Police Officers					
Traffic Officer	792	872	959	1,055	1,160
Non - commissioned Police Official	170	187	205	226	249
Military Police Official	396	436	479	527	580
Prison Guards					
Custodial Officer	425	467	514	565	622
Prison Warden	792	872	959	1,055	1,160
Correctional Officer	170	187	205	226	249



Occupations Title	Skills Gaps				
	2020/2021	2021/2022	2022/2023	2023/2024	2024/2025
Prison Guard	736	809	890	979	1,077
Correctional Centre Coordinator	311	342	377	414	456
Cell Block Attendants	170	187	205	226	249
Custodial Services Officer	396	436	479	527	580
Security Guards					
Watchman	988	1,087	1,196	1,316	1,447
Security Guards	212	233	256	282	310
Mobile Patrol Officers	918	1,010	1,111	1,222	1,344
Railway Patrol Officer	212	233	256	282	310
Answering Service Operator	212	233	256	282	310
Security Monitor	918	1,010	1,111	1,222	1,344
Protective Services Workers Not Elsewhere Classified	3,530	3,883	4,271	4,698	5,168
Lifeguard					
Emergency Service and Rescue Official	92	101	111	122	134
Armored Car Escort	398	438	481	529	582
Crowd Controller	551	606	666	733	806
Security Consultant	92	101	111	122	134
Disaster Management Officer	199	219	241	265	291

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

Successful implementation of interventions to achieve the anticipated NDP III results will require technically skilled human resources in the right quantities. Therefore, demand is projected to rise for Advocates, Criminal lawyers, Legal Managers, Adjudicators, Legislation Facilitators, Family Court Registrars, Private investigators, Customs officers, Immigration Officers, Forensic detectives and Detective Intelligence, among others, over the next five years.

4.2.13.3 Human Resource Development Objectives for this Programme

The goal of this programme is to develop skilled and competent human resources required to improve adherence to the rule of law and capacity to contain prevailing and emerging security threats and below are the specific objectives of this programme are:

- i) To align education and training with the changing needs of the labour market needs with in the Governance and Security Programme.
- ii) To develop skilled and competent human resources to strengthen the capacity of security systems to address the security needs of the country and strengthen JLOS business processes to facilitate private sector development.
- iii) To expand the technical and professional expertise in various fields of Governance and Security Programme for sustainable development
- iv) To institutionalize Human Resource Development among the MDAs within the Governance and Security Programme.



4.2.13.4 Specific interventions for the Governance and Security Programme

- i) Fast-track the establishment of a National Defense College (NDC) and Institute for Security Studies (ISS).
- ii) Strengthen the capacity of the Uganda Police Force through providing specialized trainings to combat sophisticated crimes such as cyber-crimes.
- iii) Establish a Programme Skills Coordination Committee (PSCC) for the Governance and Security Programme²⁷. The Council shall determine skills needs and skills standards of the program.
- iv) Each institution (MDAs) under the Governance and Security Programme must develop a 5-year Human Resource Development Plan in line with their strategic plan to identify and prioritize critical skills and education needs as well as soft skills requirements to meet the present and the future manpower needs within the Programme.
- v) Establish a scholarship programme in scarce and prioritized strategic areas within Governance and Security Programme with no training available in the country.
- vi) Improve working environment and conditions of the police force and other security agencies, such as in the areas of accommodation, office space, remuneration, equipment, etc.

²⁷ See Annex 3 for the roles of the Program Skills Committees.



PUBLIC SECTOR TRANSFORMATION & MODERNISATION

Government-EASIER, SIMPLER, FASTER

3 FOCUS AREAS

PUBLIC SECTOR TRANSFORMATION PROGRAMME





4.2.14 Public Sector Transformation Programme

4.2.14.1 Introduction

Public sector actors now confront a world of unprecedented disruption just like their private sector counterparts. Environmental dangers, demographic, and cultural shifts, rising expectations of efficiency in government, and, of course, rapid, and ceaseless technological innovation continue to upend familiar paradigms. This makes transformation that is, achieving a fundamental change in strategy, operating model, organization, people, and processes as much an imperative for the public sector as for the private sector. But public sector entities find transformation particularly daunting especially when it comes to creating and communicating the case for change and ensuring sustainable delivery of results for stakeholders.

Government has made strides in the improvement of the public sector in terms of service delivery mainly through processes and less on people who deliver in these processes though those recruited have good talents. This has had impact on accountability of results, low work ethic to respond to citizen needs, limited dissemination of requisite public information to the citizenry to effectively influence public opinion, limited coordination among the various government communication actors. Result Oriented Management strategy to enhance accountability for results and build confidence and trust in public service commenced together with result-based planning, budgeting, personnel performance, monitoring and evaluation in line with the national integrated monitoring and evaluation strategy in OPM and management information system have been set up. Also, the public sector Reform programme initiative sought to address various challenges, among them was skills gaps and Public Service Restructuring report for stopping the mushrooming of agencies and duplication of functions.

Despite efforts, a lot still needs to be done as articulated in NDPIII, more especially alignment of the budget to the development plans and results both at national, programme, MDA and LGs levels, also, monitoring and evaluation reports are not implemented and enforced. Further, the weakened public service accountability for results has built less than satisfactory work ethic in public service. Also, the human resource recruited in public service do not go through induction training to strengthen coordination in effecting government, performance crises, incompetency, poor accountability, and declining service standards still prevail. To improve and transform the public sector in Uganda, the NDPIII proposed the public sector transformation programme whose primary goal is to improve public sector response to the needs of the citizens and the private sector. The programme seeks to: reduce corruption as measured by the corruption perception index from 26 percent to 35 percent; increase the attractiveness of Uganda as an investment destination as measured by the Global Competitiveness Index from 48.9 to 55 and increase Government effectiveness Index from -0.52 to 0.01. To achieve public sector transformation envisaged in the public sector transformation programme, there is need to close the projected occupation needs as in Table 20.



The Ministry of Public Service has undertaken several efforts to strengthen the Civil Service College to continuously train and retrain public servants but more is still required. In-service, continuous training remains inadequate; where it exists, it is not informed by a needs and impact assessment for training. While the National Leadership Institute in Kyankwanzi was set up to train civil servants to instill a sense of nationalism and core values, the training is not mandatory which leaves many public servants untrained. Further, in addition to low remuneration that is not commensurate to performance as both good and poor performers are provided with the same pay. This kills morale and leads to the self-selection of poor performers in the public sector. Also, there is no framework to reward innovation; instead, those who attempt to innovate but fail to get the desired results may be penalized. Also, there exists a general sense of entitlement among public servants without a corresponding need to improve service delivery. Often private sector employees provide better services for seemingly less remuneration, particularly at low cadre levels.

4.2.14.2 Major competency gaps for Public Sector Transformation

The occupation and skills gaps for Public Sector Transformation are based on the projected socio-economic transformation in line with the programme strategic direction and the projected labour expansion or replacement demand. The public service plays a vital role in providing public goods, such as defense, public order, property rights, macroeconomic management, environment protection, and coordinating private sector activity. Poorly functioning public sector institutions and weak governance are major constraints to equitable development. In Uganda, however, there is weak performance, low accountability for results and unsatisfactory work ethic in the public sector that does not adequately respond to the needs of citizens and the private sector. As a pre-cursor towards improved functionality, the public service ought to have a multi-skilled workforce that can effectively deliver services to the citizens. These occupation and skills need identified are critical for the delivery of the NDPIII planned results over the short, medium, and long terms are detailed in Table 19 with negative (in brackets) indicating occupation whose supply outweighs the demand thus the need to re-orient and re-train such individuals to occupy the other available occupations within the program.

Table 19: Estimated 5-year Critical Occupation Gaps for Public Sector Transformation Program

Occupations Title	Estimated 5-year Gaps				
	2020/2021	2021/2022	2022/2023	2023/2024	2024/2025
Economists					
Economist	680	748	822	899	980
Economic Research Manager	291	321	352	385	420
Human Resource Managers					
Human Resource Manager	307	334	363	395	429
Business Training Manager	275	299	325	354	385
Compensation and Benefits Manager	366	398	433	471	512
Recruitment Manager	300	326	355	386	420
Employee Wellness Manager	328	356	387	421	458
Health and Safety Manager	412	447	487	530	576



Occupations Title	Estimated 5-year Gaps				
	2020/2 021	2021/2 022	2022/2 023	2023/2 024	2024/2 025
Personnel Manager	298	324	352	383	417
Policy and Planning Managers					
Corporate Planning Manager	12	14	15	17	19
Public Policy Manager	16	18	20	23	25
Planning & Development Manager	15	17	19	22	24
Policy Development Manager	13	15	17	19	21
Strategic Planning Manager	10	12	13	15	16
Monitoring & Evaluation Manager	13	14	16	18	20
Policy Administration Professionals					
Intelligence Officer	170	186	202	218	233
Policy Analyst	236	259	281	303	325
Company Secretary	189	206	224	242	260
Corporate Treasurer	164	179	195	210	226
Compliance Officer	111	121	131	142	152
Organizational Risk Manager	124	136	147	159	171
Accounting Officer	149	163	177	191	205
Business Administrator	131	144	156	169	181
Internal Auditor	107	117	127	137	147
Diplomat	105	115	125	134	144
Regulatory Affairs Officer	130	142	154	166	178
Intellectual Property Special Advisor	147	161	174	188	202
Fraud Examiner	126	138	149	161	173
Accountants					
General Accountant	2,115	2,309	2,524	2,755	3,000
Management Accountant	2,499	2,728	2,981	3,254	3,544
Tax Professional	1,467	1,602	1,751	1,911	2,082
External Auditor	1,824	1,992	2,177	2,376	2,588
Accountant in Practice	1,904	2,079	2,271	2,479	2,700
Financial Accountant	1,732	1,891	2,066	2,255	2,457
Forensic Accountant	1,732	1,891	2,066	2,255	2,457
Finance Managers	(12)	(8)	(4)	0	4
Finance Manager	(8)	(6)	(3)	0	3
Payroll Manager	(11)	(7)	(3)	0	4
Credit Manager	(5)	(4)	(2)	0	2
Internal Audit Manager	(6)	(4)	(2)	0	2
Government Tax and Excise Officials	32	37	43	49	57
Government Licensing Officials					
Driving license examiner	(30)	(35)	(40)	(45)	(50)
Import-export Administrator	(14)	(17)	(19)	(22)	(24)
Passport Officer (Issuing)	(25)	(30)	(34)	(39)	(43)
Motor Vehicle Examiner	(15)	(18)	(21)	(23)	(26)
Government Regulatory Associate Professionals Not Elsewhere Classified					
Labour Inspector	(17)	(20)	(23)	(26)	(29)
Wage Inspector	(13)	(15)	(18)	(20)	(22)
Refugee Status Determination Officer	(18)	(22)	(25)	(29)	(32)
Pest Management Officer	(16)	(19)	(22)	(25)	(28)
Water Allocation Officer	(11)	(13)	(15)	(17)	(19)
Environmental Practices Inspector	(12)	(14)	(17)	(19)	(21)



Occupations Title	Estimated 5-year Gaps				
	2020/2 021	2021/2 022	2022/2 023	2023/2 024	2024/2 025
Weights and Measures Inspector	(15)	(17)	(20)	(22)	(25)
Price Inspector	(13)	(15)	(18)	(20)	(22)
Trade Mark Examiner	(10)	(12)	(14)	(16)	(18)
Fisheries Officer	(10)	(12)	(14)	(16)	(18)
Building Inspector	(13)	(15)	(17)	(20)	(22)
Train Examiner	(14)	(17)	(20)	(22)	(25)
Transport Operations Inspector	(12)	(15)	(17)	(19)	(21)
Gaming Operations Compliance Officer	(10)	(12)	(14)	(16)	(18)

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

In addition, over the next five years, the programme targets require availability of adequate human resources with the right skills. For example, the programme targets increasing government effectiveness index from -0.52 to 0.01, reducing corruption as measured by the corruption perception index from 26% to 35%; and increasing the attractiveness of Uganda as an investment destination. One of the main conduits for improved service delivery that cascades downwards to the people is through having qualified human resources in the public service. Therefore, in a bid to improve the effectiveness and efficiency of the public service over the next five years, the demand will rise for most of the allied professions and other occupations including Corporate Planning Managers, Public Policy Managers, Planning and Development Managers, General Accountants, Management Accountants, Tax Professionals, External Auditors, Policy Development Managers, Strategic Planning Managers, Monitoring and Evaluation Managers, among others.

4.2.14.3 Human Resource Development Objectives for Public Sector Transformation

The goal of the programme is, therefore, to improve public sector response to the needs of the citizens and the private sector. The specific objectives of this programme are:

- i) To align education and training with the changing needs of the labour market in the public sector.
- ii) To expand the technical and professional expertise in the public sector to drive national results for social economic transformation of the country.
- iii) To fast-track the certification process of the priority skills to international level in the various fields relevant to the public sector transformation.
- iv) To institutionalize Human Resource Development among the MDAs within the Public Sector.

4.2.14.4 Specific interventions for Public Sector Transformation

- i) Establish a Programme Skills Coordination Committees (PSCC) for the Public Sector Transformation Programme²⁸. The Council shall determine skills needs and skills standards of the programme.

²⁸ See Annex 3 for the roles of the Programme Skills Coordination Committee.



- ii) Each institution (MDAs) under the Public Sector Transformation programme has to develop a 5-year Human Resource Development Plan in line with their strategic plan to identify and prioritize critical skills and education needs as well as soft skills requirements to meet the present and the future manpower/human resource needs within the Programme.
- iii) Develop and operationalize a human resource plan for the public service and strengthen the human resource management function of government for improved service delivery.
- iv) Undertake training and nurturing of civil servants through patriotic and national service training programmes.
- v) Develop and implement a comprehensive local content policy, legal and institutional framework to optimize employment and skills development initiatives in the country.
- vi) Provide specialized short-term training to enhance the diversity of the workforce in the public sector to become more resilient and productive.
- vii) Establish a scholarship programme in scarce and prioritized strategic areas within the public sector with no training available in the country.



COMMUNITY MOBILIZATION AND MINDSET CHANGE





4.2.15 Community Mobilization and Mindset Change Programme

4.2.15.1 Introduction

The overall objective of the Community Mobilization and Mindset Change programme is to actively engage families, communities, and citizens for positive mind-set change, to counter negative cultural beliefs that hinder people from participating in development programmes. Government effort is to orient persons to appreciate the country's development agenda, promotion of ownership and social accountability as well as enhancement of attitudes, norms, practices, and behaviour. This in process will help build capacities of communities to assess their needs, identify options for addressing them, prioritize, leverage resources, and create sustainable solutions. The focus will catalyze communities to appreciate, uptake and demand service delivery, strengthens community resilience to withstand and cope with risks and shocks, and enhance civic responsibility and good governance.

Community mobilization for mind-set change and empowerment of the citizens to build an independent and sustainable foundation for development is enshrined in the 1995 Constitution and other instruments. The Local Governments Act (Cap 243) guides on community governance and well-being of the community through the practical mechanisms for effective community leadership; integrating national priorities into local level planning, implementing, and monitoring of the development programmes. The Uganda Vision 2040 embraces the development and promotion of a well-defined ideology and a national value system which is subscribed to by every citizen. Despite the efforts in the country, there are far-reaching repercussions on the lives of the people and society in the country in terms of weakening national value system that has led to a weak sense of responsibility and ownership of development programmes among the general populace, increasing dependency syndrome; high selfish tendency; weak sense of nationalism/patriotism; and a weak community development function.

Within the interventional framework of the NDP III, effort will be towards addressing challenges to enable citizens embrace national values and participate in sustainable development. This will be through increased participation of families, communities, and citizens in development initiatives; enhanced media coverage of national programmes; increased household savings; increased social cohesion and civic competence; and better uptake and/or utilization of public services (education, health, child protection etc.) at the community district and national levels. Successful implementation of this programme will largely depend on the development and deployment of the relevant human capital as well as integration within the education and training curriculum mindset change and value system. The Community Mobilization and Mindset Change Programme will require systematic deployment of human capital including, among others, DCDOs and CDOs for community outreach services that will work in support with the district production officers, the parish chiefs (SAs), health officers, education officers, Religious Institutions and Faith-Based Organizations for effective partnership, mobilization, public awareness and sensitization of families and communities. Most of these posts are vacant in the LGs making it difficult for service delivery and implementation of the intended government programmes and projects.



4.2.15.2 Major competency gaps for the Community Mobilization and Mindset Change Programme

The identified occupation and skill gaps for the Community Mobilisation and Mindset Change Programme are based on the programme goal, projected socio-economic changes as well as the anticipated replacement and expansion demand. Despite the existence of free universal primary and secondary education, about 26% of Ugandans aged 10 years and above are still illiterate; with about 38.5% of pupils who enroll in P.1 unable to complete P.7; and 12% of Ugandans aged 6-12 years, 3 percent of those aged 13-18 years and 6% of those aged 19-24 years have never attended school. These numbers are even projected to increase due to high dropout occasioned by the Covid-19 pandemic that has disrupted learning and led to the closure of education and training institutions. This further implies that the number of unskilled and illiterate Ugandans joining the labour market is even going to increase by a big magnitude. The occupation and skills gaps identified under this programme are critical for the delivery of the NDPIII planned results over the short, medium and long terms. The critical gaps are as shown in Table 20.

Table 20: Estimated 5-year Occupation Gaps for this Programme

Occupations Title	Estimated 5-year Gaps				
	2020/2021	2021/2022	2022/2023	2023/2024	2024/2025
Journalists					
Editor	(12)	(11)	(10)	(8)	(7)
Journalist	(25)	(22)	(19)	(16)	(13)
Radio Journalist	(17)	(15)	(13)	(11)	(9)
Content Presenter	(15)	(13)	(12)	(10)	(8)
Critic	(14)	(12)	(11)	(9)	(8)
Social Work and Counselling Professionals					
Social Counselling Worker	(29)	(28)	(27)	(25)	(24)
Addictions Counsellor	(20)	(19)	(19)	(18)	(17)
Marriage and Family Counsellor	(18)	(18)	(17)	(16)	(15)
Rehabilitation Counsellor	(16)	(15)	(14)	(14)	(13)
Student Counsellor	(18)	(17)	(17)	(16)	(15)
Probation Social Worker	(17)	(17)	(16)	(15)	(14)
Adoption Social Worker	(16)	(15)	(15)	(14)	(13)
Child and Youth Care Worker	(18)	(17)	(16)	(15)	(15)
Parole Board Member	(11)	(11)	(11)	(10)	(10)
Employee Wellness Practitioner	(19)	(19)	(18)	(17)	(16)
Career Councilor	(12)	(11)	(11)	(10)	(10)
Community Development Practitioner	(10)	(9)	(9)	(8)	(8)
Psychologists					
Clinical Psychologist	(95)	(91)	(88)	(84)	(80)
Educational Psychologist	(113)	(109)	(105)	(101)	(96)
Organizational Psychologist	(82)	(79)	(76)	(73)	(69)
Psychotherapist	(63)	(61)	(58)	(56)	(53)
Research Psychologist	(63)	(61)	(58)	(56)	(53)
Sport Psychologist	(101)	(97)	(94)	(90)	(85)
Counselling Psychologist	(32)	(30)	(29)	(28)	(27)
Community Psychologist	(82)	(79)	(76)	(73)	(69)

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



Addressing the identified human resource gaps will go a long way in achieving programme targets and results. For example, the programme targets increasing uptake and/or utilization of public services (education, health, child protection, population services, water and sanitation, livelihood programmes, etc.) at the community and district levels; increasing adult literacy rate from 72.2 to 80%; reduction in prevalence of negative social norms and cultural practices that perpetuate gender inequality; increasing the proportion of families, citizens and communities informed about national and community programmes from 30 to 90%; increasing the participation of families, communities and citizens in development initiatives by 80%, among others. To achieve the programme targets, the demand for technically qualified and experienced human resources will rise for Clinical Psychologists, Educational Psychologists, Organizational Psychologists, Social Counselling Workers, Addictions Counsellors, Career Counselors, Community Development Practitioners, Psychotherapists, Research Psychologists, Sport Psychologists, Counselling Psychologists and Community Psychologists, to mention but a few. Therefore, the government and the private sector will need to recruit trained personnel in those occupations as the country continues to prioritize planning for its labour force and enhancing productivity.

4.2.15.3 Human Resource Development Objectives for this Programme

The goal of this program is to develop skilled and competent human resources required to empower families, communities and citizens to embrace national values and actively participate in sustainable development; and the specific objectives of the programme are:

- i) To align education and training with the changing needs of the labour market in line with the Community Mobilization and Mindset Change programme.
- ii) To promote and inculcate the National Vision and value system into the education and training systems.
- iii) To expand the technical and professional expertise in various fields relevant to the Community Mobilization and Mindset Change Programme for effective mobilization of families, communities and citizens for national development.
- iv) To institutionalize Human Resource Development among the MDAs within the Community Mobilization and Mindset Change Programme.

4.2.15.4 Specific interventions for the Community Mobilization and Mindset Change Programme

- i) Develop and implement a national civic education programme aimed at improving the level of awareness of roles and responsibilities of families, communities and individual citizens.
- ii) Equip and Operationalize Community Mobilization and empowerment institutions/structures of central, local government and non-state actors for effective citizen mobilization and dissemination of information to guide and shape the mindsets/attitudes of the population through various education and training programmes.
- iii) Integrate into the education and training curricula critical issues on mindset change and the spirit of patriotism.



- iv) Conduct community-based short-term skilling trainings guided by the needs of communities.
- v) Establish a Programme Skills Coordination Committee (PSCC) for the for-Community Mobilization and Mindset Change Programme²⁹. The Committee shall determine skills needs and skills standards of the programme.
- vi) Each institution (MDA) under the Community Mobilization and Mindset Change Programme must develop a 5-year Human Resource Development Plan in line with their strategic plan to identify and prioritize critical skills and education needs as well as soft skills requirements to meet the present and the future manpower/human resource needs within the Programme.
- vii) Undertake training and nurturing of citizens in community, patriotic and national service training programmes.
- viii) Establish a scholarship programme in scarce and prioritized strategic areas within the Community Mobilization and Mindset Change Programme with no training available in the country.

4.3 CONCLUSION

The chapter has provided the human resource needs articulation by national development programmes. Competency gaps, human resource development objectives, and specific program-level interventions are presented. The subsequent chapter highlights the implementation modalities of the NHRDP initiatives, stakeholder roles and responsibilities, the financing mechanisms of the NHRDP interventions as well as the risk management strategy.

²⁹ See Annex 2 for the roles of the Program Skills Coordination Committee.



CHAPTER FIVE

IMPLEMENTATION AND FINANCING ARRANGEMENTS OF THE NATIONAL HUMAN RESOURCE DEVELOPMENT PLAN

5.1 INTRODUCTION

This chapter details the implementation modalities of the proposed interventions and activities, roles and responsibilities of the different stakeholders, and the financing arrangements of the National Human Resource Development Plan.

5.2 IMPLEMENTATION MODALITIES OF THE NHRDP INITIATIVES

The implementation modality of this National Human Resource Development Plan (NHRDP) is in line with the implementation framework of the third National Development Plan (NDPIII). NDPIII recognizes that a successful development plan is a function of addressing all facets of the implementation cycle.³⁰ This cycle revolves around strategic planning, prioritization, budgeting, implementation, auditing and accounting, monitoring and evaluation. This is reinforced by effective coordination and an efficient statistical generation mechanism for results. Therefore, development plan implementation is strong to the extent to which the cycle components are strong; otherwise, implementation will be weak.

However, over the years, Uganda's development planning has not fully integrated human resource development planning into the planning process. This was partly because of the belief at the time that demand and supply market forces would clear the labour market and due to limited appreciation of Human Resource Development Planning and the role it would play in realizing optimal labour market outcomes. Consequently, the economy has witnessed several challenges related to the functionality of the labour market as highlighted in the strategic direction section. For emphasis to inform the implementation of proposed reforms, these are highlighted in Box 1.

Therefore, the implementation modalities of interventions and priorities in this plan are guided by the strategic mandates of key implementing Ministries, Departments and Agencies (MDAs) as well as the private sector-based institutions. The implementation matrix presented in Table 22 highlights the objectives, interventions, focus areas and the responsible implementing institutions. Each responsible implementing institution must develop a roadmap, action plan and financial plan to implement the recommended interventions and priority focus areas. This will form part of the assessment criteria of performance of government institutions under the annual certificate of compliance provided for under the Public Finance Management Act (PFMA) of Uganda.

³⁰ See figure 22.1 of NDPIII under Development Planning Implementation Programme



Box 1: Challenges limiting full functioning of Uganda's labour market

- a) Absence of a clear human resource development agenda that links the education and training institutions to the national development priorities
- b) Continuing Skills and Education Qualifications mismatches between what the labour market demands and what the education and training institutions produce
- c) Education financing and scholarships are not allocated in line with national human resource and skills needs of the country
- d) Enrollment into higher education institutions of learning does not tally/resonate with national human resource and skills needs
- e) Low access to quality Early Childhood Care and Education (ECCE), primary and secondary education, low numeracy rates and low survival rates especially in primary and secondary levels, plus low standards of education across the board, leading to low/suboptimal quality of graduates at all levels
- f) Limited apprenticeship and attachments and certification framework for different trades at different levels both in formal and informal sectors
- g) Inadequate education infrastructure at all levels of education including teachers and staff houses, classrooms, computer and science laboratories as well as the required textbooks and consumables
- h) Limited employability of the country's labour force especially the youths mostly due to inadequacy of required skills and core competencies
- i) High rates of school dropout at all levels of education that creates the need for skilling and re-skilling the school dropouts in priority areas of the economy
- j) Rising number of youths who are neither in employment nor in education and training in the country.
- k) Continuing low level of productivity of the country's human resources especially in agricultural and services related activities where the majority of Ugandans derive their daily livelihood.
- l) Absence of information on skills and occupations in high demand to guide skills development for the teenagers (non-functional market intelligence system)
- m) Rising unemployment and under-employment due to inadequacy of entrepreneurial and managerial skills relevant for business and product development
- n) High mortality rates of business enterprises in Uganda with many businesses failing to leave up to at least 5 years, thereby limiting employment creation
- o) Limited innovation and invention with high rate of businesses copycatting resulting in low profitability and expansion of businesses
- p) High level of informality of many business enterprises, thereby limiting business expansion and the capacity for employment creation
- q) Unnecessary competition among primary and secondary levels of education leading to loss of value of education and promoting cram work with limited child creativity.
- r) Increasing role of technology, automation and Artificial Intelligence (AI) that puts some jobs and skills at high risk of replacement and some skills becoming obsolete
- s) Limited access to safe drinking water and absence of a school feeding programme especially at ECCE, Primary and secondary education levels
- t) Declining morals and values coupled with low attitudes and high negativity especially among the youths
- u) High prevalence of malnutrition and stunting affecting child cognitive development coupled with limited access to good sanitation and housing facilities



To fully tackle and address the labour market challenges identified in Box 1, four (4) objectives and four (4) strategic interventions were adopted in this plan over the five years (2020-2025). The priority actions and the responsible stakeholders are highlighted in the section that follows.

5.3 STAKEHOLDER ROLES AND RESPONSIBILITIES

To establish the roles and responsibilities of different stakeholders, focus areas were identified for each strategic intervention to provide strategic guidance to the responsible sectors, implementing MDAs as well as the private sector-based institutions. Therefore, the roles and responsibilities of stakeholders are highlighted in the implementation matrix presented in Table 21.



Table 21: Implementation Matrix

Strategic intervention	Priority areas	Responsibility center	Other players
Intervention 1: Address the critical education and skills gaps to meet the current and projected HR needs at national and global levels.	1. Produce and publish national scarce skills and occupation report to highlight critical scarce qualifications and skills needs in the country every after two years	NPA	UBOS, MoES, MoGLSD
	2. Develop a national programme for identifying and harmonizing support (domestic and foreign) towards education and skills development. This will help to equip Ugandans with skills relevant to national development identified as scarce in the NHRDP and the scarce skills report.	NPA	MoES, MoFPED, NCHE, MoPS, Private sector
	3. 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/manpower at every point in time. The Uganda National Talent Register (UNTR) should align with the international standard classification of occupations and education (ISCO & ISCED). In addition, it should be integrated with the Oil and Gas Talent Register as well as other relevant information systems such as the Teacher Management System, among others.	MoGLSD, NPA	UBOS, MoES, PSFU, UMA, MoPS, Private Sector
	4. Establish and/or strengthen centres of excellence for skills development at national and district/regional levels tailored to the country's development agenda. For example, centres of excellence in Tourism, Agriculture, Manufacturing, ICT, Oil and Gas, Health, and STI, among others	MoES	MAAIF, MEMD, MoFPED, NCHE, NPA, Mops, MTIC, Private sector
	5. Re-orient the excess labour supply (the unemployed and those whose qualifications fall in the category of occupations with excess labour supply) by reskilling them and certifying their skills to take up job opportunities in fields where labour demand exceeds labour supply.	MoES & MoGLSD	MoFPED, NCHE, NPA, Mops, MTIC, Private sector
	6. Strengthen the standardization and certification programme to make Uganda's labour force employable and competitive. The Directorate of Industrial Training (DIT) should develop, popularise, and implement the Uganda Vocational Qualifications Framework (UVQF) to assess and award certification and accreditation to Uganda's labour force to be employed in targeted sectors and projects	MoES	MoFPED, NCHE, NPA, MoPS, Private sector



Strategic intervention	Priority areas	Responsibility center	Other players
	7. Develop, popularize, and implement the Uganda Vocational Qualifications Framework (UVQF) to produce skills that are relevant, competitive nationally and internationally and institute mechanisms for recognition of prior learning and wider certification of the informal sector competences. Repetition; see 6 above.	MoES/DIT	MoFPED, NCHE, NPA, MoPS, Private sector
	8. Incentivize skills development in the private sector to enhance competitiveness of domestic organizations and improve national productivity (for example, operationalize the skills development levy and tax incentives).	PSFU	MoES, MoFPED, NCHE, NPA, MoPS, Private sector
	9. Undertake skilling and reskilling of Uganda's labour force especially the youths in line with the skills demand to reduce the skills mismatch, reduce unemployment and increase the transition into gainful employment both locally and internationally.	MoES	MoFPED, NCHE, NPA, MoPS, Private sector
	10. Review work permit guidelines to grant work permits and waivers of work permit fees to foreign workers in line with the skills identified as scarce as contained in the national scarce report and agreeable by all relevant stakeholders.	MoIA	NPA, MoFA, MoFPED, MEACA
	11. Attract scarce skills in the country especially for skills that are in short supply yet require long term training for building local capacities.	UIA	MoIA, NPA, MoFPED, MoES, MoPS, UMA, Academia,
Strategic intervention	Priority areas	Responsibility center	Other players
Intervention 2: Streamline national education and training system to meet the current and projected education and training needs of the country	1. Identify, develop, and implement new education and training programmes to meet the qualification and skills shortages with no training available in the country in line with the NHRDP/ Scarce Skills Report.	MoES	MoFPED, NCHE, MoPS NPA, Private sector, Training Institutions
	2. Decommmercialize education and training services to reduce the unnecessary competition especially among primary and secondary schools. The commercialization of education has completely altered the	MoES	NPA, Private sector, Training Institutions



Strategic intervention	Priority areas	Responsibility center	Other players
	purpose of education and this has led to loss of value of education and promoting cram work with limited child creativity		
	3. Support and guide institutions of higher learning to design and implement education programmes that are relevant to the national manpower/human resource requirements.	MoES	MoFPED, NCHE, MoPS NPA, Private sector, Training Institutions
	4. Build capacity of training institutions to provide relevant education and training considering the emerging technological advancement and changing labour market needs (such as the 3rd and 4th industrial revolution).	MoES	MoFPED, NCHE, MoPS NPA, Private sector, Training Institutions
	5. Revise the framework/criteria for development and approval of new courses offered by education and training institutions to include other key stakeholders such as the Ministry of Public Service, NPA, NCDC, Private sector umbrella bodies, among others	MoES	MoFPED, NCHE, MoPS NPA, Private sector, Training Institutions
	6. Centralize admission to BTVET and tertiary institutions to link BTVET and tertiary education to the national development priorities.	MoES	MoFPED, NCHE, MoPS NPA, Private sector, Training Institutions
	7. Balance the production and development of professionals across all priority professions as identified in the National Scarce Skills Report/NHRD Plan.	Training Institutions	MoES, MoFPED, NCHE, MoPS NPA, Private sector
	8. Link financing for education and training to scarce qualifications and skills needs of the country relevant to national priorities.	MoES	MoFPED, NCHE, MoPS NPA, Private sector, Training Institutions
	9. Provide the required physical infrastructure, instruction materials and human resources at levels of Education and Training including Special Needs Education (SNE)	MoES	MoFPED, NCHE and Universities and other training institutions.
	10. Award government scholarships and grant students' loans under the current students' loan scheme based on qualifications and skills in	MoES	MoFPED, NCHE, MoPS NPA, Private



Strategic intervention	Priority areas	Responsibility center	Other players
	shortage as identified in this plan and as contained in the national scarce skills report/NHRDP.		sector, Training Institutions
	11. Establish and fully equip vocational and technical institutions in each sub-county and attract youths towards skills development to increase the number of technicians produced.	MoES	MoFPED, NCHE, MoPS NPA, Private sector, Training Institutions
	12. Improve teachers' welfare to reduce the opportunity cost of teaching as a career and restore teaching as a prestigious profession.	MoES	MoFPED, NCHE, MoPS NPA, Private sector, Training Institutions
	13. Undertake effective investments in physical education and sports following strategic planning and a revised policy framework.	MoES	MoFPED, NCHE, MoPS NPA, Private sector, Training Institutions
	14. Develop and operationalize a publicization campaign to tackle the negative mindset against vocation and technical training, raise BTVET's brand and identity to attract youths to BTVET education to increase the number of technicians produced.	MoES	MoFPED, NCHE, MoPS NPA, Private sector, Training Institutions
	15. Promote partnerships between education and training providers and employers to increase integration of work-based training into the education and training system.	MoES	MoFPED, NCHE, MoPS NPA, Private sector, Training Institutions
	16. Strengthen general education at pre-primary, primary and secondary levels to enhance learner's ability to think critically, develop communication skills and stimulate their capacities for creative and innovative thinking.	MoES	MoFPED, NCHE, MoPS NPA, Private sector, Training Institutions
	17. Establish a Public-private partnership to offer relevant and high-quality BTVET programmes. The partnership should cover various areas, such as curriculum development, faculty support, testing resources, internship support, and financial support	MoES	MoFPED, NCDC, DIT, NCHE, MoPS NPA, Private sector, Training Institutions



Strategic intervention	Priority areas	Responsibility center	Other players
	18. Promote partnerships between primary and secondary schools with tertiary institutions and employers for career guidance at a young age to increase children’s participation in higher education.	MoES	MoFPED, NCHE, MoPS NPA, Private sector, Training Institutions
	19. Strengthen partnerships between education and training providers and the private sector for the development of applied research and business incubators.	MoES	MoFPED, NCHE, MoPS NPA, Private sector, Training Institutions
	20. Integrate career guidance and counselling in all levels of education to guide students in the selection of their career paths.	MoES	NCDC, NCHE, MoGLSD, MoICT&NG, Private sector, Training Institutions
	21. Support partnerships/twinning between international and local universities and other institutions of higher learning in the areas of research, curriculum and staff and student development.	MoES	MoFPED, NCHE, MoPS NPA, Private sector, Training Institutions
	22. Develop and implement lifelong learning programmes targeting both the employed and the unemployed persons to pursue skills training in fields that are in short supply as identified in this plan as well as emerging skills need due to structural and technological shifts.	MoGLSD/MoES	MoFPED, NCHE, MoPS NPA, Private sector, Training Institutions
	23. Promote regular reviews of curriculum to accommodate the needs of the private sector and industrial dynamics at all levels of education and training to address the skills mismatches.	MoES	MoFPED, NCHE, MoPS NPA, Private sector, Training Institutions
	24. Strengthen and integrate entrepreneurship education and training at all levels of education to ensure that learners are equipped with relevant businesses development skills including financial literacy, book keeping, proposal writing, sales and marketing as well as standardization and quality management.	MoES	MoFPED, NCHE, MoPS NPA, Private sector, Training Institutions



Strategic intervention	Priority areas	Responsibility center	Other players
	25. Institute a mechanism for international standardization and certification for skills to make Uganda's labour force internationally competitive.	MoES	MoFPED, NCHE, MoPS NPA, Private sector, Training Institutions
	26. Introduce TVET training as part of the one-year compulsory National Service Programme immediately after Advanced level of education before enrolling for further education.	MoGLSD/MoES	MoFPED, NCHE, MoPS NPA, Private sector, Training Institutions
	27. Integrate soft skills that support modern work in education and training programmes of education and training institutions.	MoES	MoFPED, NCHE, MoPS NPA, Private sector, Training Institutions
	28. Improve the capitation grant to effectively deliver the required education services and this should take regard to locational differences. This is because, the unit cost of education is higher in urban compared to rural areas.	MoES	MoFPED, NPA, Private sector Training Institutions
	29. Operationalize the internship and apprenticeship framework and coordinate the implementation of workplace-based learning and initiatives.	MoGLSD/MoES	MoFPED, NCHE, MoPS NPA, Private sector, Training Institutions
Strategic intervention	Priority areas	Responsibility center	Other players
Intervention 3: Establish a framework for timely collection, production and analysis of labour market statistics to support formulation and monitoring job creation efforts and projection of HR needs in the country	1. Develop and operationalize the National Labour Market Statistics Framework for Uganda to guide the type and frequency of labour market data and information to be collected.	UBOS	MoFPED MoGLSD, NPA, MoES, Private sector, Donor groups
	2. Undertake the administration of regular labour and employment surveys. The National Manpower Survey (NMS) should be conducted every five years as provided in the approved NHRDP Framework. This will provide up-to-date information and a better understanding of the country's human resource capacity, utilization, and needs. In addition, the National Labour Force Survey (NLFS) should be undertaken on a	UBOS	MoFPED MoGLSD, NPA, MoES, Private sector, Donor groups



Strategic intervention	Priority areas	Responsibility center	Other players
	year-to-year basis except for a year when the Uganda National Household survey is to be conducted		
	3. Design and implement a capacity development programme for strengthening collection, analysis, and reporting of labour market statistics	UBOS	MoFPED MoGLSD, NPA, MoES, Private sector, Donor groups
	4. Establish a comprehensive and functional Labour Market Information and Analysis System (LMIAS).	MoGLSD	MoFPED, NPA, UBOS, MoES, Private sector, Donor groups
	5. Strengthen the collection, management, and reporting of administrative data	UBOS	MoFPED, NPA, MoPS, MoES, MoGLSD
	6. Develop and regularly update a robust web-based system for human resource projections and tracking.	NPA	MoFPED MoGLSD, UBOS, MoES, Private sector, Donor groups
Strategic intervention	Priority areas	Responsibility center	Other players
Intervention 4: Strengthen the institutional and coordination framework for Human Resource Planning and Development in line with the national development agenda	1. Operationalize and Strengthen the Policy Implementation Coordination Committee under the Office of the Prime Minister to also handle Human Resource Development Planning issues.	OPM	NPA, MoES, MoGLSD, MoPS, Training institutions, Private sector.
	2. Operationalize and Strengthen the Technical Implementation Coordination Committee under the office of the prime minister to also handle Human Resource Development Planning issues	OPM	NPA, MoES, MoGLSD, MoPS, Training institutions, Private sector.
	3. Establish and operationalize the Program Skills Coordination Committees (PSCCs).	PWGs	NPA, MoES, MoGLSD, MoPS, Training institutions, Private sector.



Strategic intervention	Priority areas	Responsibility center	Other players
	4. Fast-track the development of the MDA Strategic Plans with integrated HRD Planning approach to determine the skills needs and gaps.	NPA	MDAs, LGs, Training institutions, Private sector
	5. Develop the Human Resource Development Planning Guidelines to support MDAs/LGs in developing their respective HRD Plans.	NPA	MDAs, LGs, Training institutions, Private sector
	6. Harmonize the Policy, Legal and Institutional Framework for the country's human resource planning and development.	MoGLSD	MDAs, LGs, Parliament, Training institutions, Private sector, Training institutions.
	7. Harmonize the Policy, Legal and Institutional Framework for the country's human resource planning and development.		
	8. Regulate and facilitate the movement of people in and out of the country to keep track of stock of the country's human resources and to ensure and maintain internal security, peace, and stability.	MoFA	MIAs, MoES, MEACA, MoGLSD, NPA
	9. Review and strengthen the policy legal framework for Uganda's labour market to enhance and streamline its functionality (Employment Act and Policy, OSH Act, Public service Act, Public service training policy, LG Capacity Building Policy, among others).	MoGLSD	MDAs, LGs, Parliament, Training institutions, Private sector, Training institutions.
	10. Rationalize employment and remuneration in the public sector to ensure harmonization of wages and benefits as well as career progression.	MoPS	MDAs, LGs
	11. Develop a science and non-science-based education and occupation classifications framework.	MoGLSD	MoES, NPA,
	12. Develop a National Employment Strategy and Action Plan with specific targets for employment generation and key outputs.	MoGLSD	MDAs, LGs, Parliament, Training institutions, Private sector, Training institutions.



Strategic intervention	Priority areas	Responsibility center	Other players
	13. Coordinate the implementation of Human Resource (HR) priority programmes and projects within the MTEF and undertake monitoring of HR planning and development initiatives.	OPM	MDAs, LGs, Parliament, Training institutions, Private sector Training institutions.
	14. Coordinate the implementation of workplace-based learning and coordinate initiatives to ensure that soft skills and attitude building is integrated in workplaces to enhance labour productivity.	MoGLSD	MDAs, LGs, Parliament, Training institutions, Private sector Training institutions.
	15. Mobilize and solicit technical and financial support for undertaking HR development programmes and strategies in the country to achieve the desired development goals and targets.	MoFPED	MDAs, LGs, Parliament, Training institutions, Private sector Training institutions.
	16. Review, develop and strengthen the policy, legal and regulatory framework for labour externalization to tap into the global employment opportunities (e.g. Externalization of labour Bill/Act, Regulations, Policy, Capacity Development, MoUs, among others.	MoGLSD	MDAs, LGs, Parliament, Training institutions, Private sector Training institutions.
	17. Fast-track the Implementation of Provisions of Employment (Recruitment of Uganda Migrant Workers) Regulations, 2021 including the deployment of labour attaches in Saudi Arabia, Qatar, and United Arab Emirates	MoGLSD	MoFPED, NPA, UBOS, MoES, Private sector, Donor groups
	18. Negotiate for training opportunities for employees in the public and private sectors and provide the necessary support for Ugandans to undertake training abroad.	MoFA	MIAs, MoES, MEACA, MoGLSD, NPA
	19. Regularly review and provide guidance on the implementation of the EAC Common Market Protocol which Uganda ratified in 2010 concerning free movement of labour, employment, and human resource development.	MoFA/MEACA	MIAs, MoES, MoGLSD, NPA



5.4 FINANCING MECHANISMS OF THE NHRDP INTERVENTIONS

5.4.1 Estimated Cost of Implementing the 5-Year NHRD Plan

The total financial cost of implementing the 5-year National Human Resource Development Plan is estimated at UGX 1,291.05 billion, of which 76.60% (approximately UGX 1,027.7 billion) will finance broad strategic interventions that are cross-cutting, while UGX 263.33 billion will finance programme level interventions. The NHRDP costs were projected after considering the NDPIII projected financial requirements. As a result, UGX 832.72 billion (64.5%) will be contributed by the public sector, while UGX 458.32 billion (35.5%) will be by the private sector.

5.4.2 Source of funding

The financing of the various interventions under this National Human Resource Development Plan is integrated into the national and MDA work plans and budgets. Consequently, all interventions of this plan will be funded typically through the Medium-Term Expenditure Framework. Government shall ensure mobilization of adequate financing, together with the engagement of the private sector and the development partners. All implementing Ministries, Departments and Agencies (MDAs) are to prioritize the interventions of this plan in their annual work plans and budgets.

Other sources of funding interventions for this plan will come from the private sector, as estimated in the NDPIII. However, Development Partners, United Nations Agencies, Multilateral and Bilateral Agencies, and Civil Society Organizations shall constitute a significant funding source for this plan. The preferred mode for this external support is through basket funding: either as a contribution to the national budget or specifically for the concerned implementing MDA, in line with a Sector-Wide Approach. Technical assistance shall remain the mode of support from Development Partners and any other partners in developing the required human resource that is educated, skilled and productive.

5.4.3 Financial sustainability for Human Resource Development under this plan

To ensure sustainable financing of the various interventions under this National Human Resource Development Plan, MDAs shall exploit other public financing strategies such as Development Assistance Grants; Oil and Oil Related Revenues; Public-Private Partnerships; South-South Cooperation; Public Debt Acquisition; Private Financing Sources; Domestic Private Investments (including private savings, cooperatives, SACCOs, and Retirement Funds); Blended finance, such as equity guarantees for energy and transport infrastructure; Private Remittances and Diaspora Resources; NGOs/CSOs and Philanthropy and other sources in line with the third National Development Plan. Furthermore, to cover up funding gaps in the responsible sectors and MDAs, it is recommended that implementing sectors and MDAs:

- i) Strengthen linkages and collaboration with other government programmes and the private sector.



- ii) Mainstream HRD and employment concerns in other essential sectors at national and local government levels.
- iii) Raise awareness about HRD concerns to increase commitment and responsiveness among stakeholders.
- iv) Develop proposals and negotiate for funding and increased resource allocation to accelerate skills development and employment creation initiatives.
- v) Strengthen public-private partnerships, especially in human resource development, and strengthen strategic partnership and coordination with implementing CSOs and the private sector for harmonized delivery of the planned outputs.
- vi) Increase financial monitoring to ensure effective utilization of the available resources to achieve planned results.

5.5 RISK MANAGEMENT

The goal of the NHRD Plan is to increase the stock of knowledgeable, skilled and productive human resources in Uganda. Achieving this goal is, however, not expected to be a seamless move; it is anticipated to come along with risks that may impede the realization of planned results. The risk management adopted in this plan is in line with NDPIII and consistent with the Government of Uganda Risk Management Strategy 2018. Therefore, the plan acknowledges the need for risk informed development as a process, not an event. Risk management in HRD planning is central because of its interactive nature across local, regional and global level aspects, including pandemics and epidemics like the recent COVID-19 global pandemic; movement of labour across borders; natural hazards and disasters; climate change; and sabotage; among others.

Consequently, successfully implementing the interventions in this plan requires identification, mitigation, and monitoring of these possible risks. For example, the occurrence of the COVID-19 pandemic has had several adverse effects on the labour market, including loss of jobs and reduced profitability, closure of places of work, the difficulty of moving to workplaces, high operation costs of implementing SOPs, reduced salaries for workers, reduced government revenue leading to increased government borrowing and service delivery, among others. Therefore, to effectively manage the identified risks to achieve the NHRDP planned interventions, the government with relevant stakeholders will ensure that risk management is integrated into all MDAs and local government plans, institutionalize and enhance capacities in risk management at all levels including national, MDAs, and local governments and strengthen reporting on risk management practices and enhance documentation and information sharing.

5.6 CONCLUSION

In a nutshell, the chapter has shed light on the Implementation modalities of the NHRDP initiatives, stakeholder roles and responsibilities, the financing mechanisms of the NHRDP interventions, and the risk management strategy. The next chapter highlights the national human resource development plan's reporting, monitoring and evaluation mechanisms.



CHAPTER SIX

REPORTING, MONITORING AND EVALUATION MECHANISMS OF THE NATIONAL HUMAN RESOURCE DEVELOPMENT PLAN

6.1 INTRODUCTION

The reporting arrangement and the Monitoring and Evaluation (M&E) mechanism of this plan is in line with the NDPIII M&E system. The successful implementation of interventions under this NHRDP will require comprehensive and timely reporting and monitoring and evaluation (M&E) of effort in line with the existing government mechanisms. Specific strategies for reporting, monitoring and evaluating interventions under this plan will be detailed in the implementing sectors and MDAs work plans.

The implementing sectors and MDAs will develop specific M&E strategies and M&E plans for the various interventions under their dockets. The implementing sectors and MDAs will also develop operational plans for activities to indicate who is ultimately responsible for the various initiatives, the budget estimates, the timeline for completion, the expected outputs and outcomes, the beneficiaries and appropriate indicators. The implementing sectors and MDAs will also produce progress reports that assess the impact and continuously highlight successes and failures and unintentional positive or adverse effects.

Monitoring and Evaluation under this National Human Resource Development Plan are the same as that of NDPIII. They shall be based on indicators and targets of the different elements in the agreed reporting, monitoring, and evaluation activities. In addition, each implementing institution shall develop and integrate a system for periodic reporting of specific Human Resource Development initiatives within the existing reporting system.

6.2 M&E EVENTS FOR HRD AND KEY ACTORS

The M&E events and processes for HRD are in line with the NDPIII M&E events and processes. As clearly stipulated in NDPIII, the performance monitoring reports for the NHRD Plan will be produced and disseminated at various levels as outlined in the sections below:

6.2.1 Economy-Wide Reports

6.2.1.1 Certificate of Compliance

The certificate of compliance framework will be broadened to enable assessment of the labour and employment aspects as articulated in the NDPIII and the attendant National Human Resource Development Plan. This will help establish the budget's alignment to the NDPIII and the attendant National Human Resource Development Plan. Therefore, NPA will continue to issue certificates of compliance based on the already developed criteria by NPA.

6.2.1.2 National Development Report (NDR)

A series of NDRs for the NDP III and the attendant NHRD Plan will be produced annually by NPA and submitted to Parliament, as required by the NPA Act (2002). The NDR scope will



be expanded to provide a review of the progress made towards the achievement of NDP and the NHRD Plan goals, objectives, programmes, and corresponding targets. In addition, the scope of NDRs will be broadened to capture progress on critical HRD interventions as outlined in this plan. The NDR will thus serve as the main monitoring and evaluation of annual feedback from the National Planning Authority to stakeholders.

6.2.1.3 National Employment and Skills Development Status Report

A National Employment and Skills Development report shall be produced and disseminated every two years to keep track of the number of jobs; skills developed and skills required in the short and medium terms. In this regard, UBOS will develop a more comprehensive employment and labour statistics framework and database to facilitate reporting on employment and skills development status. NPA will lead the report and work with key stakeholders such as UBOS, EPRC, MoGLSD, MoES, UIA, and PSFU.

6.2.1.4 Produce and publish annual national scarce skills and occupation report

To highlight the country's required qualifications and skills needs, NPA will produce and publish an annual national scarce skill and occupation report. The report aims to inform, *inter alia*: human resource planning and development; resource allocation and prioritization on developing critical skills; the development of relevant qualifications programmes and curricula review and development; and international recruitment strategies.

6.2.1.5 Government Annual and Half-Annual Performance Reports (GAPR & GHAPR)

These reports will continue to be produced annually and semi-annually by OPM to facilitate an internal review of Government performance by Cabinet. The reports provide an analysis of the performance of sectors and MDAs against the national budgetary resource allocations. They will primarily focus on assessing progress on interventions that aim at achieving the planned NDP III programme and the National Human Resource Development Plan results. As before, the GAPR and GHAPR will continue to be disseminated through the Cabinet retreat but with more emphasis on HRD initiatives.

6.2.1.6 Annual Budget Performance Report (ABPR)

As the NDPIII notes, the MoFPED will continue to produce the Annual Budget Performance Report, which provides information on the performance of the National Budget against the annual plans. The report analyses the revenue and expenditure, including sectoral and LG financial and physical performance. The report is disseminated to MDAs and LGs during the national and regional budget conferences as critical feedback to inform the next budgeting process. Over the next 5 years, the Annual Budget Performance Report (ABPR) will also provide information on the performance of the National Budget against the HRD initiatives in line with the annual plans of sectors, MDAs and LGs.



6.2.2 Programme Level Reports

6.2.2.1 Annual Programme Performance Reports by Programme skills Coordination Committees

As noted in NDPIII, over the past 5 years, all Programmes secretariats shall produce annual programme performance reports as planned. However, most sectors had previously held joint sector review meetings to assess progress, the output being workshop reports. In a new programme-based approach, all programmes will be required to produce annual Programme performance reports which will be a key performance review reference during the finalization of the subsequent financial year’s BFPs and budget appropriation by Parliament. In addition, all Programme Skills Coordination Committees (PSCC) will be required to produce and disseminate the reports by October every year, fully reporting on the progress of HR Development in the programme.

6.2.2.2 Local Government level reports

NDPIII notes that local governments currently produce annual budget performance reports submitted to the Ministry of Finance, Planning and Economic Development. Over the next 5 years, LGs will produce reports structured to focus on progress in implementing NDPIII, SDPs and the attendant National Human Resource Development Plans by local governments. In addition, district MIS will be strengthened as it will be linked to the Web-based NDP M&E system to provide data for preparing these reports.

6.2.2.3 Results Framework of the NHRD Plan

The Result Framework will be used to measure and assess progress during the implementation of the NHRDP as a tool for compliance assessment as required under Section 13(7) of the Public Finance Management Act, 2015. The detailed results framework focuses on measuring results at the goal and national strategic interventions in Table 22 and the programme level in table 23. This results framework is premised on a clear understanding and specification of how the planned interventions are expected to lead to desired outcomes.

Table 22: Results Framework for the NHRDP at the Goal and Objective levels

Category	Key Result Areas (KRA)	Indicators	Baseline FY2017 /18	NDPIII Targets					Vision 2040
				FY20 20/21	FY2021 /22	FY20 22/23	FY202 3/24	FY20 24/25	
Goal: Increased stock of knowledge able, skilled and productive Human Resources in Uganda”	Stock of knowledge able, educated, skilled and productive Human Resources	Share of working population (%)	79.0	80.6	82.2	83.8	85.5	87.2	94
		Share of national labour force employed (%)	47.5	48.5	49.4	50.4	51.4	52.4	
		Human Developme	0.52	0.56	0.58	0.60	0.62	0.64	



Category	Key Result Areas (KRA)	Indicators	Baseline FY2017 /18	NDPIII Targets					Vision 2040
				FY20 20/21	FY2021 /22	FY20 22/23	FY202 3/24	FY20 24/25	
		nt Index Score							
		Net annual no. of jobs created	424,125	479,588	488,298	523,830	558,000	585,858	
		Rate of transition into gainful employment (%)		34.5	35	35.5	36	40	
	Labour productivity (GDP per worker - USD)	Agriculture	2,212	2,527	2,656	2,757	2,919	3,114	6,790
		Industry	7,281	8,162	8,446	8,622	8,971	9,413	24,820
		Services	3,654	3,925	4,063	4,135	4,276	4,456	25,513
Strategy 1: Address the critical education and skills gaps to meet the current and projected HR needs at national and global levels.	Development of critical scarce qualifications and skills	National scarce skills Report in place	0	-	1	1	1	1	
		Percent of Government scholarships aligned to the national skills report	0	20	25	30	40	50	
		Harmonized programme for foreign support towards skills development in place			1	1	1	1	
		Operational Uganda National Talent Register (UNTR) for all professionals in place		-	-	1	1	1	
		Number of skills development centres of excellence in place.	0	-	-	1	2	2	



Category	Key Result Areas (KRA)	Indicators	Baseline FY2017 /18	NDPIII Targets					Vision 2040
				FY20 20/21	FY2021 /22	FY20 22/23	FY202 3/24	FY20 24/25	
		A functional Uganda Vocational Qualifications Framework (UVQF) in place		1	1	1	1	1	
		Operational skills development levy in place		-	--	1	1	1	
		Percent of students who apply for loans Student loans under the current students' loan scheme aligned to the national skills report (%)	0	20	25	30	40	50	
		Foreign workers and skills aligned to the national skills list (%)	0	25	30	33	38	42	
		Ugandan workers trained abroad in skills aligned to the national scarce skills list (%)	0	30	35	38	42	46	
		Work permits granted to foreigners aligned to the national skills scarce list (%)	0	60	65	70	73	77	



Category	Key Result Areas (KRA)	Indicators	Baseline FY2017 /18	NDPIII Targets					Vision 2040
				FY20 20/21	FY2021 /22	FY20 22/23	FY202 3/24	FY20 24/25	
Strategy 2: Streamline national education and training system to meet the current and projected education and training needs of the country.	Reduced educational , skills and qualification mismatches	Share of financing for education and training aligned to scarce qualifications and skills needs of the country	0	23	28	31	40	48	
		Proportion of partnerships between education and training providers and employers for the development of the apprenticeship and internship programme		48	52	57	62	65	
		Number of applied research and business incubations		10	13	15	18	19	
		Proportion of reviewed and updated curricula at all levels of education and training.		10	15	15	20	20	
		Centralized admission to BTVET and tertiary institutions in place	0	-	1	1	-	-	
		Revised framework/ criteria for approval of courses offered by		-	1	1	-	-	



Category	Key Result Areas (KRA)	Indicators	Baseline FY2017 /18	NDPIII Targets					Vision 2040
				FY20 20/21	FY2021 /22	FY20 22/23	FY202 3/24	FY20 24/25	
		the training institutions in place							
		Number of partnerships between international and local universities		52	55	59	63	67	
		Vocational and technical institutions per sub-county (%)		10	15	20	22	27	
		BTVET Publication campaign in place		1	1	1	1	1	
		Re-designed BTVET curriculum		-	1	1	-	-	
		Number of BTVET graduates starting sustainable businesses on completion of their training.		6000	6200	6700	7000	73000	
		Proportion of qualified trainers in vocational and technical institutions in each sub-county recruited		40	49	55	60	62	
		Number of technical and vocational institutions transformed into centres		-	2	3	5	5	



Category	Key Result Areas (KRA)	Indicators	Baseline FY2017 /18	NDPIII Targets					Vision 2040
				FY20 20/21	FY2021 /22	FY20 22/23	FY202 3/24	FY20 24/25	
		of excellence							
		Employers satisfied with the TVET training (%)	40	44	48.4	52.6	58	65	
		An internship and apprenticeship framework in place.		1	1	1	1	1	
Strategy 3:	Timely and updated Labour Market Statistics Establish a functioning system for Uganda's labour Market statistics to support timely production and analysis of the labour market statistics, formulation and monitoring job creation efforts and projection of human resource needs of the country.	National Labour Market Statistics Framework for Uganda in place	0	-	1	1	-	-	-
		The National Labour Force Survey (NLFS) conducted per year		1	-	1	1	-	
		Functional Labour Market Information and Analysis System (LMIAS) in place.	0	-	1	1	-	-	
		National Manpower survey conducted every five years		-	1	-	-	-	



Category	Key Result Areas (KRA)	Indicators	Baseline FY2017 /18	NDPIII Targets					Vision 2040
				FY20 20/21	FY2021 /22	FY20 22/23	FY202 3/24	FY20 24/25	
		Capacity building program for Analysis of Labour Market Statistics in place		1	1	1	1	1	
		A robust web-based system for human resource projections and tracking in place.		1	1	1	1	1	
Strategy 4	Institutionalization and Coordination of Human Resource Planning Strengthen the institutional and coordination framework for Human Resource Planning and Development in line with the national development agenda	Programme Skills Coordination Committees (PSCCs) responsible for Human Resource planning in place	0	-	1	1	1	-	
		A National Skills Council in place	0	0	1	1	-	-	
		Number of MDA strategic plans with integrated HRDP	0	60	60	39	-	-	
		Number of LGs supported to develop their capacity building plans	0	50	80	45	-	-	
		Human Resource Planning guidelines in Place	0	1	1	-	-	-	



Category	Key Result Areas (KRA)	Indicators	Baseline FY2017 /18	NDPIII Targets					Vision 2040
				FY20 20/21	FY2021 /22	FY20 22/23	FY202 3/24	FY20 24/25	
		Local content Act for Uganda in place	0	1	1	-	-	-	
		National Local Content Body in place	0	1	1	-	-	-	
		A National Programme of Action for employment creation in place	0	-	1	1	-	-	
		Strengthened policy, legal and regulatory framework on labour externalization in place		-	1	1	1	-	
		Number of Ugandans undertaking training abroad in line with the identified scarce skill	-	-	50	60	65	70	

Table 23: Results Framework for the 5-Year NHRDP at Programme level

1. Agro-industrialization

Objective	Outcome	Indicators	Baseline FY2017/18	Targets				
				2020/21	2021/22	2022/23	2023/24	2024/25
Overall Programme Objective: To develop competent and skilled human resources that will aid in increased household incomes from Agro-enterprises								
1. To align education and training with the changing nature of the labour market	Reduced education and skills mismatches within the agro-industrializ	1. Scholarship and apprenticeship programme in strategic agro-processing		100	100	100	100	100



Objective	Outcome	Indicators	Baseline FY2017/18	Targets				
				2020/21	2021/22	2022/23	2023/24	2024/25
needs in the agro industrialization programme for increased employability in the country.	ation program	industries in place.						
		2. Agricultural certification mechanism and a qualification framework in place	0	-	1	-	-	-
		3. Reviewed and updated agricultural education curriculum in place		-	1	1	-	1
		4. Exchange programmes for practitioners in the agro-industry value chain in place		2	4	5	7	5
2. Increase technical and professional expertise in various fields of agriculture along the value chain.	Increased employment and labour productivity in agro-industry	1. Number of jobs created in the agro-industrial value chain.		50,000	75,000	150,000	125,000	100,000
		2. Labour productivity in agriculture (USD)	2,212	2,527	2,656	2,757	2,919	3,114
		3. Proportion of extension workers recruited (%)		40	44	46	49	51
		4. Proportion of farmers up taking agro-processing technology		30	33	38	41	45
3. To institutionalize Human Resource Development	A systematic, coordinated and guided approach to	Programme skills Coordination committee for Agro-			1	1	1	1



Objective	Outcome	Indicators	Baseline FY2017/18	Targets				
				2020/21	2021/22	2022/23	2023/24	2024/25
among the MDAs within the Agro-industrialization Programme.	human resource planning in line with the national development agenda	industrialization Programme in place						
		4. Proportion of MDAs with human resource development plans			20	35	65	75

2. Mineral Development

Objective	Outcome	Indicators	Baseline FY2017/18	Targets				
				2020/21	2021/22	2022/23	2023/24	2024/25
Overall Programme Objective: To build a skilled labour force in the exploitation and value addition of selected mineral resources along every stage of the value chain								
1. Promote local content and national participation in the mineral industry	1. Increased employment in the sector	1. Number of strategies implemented aimed at increasing local content in public procurement		2	4	8	12	14
		2. Number of people employed in the mineral sector (million)	1.6	1.8	2.0	2.2	2.4	2.6
		3. Proportion of contracts awarded to local companies (%)		30	35	40	43	47
		4. Proportion of training and apprenticeship programmes implemented		25	28	31	38	42
		5. Proportion of training and apprenticeship programmes provided by the private sector (%)		10	13	16	19	22



Objective	Outcome	Indicators	Baseline FY2017/18	Targets				
				2020/21	2021/22	2022/23	2023/24	2024/25
2. Enhance formalization of Artisanal and Small-scale Mining (ASM) Sub-industry	2. Increased investment in the sector	1. Proportion of artisanal and small-scale miners formalized		20	23	27	29	31
3. Strengthen Human Capacity for effective and efficient governance and management of the mineral subsector.	3. Skilled and competitive human resource	1. No. of skilled human resource to undertake mineral certification, trading, testing, inspection, regulation and enforcement.	105	111	117	123	129	135
		2. Geoscientists trained	108	120	140	160	180	200
		3. Mineral development programme skills Coordination committee in place		-	1	1	1	1
		4. Proportion of MDAs with human resource development plans			20	35	65	75

3. Sustainable development of Petroleum Resources

Objective	Outcome	Indicators	Baseline FY2017/18	Targets				
				2020/21	2021/22	2022/23	2023/24	2024/25
Overall Programme Objective: To develop competent and skilled human resources required to attain equitable value from the petroleum resources								
1. To develop skilled human resources required to fast track	1. Skilled local human resource employed in the oil	1. Number of Ugandans employed in the oil and gas and gas related industries.	3,400	4,250	5,210	8,300	15,000	20,000



sustainable production and utilization of the country's oil and gas resources	and gas sector	2. Petroleum Development Programme Sector Skills Council in place	-	-	1	1	1	1
		3. Proportion of MDAs with human resource development plans			25	35	64	75
2. Enhance local capacity to participate in oil and gas operations	2. Increased participation of the local companies in the oil and gas industry	1. Number of contracts awarded to local companies	50	70	80	90	150	200
		2. Number of local Companies on National Suppliers Database	513	1768	1471	1500	1700	1800
		3. National Content policy in place	0	-	1	1	1	1
3. Fast-track international certification of key priority skills in oil and gas	3. Increased skills in oil and gas	1. Number of accredited institutions offering certified training and skilling.		6	8	10	11	13
		2. Number of certifications issued		2800	3500	3800	4500	5800
4. Strengthen the capacity of education and training institutions to develop scanty skills in the oil and gas programme.	4. Strengthened partnerships between education institutions and industry	1. Number of oil and gas programmes provided by education training institutions		20	25	32	38	42
		2. Proportion of apprenticeship and industry training programmes implemented		35	38	41	45	47
		3. Strategy for innovation hub in place	0	-	-	1	1	-



4. Tourism development

Objective	Outcome	Indicators	Baseline FY2017/ 18	Targets				
				2020/21	2021/22	2022/23	2023/24	2024/25
Overall Program Objective: To create a resource of skilled, trained personnel for the range of tourism activity.								
1. To align education and training with the changing nature of the labour market needs within the Tourism Programme and related activities to create a pool of skilled personnel along the tourism value chain	1. Improved hotel and tourism training	1. Revised and updated curriculum at the Hotel and Tourism Training Institute (HTTI) in place		1	1	-	-	-
		2. Proportion of internship and apprenticeship programmes in the Hospitality sub-sector		30	33	34.4	40	42
		3. Share of quality instructors in the Hotel and Tourism Training Institute (HTTI)		52	53	57	62	64
		4. Proportion of local hospitality sector enterprises participating in local, regional and global tourism value chains.		38	41	43	48	53
		5. Tourism development programme skills Coordination committee in place			1	1	1	1
		6. Proportion of MDAs human resource development plans in place			20	35	65	78
2. Develop a pool of skilled personnel along the	2. Increased employment/jobs created along the	1. Contribution of tourism to total employment (%)	6.3	6.8	7.1	7.5	8	8.5



tourism value chain	tourism value chain	2. Visitor satisfaction (%)	71	74	78	80	83	85
		3. Number of people directly employed along the tourism value chain	220,000	250,000	270,000	290,000	320,000	350,000
		4. Proportion of tailor-made training for actors across the entire tourism value chain provided		62	67	71	73	76
		5. Share of internship and apprenticeship programmes provided by the private sector		70	75	79	81	85

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

Objective	Outcome	Indicators	Baseline FY2017/18	Targets				
				2020/21	2021/22	2022/23	2023/24	2024/25
Overall Programme Objective: To produce competent skilled, qualified human resources for natural resource conservation								
1. To support higher education programmes specializing in research in environmental conservation, water management and climate change adaptation and mitigation.	Strengthened partnerships between education institutions and industry	1. Percentage of human resources undertaking applied research and innovation on sustainable consumption and production to ensure resource use efficiency	21	24	29	32	35	40
		2. Proportion of accredited institutions offering certified skilling, entrepreneurship and incubation development.		25	27	29	32	33
		3. Reviewed and updated education curriculum for an environmentally		-	1	1	1	-



Objective	Outcome	Indicators	Baseline FY2017/ 18	Targets				
				2020/2 1	2021/2 2	2022/2 3	2023/2 4	2024/25
		literate citizenry in place						
2. Increase incomes and employment through sustainable use and value addition to water, forests and other natural resources	Increased incomes and employment from natural resources	1. Green jobs strategy in place		1	1	1	-	-
		2. Proportion of green jobs to total jobs	25	28	32	35	36	38
		3. Proportion of locally and competent meteorologists to deliver accurate meteorological information		25	27	29	31	34
		4. Proportion of qualified human resources to undertake enforcement of set standards and regulations (%)		34	37	39	42	44
		5. Number of training programmes aimed at making employers aware of the issues and risks arising from their own activity	63	64	65	66	67	68
3. To institutionalize Human Resource Development among the MDAs within the Climate Change, Natural Resources, Environment, and Water Management Programme.	A systematic, coordinated and guided approach to human resource planning in line with the national development agenda	1. Programme skills Coordination committee for Climate Change, Natural Resources, Environment, and Water Management Programme in place			1	1	1	1
		2. Proportion of MDA human resource development plans in place (%)			20	35	68	74
		3. Internship, apprenticeship and exchange programme in			1	2	4	6



Objective	Outcome	Indicators	Baseline FY2017/ 18	Targets				
				2020/2 1	2021/2 2	2022/2 3	2023/2 4	2024/25
		the prioritized strategic areas within the Climate Change, Natural Resources, Environment, and Water Management Programme						
		4. Scholarship programme in scarce and prioritized strategic areas in place			100	100	100	100

6. Manufacturing

Objective	Outcome	Indicators	Baseline FY2017/ 18	Targets				
				2020/2 1	2021/2 2	2022/2 3	2023/2 4	2024/25
Overall Programme Objective: To develop competent and skilled human resources required to increase the product range and scale for import replacement								
1. Build a pool of skilled human resource to expand the reach and access to appropriate Business Development Services for manufacturing SMEs.	Increase in the number of competent and skilled human resources employable in the manufacturing programme	1. Share of manufacturing jobs to total formal jobs (%)	9.8	11.0	12.0	13.0	14.0	15.0
		2. Share of labour force employed in the industrial sector (%)	7.4	7.8	8.2	8.6	9.0	10
		3. Proportion of trained entrepreneurs (%)		15	30	36	40	42
2. Strengthen linkage between education and training institutions and the manufacturing sector.	Enhanced partnerships between the manufacturing industry and schools, VET providers and	1. Number of collaborations between the education institutions and employers in the manufacturing programme (%)		10	20	32	40	45
		2. Number of accredited institutions to offer certified skilling and		7	8	14	18	20



Objective	Outcome	Indicators	Baseline FY2017/ 18	Targets				
				2020/2 1	2021/2 2	2022/2 3	2023/2 4	2024/25
	universities.	entrepreneurship (%)						
		3.Number of certifications of key skills in the manufacturing programme (%)		15	20	23	25	30
3.To institutionalize Human Resource Development among the MDAs within the Manufacturing Programme.	A systematic, coordinated and guided approach to human resource planning in line with the national development agenda	1. Programme skills Coordination committee for manufacturing Programme in place			1	1	1	1
		2. Proportion of MDA human resource development plans in place (%)			20	35	68	74

7. Integrated transport infrastructure and services

Objective	Outcome	Indicators	Baseline FY2017/ 18	Targets				
				2020/2 1	2021/2 2	2022/2 3	2023/2 4	2024/2 5
1.Improve the human resource and institutional capacity of the industry to efficiently execute the planned interventions	Improved human resource and institutional capacity	1.Proportion of MDA human resource development plans in place (%)			20	35	68	74
		2. A programme skills Coordination committee in place	0	1	1	-	-	-
		3.Proportion of transport sector professionals trained at Master's degree level		30	40	50	60	65
		4. Number of transport sector professionals trained at technician level (%)		40	50	60	65	70
		5. Number of foreign companies		20	25	30	35	40



Objective	Outcome	Indicators	Baseline FY2017/ 18	Targets				
				2020/2 1	2021/2 2	2022/2 3	2023/2 4	2024/2 5
		employing Ugandans (%)						
		6. Proportion of the total procurement value awarded to local contractors		25	28	32	35	41
		7. Proportion of local communities trained in Labour Intensive Public Works		78	81	84	85	88
2.To align the education and training system to the needs of the transport and services industry	Reduced skills mismatches	1. Number of partnerships with educational institutions to provide transport related knowledge and skills (%)		20	25	32	38	40
		2. Reviewed and updated curricula for transport training programmes in place		-	-	1	1	1
		3. Number of International accreditations and certifications for short-term skills (%)		40	45	48	50	55
		4. Number of apprenticeships and internships in the transport sector (%)		45	47	55	58	65
		5. Scholarship programme in scarce and prioritized strategic areas within the Integrated Transport Infrastructure and Services Programme in place			1	1	1	1

8. Sustainable Energy Development



Objective	Outcome	Indicators	Baseline FY2017/ 18	Targets				
				2020/2 1	2021/2 2	2022/2 3	2023/2 4	2024/25
Overall Programme Objective: To develop a critical mass of locally-trained manpower along the energy- industry value chain.								
1. To create a pool of sustainable workforce in the energy industry in particular in electricity generation, transmission and ?	1. Increased productivity of the workforce along the energy industry value chain	1. Proportion of energy sector professionals trained at Master's degree level		25	30	33	37	38
		2. Number of energy sector professionals trained at technician level (%)		35	45	50	65	68
		3. Number of refresher and in capacity building trainings conducted		38	47	56	65	70
		4. Exchange and scholarship programme for practitioners in the energy sector		5	7	10	13	15
	2. Increased participation of the local companies in the energy industry	1. Number of contracts awarded to local companies		20	25	30	32	38
		2. National Content policy in place	0	-	1	1	-	-
		3. Number of jobs taken by Ugandans (%)		20	35	40	42	47
2. To align the education and training system to the needs of the energy sector	1. Reduced skills and qualifications mismatches in the energy industry	1. Number of certification and accreditation institutes that provide certification training		4	6	8	9	10
		2. Number of apprenticeships and internships (%)		35	45	55	62	67
		3. Reviewed and updated curricula for energy training programmes in place		-	1	1	1	-
3. To institutionalize	A systematic, coordinated,	1. Programme skills Coordination committee for			1	1	1	1



Objective	Outcome	Indicators	Baseline FY2017/ 18	Targets				
				2020/2 1	2021/2 2	2022/2 3	2023/2 4	2024/25
Human Resource Development among the MDAs within the sustainable energy development Programme.	and guided approach to human resource planning in line with the national development agenda	sustainable energy development Programme in place						
		2. Proportion of MDA human resource development plans in place (%)		20	35	68	74	

9. Digital transformation

Objective	Outcome	Indicators	Baseline FY2017/18	Targets				
				2020/21	2021/22	2022/23	2023/24	2024/25
Overall Programme Objective: To build a mass of ICT knowledge and skills that will lead to increased penetration and utilization of ICT services								
1. Increase the ICT human resource capital	Enhanced efficiency and productivity in service delivery	1. ICT Development Index (IDI value)	2.19	2.5	3.2	3.6	3.8	3.9
		2. ICT directly created jobs	0	30,000	30,000	30,000	30,000	30,000
		3. Number of trained personnel in all MDAs in applying and using ICT to improve the delivery of services to the public (%)		70	78	82	85	88
2. To align education and training system to ICT sector	Reduced skills and qualifications mismatches in the ICT sector	1. Number of apprenticeships and internships (%) ?		15	20	25	30	38
		2. Reviewed and updated ICT training curriculum at all levels of education in place		-	1	1	1	-
		3. Proportion of virtual universities and educational institutions.		15	20	25	30	32



Objective	Outcome	Indicators	Baseline FY2017/18	Targets				
				2020/21	2021/22	2022/23	2023/24	2024/25
		4. Number of certification and accreditation institutes that provide certification training. (%)?		20	25	35	38	41
		5. Number of training schemes for ICT teachers. (%)?		41	44	48	52	55
		6. Number of training certifications issued (%)?		25	30	32	38	41
		7. An ICT professional's quality assurance and certification framework in place	0	-	1	1	-	-
3. To institutionalize Human Resource Development among the MDAs within the Digital Transformation Programme.	A systematic, coordinated and guided approach to human resource planning in line with the national development agenda	1. Programme skills Coordination committee for Digital Transformation Programme in place			1	1	1	1
		2. Proportion of MDA human resource development plans in place (%)			20	35	68	74

10. Sustainable urbanization and housing

Objective	Outcome	Indicators	Baseline FY2017/18	Targets				
				2020/21	2021/22	2022/23	2023/24	2024/25
Overall Programme Objective: To invest in human resources that will deliver and monitor quality of inclusive, productive and liveable urban areas								
1. To build a skilled and motivated human capital in the	Increased productivity in the urban and housing industry	1. A comprehensive human resource plan for urban and housing industry programme in place	0	1	1	-	-	-



Objective	Outcome	Indicators	Baseline FY2017/18	Targets				
				2020/21	2021/22	2022/23	2023/24	2024/25
urbanization and housing industry.		2. Number of refresher and in capacity building trainings conducted (%)?		30	45	51	55	62
		3. Number of apprenticeships and internships (%)? Proportion?		38	41	45	52	56
		4. Exchange and scholarship program for practitioners in place		2	4	6	10	13
		5. Proportion of new curricula integrated in university programmes		20	25	28	32	34
2. Increase productive jobs through leveraging growing urban demand	Reduced urban unemployment	1. Urban unemployment rate (%)	14.41	13.5	12.3	11.3	10.3	9.4
		2. Proportion of urban informal employment in non-agricultural employment (%)	81	78	77	76.5	75	74
		3. Proportion of labour-intensive manufacturing, services, and projects for employment creation		70	72	78	82	85
	Increased participation of the local companies in the housing industry	1. Number (Proportion?) of contracts awarded to local companies (%)		23	25	27	31	35
		2. Number (Proportion?) of jobs taken by Ugandans (%)		70	74	78	79	81
4. To institutionalize Human Resource Development among the MDAs	A systematic, coordinated and guided approach to human resource planning in line with the	3. Programme skills Coordination committee for sustainable urbanization and housing Programme in place			1	1	1	1



Objective	Outcome	Indicators	Baseline FY2017/18	Targets				
				2020/21	2021/22	2022/23	2023/24	2024/25
within the Programme.	national development agenda	4.. Proportion of MDA human resource development plans in place (%)			20	35	68	74

11. Human Capital Development

Objective	Outcome	Indicators	Baseline FY2017/18	Targets					
				2020/21	2021/22	2022/23	2023/24	2024/25	
Overall Programme Objective: To develop skilled and competent human resources necessary to increase productivity of the population									
1. Improve the foundations for human capital development	Improved Learning outcomes	1. Gross Enrollment Ratio	Pre-Primary	15.4	19.6	21	32.7	40	50
			Primary	115	113	111	109	107	105
			Secondary	25	28	34	37	40	46
		2. Net Enrollment Ratio	Pre-Primary	13.3	17.5	19	30.6	38	48
			Primary	93	93.6	95	96.8	98	98.4
			Secondary	22	26	30	33	36	38
		3. Proficiency in Literacy	P.3	50	52	56	58	64	69
			P.6	53	56	60	67	69	74
		4. Proficiency in Numeracy	P.3	55	59	61	66	68	70
			P.6	51	55	60	68	70	72
		5. Survival rates, %	Primary	38	40	41	45	50	55
			Secondary	77	79	82	86	90	95
		6. Proportion of schools/ training institutions and programmes attaining the	Pre-Primary (registered)	18	22	30	35	40	50
			Primary (SACMEQ)	50	54	58	62	66	70
			Secondary (DES)	45.8	47	50	53	55	60
			Universities (accredited)	41.1	47.3	53.5	59.7	65.9	75



Objective	Outcome	Indicators		Baseline FY2017/18	Targets					
					2020/21	2021/22	2022/23	2023/24	2024/25	
		BRMS31, %	ted programmes)							
		7. Transition from P.7 to S.1		61	65	68	71	74	79	
		8. Science pass rates ³² (O-level)		50	53	57	62	68	70	
		9. Quality adjusted years of schooling		4.5	4.6	5.0	5.3	6.0	7	
		10. Average years of schooling		6.1	6.8	7.3	8.0	9.5	11	
	Child development in learning health and psychological wellbeing improved	1. Proportion of children with age appropriate development		65.2	68	70	73	76	78	
		2. Child poverty rate, %		56	50	40	30	20	10	
		3. Proportion of children protected from abuse and violence, %		35	40	50	60	70	80	
		4. Percentage of children aged 5-17 years engaged in child labour		30.9	28.9	25.6	22.3	20.5	15.5	
		5. Prevalence of under 5 Stunting, %		28.9	27	25	23	21	19	
		6. Proportion of children able to learn, play and grow up in safe, clean and stimulating environment		52	56	62	68	72	78	
		7. Incidences of Violence Against Children (VAC), %		22	20	17	15	10	5	
		8. Proportion of primary school children accessing a school meal, %		36	40	44	50	56	64	
	2. Produce appropriate knowledgeable, skilled, and ethical labour force (with strong emphasis on science and	Increased labour force in decent employment	1. Employment to population ratio (EPR) ³³		47.5	51.3	55.4	59.8	64.6	69.8
			2. Proportion of labour force in the informal sector (%)		56	55	53	49	47.5	45
			3. Employment elasticity of growth ³⁴		0.35	0.38	0.41	0.45	0.50	0.55
			4. Unemployment rate, %		9.2	8.5	8.0	7.6	7.3	6.9

³¹ Basic Requirements and Minimum Standards (BRMS)

³² Measuring 4 subjects: physics, chemistry, biology and mathematics

³³ Proportion of the country's labour force with decent jobs

³⁴ Jobs per % change in GDP



Objective	Outcome	Indicators	Baseline FY2017/18	Targets						
				2020/21	2021/22	2022/23	2023/24	2024/25		
technology, TVET and Sports)		5. Unionization density, %	6	9	11	12	17	20		
	Increased employability of the labour force	1. Proportion of labour force transitioning into decent employment, %	34.5	35	35.5	36	40	55		
		2. Transition period to stable employment (months)	36	35	32	30	24	18		
		3. School to work transition rate (%)	9.4	10	12	20	25	32		
		4. TVET to work transition rate (%)								
		5. Employers satisfied with the training provided by the TVET institutions, %	40	44	48.4	52.6	58	65		
	Improved Skills Mix	1. Ratio of TVET graduates to University graduates, %	60	60	70	75	80	90		
		2. Ratio of STEI/STEM graduates to Humanities	2:5	2:5	3:5	3:5	3:5	3:5		
		3. Ratio of Technicians to Engineers	5:3	5:3	7:3	8:3	10:3	12:3		
		4. Ratio of nurses to population	1:25,725	1:22000	1:21,000	1:15,000	1:10,000	1:9000		
		5. Ratio of doctors to population	1:11,000	1:9000	1:8500	1:8300	1:8000	1:7900		
	Lifelong Learning in place	1. Proportion of youths accessing Non-Formal Education (NFE) and training	5.1	6.7	11.1	14	21.4	27		
	Increased innovativeness of labour force	1. Proportion of commercialized science-based innovations, %	3	5	9	13	17	20		
		2. Ratio of innovation as measured by patents registered per year	3	10	35	60	100	145		
	3. Develop clear mechanisms for talent identification, nurturing	Improved health, income and national image	1. Uganda's ranking in niche sports (football,	Football	77	76	74	72	70	65
				Netball	6	6	5	4	4	1
				Athletics	9	8	7	6	6	4
				Rugby	18	18	17	16	15	4



Objective	Outcome	Indicators	Baseline FY2017/18	Targets				
				2020/21	2021/22	2022/23	2023/24	2024/25
and growth through the education and training institutions		athletics, netball, boxing, etc.)						
		2. Sports related employment, %	5	7	9	11	13	15
		3. A framework for institutionalizing talent identification and nurturing in place		-	1	1	-	-
		4. Proportion of workplaces with health wellness programme, %	20	25	30	35	40	45
	Improved gains from culture and creative industries	1. Percentage of artists accessing affordable training and empowerment to improve on their skilling and talents	10	30	50	80	100	100
4. To institutionalize Human Resource Development among the MDAs within the Programme.	A systematic, coordinated and guided approach to human resource planning in line with the national development agenda	Programme skills Coordination committee for Human Capital Development Programme in place			1	1	1	1
		Proportion of MDA human resource development plans in place (%)			20	35	68	74

12. Innovation, Technology Development and Transfer

Objective	Outcome	Indicators	Baseline FY2017/18	Targets				
				2020/21	2021/22	2022/23	2023/24	2024/25
Overall Program Objective: To produce human resources with the capacity to generate and effectively apply STI								
1. Build human resource capacity in STI	1. Improved human capacity in the STI sector	1. Number of sciences centres in place		0	0	2	4	8
		2. No. of firms graduating to S&T parks	0	0	0	5	10	15
		3. No. of firms graduating from incubators	0	10	20	40	60	75
		4. Proportion of skilled staff employed in		5	10	15	20	22



Objective	Outcome	Indicators	Baseline FY2017/18	Targets				
				2020/2 1	2021/2 2	2022/2 3	2023/2 4	2024/25
		laboratories/ R&D facilities (%)						
		5.Proportion of skilled staff employed in technology transfer centres (%)		10	15	18	20	25
		6.Scholarship programme in scarce and prioritized strategic areas within for Innovation, Technology and Transfer Programme in place	0	-	1	1	1	1
2.Strengthen R&D capacities and applications	2.Increased R&D capacity	1.Global Innovation Index (%)	25.32	27.00	29.00	31.00	33.00	35
		2.Number of applications for IP protections per annum	200	400	600	1,000	1,400	1,800
		3.Number of intellectual properties registered	2	6	10	14	18	22
		4.Technicians in R&D (per million people)	20	40	60	80	100	120
		5.Researchers in R&D (per million people)	50	100	200	300	400	600
3.Foster linkages between industry and universities and other tertiary institutions for scientific research, innovation, development and commercialization of products	3.Improved partnerships between industry and universities and other tertiary institutions	1.Number of apprenticeships and internships (%)		41	47	52	58	64
		2.Ratio of Arts to S&T graduates	2:5	2:5	3:5	3:5	3:5	3:5
		3.No. of students graduating from incubators	0	1	2	4	5	6
		4.Revised science education curriculum in place		-	1	-	1	-
		5.Number of school visits at all levels of learning conducted to improve the perception towards STI careers.	0	5	10	15	20	25
4.To institutionalize	A systematic, coordinated	1. Programme skills Coordination committee for			1	1	1	1



Objective	Outcome	Indicators	Baseline FY2017/18	Targets				
				2020/21	2021/22	2022/23	2023/24	2024/25
Human Resource Development among the MDAs within the Program.	and guided approach to human resource planning in line with the national development agenda	Innovation, Technology Development Programme in place.						
		2. Proportion of MDA HRD plans in place (%)		20	35	68	74	

13. Community Mobilization and Mindset Change

Objective	Outcome	Indicators	Baseline FY2017/18	Targets					
				2020/21	2021/22	2022/23	2023/24	2024/25	
Overall Programme Objective: To develop skilled and competent human resources required to empower families, communities and citizens									
1. Enhance effective mobilization of families, communities and citizens for national development	Informed and active citizenry and uptake of development interventions	1. Percentage of Households participating in public development initiatives	60	70	75	80	85	90	
		2. Proportion of the population informed about national programmes	30	50	60	70	80	90	
		3. Adult literacy rate (%)	Total	70.2	72	73	74	76	78
			Male	79.1	80	81	82	83	85
			Female	62	65	67	70	75	80
4. Number of civic educations programmes held (%)?		20	25	30	38	41			
5. Number of community-based trainings (skilling) conducted (%)?		30	35	40	42	48			
2. Strengthen institutional capacity of central, local government and non-state actors for effective mobilization of communities	Empowered communities for participation in the development process	1. % of vulnerable and marginalized persons empowered	1.5	2.6	3.7	5.2	7.8	10	
		2. Staffing levels for national guidance and community mobilization	Central Level	84	86	88	90	92	94
			LG Level	86	88	90	92	94	96



Objective	Outcome	Indicators	Baseline FY2017/18	Targets				
				2020/21	2021/22	2022/23	2023/24	2024/25
		functions at all levels						
		3. Scholarship programme in scarce and prioritized strategic areas within for Community Mobilization and Mindset Change Programme in place			1	1	1	1
3. Promote and inculcate the National Vision and value system	Improved morals, positive mindsets, attitudes and patriotism	1. Proportion of population engaged in nationalistic and patriotic initiatives	54	57	62	68	70	72
		2. Proportion of the youth engaged in national service	16	24	28	34	37	40
		3. A shared national value system in place	0	-	1	1	-	-
4. To institutionalize Human Resource Development among the MDAs within the Programme.	A systematic, coordinated and guided approach to human resource planning in line with the national development agenda	1. Programme skills Coordination committee for Community mobilization and mindset change Programme in place.			1	1	1	1
		1. Proportion of MDA human resource development plans in place (%)			20	35	68	74

14. Governance and Security



Objective	Outcome	Indicators	Baseline FY2017/18	Targets				
				2020/2 1	2021/2 2	2022/23	2023/2 4	2024/2 5
Overall Programme Objective: To develop skilled and competent human resources required to improve adherence to the rule of law and capacity to contain prevailing and emerging security threats								
1. To develop highly skilled, competent, flexible and law-abiding security personnel to strengthen the capacity of security agencies to address emerging security threats	Efficiency and effectiveness of institutions responsible for security, law, and order	1. No. of security staff trained and retrained	15,000	17,000	18,000	21,000	23,000	27,000
		2. No. of specialized trainings conducted for security staff (%)		35	40	48	51	52
		3. Police to Population ratio	1:700	1:658	1:638	1:600	1:550	1:500
		4. A Programme skills Coordination committee in place	0	1	1	-	-	-
		5. Proportion of MDA human resource development plans in place (%)			20	35	68	74
2. To develop the required human resources required to strengthen policy, legal, regulatory and Institutional frameworks for effective governance	Strengthened human resource capacity of the Judiciary to deliver quality justice.	1. Training Needs Assessments in place		1	-	1	-	1
		2. Number of skills gap analysis conducted.		1	-	1	-	1
		3. Percentage of Staff who are trained based on the Needs Assessment		25	35	40	45	50
		4. Number of targeted capacity building of the Judiciary (career, skills and discretionary staff training based on needs identification).		40	45	51	55	60
		5. Number of employees trained in new emerging areas		10	15	20	25	26



Objective	Outcome	Indicators	Baseline FY2017/18	Targets				
				2020/2 1	2021/2 2	2022/23	2023/2 4	2024/2 5
		such as Gas and Oil, Cyber-crime and Terrorism						
	Strengthened partnerships with the academia and the industry	1. Number of apprenticeships and internships		45	50	58	60	67
		2. Reviewed and updated curricula in learning institutions in place		-	1	-	1	-
		3. Number of practitioners conducting teaching sessions in higher learning institutions		15	17	19	21	25

15. Public Sector Transformation

Objective	Outcome	Indicators	Baseline FY2017/18	Targets				
				2020/2 1	2021/2 2	2022/23	2023/2 4	2024/2 5
Overall Programme Objective: To improve public sector response to the needs of the citizens and the private sector								
1. Strengthen human resource management function of Government for improved service delivery	1. Improved public service productivity	1. Public service productivity index						
		2. Scholarship programme in scarce and prioritized strategic areas within public Sector in place			1	1	1	1
		3. Public Service Capacity Building policy reviewed and disseminated		100	100	50	80	88
		4. Human Resource Planning Framework for Uganda Public Service developed and disseminated	0	1	1	-	-	-
		5. Number of public servants using E Learning		50	60	64	70	72



Objective	Outcome	Indicators	Baseline FY2017 /18	Targets				
				2020/21	2021/22	2022/23	2023/24	2024/25
		6.Human Resource Development Plan for Uganda Public Service in place	0	1	1	-	-	-
		7.Number of HR policies, management systems, procedures and structures for the Public Service developed, managed and administered		54	60	65	67	70
		8.Number of assessments of the Public Service capacity building and HR needs undertaken		1	1	2	2	2
		9.Number of in-service trainings undertaken to build the capacities of Public Service institutions.		45	49	54	60	62
		10.Number of specialized short-term training to enhance the diversity of the workforce in the Public sector to become more resilient and productive		45	57	61	68	75
		11.Proportion of the population satisfied with their last experience of public services		74	76	80	84	88
2. To institutionalize Human Resource Development among the MDAs	2. A systematic, coordinated and guided approach to human resource	1. Programme skills Coordination committee for Public Transformation Programme in place.			1	1	1	1



Objective	Outcome	Indicators	Baseline FY2017 /18	Targets				
				2020/21	2021/22	2022/23	2023/24	2024/25
within the Programme.	planning in line with the national development agenda	2. Proportion of MDA human resource development plans in place (%)			20	35	68	74

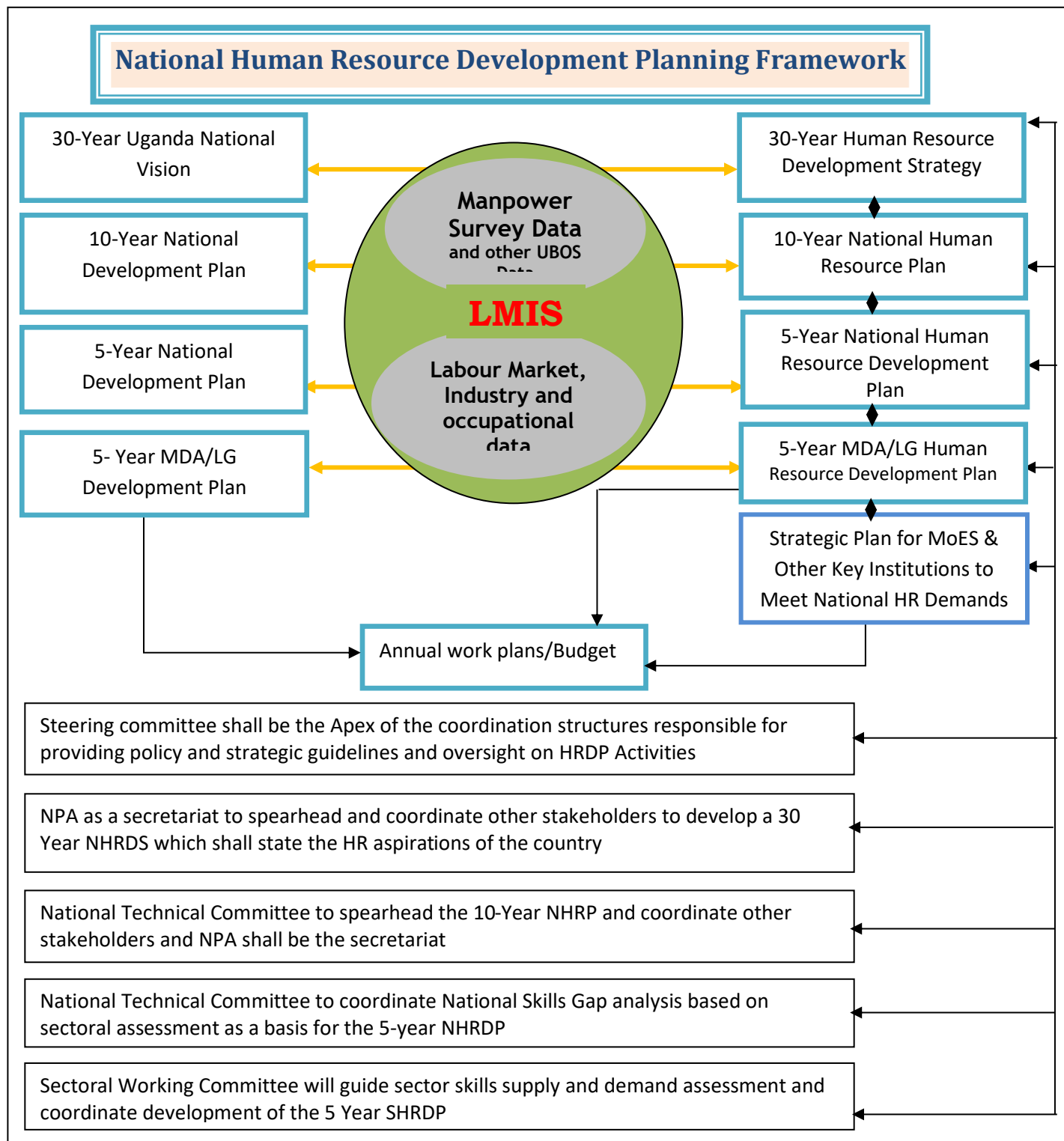
6.3 CONCLUSION

The chapter has demonstrated the monitoring and evaluation mechanisms of this national human resource development plan. In brief, the chapter has shed light on the M&E events for HRD and key actors and has provided a snapshot of the results framework at strategic and programme levels. The list of annexes provided in the sections that follow shed more light on several aspects highlighted in the main body of this Plan. Nonetheless, the M&E events and the results framework for this NHRD Plan are not independent of the NDPIII but provide a detailed description.



ANNEXES

Annex 1: The NHRDP Framework





Annex 2: Description of the Macro Model for Human Resource Projection for Uganda

1. Background

The Uganda Macro Model for Human Resource Projection initiative by the National Planning Authority to monitor and produce projections for employment and national human resource requirements in line with the national priorities as articulated in the National Development Plans. The model provides an integrated accounting framework to analyze the employment and Human Resource situation and evolution over time.

The Model is an extension of the National Development Macro-Economic Framework for Uganda produced by the Macro-Economic Working Group and the latest official labour market statistics and other related data available, such as the National Manpower survey conducted in 2016/17, the 2014 Population and Housing Census, the Labour Force Survey, 2016/17, Uganda National Household Survey 2016/17 as well as the school to work transition survey 2016/17.

The Macro Model for Human Resource Projection in Uganda will be regularly updated when new data becomes available. The model is critical in providing information for employers, employment agencies and policymakers. It creates the path to ensure that workers are employed in occupations that correspond to their skills. From the planning point, the model results can be used for evidence-based planning and decision-making.

The model is initially developed as an offline tool to run in in Microsoft (MS) excel 64-bit operating system, although it can also run in lower and higher MS versions. The model has been developed with technical support from the National Planning Commission (NPC) of Namibia. The technical team behind the development of this model comprised officials from the National Planning Authority of Uganda and Uganda Bureau of Statistics.

The Macro Model has 3 main modules: the current and forecast occupational demand, the current and forecast occupational supply, and the current and forecast occupational gaps/imbances. The demand side of the model projects the number of workers required by employers and takes stock of the available jobs. First, it takes stock of the current number of currently employed and the vacant positions available for a given occupation. It then projects the likely jobs to be created due to growth of the economy. The supply side of the model on the other hand, takes stock of the available workers of different skills and projects the likely trend of labour supply over time. The last component of the occupational gap forecast compares the Net Supply and demand for workers in different occupations across sectors and activities and then determines the labour market imbalances.

By quantifying occupational gaps, the model provides useful insights regarding identifying and understanding major labour market trends and issues requiring policy attention within the planning process. For example, the occupational imbalances between demand and supply mainly feed into the national human resource planning function for government to decide on the mechanism of human resource development and for business to plan their processes or operations.



2. Modules/components of the Uganda Macro Model for Human Resource Projection

The Model for Human Resource Projection has 3 main modules: the Demand Side module, the Supply Side module, and the Gaps/imbbalances module. These are elaborated in the proceeding write-up.

(i) The Demand Side Module of the Model

The demand side module or component of the model projects the number of currently employed workers and those projected to be demanded by employers and takes stock of the available jobs in Uganda. First, it takes stock of the number of workers employed currently, as well as the number of vacant positions available for a given occupation. It then projects the likely jobs to be created due to growth of the economy (Expansion demand).

The demand side module projects the number of new workers that will be demanded due to economic growth or expansion demand as well as the national requirements to replace workers who leave their current occupations, termed replacement demand in the context of this model.

The demand side module starts with GDP projections structured in 3 sectors and 25 subsectors over the Uganda Vision 2040 period. This projection is consistent with the macroeconomic framework produced by the Macroeconomic Working Group for Uganda, the Uganda Vision 2040, and the subsequent National Development Plans. After that, the model's demand side module estimates the remaining projections based on the best fit between the non-linear and the linear projections. The demand side module also exploits the available employment data and projects the series of employment opportunities created in the different sectors and subsectors (activities). Finally, the module generates average coefficients used to project backward and forwards the occupation demands with changes in economic activity.

In addition to the expansion demand, the demand side module also projects the number of jobs that need to be replaced by sector and sub-sectors (activity). The sum of the expansion demand and the replacement demand generates the total demand for labour in the economy by both sector and sub-sectors (activity). The module provides the status and the projections over the Uganda Vision 2040 period but is truncated for the medium-term human resource plan (Details of the structural equations can be seen in the model manual).

(ii) The Supply Side Module of the Model

On the other hand, the supply side takes stock of available workers of different skills and projects the likely trend of labour supply over time. The supply side provides the current and projected availability of qualified and non-qualified workers for employment in Uganda. The supply of labour force consists of school leavers; that is, people leaving the formal training system, either after graduating or dropping out of the system, the re-entrants-those who re-enter the occupation's labour market after a period of inactivity, and those who are in the labour force actively seeking work

The supply side module aims to determine the net labour market supply by occupation and level of education. The module exploits the demographic data, labour participation rates,



education institution data on enrollment, repetition, promotion, and dropout rates. This information is used to determine the net labour supply by occupation and education relating to school non-completers, graduates and the unemployed.

The projections for demographic and labour force participation rates are the starting point, and this is projected by year for every five years. By multiplying the projected labour participation rates by the working-age population, we obtain the forecasts for the labour force. These estimates, plus the dropouts from education institutions, are used to estimate the unemployed by level of education, as well as the employed by occupation. Finally, we estimate the labor supply by occupation and the data on occupations by field of learning and the data on the unemployed and employed by occupation.

Using data from the Uganda Bureau of Statistics and the Ministry of Education and Sports, we obtained data on enrolment, promotion, repetition, and dropouts for primary and secondary schools. Data on business, technical vocational education and training and universities is obtained from the Uganda National Manpower Survey conducted between 2016/2017

(iii)The Gaps/Imbalances Module

The last module/component of the model is the gaps/Imbalances Module which compares the Net Supply and demand for workers in different occupations across sectors and sub-sectors (activities) and then determines the labour market imbalances. This comparison provides important insights into whether imbalances are attributable to economic expansion, technological change, socio-economic factors, or inefficient education decisions. In addition, specific information in this analysis supports decision-making processes considering the need to reduce the imbalances or eliminate them over time.

In summary, the gaps or imbalances module provides a balancing item for the supply side and demand side of the model. The imbalance in the labour market is obtained by subtracting from the net demand the net supply. Net Demand is computed in the demand side module, while net supply is computed from the supply side of the model, as illustrated already.

3. Application of the Uganda Macro Model for Human Resource Projection

The model is a tool to forecast occupational gaps over time and is critical in providing information for government, employers, employment agencies and policymakers. The model creates the path to ensure that workers are employed in occupations that correspond to their skills. From the planning point, the model results can be used for evidence-based planning and decision-making. The model results are useful in the following ways:

- i) The model enables Government of Uganda to project the labor supply by key occupations and education level in the country over the short, medium, and long planning periods.
- ii) The model enables the Government of Uganda to project the number of jobs created by the activity sector and by education level over the short, medium- and long-term planning periods and flags areas where there is an urgent need for skills development and/or areas where incentives are required to promote wider employment.



- iii) The model provides data to enable the government, on an annual basis, to identify or calculate imbalances between demand and supply for specific occupations and more accurately identify skill shortages in priority sectors and sub-sectors of the economy.
- iv) With the knowledge of specific labour market imbalances, the model enables the Government of Uganda to plan more effectively for the future and focus on industries or sectors where the needs are most pressing. For example, using the results from the model, the government can make better-informed decisions on which education and training programmes should be offered (as new programmes), which should be expanded, and which should be phased out or modernized to fit the needs of emerging employment opportunities.
- v) The model also guides the government on policies and decisions to deal with labour market issues/challenges, such as deciding to make greater investments in specific human resources development activities that will enhance generation of employment opportunities in a sector or region of the country.

In the context of this plan, strategies and targets designed to respond to demand gaps need to prioritize the sectors where shortages are more prominent and where economic growth is imperative to move towards an industrialized economy. Given Uganda's unemployment rate, it is essential to target those sectors that are employment rich and that have the capacity to absorb qualified or semi-qualified unemployed jobseekers

This could be by improving education and training systems, introducing new training schemes and creating incentives for industries to partner in employment targets and retrain existing employees and unemployed people. In designing strategies to respond to demand and supply gaps, it is also crucial to consider the informal sector and the subsistence economy.



Annex 3: Roles of Programme Skills Coordination Committees (PSCCs) in Uganda

With a shift from sector to programme-based approach to planning and budgeting, the involvement of Sector Skills Councils into Programme Skills Coordination Committee should be considered in line with the existing legal and institutional framework. In addition, given the country's strategic importance attached to Human Resource Development Planning, it is paramount that Programme Skills Coordination Committees are established for all the Development programs in line with the third National Development Plan (NDPIII). The Programme Skill Coordination Committees (PSCCs) will be working groups of co-opted technical officers from different and relevant stakeholders for workforce development within the programme implementation framework with sizeable representation from all stakeholders. The PSCCs shall drive the development of the demanded skills in the country and support and encourage employers to develop and use the skills of existing workers and invest in training new workers.

The PSCCs will work with employers within their programmes, including large, medium and small enterprises, to ensure that all Programme skills concerns are addressed. The responsibility of a PSCC will be to collect and analyze skills and employment-related data. And information, identify skills and other competencies that may be lacking, in short supply or anticipated to meet future demand. The PSCC will prioritize skills that the program requires in the short, medium and long term. The PSCC will ensure that qualifications, national occupational standards and apprenticeships are informed by current and future skills needs as assessed and agreed by all stakeholders based on high-quality labour market intelligence that will be collected, analyzed, updated and interrogated regularly; Informed by relevant education and training policies and standards.

The key roles of the Programme Skills Coordination Committees (PSCCs) will include:

- i) Collect skills and employment-related data and information to help identify skills and other competencies lacking or in short supply in a given program.
- ii) Undertake skills needs assessments within a national development programme as provided in the third National Development Plan (NDPIII).
- iii) Undertake research and publication of reliable and accurate labour market information about a programme to support the development of qualifications and programmes that meet the needs of employers.
- iv) Develop skills development strategies in partnership with the private sector (employers) for dealing with persistent skills and manpower problems in their respective programmes and design internationally acceptable standards for skills in their respective programmes.
- v) Involving employers more in all aspects of skills development in all the programmes. The PSCCs will be the voice of employers to determine a coherent understanding of skills needs in a programme and to influence the design and delivery of qualifications and training programmes to ensure that the skills required by employers in each programme are provided.

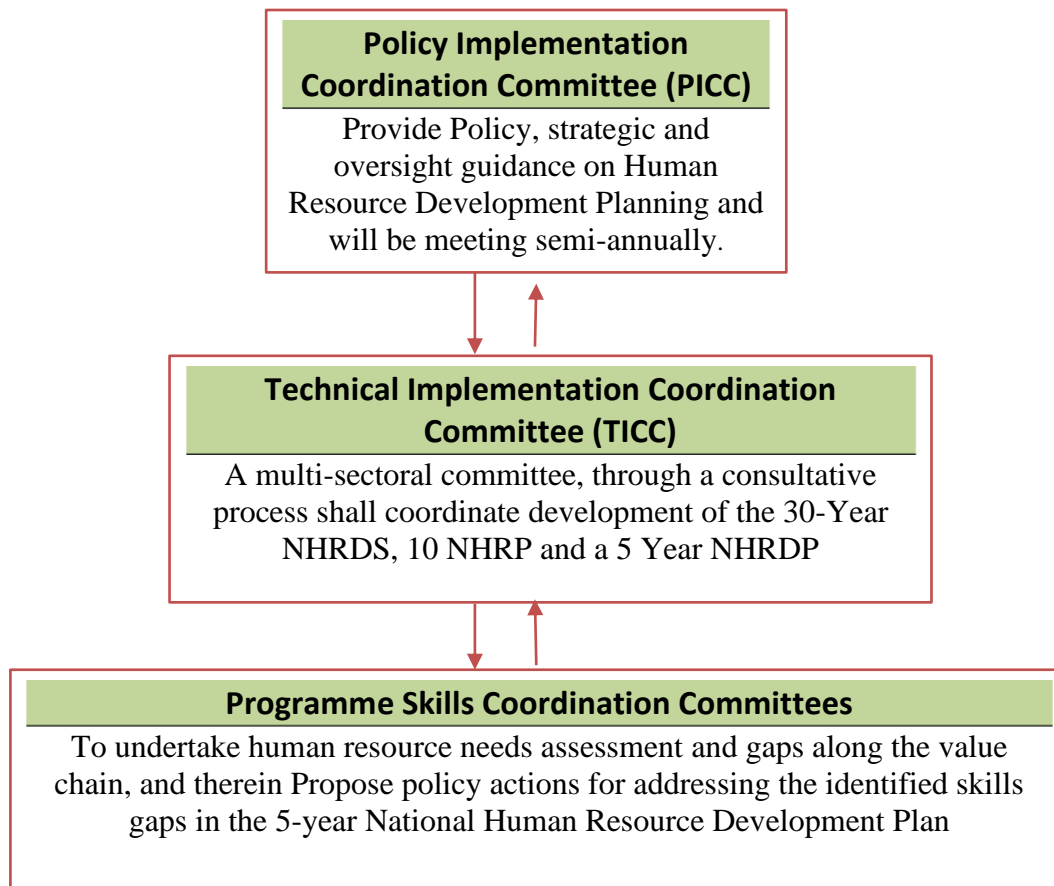


- vi) Monitor skills shortages and advise on the quantity of training needed overall and in specific occupation fields for their respective programmes.
- vii) Supporting the development of curricula for relevant vocational education and training programme needs in formal education.
- viii) Develop annual programme skills reports detailing the activities undertaken, achievements, challenges, lessons learned, and proposals on improving their programs' human resource development.
- ix) Supporting the processes for determining assessment methods for testing or validating skills in their respective programmes.

The operations of the PSSCs will be consistent with the objectives of this NHRD Plan, the Development Programme and the NDPIII. The Programme Working Group (PWG) secretariat will determine policies and procedures to govern the PSSCs' administration, corporate governance arrangements and members' roles within the existing government architecture.



Annex 4: Coordination Pyramid for Human Resource Development Planning





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