Republic of Rwanda

Ministry of Public Service and Labour

Rwanda State of Skills Supply and Demand Report 2024

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RDB RWANDA DEVELOPMENT BOARD

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The Centre For Employment Initiatives,Ltd

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Acronyms

EAC	—	East African Community
ESSP	—	Education Sector Strategic Policy
GIZ	—	Deutsche Gesellschaft für Internationale Zusammenarbeit
HEC	—	Higher Education Council
HLIs	—	Higher Learning Institutions
HPO	—	High Priority Occupations
KOICA	—	Korea International Cooperation Agency
LFPR	—	Labour Force Participation Rate
M&E	—	Monitoring & Evaluation
MICE	—	Meetings, Incentives, Conferences, and Exhibitions
MIFOTRA	—	Ministry of Public Service and Labour
MINECOFIN	—	Ministry of Economic Planning and Finance
MINEDUC	—	Ministry of Education
MINICOM	—	Ministry of Trade and Industry
MSME	—	Micro, Small and Medium Enterprises
NEET	—	Not In Employment, Education or Training
NESS	—	National Employment and Skills Strategy
NGO	—	Non–Governmental Organisation
NISR	—	National Institute of Statistics of Rwanda
NQF	—	National Qualifications Framework
NST	—	National Transformation Strategy
ODL	—	Occupations in Demand
QA	—	Quality Assurance
RDB	—	Rwanda Development Board
RP	—	Rwanda Polytechnic
RTB	—	Rwanda TVET Board
RTTI	—	Rwanda Teacher Training Institute
SDG	—	Sustainable Development Goals
SSCs	—	Sector Skills Councils
TVET	—	Technical and Vocational Education and Training
UR	—	University of Rwanda
WB	—	World Bank

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Key Messages

This Report "dovetails" the *National Transformation Strategy (NST2)* from a skills development standpoint. It ensures that skills are not a binding constraint to meeting the Strategy's key priorities and goals. The Report calls for action for state and non–state role–players to work together to develop a skilled and competitive workforce.

The Rwandan economy is performing strongly, with growth accelerating to 9.8% in 2024 (Q2). The government is alleviating poverty and improving living standards. Social protection programmes and access to education, healthcare, and basic services are improving. The country is an attractive tourist and conference destination. Macroeconomic policy management is prudent.

However, the persistent challenges are poverty, inequality, informal businesses and youth unemployment. The slow pace of human capital development impedes structural transformation. There is abundant low–skilled and a shortage of middle and high–skilled labour. The economy is dominated by low–wage agricultural and retail employment. Skills mismatches contribute to above–average youth unemployment rates. Limited industrialisation and skills mismatches lead to graduate unemployment. Business, tourism and humanities graduates are over produced vis–à–vis medicine, engineering, and ICT.

Youth NEET comprises 14.2% of the working age and 32.9% of the total youth population. Rwanda's youth population is a demographic dividend, but it becomes a demographic human capital loss if not fully utilised.

There is a correlation between educational attainment and unemployment. The higher the education level, the lower the unemployment — higher learning (4.7%), secondary education (20.7%), and primary education (74.6%). About 80.1% of those outside the labour force have primary education or lower, compared to 1.2% with tertiary education.[1] Education is the pathway to sustainable livelihoods. Graduate employment outcomes vary by higher learning institutions and programmes. Institutions that emphasise technical, practical, communication, teamwork and digital skills produce graduates with better college–to–work transitions.[2]

The Report makes several recommendations to address youth NEET. Develop an inter–ministerial, multi–sectoral, and multi–level NEET action plan to synergise interventions. Establish a central structure that directs, coordinates, implements and monitors NEET interventions in the plan. Make apprenticeships, internships and work placements the main priority of the Sector Skills Councils (SSCs) to labour market transitions. Devise employer incentives schemes to absorb youth into workplaces. Strengthen active labour market policies (ALMPs) and employment services. Validate and recognise short job skills training programmes between 03 to 12 months to get more youth into employment. Set youth employment and training quotas as eligibility criteria for public tendering, thus compelling awardees to absorb youth into projects.

The study mapped TVET and higher learning programmes (supply) with NST2 skills needs (demand) and found that learning programmes are available to support NST2. However, their quality and relevance require through programme evaluation for improvement. There is an acute demand for specialised top–up skills to address workforce skills gaps. These should be short courses for workers who cannot leave the workplace for prolonged periods. Rapid change necessitates life–long learning. Micro–credentialing is a cost–effective and effective option for "white collar" workers. Short job skills training is cost–effective for supporting youth employment.

[1] NISR (2023) Labour Force Survey Annual Report 2023. Kigali, Rwanda: NISR. https://www.statistics.gov.rw/

[2] World Bank Group (2024) Rwanda Economic Update (REU): Accelerating Skills Development to Foster Private Sector Growth. July 23rd edition. WBG: Washington.

A High Priority Occupation (HPO) List and Top–Up Skills List are produced in the context of NST2 (Chapter 4). These lists were corroborated by the Occupations in Demand List (ODL), Sector Skills Assessments and job vacancy survey. The full HPO List is in Annexure D. The top–up skills are categorised under management, technical skills, ICT and finance.

The recommendations are grouped into the following themes:

- **Graduate Employment**
  Increase graduate employment by formalising apprenticeships and internships; incentivise employers; attach youth employment targets to public tendering; use SSCs for workplace training.

- **Productive and Decent Jobs**
  Increase productive and decent jobs by 1.25 million (250,000) annually by optimising employment opportunities and skills development from major investment and flagship projects such as Nyagatare milk powder factory, Bugesera International Airport, Aviation Skills Academy, Gabiro agri–hub, and sports complexes.

- **Micro, Small And Medium Enterprise (MSME) Development**
  Facilitate market linkage services by connecting MSMEs with international markets through networking events and trade shows to expand their customer base and integrate them into global value chains.

- **Quality Assurance**
  Develop a unified quality assurance framework to improve education quality.

- **High Priority Occupations and Skills Gaps**
  Inform labour market actors of HPO and skills gaps; develop demand–led programmes; and ensure regular curriculum development.

- **Research & Development**
  Increase R&D investments and research outputs.

- **Workplace Learning**
  Formalise and regulate apprenticeships and internships; devise employer incentive packages and industry attachments a part of higher learning programmes.

- **Sector Skills Councils**
  Operationalise Sector Skills Councils, build capacity and prioritise workplace access for students.

- **School, TVET and Higher Learning**
  Increase net enrolment in pre–primary from 35% to 65%, enhance access to Basic TVET from 43% to 60%, and improve education quality by expanding enrolment capacity, resourcing schools, building new schools and teacher professional development programmes.

Chapter One: Background and Context

Chapter One is an orientation to the report. It sets out the policy context, discusses the key skills development challenges, outlines the methodological approach, and articulates the report's structure.

1. Introduction

This study report supports NST2 in achieving its five key priorities — creating decent work and productive jobs, reducing stunting and malnutrition, enhancing public service delivery, improving the quality of education, and boosting exports. The Report is intended to ensure that skills are not a constraint to growth and development and proposes actions to address occupational shortages and skills gaps in the labour market. The Report gives a special focus on youth NEET to maximise their opportunities for labour market entry.

The Report is a call for collective action for state and non–state players to commit to working together to promote skills development. It maps the skills development implications of NST2 and outlines ways in which the education system, together with its key role–players, respond to labour market demand.

The Rwandan economy has shown resilience since the COVID–19 pandemic and global commodity price fluctuations in 2020. The economy rebounded from –3.4% in 2020 to 10.9% in 2021. Gross Domestic Product (GDP) was 8.2% in 2022 and 2023, driven by robust growth in the service sector and exports and tourism recovery.[3] The government's proactive measures, including targeted fiscal and monetary policies, have played a vital role in mitigating external shocks and supporting economic recovery.

Rwanda is alleviating poverty and improving living standards. GDP per capita increased from USD 268 in 2000 to USD 1 040 in 2023.[4] Social protection programmes are expanding, and access to education, healthcare, and basic services are improving. However, poverty, youth unemployment and inequality are obstacles to becoming a high–income country by 2050. The labour market structure is bifurcated with a high demand for skilled labour and an oversupply of unskilled workers. The economy is dominated by subsistence agriculture, non–tradable, low–value services and informalisation. There are mismatches between employer skills demand and graduate skills, contributing to above–average youth unemployment rates. Youth NEET comprise 32.9% of the total youth population in 2023 and presents a significant societal challenge.[5]

2. Purpose and Objectives

The Report proposes skills development interventions to support NST2's key priorities and goals.

The objectives are to:

- Map the skills development implications of NST2.
- Identify high priority occupations (HPOs) and top–up skills to support NST2.
- Inform enrolment education planning and provisioning.
- Assess if learning programmes align with NST2.
- Propose interventions to reduce the youth NEET rate.
- Provide labour market intelligence to role–players on skills in demand.

[3] National Institute of Statistics of Rwanda (2023) Gross Domestic Product – 2023. NISR: Kigali.
[4] Ibid.
[5] National Institute of Statistics of Rwanda (2023) Annual Labour Force Survey – 2023. NISR: Kigali.

3. Key Questions

The Report responds to the following questions:

4. Limitations

Firstly, it is an overarching report that covers pre–primary education to higher learning. Therefore, it cannot deal with every skill issue in the system. Secondly, structural transformation, unemployment and poverty are more than a supply–side skills deficit. Skills development is a necessity but not a sufficient condition to address these socio–economic issues. Macro–economic, labour market and industrial policies are key considerations. Thirdly, the report is a meta–analysis of official documents, national accounts, research studies and grey literature. Fourthly, administrative, resourcing and coordination challenges in the education system are not addressed in the report. The new National Employment and Skills Strategy (2024) may touch on these issues.

5. Report Structure

The Report is organised into six chapters:

➢ **Chapter One: Introduction** Discusses NST2 key priorities and goals.
➢ **Chapter Two: Economy and Labour Market** Analyses the economy and labour market. It outlines the implications for skills development.
➢ **Chapter Three: Skills Supply and Demand Analysis** Analyses NST2 skills priorities (demand) and the learning programmes (supply).
➢ **Chapter Four: High Priority Occupations and Skills Gaps** Presents high priority occupations and skills gaps in the context of NST2.
➢ **Chapter Five: Youth Not In Employment, Education And Training (NEET)** Construct a youth NEET profile and propose interventions to reduce NEET rates.
➢ **Chapter Six: Findings and Recommendations** Presents findings and recommendations.

6. National Transformation Strategy 2

NST2 is a medium–term strategy to support Rwanda's transition to attaining upper–middle–income status by 2035 and high–income status by 2050.

a. Five Key Priorities

Five key priorities underpin the Strategy:

Figure 1 — Five Key Priorities

b. Transformation Pillars

The economic, social and governance pillars underpin NST2:

Table 1 — NST2 Pillars

Economic Transformation Pillar	Social Transformation Pillar	Transformational Governance Pillar
• Climate–resilient, productive, and modernised agriculture and food systems • Industrial development and export promotion • High–end, eco–friendly, and diversified tourism • Renewable and clean energy transition and universal access to electricity Increased access to water for socio–economic development • Enhanced connectivity for economic growth and trade	• Enhanced quality of education • Enhanced quality of health, strengthened health systems and reduced stunting • Increased access to Sanitation and Hygiene (WASH) services for improved wellbeing • Enhanced graduation from poverty and increased resilience	• Enhanced rule of law • Enhanced service delivery, governance, inclusive citizen participation and implementation • Enhanced PFM transparency and accountability • Strengthened national unity, resilience, culture and values • Peace and security

Economic Transformation Pillar	Social Transformation Pillar	Transformational Governance Pillar
• Enhanced urbanisation and settlements for agglomeration benefits • Digital transformation • Resilient and broadened financial sector for private sector growth • Building resilience to climate change and sustainable management of the environment and natural resources • Creation of productive and decent jobs		

The NST2 pillars and priority areas highlighted above are skills and non–skilled related. The report focuses on skills–related issues for alignment with NST2.

Figure 2 — NST2 Has Thirteen Goals

Goal 9
Universal Access to Clean Water and Electricity

- By 2029, **every household, school and health facility in Rwanda** will have access to clean water, sanitation, hygiene services, and reliable electricity

VISIT RWANDA

Goal 10
Promote #VISITRWANDA

- Tourism revenues will **nearly double, establishing the country as a top destination** for Meetings, Incentives, Conferences, and Exhibitions (MICE) as well as key sporting events.

Goal 11
No Noe Left Behind, a Single Digital ID

- A Single digital ID system will be introduced, revolutionising access to government services and making it easier and faster for Rwandans to interact with public institutions.

Goal 12
Universal Access to E–Government

- By 2029, **all government services will be fully digitised**, enhancing service delivery and accountability.

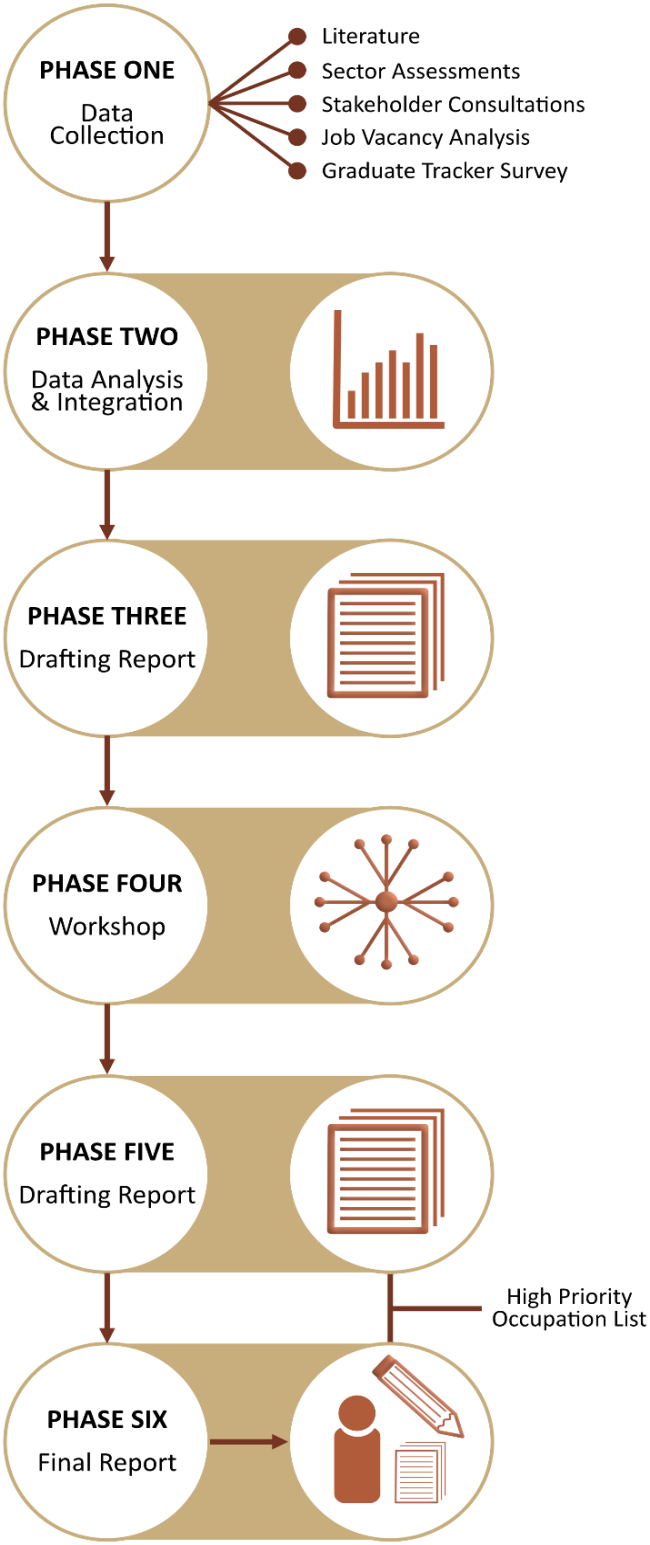
Goal 13
Embracing Partnerships

- Economic diplomacy and international cooperation will be strengthened to secure trade and investment opportunities and elevate Rwanda's global profile to drive shared prosperity.
- Rwandan Community Aboard will actively contribute to and support national development goals.
- Peace and security will be maintained, ensuring a stable environment for Rwanda's continued growth and active engagement of communities.

7. Design Research and Methodology

Information was gathered from a literature review, stakeholder consultations, a job vacancy survey, national strategies and plans, and sector skills assessments. The research design and methods are illustrated:

Figure 3 — Design Research and Methodology Phases



Literature Review

- Reviewed local and international literature (academic papers, public policy, regulation and strategy, and media articles).
- The aim was to understand the key skills challenges, including youth NEET issues, and what can be done to solve them.

Stakeholder Consultations

- Conducted a stakeholder mapping exercise.
- Interviews were conducted with training providers, government bodies, employers, unions and NGOs/donor bodies to unpack the skills and unemployment challenges, but, importantly, to identify where it might have the greatest impact.

Sector Skills Assessments, Occupation Maps and Career Progression Pathways

- The Private Sector Federation conducted sector skills assessment to identify HPOs and skills gaps.

Job Vacancy Survey

- Recruitment agencies submitted jobs vacancy data for a 12 months period.

Workshops

- Workshops were convened to discuss the draft report and elicit stakeholder comments.
- Validation workshop held with MIFOTRA.
- Refinement and final production of the report.

Chapter Two: Economy and Labour Market Trends

Chapter Two analyses macroeconomic and labour market trends, which shape labour demand and skills investments. Skills insights are deduced from these trends.

1. Economy

Rwanda shows economic resilience due to strong consumer spending and growth in key sectors like services, mining, tourism and construction. The labour market recovered with a substantial reduction in unemployment since the pandemic.

Table 2 — Economic Resilience

	2019	2020	2021	2022	2023
Real GDP (%)	9.4	–3.4	10.9	8.2	8.2
GDP per capita (USD)	835	802	855	1,007	1,046
GDP (RWF billion)	9,308	9,597	10,943	13,720	16,355
Fiscal balance (% of GDP)	–5.1	–9.5	–7.0	–5.7	–5.1
Public debt (% of GDP)	49.9	65.6	66.6	60.6	64.5
Inflation (CPI ann. Av %)	3.3	9.9	–0.4	17.7	19.8
Exchange rate (RWF/USD)	921	978	1,008	1,069	1,259
Current account (% of GDP)	–11.9	–12.1	–10.9	–9.3	–11.7
Exports (USD billion)	1.2	1.4	1.5	2.1	2.5
Imports (USD billion)	2.7	3.1	3.2	4.1	4.8
FDI (USD billion)	0.4	0.3	0.4	0.5	0.5

Source: NISR, World Bank

Real GDP: Despite rising inflation, agricultural disruptions and a weakening currency, the economy is resilient and on an upward trajectory. Rwanda is one of the fastest–growing economies in the world. The economy had performed strongly over five years, except in 2020, when GDP contracted to –3.4% in 2020 from a high of 9.4% in 2019. GDP trended upwards to a high of 10.9% in 2021 on the back of a financial stimulus, COVID–19 vaccine roll–out, relaxing restrictions, and global market recovery. In 2022–2023, a healthy 8.2% was recorded. Growth accelerated to 9.8% in 2024 (Q2), driven by the recovery in food production and strong momentum in services and industry. Projected growth is 7.6% in 2024–2026, supported by private investment, tourism, and favourable agricultural conditions.[6]

GDP per Capita: GDP per capita more than tripled between 2000 and 2018, from USD 225 to USD 787. There was a 25% increase between 2019 and 2023. While poverty levels have rapidly fallen from a high of 60%, roughly 35% of the total population lives under the poverty line.[7]

Fiscal Balance: The fiscal deficit was 5.1% in 2023. The budget balance is estimated to amount to –2.63% in 2029.[8]

[6] World Bank Group (2024) Rwanda Economic Update (REU): Accelerating Skills Development to Foster Private Sector Growth. July 23rd edition. WBG: Washington.
[7] Ibid.
[8] Ibid.

Public Debt: Rwanda's total public debt as a percentage of GDP increased from 60.6% to 64.5% in 2023. External debt was 53.7%, primarily consisting of concessional debt from multilateral development agencies. Public debt indicators are sustainable. To ensure long–term sustainability, the government has embarked on a growth–friendly fiscal consolidation strategy to anchor debt at 65% of GDP by 2030.[9]

Inflation: Despite high inflationary pressures since mid–2022, private consumption is persistent and supports real GDP growth, reflecting improvements in the labour market, sustained remittance inflows, and rising personal loans. At the same time, inflation and widening trade deficits remain key challenges.

Exchange Rate: Rwanda faces foreign exchange risk, with 84.6% of total debt in foreign currency. Moody's upgraded Rwanda's credit rating from B negative in 2022 to B positive in September 2023, affirming the country's creditworthiness and ability to meet financial obligations.[10]

Current Account: The current account deficit, including official transfers, as a percentage of GDP, widened from 9.3% in 2022 to 11.7% in 2023. An increased trade deficit drove this increase due to faster import outlays. Traditional exports like coffee, tea, and non–gold minerals underperformed, while food imports and construction goods for infrastructure projects in the sports and aviation sectors increased.[11]

Exports: Exports reached a high of USD 2.5 billion in 2023, although the main export items fetched lower prices on international markets. Now more than ever, Rwanda must implement an export growth strategy that responds to domestic and international challenges while taking advantage of emerging opportunities, regionally — under the African Continental Free Trade Area — and globally as supply chains shift in response to gyrations.

Imports: Imports grew to USD 4.8 billion in 2023. The main drivers were high supply costs, an overreliance on imports, robust government spending, high costs of fuel and transportation, and poor agricultural output in 2023.[12]

Foreign Direct Investment: Although FDI has increased in recent years due to measures to improve the business climate, FDI flows remain rather weak. From 2008 to 2022, the Rwanda Development Board (RDB) documented 1 279 investment initiatives. These endeavours encompassed an aggregate investment value of approximately USD 13.5 billion, aiming to generate around 200 000 employment opportunities.[13] Rwanda has FDI opportunities in manufacturing, infrastructure, energy distribution and transmission. Financial services, fintech, off–grid energy, health services, education, electric vehicles, agriculture and agro–processing, tourism, services, mining, and information and communications technology (ICT).[14]

Skills Insights: Despite progress, skill levels are insufficient to meet development goals. Skill development is crucial for diversifying Rwanda's economy, improving productivity, creating jobs, and achieving Vision 2050.

Select economic sectors will be key to driving growth and employment in the medium to long–term. Agriculture needs technical upskilling for increased exports and sustainable practices, while manufacturing can benefit from higher capital investment and greater formalisation. Enhancing transportation, logistics, and storage through reduced skill gaps can lower trade costs and boost exports. Services offer opportunities to shift from traditional agriculture to a high–tech and labour–intensive agri–food sector. Investing in research and agricultural extension will help farmers adopt advanced technology, leading to improved productivity, income, and welfare. Tailored skills development could help to address the specific needs of labour market segments, especially for youth entering the workforce.

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[9] Ibid.
[10] Ibid.
[11] World Bank Group (2024) Rwanda Economic Update (REU): Accelerating Skills Development to Foster Private Sector Growth. July 23rd edition. WBG: Washington.
[12] Ibid.
[13] Accessed from https://www.lloydsbanktrade.com/en/market–potential/rwanda/investment
[14] https://www.state.gov/reports/2023–investment–climate–statements/rwanda/

The World Bank Group Enterprise Survey (2024) mentions that firms report difficulties in hiring skilled employees and highlight skills gaps. The proportion of the workforce with just a basic education or less is one of the highest in the region. The scarcity of skilled workers significantly impacts the competitiveness of Rwandan firms, as employers consistently cite low educational attainment, insufficient skills, inadequate training, and poor managerial capabilities as primary barriers to adopting new technologies or remaining competitive. Workers in agriculture and industry have particularly low educational attainment, with nearly 98% completing primary education or less.[15]

The Industrial Policy 2024–2034 focuses on growing key high–growth subsectors to support sustainable structural transformation and reap the economic benefits from the demographic dividend. The policy promotes the creation of productive jobs, particularly for women and the youth. It embraces green industrialisation and building a circular economy and low-carbon value chains. There will be a demand for skills in strategic sub-sectors such as agriculture & agro-processing (horticulture and other high-value fresh and processed crops, high–value tea products and sugar, light manufacturing (leather goods and pharmaceuticals), tradable services (tourism and global business services), textiles and apparel, creative industries, automotive industries, glass and steel manufacturing.[16]

Rwanda's structural transformation requires significant investments in physical infrastructure, human capital, climate action, and productivity–enhancing technology. However, low domestic resource mobilisation capacity and limited access to external funds under the current global financial system pose major challenges. Reforming this system is crucial to secure concessional resources, increase climate finance and private capital, and strengthen domestic financial markets for accelerated economic transformation.

Rwanda is in a low–skill equilibrium (LSEq) with informal jobs. The economy is low–wage, low–skilled and produces low–value–added goods. The labour market is dominated by agriculture and non–tradable services. There is limited industrialisation. An LSEq experiences fewer skills shortages because employers are producing low–value–added goods and services.

Micro, small and medium–sized enterprises (MSMEs) represent over 90% of all businesses and account for 41% of employment. Most firms are nascent, informal and concentrated in the non–tradable sectors.[17] Those with higher skill levels cannot find employment to match their skills. Skills shortages increase as businesses upgrade to higher value–added goods and services. Structural transformation triggers a significant shift from unskilled to skilled labour.

The challenge is to improve the working conditions, skills and wages for informal workers in non–tradable services, except government and healthcare, where conditions and salaried employment exist. Growth is needed in tradable services in IT, finance, advisory, tourism, health, education, telecommunications and logistics. It requires middle and high–level skills.

Investments in infrastructure, education, climate action, and productivity–enhancing technology are needed for structural transformation. Rwanda intends to become a knowledge–based, service–driven economy by diversifying its export base into distribution and logistics, tourism, business travel, and financial services. These sectors offer significant employment opportunities for unskilled and skilled workers. A services strategy enables Rwanda to capitalise on its strategic location and resources by specialising in regional logistics, adding value to agricultural products, and enhancing consumer and business travel opportunities, like conventions.[18]

[15] World Bank Group (2024) Rwanda Economic Update (REU): Accelerating Skills Development to Foster Private Sector Growth. July 23rd edition. WBG: Washington.

[16] Ministry of Trade and Industry (2024). Industrial Policy: MTI: Kigali.

[17] Non–tradable sectors include construction, distributive trade, repairs, transport, accommodation, food services activities (GHI), real estate activities (L), business services (MN), and public administration (OPQ). Non–tradable services include jobs in government, health care, hospitality, food service, education, retail, transport and construction.

[18] MINICOM. 2011. National Industrial Policy. Ministry of Trade and Industry, Government of Rwanda.

The challenge facing youth is limited decent and productive jobs. The economy has created jobs, but youth are underemployed or employed informally. Labour demand from the private sector is lacking, and there are not enough high–quality jobs being created in the country. Agriculture accounts for most jobs, while some youth are employed in substance farming without employment contracts and social security benefits. It limits upward social mobility and vulnerability to shocks and weather conditions.

Structural transformation requires higher value addition of products and services underpinned by higher educational attainment. If Rwanda is going to achieve its Vision 2050, it should improve the population's education levels with a much higher proportion of workers in the upper secondary to higher learning bands.

2. Labour Market

Labour Market Structure: The labour market is dominated by agriculture and non–tradable services. Most workers are employed in economic sectors that absorb low skills (agriculture, retail and construction) rather than those needed to shift the country's development path to competitive services and knowledge–based industries.

Table 3 — Labour Market Summary (2023)

<table>
<tr><td colspan="8">Working–age population 16 years and older —8,071,962 persons</td></tr>
<tr><td colspan="3">Outside the Labour Force
(Elderly, disabled, discouraged work–seekers, students, subsistence agriculture)
3,288,548 persons</td><td colspan="5">Active Labour Force
(Employed and unemployed)
4,783,414 persons</td></tr>
<tr><td colspan="3">Out–of–labour force rate 40.7%</td><td colspan="5">Labour force participation rate 59.3%</td></tr>
<tr><td>Subsistence Agriculture
1,390,525
(42.3%)</td><td colspan="2">Other outside labour force
1,898,023
(57.7%)</td><td colspan="2" rowspan="4">Employed
3,958,817 persons
Employment to population ratio: 49%</td><td colspan="2">Unemployed
824,597 persons
Unemployment rate: 17.2%</td></tr>
<tr><td colspan="3">Primary or below (80.1%)</td><td colspan="2">Primary or below (78.7%)</td></tr>
<tr><td colspan="3">Secondary (18.7%)</td><td colspan="2">Secondary (17.4%)</td></tr>
<tr><td colspan="3">Tertiary (1.2%)</td><td colspan="2">Tertiary (3.9%)</td></tr>
<tr><td colspan="2">Potential labour force
1,340,478</td><td>Other out–of–labour–force
1,948,070</td><td>Agriculture excl. subsistence</td><td>1,720,078
(43.5%)</td><td>Unemployed but engaged in subsistence agriculture</td><td>397,843
(48.2%)</td></tr>
<tr><td colspan="3" rowspan="3"></td><td>Industry</td><td>662,202
(16.7%)</td><td rowspan="2">Other unemployed</td><td rowspan="2">426,754
(51.8%)</td></tr>
<tr><td>Services</td><td>1,576,536
(39.8%)</td></tr>
<tr><td>Time–related under–employed
1,165,285</td><td>Other employed
2,793,532</td><td colspan="2"></td></tr>
<tr><td colspan="8">Labour underutilisation (3,330,360)
Unemployed (824,597) + Time–related underemployed (1,165,285) +
Potential labour force (1,340,478)
Composite measure of labour underutilisation (54.4%)</td></tr>
</table>

Source: Labour Force Survey Annual Report 2023

Population: Rwanda's population was 13.36 million in 2023, comprising 48.1% (6,433,442) males and 51.9% (6,929,416) females. 57.4% (7,664,605) were between 0 and 24 years old, with the largest group aged 5 to 9

years (1,738,168). About 65% of the population is under 30 years. 58.2% (7,780,436) of the population is aged 15 to 64 years, constituting the potential labour force. Therefore, youth development is a priority.

Labour Force and Employment: The working age population (16 years and above) was 8,071,962, of which 4,783,414 persons (59.3%) were in the labour force, while 3,288,548 persons were outside the labour force. For those in the labour force, 3,958,817 persons were employed, while 824,597 persons were unemployed. Among those outside the labour force, 1,390,525 persons were engaged mostly in subsistence food production, not classified as employment.

Unemployment: The annual unemployment rate stood at 17.2%, indicating that for every 6 persons in the labour force, 1 person was unemployed. The unemployment rate was higher among females (20.3%) than among males (14.5%) and higher among youth (20.8%) than among adults (14.8%). It was higher in the rural than urban areas (18% and 15.8%).

Underemployment and Labour Utilisation: Other components include time–related underemployment and the potential labour force. In total, there were 1,165,285 persons classified as time–related underemployed and 1,340,478 persons classified as the potential labour force. The composite measure of labour underutilisation was 54.4%, which means that more than a half of the extended labour force was either unemployed, time–related underemployed or in the potential labour force (persons outside the labour force who were available for employment but were not seeking employment during the reference period or who were seeking employment during the reference period but were not currently available for work).

Economic Activity and Employment: Employment in agriculture (43.5%), services (39.8%) and industry (16.7%). The share of employment by economic activity:

Table 4 — Economic Activity

Economic Activity	%
Services	
• Market services (trade; transportation; accommodation and food; and business and administrative services)	23.9
• Non–market services (public administration; community, social and other services and activities)	13.8
Industry	
• Construction	9.8
• Manufacturing	5.5
• Mining and quarrying; electricity, gas and water	1.3
Agriculture	
• Agriculture (excludes subsistence)	43.5

The full count of workers in the agriculture sector reveals that 3,508,446 people (43.5%) of the working age population were involved in agriculture activity in subsistence (1,788,368) or market–oriented (1 720 078 persons). The proportion of the workforce who was in agriculture was 64.4%.

The full count of workers in the agriculture sector reveals that 3,977,791 people (49.3%) of the working age population were involved in agriculture activity in subsistence (1,788,368) or market–oriented (1 720 078 persons). The proportion of the workforce who was in agriculture was 69.1%.

Informal Sector and Employment: About 3,269,809 employed persons were in the informal sector, amounting to 82.5% of total employment, mostly males. There were in total, 3,575,893 persons with informal

employment constituting almost 90.3% of total employment. The results also show that there were 182,179 persons with informal jobs[19] in the formal sector.

Employment Income: The average income from paid employment at the main job was about 68,481 RWF per month, while the median was 26,000 RWF. The national average hourly cash income from employment as the main job was 545 RWF per hour.

Women and Equal Opportunities: Women accounted for 46.9% of the labour force, engaged mostly as crop farm labourers, domestic cleaners and helpers, stall and market salespersons and shopkeepers. 39.6% of women were in managerial positions.

Youth and Education: The unemployment rate among youth (16 to 30 years old) was 20.8%. The survey showed a high correlation between youth unemployment rate and educational attainment:

Table 5 — Educational Attainment

Educational Attainment	%
Primary or less	17.3
Secondary education	30.0
University education	22.7

The youth unemployment rate among those who completed TVET was 21.7% and 22.8% for those with general education.

People with Disabilities (PWD): About 20.3% of the working–age persons with disabilities were labour force participants compared to 60.3% for those without disability. The unemployment rate among persons with disabilities (18.9%) was slightly higher than the one among persons without any disability (17.2%). The proportion of persons outside the labour force was far higher among persons with disability (79.6%) compared to those without disability (39.7%).

Skills Insights: The following insights are deduced from the labour market analysis:

- **Youth Unemployment**: Relatively high youth unemployment and low employability constrain inclusive growth and economic competitiveness. According to the Annual Labour Force Survey of 2023, the unemployment rate was 17.2% but relatively higher among females (20.3%) than rural youth (18%). It is also higher for youth aged 16 years to 30 years (20.8%). Female unemployment increased by 3.3% compared to 0.7% for males. Rural unemployment increased by 2.8% compared to 0.5% for urban.

  There are a limited number of decent and productive jobs. Although significant job creation is recorded, young workers are mostly employed in the informal economy. Agriculture is the sector accounting for most jobs and many young people are employed in substance farming without employment contracts and social security benefits. It limits upward social mobility and increases vulnerability to economic shocks. Poor quality employment is reflected in Rwanda's relatively high working poverty rate of 74%. The current skills base reflects the low–income economic status of the country, considering that most people are employed in industries that depend on low skill levels (agriculture, retail and construction) rather than those needed to shift the country's development path to competitive services and knowledge–based industries.

- **Agriculture**: From a working–age population of 8,071,962, a staggering 3,110,603 (38.5%) were involved in agriculture, with 1,720,078 (excluding subsistence) and 1,390,525 (including subsistence). Agriculture is the largest employer in the labour force (43.5%). It has the highest share of workers with basic education or less

[19]Working arrangements that are in practice or by law not subject to national labour legislation, income taxation, or entitlement to social protection or other employment guarantees.

(95%). Rwanda's challenge is to modernise agriculture and improve yields. It will ensure food security and more exports. Decent work and a living wage are needed for workers in this sector.

- **Industry**: Construction, manufacturing, mining and quarrying, electricity and gas, and water comprise the industry. These are job–rich sectors that can employ high to low–skilled workers.

- **Construction**: It employs 386,365 workers with a 9.8% total employment share. There was a net job gain of 19,915 (5.4%) from 2022. Activities are labour–intensive, and Rwandan companies have a competitive low–wage advantage. The challenge is to enhance worker skills. There are very few investments in skills training. Graduate quality is also a concern among employers. The government is developing regional connectivity and infrastructure. It is expanding the road network, investing in the new Bugesera International Airport, and exploring railway and water connectivity. The Government has started planning the construction of four ports in Lake Kivu.

  By 2050 it is projected, Rwanda's population will increase to 22–25 million with a population density of approximately 1,000 people per square kilometre. The country will consolidate its position as the most densely populated country in Africa. Most of the population will be residing in urban areas. It will require affordable public housing, more public services, and improved connectivity. The employment conditions of construction workers and skill sets should be improved. TVET and higher learning must focus on theoretical learning to practical training.[20]

- **Mining and Quarrying:** Mineral resources include cassiterite, coltan, wolfram, peat, gold and nickel. The country has other minerals such as amphibolite, granite, quartzite, volcanic rocks, clay, sand, and gravel. Rwanda produces between 8,000 and 9,000 tons of mineral compounds annually. It produces about 9% of the world's tantalum. Mining is the second–largest export revenue earner. There are 49,968 people employed in the sector. Mineral export revenue has increased from USD 772 million to more than USD 1.1 billion, closing in on the target of USD 1.5 billion by 2024.

  The lack of mining skills is a problem for mining operators and regulators. A sector skills survey (2023) showed most mine workers were artisanal. They lack basic education or may have never attended school. There is limited exploration and processing skills. Skills enhancement, access to geological data, access to finance, improved infrastructure in mining areas, improved technological usage, better market access, and minimum standards for environmental protection, health and safety are concerns.

- **Manufacturing**: Manufacturing is often seen as a gateway to inclusive growth. It has the potential to create jobs, deepen value chains, advance technology, and develop skills. There were 217 799 employed in manufacturing in 2023 compared to 187,297 in 2022, an annual increase of 16.3%. Manufacturing GDP (RWF 16,355 billion) is small, and the employment contribution is 5.5%. It has upside potential and structural transformation benefits.

- **Education Attainment**: 46.9% of employed persons have no formal education (1,857,068), 31.6% (1,249,319) have primary education, and 6.6% (260,304) have lower secondary education (low skills). About 9% (355 801) have upper secondary (middle skills), and 6% (236,324) have university education (skilled). The proportion of the workforce with primary education or less is one of the lowest in the region. The workforce has a World Economic Forum skills score of 37.9, which is below most regions except Ethiopia.

  The state of skills in Rwanda varies significantly, with agriculture and industry having the lowest skill levels. Rwanda's agricultural employment is marked by lower educational attainment. In agriculture, 95% of the workforce has primary education or less. Manufacturing and mining have 78% and 80% of workers with primary education or less.

[20] Accessed at https://www.urbanet.info/construction–industry–rwanda–urban–growth/

There is a direct correlation between education level and unemployment — the higher the education level, the lower the employment — tertiary (4.7%), secondary (20.7%) and primary or below (74.6%). About 80.1% of those outside the labour force have primary education or lower, compared to 1.2% with tertiary education.[21] Therefore, skills development offers opportunities for productive livelihoods.

- **Employment Outcomes**: Vary by institution and programme. Tracer studies show that graduate employment rates for public higher learning institutions range between 40% and 60%. In a 2021 survey of 363 students from eight public polytechnics, 52.3% secured employment, with 39.55% in permanent jobs. The Carnegie Mellon University (private) boasts a 90–95% employment rate for graduates. Employers prefer strong communication, teamwork, and branding skills alongside technical competencies.[22]

[21] Ibid.

[22] World Bank Group (2024) Rwanda Economic Update (REU): Accelerating Skills Development to Foster Private Sector Growth. July 23rd edition. WBG: Washington.

Chapter Three: Skills Supply and Demand Analysis

Chapter Three analyses NST2 skills priorities (demand) and the programmes offerings (supply) of educational institutions.

1. Outline

The first column of the analysis template is economic activity descriptions from national accounts. The second column lists NST2 activity statements. The third lists TVET and higher learning programmes available locally alongside the NST2 activity statements. Column 4 identifies and makes recommendations.

Table 6 — The Analysis Template

Activity Description (NISR)	NST2 Activity Statements	Supply	Gaps and Recommendations
		TVET and Higher Learning Programmes	
Agriculture, Forestry & Fishing			
• Food crops • Export crops • Livestock & livestock products • Forestry • Fishing	Achieve over 6% annual growth / Climate–resilient, productive, and modernised agriculture and food systems / Productive, market–oriented, and sustainable sector / Increasing productivity by 50% on priority food crops / Self–sufficiency in seed supply and livestock / Modern livestock farming practices / Use of technology / Scaled up the use of modern inputs (fertilisers and improved seeds) / New management models such as Agri–hubs and Food Basket sites / Regenerative conservation agriculture practices / Scale up key value chains in livestock and aquaculture / Improving post–harvest handling / Strengthening market linkages / Expanding agro–processing capabilities / Investments in key export sub–sectors, mainly non–traditional (horticulture, fruits, vegetables)	• BSc (Hons): Crop production • BSc (Hons): Horticulture • BSc (Hons): Agribusiness • BSc (Hons): Agroforestry • BSc (Hons): Agricultural Mechanisation • BSc (Hons): Animal Production • BSc: Procurement, Logistics and Supply Chain Management • BSc: Conservation Agriculture (Options: Animal • Production, Crop Production, Irrigation and Mechanization, or Food Processing) • BA: Environmental Management and Conservation • BSc (Hons): Supplies and Procurement Management • Cash crop production and Processing (L1–2) • Water and Irrigation (L3–5) • Advanced Diploma: Forest Resources Management • Advanced Diploma: Forest Engineering and Wood Technology • Advanced Diploma: Wildlife and Conservation Technologies	• Formal learning programmes leading to qualifications are available. However, regular curriculum development is needed to keep abreast of industry developments. • Specialised short courses should be offered in various areas in the use of technology, productivity, agricultural practices, aquaculture, post–harvesting, agro–processing, non–traditional agriculture and productivity.

Activity Description (NISR)	NST2 Activity Statements	Supply TVET and Higher Learning Programmes	Gaps and Recommendations
Industry			
Mining & Quarrying	Increase by 80% mining revenues/mineral exploration / improved environmentally friendly mining practices/professionalisation of mining / enhanced processing and value addition of key minerals.	• BSc (Hons): Mining Engineering (Hons) • Small–scale Mining (L1–2) • Mining Technology (L3–5) • BSc: Procurement, Logistics and Supply Chain Management • BA: Environmental Management and Conservation • BSc (Hons): Supplies and Procurement Management	• Mining employment is small. Therefore, recruit from abroad and send locals abroad to study specialist mining programmes. • Specialised short courses should be offered in various mining functions to keep abreast of industry developments.
Manufacturing: • Food • Beverages & Tobacco • Textiles, Clothing & Leather Goods • Wood & Paper; Printing • Chemicals, Rubber & Plastic Products • Non–Metallic Mineral Products • Metal Products, Machinery & Equipment • Furniture & Other Manufacturing	Boost exports and reduce the trade deficit / Adopt 'Made in Rwanda' policy / Produce essential and high–value items, grow exports and reduce imports / Attract private investment in leather, automotive, bio–manufacturing, pharmaceuticals, textiles and apparel.	• BSc (Hons): Food Science and Technology • BSc (Hons): Mechanical Engineering (Production Engineering) • BSc (Hons): Mechanical Engineering (Plant Engineering) • BSc (Hons): Physics (Material Science) • BSc (Hons): Economics with Specialisation in • International Economics	• Formal learning programmes leading to qualifications are available. However, there should be regular curriculum development. • Manufacturing skills acquisition is work–based. Short courses should be offered in various manufacturing

Activity Description (NISR)	NST2 Activity Statements	Supply	Gaps and Recommendations
		TVET and Higher Learning Programmes	
		• BSc (Hons): Supplies and Procurement Management • Manufacturing Technology (L3–5) • Wood Technology (L3–5) • Advanced Diploma: Fashion Design • Advanced Diploma: Forest Engineering and Wood Technology • Bachelor's Degree: Industrial Art and Design	activities through apprenticeships and internships. • Short courses in textile manufacturing and design are required. • Programmes in chemistry, chemical engineering, pulp & paper technology and related courses are needed.
Electricity	Ensure universal access to electricity / The energy transition will be supported by increasing the share of renewable and clean energy from 52% to 60% / Scale up sustainable industries and adopt sustainable practices (including energy efficiency)	• BSc (Hons): Energy Engineering • BSc (Hons): Electrical Power Engineering • Renewable energy (L3–5) • Advanced Diploma: Electrical Automation • Advanced Diploma: Electrical Technology • Advanced Diploma: Renewable Energy Technology	• Courses in Electrical interconnection, design and distribution are required. • Short courses in renewable energy technology are needed.
Water & Waste Management	Scaled up access to water / Expansion and maintenance of water infrastructure and improvement of water quality services / Scale up sustainable industries and adopt sustainable practices (including waste management and water conservation)	• BSc (Hons): Environmental Health Sciences • BSc (Hons): Civil Engineering: Water Resources Engineering • Advanced Diploma: Water and Sanitation Technology • Water and Irrigation (L3–5)	Short courses in water and waste management practices are required.

Activity Description (NISR)	NST2 Activity Statements	Supply TVET and Higher Learning Programmes	Gaps and Recommendations
Construction	National road construction/500 km of feeder roads / Developing airport infrastructure, including new Bugesera International airport and subsidiary airport / Informal settlements upgraded and rehoused / Construction strategic ports in Rusizi, Karongi, and Nkora (Rutsiro) / Accessing decent social housing vulnerable households	• BSc (Hons): Civil Engineering: Construction Engineering • Bachelor of Architecture (Hons) • BSc (Hons): Quantity Surveying • BSc (Hons): Geography (Urban and Regional Planning) • BA: Rural Development • Advanced Diploma: Construction Technology • Advanced Diploma: Highway Engineering • Building construction (L3–L5) • Public works (L3–L5) • Plumbing Technology (L3–L5) • Interior design (L3–L5) • Land surveying (L3–L5) • Masonry (L1–2) • Carpentry (L1–2) • Painting & Decoration (L1–2) • Domestic Plumbing (L1–2) • Plumbing Technology (L3–5)	• Short courses in specific construction functions are required to enable low–skilled workers to acquire middle–level skills. • Apprenticeships are well–suited for construction in bricklaying, roofing, plastering, painting, joinery, electrical and plumbing. • Short courses in human resources, project management, green building, renewables and occupational health and safety should be offered.
Services, Trade & Transport			
• Maintenance & repair of motor vehicles, • Wholesale & retail, trade • Transport	**Logistics** Cold–chain infrastructure, Kigali wholesale market, Kigali Logistics Platform / Public transport infrastructure and services improvement and upgrading / Promote green transport (e–mobility) **Aviation**	• BSc: Transport Management • BSc (Hons): Transportation • Engineering • BAdmin (Hons) Marketing • BCom (Accounting/Auditing/Finance) • Motorcycle repair and maintenance (L1–2)	• Pilot training and aeronautical engineering programmes are needed. • Aircraft maintenance apprenticeships are needed.

Activity Description (NISR)	NST2 Activity Statements	Supply	Gaps and Recommendations
		TVET and Higher Learning Programmes	
	Scale up RwandAir's capacity, double passenger numbers, increase destinations and boost cargo freight capacity and services. **Marine** Improve marine transport and trade across Lake Kivu	• Automobile Body Works (L1–2) • Automobile repair and maintenance (L1–2) • Heavy Machinery (L3–L5) • Automobile technology (L3–L5) • Airline and Airport Management • Logistics and Supply Chain Management • Advanced Diploma: Airline and airport Management	• Short courses for employees are required in logistics, aviation, marine and transport management.
Other Services			
Hotels & restaurants	**Tourism** Increase by 80% tourism revenues / World–class, high–value ecotourism destination **MICE** Global destinations for the MICE / MICE industry professionalised have programs, standards and certifications	• Food and Beverage Services (L1–2) • Culinary Arts (L1–2) • Food and Beverage Operations (L3–5) • Front office & Housekeeping operations(L3–5) • Tourism (L3–5) • Advanced Diploma: Hospitality management • Advanced Diploma: Tours and Travel Management • Bachelor Degree: Leisure, Tourism & Hotel Management	• There is an over–supply of tourism and hospitality programmes. • Short courses for employees are required in tourism and MICE.
Information & communication	Develop ICT skills and prepare the youth for future jobs / Train 1 million coders / Equip 500 000 people with advanced ICT skills / Digitalisation — integrating innovation, digital, and emerging technologies (AI, advanced robotics, etc.) to facilitate data–driven	• BSc (Hons): Business Information Technology • BSc (Hons): Electronics and Telecommunication Engineering	Short courses on analytics and data management, cloud computing, project planning/management, application development

Activity Description (NISR)	NST2 Activity Statements	Supply	Gaps and Recommendations
		TVET and Higher Learning Programmes	
	decision–making in major sectors such as education, health, agriculture, industry, government performance management, private sector, judiciary, and financial sector	• BSc of Information Technology: Network & Communication Systems • BSc of Information Technology: Software Engineering • BSc: Information Systems and Management • BSc (Hons): Computing • Bachelor's Degree: Mass Communication	and programming, project management
Financial services	Resilient and broadened financial sector / Scale up of financial inclusion / Increase financial sector contribution to economic growth and citizen welfare / Develop Rwanda as an international financial services centre (hub)	• BAdmin (Hons) with specialisation in Insurance • BAdmin (Hons) with specialisation in Banking • BSc: Accounting • Bachelor of Business Management • Master of Business Administration • BSc (Hons): Applied Statistics with Specialisation in Actuarial Sciences • BSc (Hons): Mathematics (Applied Mathematics) • BSc (Hons): Mathematics (Statistics)	Financial services is a highly specialised sector. Specialised work–related short courses should be offered to employees to keep them regulatory, accounting and auditing standards.
Real estate activities	Develop private sector real estate projects, including the Bugesera airport area, Kigali Health City, Kivu belt development, Kigali Green	• BSc (Hons) in Estate Management and Valuation • Land Administration and Management	Short courses relating to real estate should be offered to realtors.

Activity Description (NISR)	NST2 Activity Statements	Supply	Gaps and Recommendations
		TVET and Higher Learning Programmes	
	Complex, Kigali Golf resort and villas, Malls, hospitality school, and Kigali Innovation City	• Valuation and Property Management	
Professional, scientific & technical activities	Strengthen research and innovation / Increase R&D spending	N/A	R&D takes place in all academic disciplines.
Administrative & support service activities	Improve the quality and efficiency of public service delivery / more public services online / innovation, digital, and emerging technologies (AI, advanced robotics, etc.) to facilitate data–driven decision–making/strengthen capacities in public service	• BA (Hons): Arts and • Publishing • BSc (Hons): Applied • Statistics with Specialization in Demography • BAdmin: Marketing • BAdmin: Human Resource Management • Refer to the ICT Programmes above	Specialised short courses should be offered to public servants in digital skills, policy development, customer care, leadership and management, and financial management.
Public administration & defence, compulsory social security	Digitise government services / Reduce backlog cases in the justice system by half / Increase the quality of service delivery to above 90% / Increased citizen participation / Target citizen satisfaction with public service delivery above 90% / Enhance public financial management, transparency, accountability, and compliance / Crime prevention, public order, safety, security, and territorial integrity	• BA: Professional Police Studies • BSS (Hons): Political Science • BSS (Hons): Governance Studies • BSS (Hons): Social and Military Sciences • BAdmin • BAdmin: Finance • BA: Cooperative Management • BA: Public Administration and Local Governance	
Education	**General** Digital literacy is planned to increase from 53% to 100% / Improve quality in all levels of education / Improve learning outcomes / Scale up market–relevant education / Ensure basic	• BEd (Hons) (Early Childhood • Education) (Primary Teacher Education) • BEd (Hons) (Science–Mathematics Education) (Primary Teacher Education)	• Train more teachers in STEM. • Continuing professional development (CPD) is needed for education

Activity Description (NISR)	NST2 Activity Statements	Supply	Gaps and Recommendations
		TVET and Higher Learning Programmes	
	literacy for all / Align training with market demands /Equip training centres with resources **School** All children of school–going age attend school / Curb drop–outs, identify root causes, and reintegrate those who left school (primary and secondary) and monitoring and tracking /Develop infrastructure, increase trained teachers, and provide teaching and learning materials /Provide learning materials, teacher recruitment, training, and management, expand infrastructure, increase learning hours, reduce classroom overcrowding, travelling reach to school / School feeding program, and community mobilisation /Improve learning outcomes, especially in mathematics, science, and languages / Scale up ICT **TVET** Establish Technical Secondary Schools (TSS) CoEs in all districts / Scale up modern, high–quality training / Scale up Vocational Training Centres for short–term vocational skills to every cell (Akagali) / Proportion of students completing secondary TVET to reach 60% / Enhance STEM learning / Scale up focus on youth and women through internships, apprenticeships, re–skilling, upskilling **Higher Learning** Improve quality	• BEd (Hons) (Mathematics–Computer Science) (Secondary) • BEd (Hons) (Physics–Chemistry) (Secondary) • BEd (Hons) (Foundations of Education–English Education) (Primary Teacher Education) • Diploma in Education (Physics and Computer • Science) (Lower Secondary Education) • BEd: Information Technology and Accounting	managers in school management, leadership, provisioning, organisation development and planning courses. • CPD is needed for teachers and lecturers in pedagogy, digital skills, and deepening subject knowledge.

Activity Description (NISR)	NST2 Activity Statements	Supply	Gaps and Recommendations
		TVET and Higher Learning Programmes	
Human health & social work activities	Early Childhood Development Reduce the stunting rate for children under the age of five years from 33% to 15% / Improve child nutrition Health System Strengthening Improve access to and quality of health services / Quadruple health workforce / Expand health infrastructure and equip health facilities / Preparedness for public health emergencies / Promote medical tourism and positioning Rwanda as a hub for specialised healthcare services / Improve maternal, infant, and child health and consequently reduce mortality in the respective categories / Awareness of lifestyle changes — good nutrition practices, exercising, and avoidance of alcoholism, drug abuse, and teenage pregnancies / Increase number of mental health professionals and enhance related services / Screening, provision of nutritious foods and supplements and feeding practices / Increase access to Sanitation, and Hygiene (WASH) services / Improve social transfers.	• BEd (Hons) (Early Childhood Education) (Primary Teacher Education) • BSc (Hons): Human Nutrition & Dietetics • BSS (Hons): Sociology • BSS (Hons): Social Work • BSc (Hons): Nursing (General Nursing) • BSc (Hons): Nursing (Midwifery) • BSc (Hons): Dental Therapy • Bachelor of Medicine and Surgery • BSc (Hons): Biomedical Laboratory Sciences • Advanced Diploma: Mental Health Nursing • BSc (Hons): Clinical Psychology • BEd (Hons): Early Childhood Development Education	The health sector workforce will be quadrupled. There should be an expansion of enrolment progressively in healthcare and public health management, including a wider range of programmes and short course offerings.
Cultural, domestic & other services	Develop services and business segments for sports disciplines / Acting private investment in priority industry sub–sectors such as creative industries.	• BA (Hons): Arts and Publishing • BA: History and Heritage Studies • BA (Hons): Arts and Creative Industry • Music and performing Arts (L3–5)	Sports science and related programmes need to be introduced into the HLI qualifications mix.
Sustainable development and Climate Resilience	Reduce greenhouse gas emissions by 38% Adopt green and clean technologies	• BSS (Hons) in International Relations	Risk management courses are required.

Activity Description (NISR)	NST2 Activity Statements	Supply	Gaps and Recommendations
		TVET and Higher Learning Programmes	
	Nuclear technology for productive uses in sectors such as health, energy, and agriculture Disaster prevention, risk reduction and management Sustainable management of natural resources and forests Mobilise climate finance and resources to support sustainable development	• Bachelor of Law (Hons) • BSc (Hons): Economics with Specialization in • Development Economics • BSc (Hons): Geography (Environmental Planning) • BSc (Hons): Agricultural Economics • BSc (Hons): Agroforestry • BSc (Hons): Environmental Health Sciences • BSc (Hons): Biology (Zoology/Botany and Conservation) • BSc (Hons): Physics (Atmospheric and Climate Science) • BSc (Hons): Biology (Botany and conservation) • BSc: Procurement, Logistics and Supply Chain Management • BA: Emergency and Disaster Management • BA: Environmental Management and Conservation • BA: Cooperative Management • BSc (Hons): Business Management	

Chapter Four: High Priority Occupations and Skills Gaps

Chapter Four discusses the skills requirements for meeting NST2 goals and targets. The requirements are presented in the form of high priority occupations (HPO) and skills gaps.

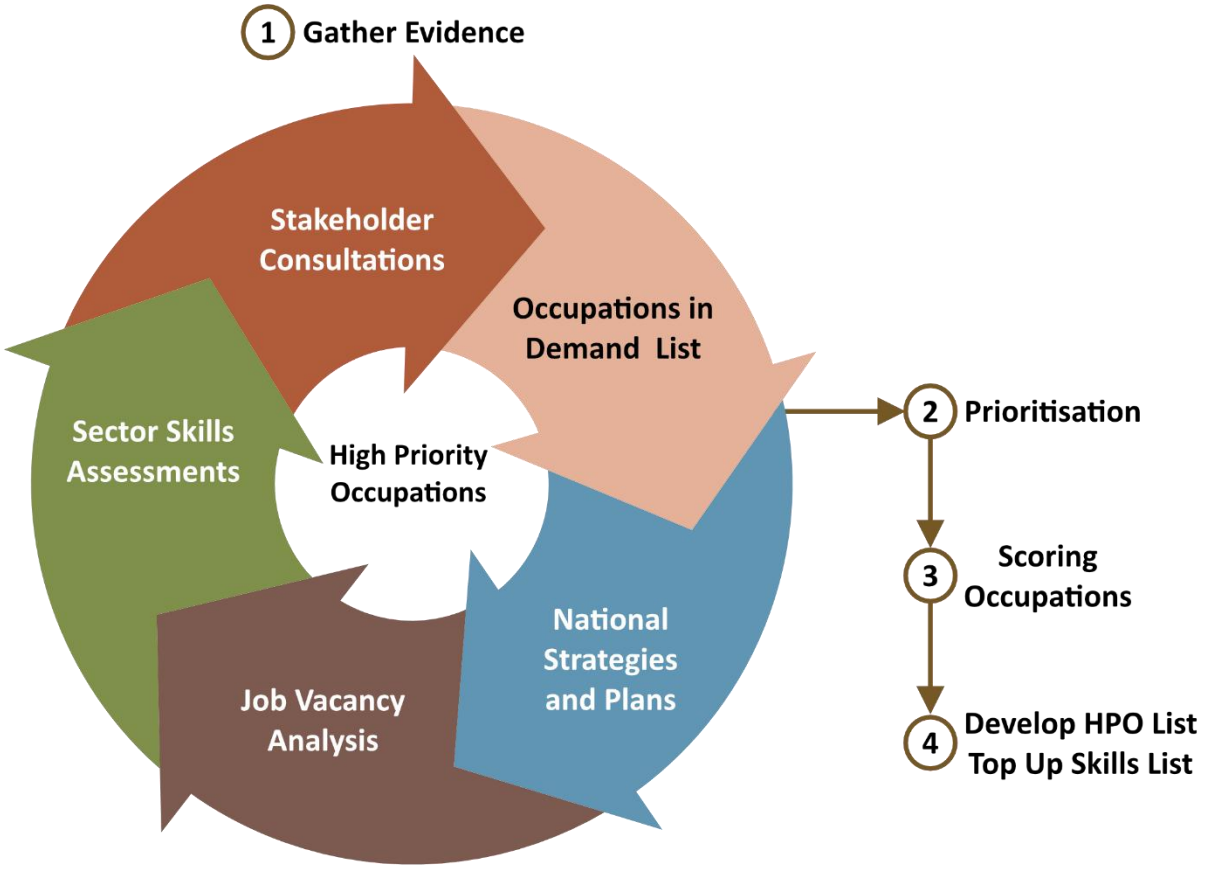
Skills are analysed in two categories. Occupations are similar job tasks that can be grouped. It is defined by an occupational title, e.g., nurse, teacher, plumber, teacher, cashier, or accountant. Skills gaps are "top up" skills that people are lacking, e.g., computer literacy skills, communication skills, problem–solving skills and management skills.

High priority occupations (HPO) refer to those medium and high–skilled occupations needed in the labour market to achieve the NST2 targets. Education and training institutions should ensure that these learning programmes are available in addition to their other programme offerings. The method for producing the HPO List is the following:

1. Methodology

The HPO List method is the following:

Figure 4 — HPO List Method



Step One: Evidence Gathering
HPOs are identified from: • Stakeholder consultations • Sector skills assessments (Annexure B) • Occupations in Demand List • Job Vacancy Survey (Annexure A)

Step Two: Prioritisation
The long occupation list is drawn up from Step One (Annexure C). The List is juxtaposed against NST2 activity statements (Chapter 3).

Step Three: Scoring
The occupations listed in Annexure C are scored (Annexure C). Occupations were included on the HPO List if they were found in more than one source (Step One).

Four criteria are employed to produce the HPO List:

No	Selection Criteria	Rationale
1.	The occupation should be identified as in demand from **more than one evidence source**.	Need for the occupation to be identified from as many sources as possible to corroborate the evidence.
2.	Training for the occupation must be at least **three years duration**.	If an occupation requires less than three years duration, demand can be met with the short–term training.
3.	MIFOTRA must **validate** the occupation as a high–priority occupation.	The validation gives legitimacy to the occupation. The occupation may be included or excluded based on expertise and reasonable grounds.
4.	There must be **sufficient job openings** for the occupation.	There might be a priority occupation where only a few people are needed, e.g., meteorologist. It would not be economical to develop and offer qualifications at a huge cost to meet this demand. Sending students abroad or hiring foreign skills might be an economical option.

Step Four: Identifying HPOs
The HPO Scoring Sheet List is analysed to produce a concise HPO List. NST2 requires a manageable number of strategic occupations for skills development investments. Although skills development for all occupations is desirable and should be pursued, **the key issue is what are the strategic high priority occupations?**

2. *Skills Supply Impediments*

Educational Attainment: If Rwanda is to achieve high–income country status, it requires a higher proportion of secondary and university education.

Table 7 — Educational attainment (2023)

Educational Attainment	Percentage
No level completed	46.5
Primary	32.2
Lower secondary	9.2
Upper secondary	8.2
University	3.9

Source: NISR Labour Force Annual Survey (2023)

The labour force is largely low–skilled with 78.7% that have no level completed and primary education. Structural transformation requires higher value addition of products and services underpinned by higher educational attainment.

Skill development and educational attainment significantly influence unemployment status. Interestingly, those with lower and upper secondary education have the highest unemployment rates — higher than individuals with no education — indicating that the economy generates more low–skill jobs, often better suited to those with limited education. Still, completing higher learning offers high returns on investment, translating into better jobs and higher salaries.

Internal efficiency: The goals of education systems go beyond enrolment growth. They include promoting successful completion of each educational level without dropouts or grade repetition in the specified timeframe. When students do not complete a level within the designated time, it leads to education loss, requiring additional investment for each additional year to complete that level.

Table 8 — Proportion of P1 Students Who Reach S6 Within 12 Years

P1–S6	2011–2022/23
Entry P1	662 358
Reach S6	80 531
Proportion	12.2%

An estimated 12.2% of students reached S6 without any delays. There is a significant education loss at this stage, with approximately 87.8% of students experiencing delays or difficulties in completing their education within the expected time–frame.

Promotion, Repetition and Dropout: The national average for promotion, repetition and dropouts are discussed.

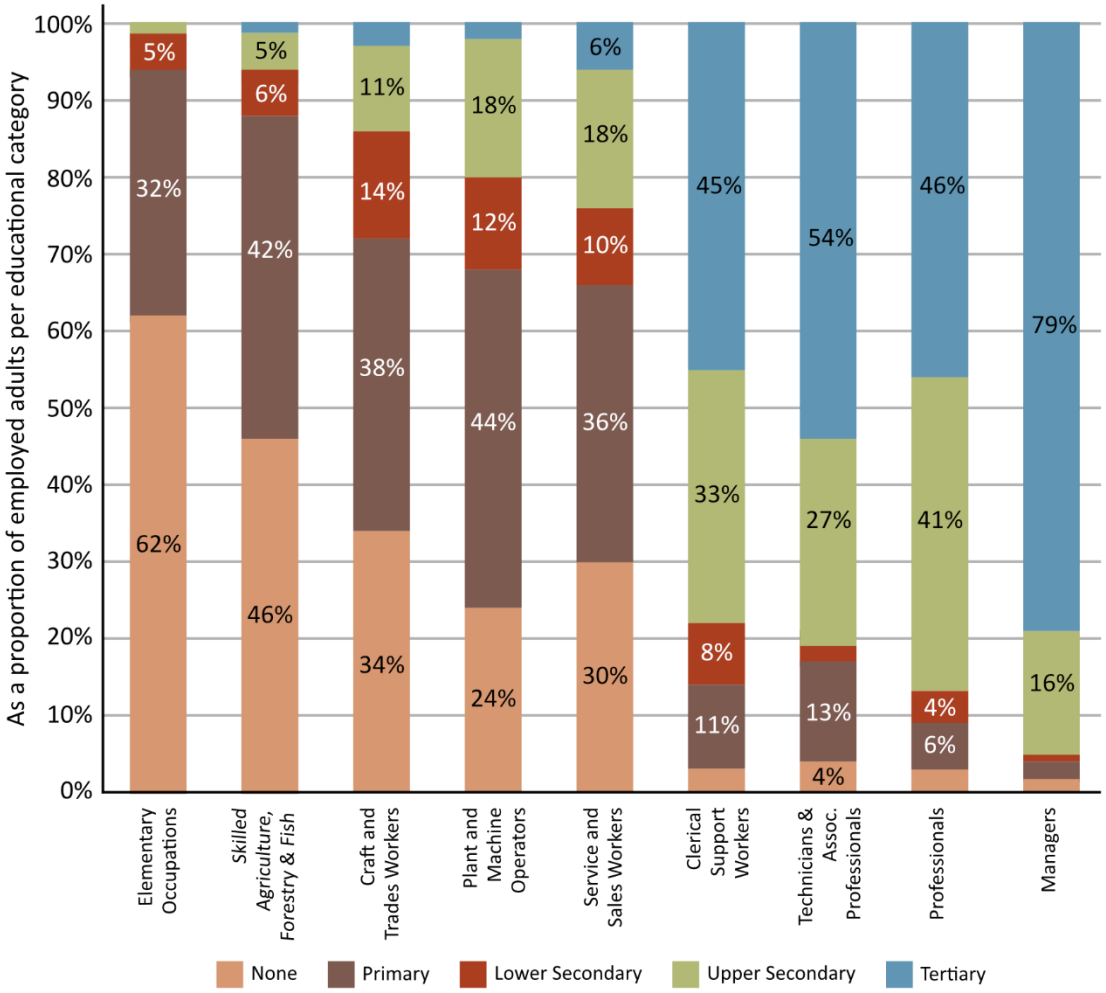
Table 9 — National Average for Promotion, Repetition, and Dropout Rate

P1–S6	2016/17	2021/22
Promotion rate	86.3	75.7
Repetition rate	8.9	19.1
Dropout rate	4.8	6.8

Source: School Census, Ministry of Education

There is a decrease in the promotion rate from 86.3% in 2016/17 to 75.7% in 2021/22. The repetition rate increased from 8.9% in 2016/17 to 19.1% in 2021/22. Regarding dropout rates, the data shows an increase of 4.8% in 2016/17 to 6.8% in 2021/22. Measures to reduce these rates should be reinforced.

Figure 5 — Proportion of Employed Adults by Education Level and Occupational Skill



Source: Rwanda Labour Force Survey Annual Report 2023, CENFRI and MINED 2023

There are significant numbers of elementary (62%), skilled agriculture, forestry and fishery (46%), craft and trade workers (34%), plant and machine operators (24%), and service and sales workers (30%) that have not completed primary schooling. Besides elementary occupations, the other categories mentioned above will be severely impacted by emerging technologies as work systems and processes are reshaped with the fourth industrial revolution. NST2 makes reference to modernising agriculture but most elementary and skilled agriculture, forestry and fishery workers have primary or less education.

Skills Insights: The World Bank Rwanda Economic Update (2024) summarises the systemic impediments.[23]

The skill deficit stems largely from challenges in basic education, including poor quality, limited access, high repetition and dropout rates. Many children leave school without foundational skills to enter higher learning or further training, thus limiting their ability to secure quality jobs. Moreover, the mismatch between education outputs and labour market needs aggravates the situation.

Access to higher learning is limited, suggesting that self–employment and informal labour will be the main income source of new workers.
Strengthening STEM education from the foundational level and increasing investment in out–of–school initiatives is essential to transforming Rwanda into a globally competitive economy. Expanding

[23] World Bank Group (2024) Rwanda Economic Update (REU): Accelerating Skills Development to Foster Private Sector Growth. July 23rd edition. WBG: Washington.

public investment and capacity in TVET and higher learning infrastructure is needed. There are a large number of private providers in TVET and higher learning, but high student fees are a barrier.

Significant efforts are required to bridge the skills mismatch. Too many students are opting for degrees other than what is in labour demand, possibly due to insufficient career guidance, unavailability of courses and high costs. Evidence from a higher learning tracer study shows that business, tourism and humanities graduates are over produced vis–à–vis medicine, engineering and ICT. It is a further barrier to employment.

Employment outcomes for higher learning graduates vary widely across institutions and programmes. Institutions with a strong focus on practical skills have higher graduate employment rates because they align with employer needs.

Evidence from tracer studies suggests that students feel they are not being adequately prepared for the job market. They suggest improvement of workshops, updated textbooks, relevant course content, better student–teacher ratios and enhanced industry–education linkages.

To boost economic growth, Rwanda should enhance workforce skills, particularly in services and among youth seeking formal employment. Significant efforts are required to improve job matching, increase public and private education investments, and align education to labour market demand.

3. *Tracer Study Findings*

The MIFOTRA Graduate Tracer Survey (2023), Rwanda TVET Board Tracer Study (2022), the World Bank Rwanda Enterprise Survey (2024), and the NISR Rwanda Integrated Business Enterprise Report (IBES 2022) were analysed.

Sample size: The MIFOTRA Graduate Tracer Survey sampled 472 graduates with advanced diplomas, TVET Certificate IV and V, and Bachelor degrees.[24] The RTB Tracer Study sampled 7,954 TVET graduates. The World Bank Rwanda Enterprise Survey sampled 598 firms. The IBES 2022 is based on a sample of 2 817 formal and 2 508 informal sector business enterprises, selected from an estimated 19 194 formal and 225 612 informal business enterprises.[25]

Institutional brand: The MIFOTRA Survey found that graduate employment depends on the institutional brand. Rwanda Polytechnic graduates had a 59% employment rate, followed by TVET schools at 40% and the University of Rwanda at 36.7%.

Employment demand: There was strong demand for construction materials testing (77.8%) and road maintenance (70%). Graduate employment increases with professional qualifications (45.41%) and institution reputation (30.1%).[26] There is a strong demand for TVET graduates in construction, wellness, beauty and aesthetics. Most TVET graduates found part–time employment (64.7%).[27]

Entrepreneurship: About 80% of graduates who secured employment worked for firms, while 20% were self–employed. A lack of collateral and start–up support are a hindrance to entrepreneurship.

Remuneration: The highest paying training programmes from the sample are leather works, animal health, electrical power engineering, road maintenance, crop production, and plant engineering.[28]

[24] MIFOTRA (2023) Graduate tracer survey. Ministry of Public Service and Labour and Social: Kigali.
[25] NISR (2022) Rwanda Integrated Business Enterprise Report. NISR: Kigali.
[26] Ibid.
[27] RTB (2022) Tracer study. Rwanda Training Board: Kigali.
[28] Ibid.

Search methods: The most popular job search method is advertised job vacancies, followed by personal networks, internships and internships and industrial attachment. Public employment centres perform poorly.[29]

Employment type: There was a three–way split between casual workers with no contracts, temporary, and permanent. Most graduates are part–time employed (ABANYABIRAKA), with 64.7% of all graduates. About 61.3% of graduates have written contracts in their current employment. [30]

Employer training: The World Bank study found that 27.4% of firms offered training, and the proportion of workers receiving training was 48.4%. 13.7% of firms spend on R&D, and 52.7% of firms introduced process innovation.[31]

The overall score for management practices was 51.7%, highlighting concerns with employee under–performance.[32] The IBES (2022) found that training was needed to access financing to export, product certification, sourcing foreign markets, and quality management systems.[33] The IBES study found that the lack of training funding was the main reason for business enterprises not conducting staff training. The other reason is that training is not a management priority.[34]

4. Online Job Postings

Jobs in Rwanda and LinkedIn are popular online job recruitment sites in the country. A web crawl was conducted of their website to identify the occupations that were most frequently posted.

The most advertised jobs in Rwanda on LinkedIn reflect growth in technology, healthcare, education, sales, and administration.

- **Information Technology (IT) and Telecommunications**: Software development, IT support, and network engineering are particularly prominent as digital infrastructure expands in Rwanda.
- **Customer Service and Sales**: Customer service agents, sales representatives, and business development officers. Many companies seek professionals who can engage clients effectively and drive growth.
- **Education**: Teaching and administrative roles at universities and educational institutions remain in high demand, especially within specialized fields like veterinary medicine and animal production.
- **Healthcare**: There is an increasing need for healthcare professionals, especially in rural areas, to support Rwanda's health sector reforms.
- **Engineering and Construction**: Civil engineering, project management, and construction roles are frequently advertised to support ongoing infrastructure projects.
- **Administrative and Financial Roles**: Positions such as accountants, cashiers, and administrative officers are consistently needed across various sectors, particularly in public administration and NGOs.

The following high–demand occupations were identified on the Jobs in Rwanda platform:

- **Project and Program Management**: Roles such as program managers, coordinators, and operational leads in development projects are frequently advertised.

[29] Ibid.
[30] Ibid.
[31] NISR (2022) Rwanda Integrated Business Enterprise Report. NISR: Kigali.=
[32] World Bank (2023) Rwanda Enterprise Survey; WB: Washington.
[33] NISR (2022) Rwanda Integrated Business Enterprise Report. NISR: Kigali.
[34] Ibid.

- **Finance and Accounting**: Positions for accountants, finance officers, and auditors often feature on the site.
- **Information Technology (IT)**: Roles for IT officers, digital specialists, and tech advisors are prevalent, especially for organizations needing IT infrastructure support.
- **Human Resources (HR)**: HR management positions, including recruitment and payroll specialists, are commonly posted.
- **Healthcare and Public Health**: Positions like healthcare coordinators, public health officers, and medical professionals are sought–after, particularly with Rwanda's growing focus on healthcare development.

These job categories are generally the most recurrent in Rwanda's job market, reflecting needs in project management, finance, IT, HR, and healthcare.

5. High Priority Occupations List (2024)

Table 10 — High Priority Occupations (HPOs) List

No	Transport	Hospitality & Tourism	ICT & Media
1	• Aircraft pilot (3153)	• Hotel manager (1411)	• Security specialist (ICT) (2529)
2	• Avionics technician (7421)	• Head chef (3434)	• Cloud engineer
3	• Aeronautical engineer (2144)	• Pastry chef (3434)	• DevOps engineer
4	• Airframe mechanic (7232)	• Sous chef (3434)	• Software developer (2512)
5	• Aviation maintenance technician (7232)	• Restaurant manager (1412)	• Coding, proof-reading and related clerks (4413)
6	• Flying instructor (3153)	• Conference centre manager (1439)	• Social media content writer (2641)
7	• Flight engineer (3153)	• Advertising & marketing professional (2431)	• Telecommunications engineer (2153)
8	• Aircraft mechanic (7232)	• Conference and event planner (3332)	• Systems analyst (2511)
9	• Lift mechanic (7412)	• Interpreters/translators (2643)	• Network analyst (2523)
10	• Economist (2631)	• Market research analyst (2431)	• Information technology manager (1330)
No	**Environmental Protection and Energy**	**Manufacturing**	**Built Environment (Construction/Real Estate)**
1	• Environmental health officer (3257)	• Electrical engineer (2151)	• Environmental health officer (3257)
2	• Solar PV technician (no code)	• Mechanical engineer (2144)	• Architect/ Building architects (2161)
3	• Power production plant operators (3131)	• Civil engineer (2142)	• Quantity surveyor (2149)
4	• Power production plant operators (3131)	• Structural engineer (2142)	• Construction project manager (1323)
5	• Energy auditor	• Manufacturing production manager (1321)	• Construction site manager (3123)
6	Geologist (2114)	• Manufacturing manager (1321)	• Plumber (7126)
7	• Chemical engineer (2145)	• Air conditioning and refrigeration mechanic (7127)	• Electrician (7411)
8	• Environmental Adviser (2133) (Disaster management)	• Motor vehicle mechanics and repairers (7231) (Diesel)	• Carpenter (7115)

9	• Water treatment plant operator (3132)	• Auto–electrician (no code)	• Land surveyor (2165)
10	• Environmental auditor (2133)	• Metal production process controllers (3135)	• Roofer (7121)
No	**Mining**	**Finance**	**Agriculture, Forestry & Fishery**
1	• Metallurgist (2146)	• Financial analyst (2413)	• Meteorologist (2112)
2	• Mining engineer (2146)	• Financial and investment advisor (2412)	• Agricultural and forestry production manager (1311)
3	• Mining engineer (2146)	• Database analyst (2521)	• Horticulturist (6113)
4	• Mechanical engineer (2144)	• Data scientist	• Hillside irrigation management expert
5	• Chemical engineer (2145)	• Certified accountant (ACCA) (2411)	• Soil scientist (2132)
6	• Electrical engineer (2151)	• Finance manager (1211)	• Climate–smart agriculture expert
7	• Geologists and geophysicist (2114)	• Human resource manager (1212)	• Poultry breeder (6122)
8	• Geology technician (3111)	• Actuary (2120)	• Research manager (1223)
9	• Geophysicist (2114)	• Auditor (2411)	• Agricultural production manager (1311)
10	• Production manager (mine, gas, quarry) (1322)	• Marketing & sales manager (1221)	• Plantation manager (1311)
No	**Health**	**Education**	**Engineering**
1	• Generalist medical practitioner (2211)	• Professor in rare skills (2310)	• Electric power generation engineer (2151)
2	• Specialist medical practitioner (2212)	• Associate professor in rare skills (2310)	• Instrumentation Engineer (2152)
3	• Nursing professional (2221)	• University lecturer (2310)	• Telecommunications Engineer (2153)
4	• Midwifery professional (2222)	• Academic staff in rare skills (2310)	• Chemical engineer (2145)
5	• Paramedical practitioner (2240)	• Curriculum developer (2351)	• Mechanical engineer (2144)
6	• Veterinarian (2250)	• Learning disabilities special education teacher (2352)	• Industrial engineer (2141)
7	• Dentist (2261)	• Special needs teacher (2352)	• Petroleum engineering technician (3116)
8	• Pharmacist (2262)	• Teacher of the sight impaired/ blind (2352)	• Environmental engineer (2143)
9	• Environmental and occupational health and hygiene professional (2263)	• E-learning designer (no code)	• Electromechanical engineer (2151)
10	• Optometrist and ophthalmic optician (2267)	• E-learning curriculum developer (no code)	• Chemical engineer (2145)
11	• Nuclear radiologist (no code)	• Education methods specialist (2351)	• Nuclear power generation engineer (2149)
12	• Nuclear pharmacist (no code)	• Pre-school teacher (no code)	

The HPO List reveals the following:

- There is a strong demand for engineers across several engineering disciplines (mechanical, electrical, civil) in the primary and secondary industries.
- There is a lack of nuclear energy engineers with the establishment of the Rwanda Energy Atomic Board.
- Occupations in railway transport are lacking, with the railways expected to connect to either the Northern corridor through Kenya and Uganda or the central Corridor through Tanzania.
- There is a demand for qualified tradesmen (artisans) in the construction, mining, manufacturing, transport and energy sectors.
- Financial managers, certified accountants and auditors are in demand in all industries.
- There is a demand for IT occupations.
- Occupational health, safety and environmental specialists are in demand in all sectors.
- There is a demand for transport and agricultural economists in small numbers.

6. *Top–Up Skills*

Rwanda Integrated Business Enterprise Report (IBES 2022) issued by NISR made a comprehensive study of skills gaps in the workforce and among firms. The IBES 2022 is based on a sample of 2 817 formal and 2 508 informal sector business enterprises, selected from an estimated 19 194 formal and 225 612 informal business enterprises.[35]

Skills gaps: IBES identified the following skills gaps: manual dexterity (repairing mending constructing); knowledge of how the organisation works; basic numerical and literacy skills; product and service knowledge; reading and writing reports, manuals, guidelines and instructions; complex statistical skills; computer literacy; advanced IT skills; adapting to new equipment, systems and processes; problems–solving, decision–making, time management, task prioritisation, teamwork, client handling, difficulties meeting customer expectations, and loss of clients.

Interpersonal: The interpersonal skills gaps are persuading or influencing others, instructing, teaching or training other people, making speeches or presentations, client handling, planning, managing, motivating, emotional intelligence, marketing, and teamwork.

Causation: Product development, lack of skilled and experienced staff, new roles or tasks, staff in need of training, unmotivated staff, inadequate prior training, lack of training funds, and poor staff retention policy.

Impact: The impact of skills gaps are unmet customer expectations, increased staff workload, loss of clients, increased operating costs, delays in product development of new products, difficulties with introducing new working practices, challenges with meeting quality standards, outsourcing work, and stopping offering some services or products.

[35] NISR (2022) Rwanda Integrated Business Enterprise Report. NISR: Kigali.

The following top–up skills are needed:

Table 11 — Top–Up Skills List

Skills Gaps	Education	Energy	Health	IT	Manufact–ureing	Mining	Construct–ion	Hosp & Tourism	Agro–processing	Finance
Management										
Human management	o	o	o	o	o	o	o	o	o	o
Financial management	o	o	o	o	o	o	o	o	o	o
Logistics management					o					
Project management		o	o	o	o	o	o	o	o	o
Strategic management		o	o		o	o	o		o	o
Business Fundamentals					o	o				
Marketing & sales									o	
Leadership			o		o				o	o
Emotional intelligence			o							
Problem–solving and decision–making	o	o	o	o	o	o	o	o	o	o
Entrepreneurship			o		o	o	o			
Teamwork	o	o	o	o	o	o	o	o	o	o
Organising and planning	o	o	o		o	o	o		o	
Communication	o	o	o	o	o	o	o	o	o	o
Customer service				o	o			o		
Compliance						o	o	o		o
Work ethics								o		
Translation/interpreting								o		
Data analysis								o		
Negotiating										o
Technical										
Electric Power Engineering		o								
Electrical Interconnection Engineering		o								
Electrical Design Engineering		o								
Distribution management and Electrical Engineering		o								
High voltages and high currents		o								
Mechanical and thermal		o								
Multi rail operation		o								
Troubleshooting		o								
Quality Control Analysis		o								
Pedagogical skills	o									
Organising and planning	o									
School Management	o									
Language skills	o									
Project planning and management					o					

Skills Gaps	Education	Energy	Health	IT	Manufact–ureing	Mining	Construct–ion	Hosp & Tourism	Agro–processing	Finance
Quality control					o					
R&D					o					
Process & operations					o					
Production					o					
Air ticketing								o		
Market research								o		
Information Technology										
AI				o						
Machine learning				o						
Radio Transmission				o						
Systems and enterprise architecture				o						
Telecommunication network switching				o						
IT literacy							o			
Digital skills								o		
Graphic Design				o						
Data analytics				o						
Data management				o						
Cloud computing				o						
Application development and programming				o						
ICT Project management system and software				o						
Computerised design technologies					o					
Environmental, Health and Safety	o	o	o	o	o	o	o	o	o	
Bricklaying							o			
Carpentry							o			
Painting							o			
Plastering							o			
Plumbing							o			
Electrical							o			
Construction project management							o			
Architectural design							o			
Structural design							o			
Building completion and finishing							o			
Estate management							o			
Technical testing and analysis							o			
Demolition and site preparation							o			
construction installation							o			
Roofing							o			
Financial										

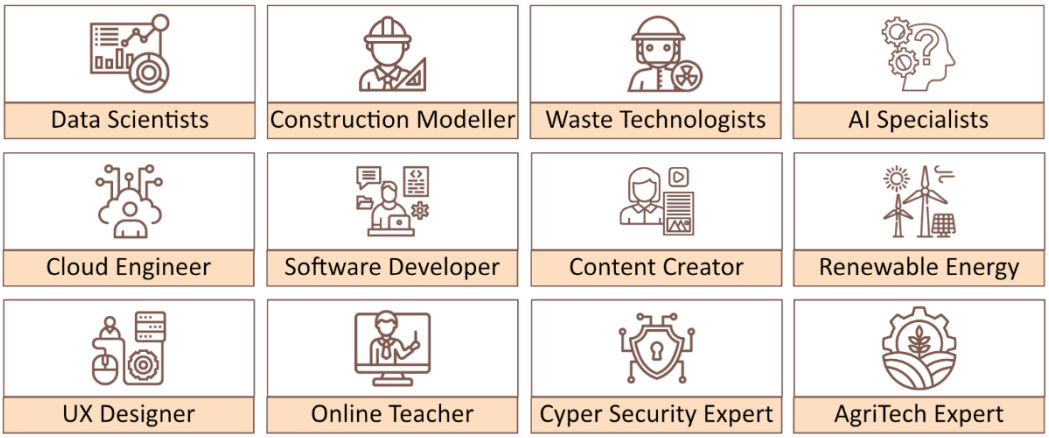
Skills Gaps	Education	Energy	Health	IT	Manufact–ureing	Mining	Construct–ion	Hosp & Tourism	Agro–processing	Finance
Data Science	o	o	o	o	o	o	o	o	o	o
Market analysis										o
Forensic										o
Actuarial										o
Business intelligence										o
Financing										o
Accounting										o
Auditing										o

Note: Highlighted top–up skills are needed in most industries.

7. Future Skills

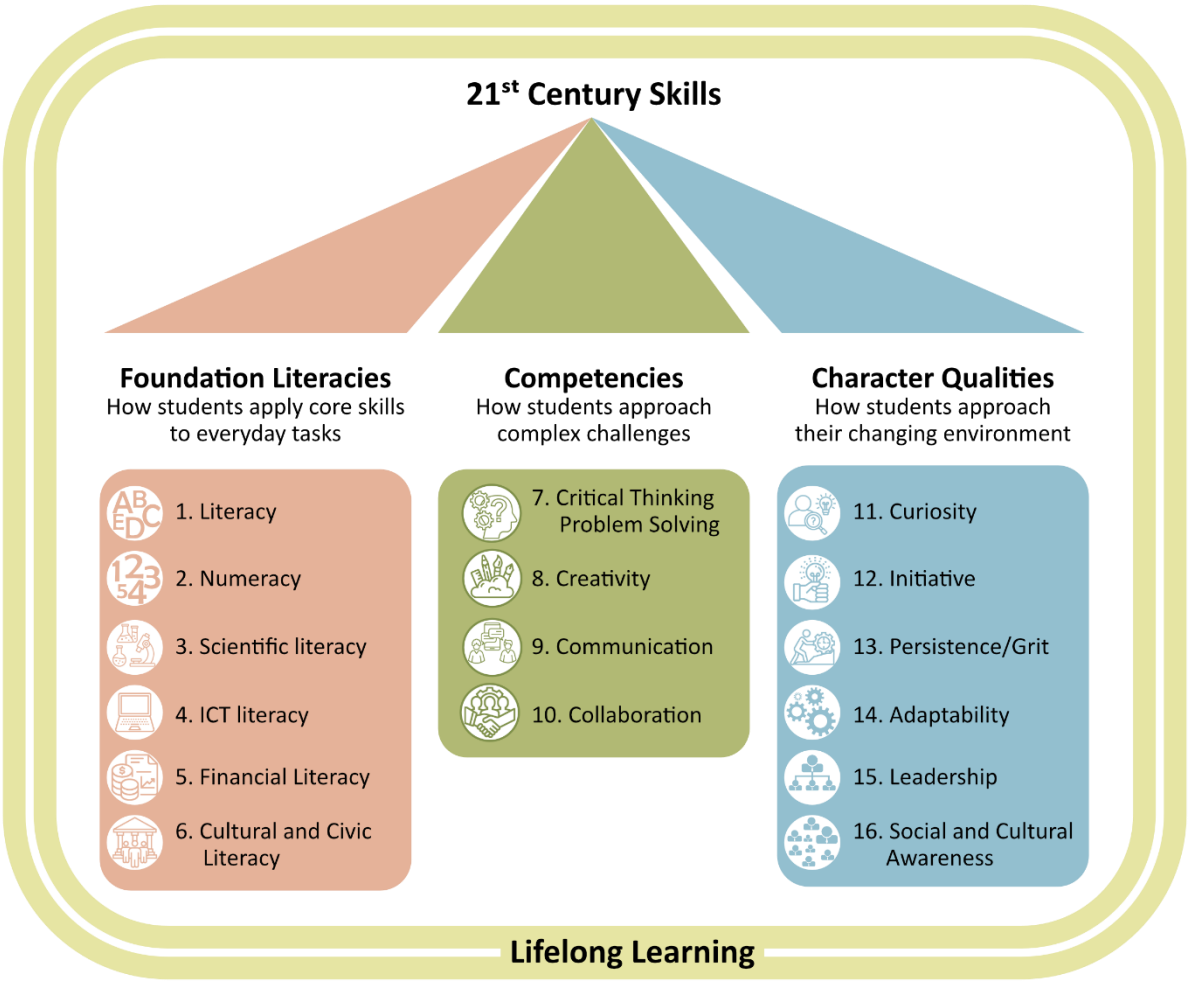
Future skills are driven by technology, digitalisation and sustainability. These factors are creating new occupations, changing existing occupations, and making others obsolete through automation, machine learning and artificial intelligence. New skills gaps are emerging with technological advancements. The occupations listed are based on global demand and extracted from several resources. The occupations most likely to apply to Rwanda are given:

Figure 6 — Most Likely Occupations



The World Economic Forum identified the following 21st century skills that apply to Rwanda:

Figure 7 — 21st Century Skills that Apply to Rwanda



Source: WEF (2016)

Schools: Schools should integrate the 21st century skills listed above into their curricula. It is critical to emphasise foundational literacies in primary schooling so that learners acquire a strong background to pursue further learning. Learners who lack foundational literacies tend to struggle in their studies in secondary education. Competencies and character qualities should also be honed as these are critical employability skills.

Higher learning: Several tracer studies discussed earlier indicate that graduates lack foundational literacy, competencies and character qualities. Hence, they are not work–ready. Therefore, 21st century skills should be integrated into the higher learning curricula.

Developing 21st-century skills is important for students' future success in the job market and their personal lives. By developing these skills, students become better problem-solvers and decision-makers. They learn how to communicate effectively with others and work collaboratively on projects. These skills are essential not just for individual success but for driving societal progress and adapting to the challenges of the 21st century, such as climate change, economic shifts, and digital transformation. They should be integrated into educational frameworks and workforce development to ensure future generations are prepared for the future.

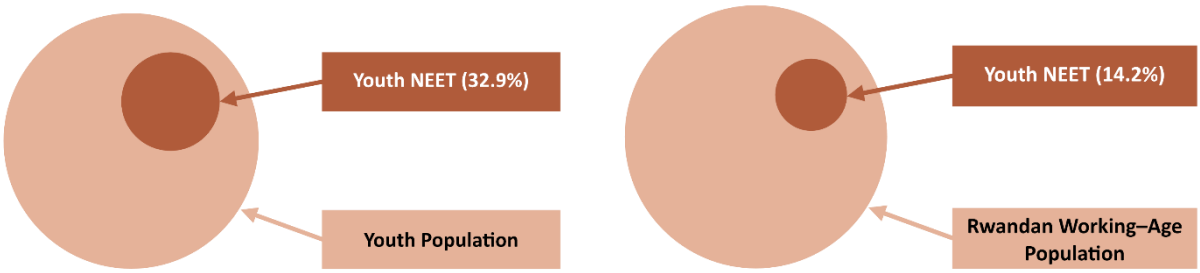
Chapter Five: Youth Not in Employment, Education or Training

Chapter Five profiles youth not in employment, education or training (NEET), factors driving NEETs, and interventions to reduce NEETs in Rwanda. NEETs fall into the 16–30 years age category and a part of the active working population. The NEET rate is an ILO decent work indicator and a broader measure of potential youth labour market.

1. NEET Profile

Proportionality: The NEET proportionality is indicative of the scale of the problem. NEET comprise 14.2% of the working–age and 32.9% of the youth population. Almost one–third of youth are NEET. It has implications for pursuing a middle–income (2035) and high–income (2050) country status. A high youth population is a demographic dividend, but if not optimally utilised becomes a demographic problem. Therefore, the youth NEET population must be reduced sooner rather than later. There is a tendency to perceive youth NEET as solely a supply–side deficit challenge, but the real problem is the lack of quality jobs.

Figure 8 — NEET Profile



The fundamental problem is the economy's structure, which provides limited opportunities for decent work. Youth unemployment can only be meaningfully addressed if it is part of addressing structural transformation challenges. Policymakers should integrate youth–targeted interventions as part of the industrial policy agenda. Currently, a dichotomy exists between skills development and industrial development, which must be part of the same agenda. A wider set of inter–ministerial, multi–sectoral and multi–level policy intervention options that give priority to tackling broader structural issues has the potential to deliver results. Education and skills development must be integrated into the economic growth and social development agenda.

Population: In 2023, the youth population was 3 495 825. 791 738 youth were in education or training, and 1 478 873 were in employment, including 76 365 youth population in both employment and education or training. The number of youth who were neither in employment nor in education or training was 1 448 849, corresponding to 32.9% of the youth population and 14.2% of the working–age population. [36]

Among the NEET population, 383 505 were unemployed, 510 712 in the potential labour force, and the remaining 254 632 unaccounted for or discouraged from seeking work, with 32.7% in subsistence agriculture. The female youth NEET rate is 39.4% compared to 25.9% for males since more females than males are outside the labour force.

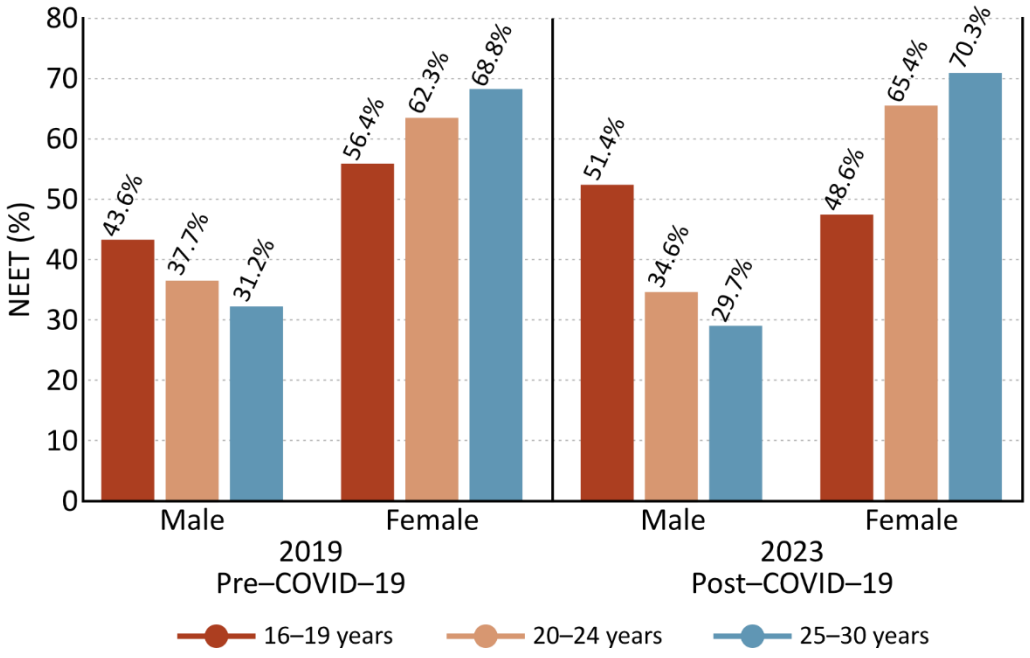
[36] NSIR (2023) *Annual Labour Force Survey 2023.* https://www.statistics.gov.rw/

Table 12 — Youth Population (16–30 Yrs) With Respect to Employment and Education Or Training, 2023

	Number			Percentage		
	Total	Male	Female	Total	Male	Female
Total youth population	3,495,825	1,692,395	1,803,429	100	100	100
In education or training	791,738	395,465	396,273	22.6	23.4	22.0
In employment	1,478,873	810,203	668,670	42.3	47.9	37.1
In both employment and education or training	76,365	48,896	27,468	2.2	2.9	1.5
NEET	1,148,849	437,832	711,017	32.9	25.9	39.4
Unemployed	383,505	160,159	223,345	33.4	36.6	31.4
Potential labour force	510,712	178,450	332,262	44.5	40.8	46.7
Others	254,632	99,222	155,410	22.2	22.7	21.9

NEET by Age and Sex: A comparison of youth NEET by age (16–19 years, 20–24 years, and 25–30 years) and sex between 2019 (pre–COVID—19) and 2023 (post–COVID–19) indicates that female NEET rates have increased, except for 16–19 years, and a decrease in male NEET rates, except for 16–19 years. Male NEET rates are lower than female rates, showing a sex bias. Therefore, measures are needed for a distinct response to augment female labour market participation.

Figure 9 — Percentage of NEET Youth Pre– and Post–COVID–19



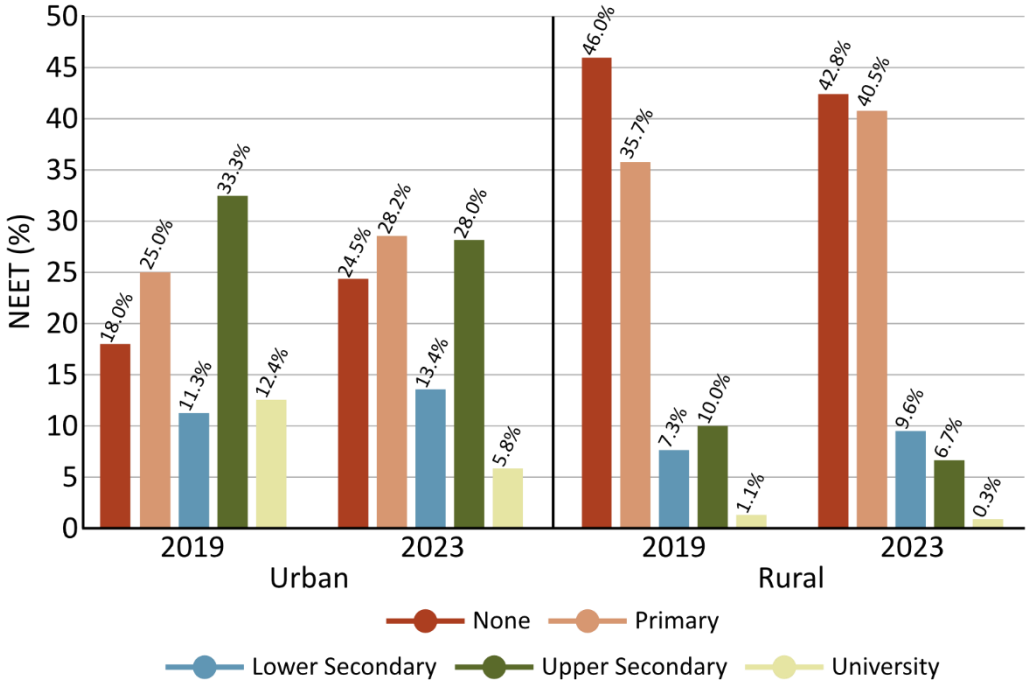
Source: NISR, Labour Force Survey, (2019–2023)

The NEET rates have been high over five years. Limited job openings, informal employment, informal businesses, skills and qualifications mismatch, and insufficient access to affordable training propel it.[37]

Educational Attainment: Youth with no or low education attainment are more likely to become NEET. There is also a difference between youth NEETs in urban and rural areas.

[37] ILO. (2020) *ILO Youth Country Brief. Rwanda: Youth Labour Markets and the School–to–Work Transition*. Geneva: ILO.

Figure 10 — NEET Youth Population by Residence and Education Attainment (2019 & 2023)

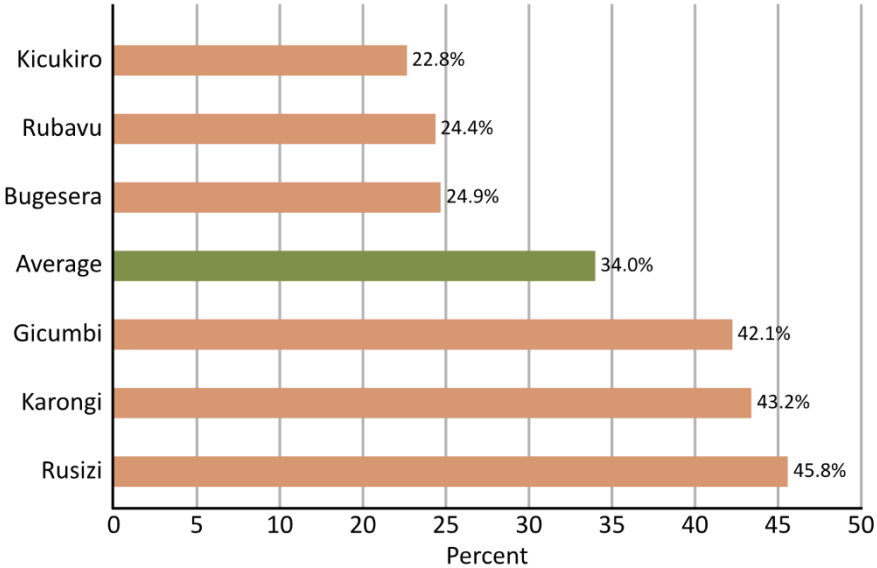


Source: NISR, Labour Force Survey, (2019–2023)

Youth NEET rates are higher for rural than urban areas, indicating that there are relatively more employment opportunities in the latter. NEET rates are higher for no and primary educational attainment. University graduates have much lower rates, indicating that higher educational attainment reduces the youth's exposure to NEET. Upper secondary educational attainment has a higher NEET rate than lower secondary education. The latter likely absorbed relatively better because there are more job openings in low or unskilled jobs.

NEET Youth Distribution by District: Out of 30 districts, three districts with the highest and lowest NEET rates are shown. There is a marked difference between these districts.

Figure 11 — NEET Youth Distribution in Selected Districts



Source: NISR, Annual Labour Force Survey (2023)

Rusizi, Karongi, and Gicumbi districts had NEET rates above the national average of 34%. Kicukiro, Rubavu and Bugesera lower rates. The lack of economic activities in rural areas is a further disadvantage for youth. Agriculture is the main economic activity, thus limiting job opportunities.

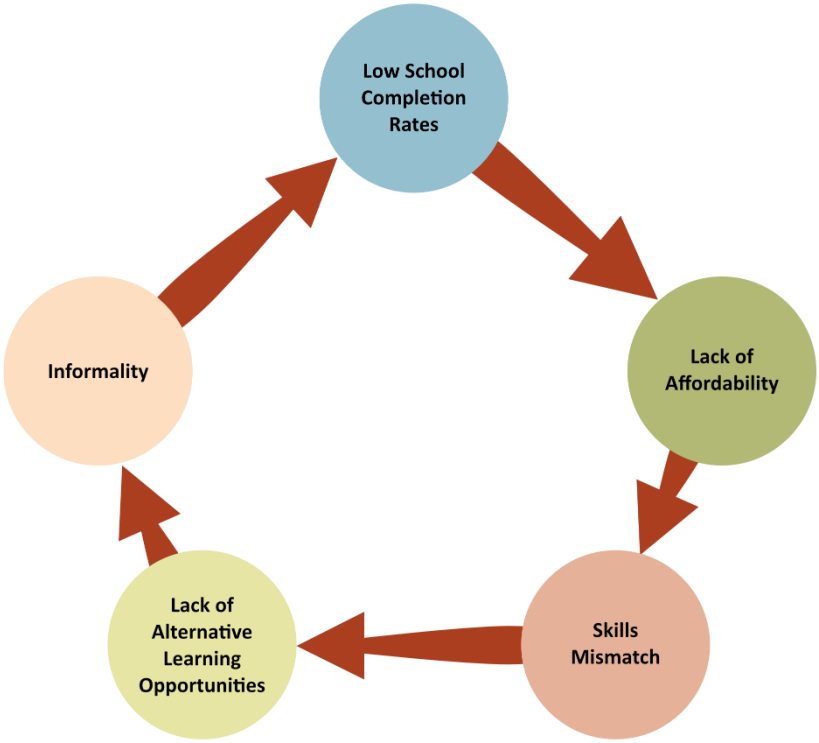
NEET support measures should approach interventions in rural and urban areas differentially as the economic context differs.

In summary, there is a need to tackle youth unemployment robustly, taking cognisance of age differences, sex, educational attainment and location.

2. Factors Driving Youth NEET

Many factors can be attributed to driving youth NEET, which is common in most developed and developing countries. The major youth NEET drivers in Rwanda are the following:

Figure 12 — Factors Driving Youth NEET



Low School Completion Rates: If students do not complete a level within the designated time, it leads to education loss and repetition costs. The percentage of P1 (primary) learners who reached P6 within 6 years has not changed in the last two years. An estimated 37.5% of students reached P6 without delays. The education loss is 62.5% of learners experiencing delays or difficulties in completing their education in the expected time–frame. The percentage of S1 students who reach S6 within 6 years declined from 53.6% in 2021/22 to 51.7% in 2022/23, indicating that an estimated 51.7% of students successfully reached S6 without any delays. An estimated 48.3% of students face delays or challenges in completing their education within the expected time–frame.

In terms of the national average for promotion, repetition and dropout rates, a slight decrease in the promotion rate from 77% in 2020/21 to 75.7% in 2021/22. The repetition rate has increased from 14.5% in 2020/21 to 19.1% in 2021/22. Measures to reduce repetition rates should be reinforced. The data shows a decrease in the dropout rate from 8.5% in 2020/21 to 6.8% in 2021/22.[38]

Affordability: Many youth cannot afford higher learning.[39] About 66.5% are rural dwellers.[40] Travel costs and accommodation exacerbate rural disadvantage.

[38] Ministry of Education (MINEDUC). (2023) *2022/23 Education Statistical Yearbook*.

[39] World Bank Group (2024) Rwanda Economic Update (REU): Accelerating Skills Development to Foster Private Sector Growth. July 23rd edition. WBG: Washington.

[40] NISR (2023) *Labour Force Survey Annual Report 2023.* Kigali, Rwanda: NISR. https://www.statistics.gov.rw/

Skills Mismatch: A skills mismatch is a characteristic labour market feature. Employers do not find the people they need, and workers cannot find the jobs they want. There are skills, qualifications and geographic mismatches. Graduates cannot find jobs because of limited diversification and industrialisation, a high proportion of informal businesses, a lack of industrial attachments, and limited decent work opportunities. Contributory factors are shortfalls in infrastructure, a lack of practical training, a shortage of qualified teaching staff, and weak networks with industry.[41]

Lack of Alternative Learning Programmes: The education system lacks learning channels for youth who have never attended school, dropped out of school, completed schooling but cannot get entry into higher learning, or completed higher learning but lack occupational skills. Provision in the system is formal, with no recognition for non–formal learning. Furthermore, learning is face–to–face, but technology enables the massification of learning systems.

Informality: Informal and micro firms dominate the country's private sector, with over 60% of informal firms located in rural areas.[42] Many large firms are state–owned. The economy and workforce are undiversified.

3. Recommendations

NEET recommendations are integrated into the final chapter. However, some standout issues warrant special attention:

- Develop an inter–ministerial, multi–sectoral, and multi–level national integrated NEET action plan to address youth unemployment, promote policy cohesion and better transitions for young people.
- Establish a central structure that coordinates, implementation, monitors and reports on the NEET plan.
- Make internships, industrial attachments and work placements the main priority of Sector Skills Councils.
- Implement employer incentives for work placements.
- Strengthen Active Labour Market Policies (ALMPs) and employment services to expand opportunities for youth employment.
- Adopt a recognition system for non–formal learning pathways to employment.

[41] Ibid.
[42] Ibid.

Chapter Six: Findings and Recommendations

Chapter Six discusses recommendations drawn from the earlier chapter findings. The recommendations are captured according to immediate response and quick wins, short to medium–term interventions, and longer–term systemic change. The recommendations are underpinned by inclusivity, environmental sustainability and digital transformation. Some of the challenges identified require responses that go beyond skills development and fall within the ambit of other public agencies. These are highlighted in the reports. We focus on skills development recommendations.

1. General Findings

HPO List: The HPO List (2024) is corroborated by stakeholder consultations, sector skills assessments, a job vacancy survey, the ODL List (2024), and national strategies and plans.

There is a demand for middle and high–skilled workers but a surplus of low–skilled workers in the labour market. It signals a skills mismatch, a discrepancy between the skills employers want and those possessed by work seekers. The Occupations in Demand (ODL) List consists of 451 occupations. The HPO list was narrowed down to 120 high–priority occupations (10 occupations per 12 industries). The occupations are high–skilled (managers and professionals) and middle–skilled (technicians, clerical, sales/service, skilled agricultural/forestry/fishing, and craft workers).

The labour market is "flooded" with unskilled or low–skilled, most of whom are in agriculture and retail. The employment structure is changing at a slow pace despite globalisation, the fourth industrial revolution, technology, climate change, and the government's goal of making Rwanda a high–income country. Slow structural change is due primarily to an undiversified economy. Most parts of agriculture and retail, which are the dominant economic activities, are low–skilled. There are many unemployed graduates because of limited industrialisation.

A structural shift from primary agriculture to industry and tradable services such as information technology, agro–processing pharmaceuticals, tourism, business process outsourcing, energy, manufacturing, transport and logistics, and financial services will require middle and high–level skills.

Quality and Field–of–Study Mismatches: Graduate quality or work readiness is a concern for stakeholders. English proficiency, reading, communication and numeracy must be drastically improved. A key constraint to reducing skills mismatches is the inadequate basic education quality. The transition rates in the system should be improved.

Although education levels are improving, the population is low–skilled. The mismatch between the qualifications and skills demand has led to rising graduate unemployment and field–of–study mismatch. For example, there is high enrolment in business services, arts and crafts, and tourism and hospitality in TVET enrolments for Levels 1–5, leading to an oversupply. Enrolments for in–demand skills such as telecommunication, electronics, manufacturing and mining are low.

There is much scope for improvement in skills levels and better alignment with skills demand. The unemployed and mismatched science, engineering and health graduates suggest that demand for these graduates must be increased to lead to employment.

Unemployment: The fundamental problem is not with youth but the economic structure, which provides far too few opportunities for decent work. The problem is not a "youth employment" crisis

but a “missing jobs” crisis. The youth employment problem cannot be solved in isolation from the country’s major macroeconomic challenges. Indeed, focusing on youth–targeted interventions distracts policymakers from developing industrial policy for structural transformation. Only a wider set of policy options that give priority to tackling structural issues has the potential to deliver results.

Quality Jobs: The Rwandan economy lacks formal, non–agricultural jobs that could be considered “good” or “decent”. The manufacturing sector is too small to offer decent, sustainable employment. While there are issues that youth should navigate, the main reason for poor youth employment outcomes is not different from poor adult employment outcomes–economic structure.

2. Our Approach

We approach recommendations in the following way:

Short to medium–term interventions	Refers to quick wins that can be implemented in the short–term. It focuses on information sharing, setting up structures, starting systemic change, framing incentives and capacity–building.
Long–term systemic change	Long–term recommendations prioritise systemic change.

Based on the findings from the preceding sections, we have structured the recommendations in the following thematic areas:

- Graduate Employment
- Productive and Decent Jobs
- Micro, Small And Medium Enterprise (MSME) Development
- Quality Assurance
- High Priority Occupations and Skills Gaps
- Research and Development
- Workplace Learning
- Sector Skills Councils
- School, TVET and Higher Learning

3. Recommendations

Table 13 — Recommendations

Short–Term	Medium– to Long–Term	Stakeholders
Graduate Employment		
GOAL: *Increase graduate employment by formalising apprenticeships and internships; incentivise employers; attach youth employment targets to public tendering; and use SSCs for workplace training.*		
• Operationalise the SSCs to promote apprenticeships and internships in their designated sectors. • Implement a national employer scorecard to measure apprenticeships and internships. • Provide free skills training for youth NEET using a voucher training scheme. • Mainstream graduate employment by making successful public procurement bidders employ graduates as part of their bid requirements,. • Improve existing job matching services outputs and expand these services country-wide.	• Devise an employer incentive scheme to promote apprenticeships, internships and employment (e.g., youth employment tax incentives, grants, tax breaks, recognition, procurement points). • Recognise through awards the most active employers offering apprenticeships, internships and youth employment.	MINEDUC, MIFOTRA, HLIs, RP, RTB, HEC, NESA SSCs, PSF, RPPA, MINICOM, NIRDA
Productive and Decent Jobs		
GOAL: *Increase productive and decent jobs by 1.25 million (25 000 annually).*		
• Optimise employment opportunities and skills development from major investment and flagship projects such as Nyagatare milk powder factory, Bugesera International Airport, Aviation Skills Academy, Gabiro agri–hub, and sports complexes. • Create employment opportunities for youth and women in the maintenance of infrastructure, environment protection, and agricultural extension programmes and projects. • Mobilise and facilitate the private sector to develop and optimise cultural and creative industries for job creation.	• Develop a talent pool for emerging critical sectors of the economy [including Global Business Services companies, financial services centres, e–mobility, health, Biotechnology, aviation, ICT, CCI and engineering. • Establish a national project to offer youth NEET skills training, counselling, and rehabilitation of vulnerable and delinquent youth in partnership with the state, the private sector, NGOs and donor agencies. • Employ youth NEET and women in labour–intensive public projects.	MIFOTRA, RDB, MINALOC, MINEDUC, MoYA, MININFRA, MoE, MINAGRI, MINICT, MINECOFIN, MoYA, Private Sector,
MSME Enterprise Development		
GOAL: *Promote skills development in MSMEs and subsidising training.*		
• Provide training support and advisory services to MSMEs for workplace learning, skills planning and managing business operations.	• Create MSMEs incentives for workplace training, including training funds, block grants and tax incentives.	MINICOM, RDB, MININFRA, MINAGRI,

Short–Term	Medium– to Long–Term	Stakeholders
• Establish a platform for networking, collaboration and partnerships for MSMEs. • Develop and Implement an e–commerce readiness programme to support SMEs in using digital trade platforms. • Expand and strengthen funding accessibility to support innovative startups. • Facilitate market linkage services by connecting MSMEs with international markets through networking events and trade shows to expand their customer base and integrate them into global value chains.	• Fund, develop and implement MSME training clusters by region or industry. • Promote the growth of fintech startups and digital innovation financial solutions. • Professionalise artisanal miners and adopt environmentally friendly mining practices.	MINECOFIN, Private Sector, Financial Institution
Quality Assurance		
GOAL: *Change MSME training behaviour by promoting and subsidising training*		
• Develop a unified national quality assurance system to improve education and training standards. • Develop a national trades and occupations framework with implementation guidelines, drawing on international best practices and experience from other countries, which will help Rwanda to develop and establish a regulatory and moderating framework, including an advisory body that will be responsible for the development of appropriate systems.	• Set up a national learner records database. • Improve the quality of training providers and training programmes. • Establish the Rwandan Trades and Occupations Moderating Council (RTOMC), which will advise the minister on matters related to trade and occupation development.	MINEDUC, HEC, NESA, RTB, RP, RDB, MIFOTRA, NGOs, RCSP, DPs, HLIs
High Priority Occupations and Skills Gaps		
GOAL: *Inform labour market actors of HPO and skills gaps; develop demand–led programmes; and ensure regular curriculum development*		

Short–Term	Medium– to Long–Term	Stakeholders
• Develop training programmes that are aligned with NST2. • Expand career guidance centres offering personalised advice and resources. • Create programmes for young entrepreneurs with mentorship, coaching, and funding access. • Raise the quality of MICE services through professionalisation programmes, standards and certification. • Host international art events for skills exchange and knowledge transfer. • Scale up sustainable industries and adopt sustainable practices (including energy efficiency, waste management, and water conservation). • Implement the Financial Inclusion and Education strategy. • Train 1.5 million citizens in basic coding and advanced ICT skills. • Implement universal basic digital literacy courses. • Create digital jobs for local and global market competitiveness. • Strengthen coordination and impact of digital literacy and skills investments (through the Digital Inclusion Council).	• Engage stakeholders to map necessary skills and competencies across various trades and occupations, develop a standardised classification system for those skills, and establish a national advisory body to oversee this process and support quality assurance in training. • Develop occupational qualifications for high priority occupations. • Develop short skills training courses for skills gaps. • Establish a national Talent development program and strengthen the governance, administration, and management capacity of sports organizations as well as personnel in sports. • Construct and operationalise Aviation Skills Academy.	RDB, MIFOTRA, DGIE, MINEDUC, HEC, HLIs, SSCs, NESA, RP, RTB, PSF, MININFRA, WASAC, Private Sector, MINALOC, CSOs, Districts, MINICT, RISA, ATL, RCA, RwandaAir, RAC, REMA, Rwanda Green Fund, MINECOFIN, RSSB, BNR, Financial Institutions
Research and Development (R&D)		
GOAL: Increase R&D investments and research outputs		
• Attract pharmaceutical researchers and manufacturers. • Promote sports technology, science, and research and establish related academic programmes specifically at the tertiary level. • Promote research and innovation aligned to labour market demand. • Create clinical trial sites for drugs in Rwanda. • Provide capacity building and technical support across MDAs, researchers and the public for statistical literacy and informed decision–making. • Boost the innovation ecosystem and invest in R&D activities. • Collaborate with the private sector in research projects to produce oriented transformative and innovative products.	Establish Technology and Innovation Support Centres TISC) to commercialise research and innovative solutions. Strengthen antimicrobial resistance (AMR) surveillance through the establishment of a Centre of Excellence for AMR surveillance, training, and research.	MINECOFIN, NISR, MIFOTRA, MINICT, RISA, MINALOC, LODAs, MoH, RBC, RNP, RIB, MINEMA, MINEDUC, REB, NCST, RTB, Private Sector, Sports Federations
Workplace Learning		
GOAL: Formalise and regulate apprenticeships and internships; devise employer incentive packages and industry attachments a part of higher learning programmes		

Short–Term	Medium– to Long–Term	Stakeholders
• Develop employer incentive packages to support the implementation of workplace learning. • Strengthen the monitoring and evaluation of the implementation of workplace learning. • Adult Continued Education should be promoted/emphasized and GoR can develop mechanisms to assess and validate skills and knowledge acquired through work experience, informal learning, and other non-formal pathways.	• Mobilise resources through a National Skills Fund for workplace learning. • Launch an awareness campaign to promote workplace learning. **Lifelong Learning** • Launching public awareness campaigns to highlight the benefits of lifelong learning and career development. • Creating incentives for individuals to participate in continuing education and training programs. • Making information about training opportunities and funding options readily available.	MIFOTRA, MINECOFIN, RDB, MINEDUC, PSF, SSCs, RTB, RP
Sector Skills Councils		
GOAL: *Operationalise Sector Skills Councils; build capacity; and prioritise workplace access for students*		

• Revamp and operationalise the six Sector Skills Councils (SSCs) with sustainable resources.
• Develop a legal framework for SSCs and establish a dedicated support unit.
• Conduct capacity building with SSCs to understand economic, industry and labour market needs, how the training system works, quality assurance, and sector skills assessments.
• Conduct an awareness campaign to mainstream SSCs.
	• Establish technical working groups in the SSCs for:
	  ○ Curriculum
	  ○ Workplace learning
	  ○ Partnerships
	  ○ Occupational standards
	  ○ Training/RPL
	  ○ Quality assurance
	• Entrench SSCs in a legal framework
		RDB, SSCs, PSF, DPs, HLIs, RP, MINEDUC, HEC, RTB, MIFOTRA

School, TVET and Higher Learning		
GOAL: *Increase net enrolment in pre–primary from 35% to 65%; enhance access to Basic TVET from 43% to 60%; and improve education quality*		
School • Mobilise parental and community support for increasing pre–primary enrolment. • Provide age–appropriate teaching and Learning materials for pre–primary schools. • Establish inclusive classrooms and other school infrastructure to eliminate double shifts and reduce overcrowding. • Sustain the school feeding programme. • Improve foundational literacy and numeracy skills.	**School** • Recruit trained pre–primary teachers and implement continuing professional development. • Facilitate Early Childhood Development centres to meet pre–primary standards. • Establish model special schools for children with autism and other mental challenges. • Recruit teachers and train in–service teachers. • Provide English training to primary teachers.	**MINEDUC**, REB, MIGEPROF, NCDA, Districts, MINALOC, REB, NESA, Private Sector, CSOs, Districts, MIFOTRA, NCST, MINICT, RISA, MoH, RBC, HEC, Universities

Short–Term	Medium– to Long–Term	Stakeholders
• Reduce school dropout rate through school and community collaboration. • Ensure adequate learning materials. • Reduce repetition rate with remedial learning education strategies. • Expand functional adult literacy programmes. • Upgrade HLIs with modern STEM infrastructure, materials, equipment and consumables. **TVET** • Establish career guidance and counselling corners in TVET institutions. • Strengthen TVET trainer capacity. • Improve TVET infrastructure, equipment, consumables and materials. **Higher Learning** • Collaborate with the private sector in research projects to produce innovative products and services. **Career Development in Schools** • Integrate career exploration and guidance into the curriculum from primary school by introducing age-appropriate activities that expose students to different career paths and help them identify their interests and aptitudes. • Establish dedicated career counseling services in secondary schools by providing students with personalized guidance and support to help them explore career options, understand labor market trends, and develop individualized career plans. • Organize career fairs and workshops by connecting students with industry professionals, employers, and higher learning institutions to gain practical insights into various occupations and training pathways.	• Reduce school dropout rate through attendance tracking, early warning and response mechanisms. • Reduce the repetition rate in secondary education with remedial strategies. • Resource STEM. **TVET** • Establish Technical Secondary Schools (TSS) centres of excellence in all districts. • Scale up Vocational Training Centre to cell level (through workplace learning approaches) **Higher Learning** • Quadruple skilled health workforce. • Expand the number of level 2 teaching hospitals. • Recruit, train, and deploy certified professional community health cadres at the community level. • Provide training and capacity building for front–line workers to improve the quality and delivery of services. **Career Development in Schools** •Develop partnerships with industry to provide work experience opportunities for students by facilitating job shadowing, internships, and mentoring programs to give students real-world exposure and build their employability skills. **Centres of Excellence** •Attracting investment in specialized training centers, focusing on areas with significant skills gaps, such as IT, engineering, healthcare, and advanced manufacturing. •To leverage industries like GBS and Hospitality, to attract investors to establish English language training centers. •Facilitate the development of industry-led training centers that offer practical, hands-on training aligned with specific sector needs. This can ensure that the training provided is relevant, up-to-date, and meets the evolving demands of businesses.	

4. Conclusion

The study analysed the economy and labour market. It made recommendations to align skills development with NST2. The challenge is to implement the report's recommendations progressively through the National Employment and Skills Strategy (NESS) and education provision from pre–primary to higher learning.

Skills development interventions must be integrated into economic, social and labour market policies, industrialisation and structural transformation agenda. A high–skilled and productive workforce is needed to achieve middle–income status.

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Annexes

Annexure A: Recruitment Agency Job Vacancies

Recruitment agencies who signed MoUs with RDB/MIFOTRA were surveyed to find out about job openings. The following agencies responded to the survey:

- Jobs in Rwanda
- Q Sourcing
- Right Seat
- Sharpen Jobs
- NFT

Annexure B: Job Vacancy Analysis Survey (2024)

This provides a list of hard–to–fill job vacancies.

Table 14 — Hard–To–Fill Vacancy List

Hard–to–Fill Vacancies	Hard–to–Fill Vacancies
ICT And Telecommunications	**Education**
Telecommunications engineer	e–learning curriculum developer
IT Engineers	Health
Software Developer	Nutritionist
Project managers in telecommunication	Construction
Procurement manager	Construction Manager
Finance	Construction Project Manager
Business Development Manager (NGOs)	Manufacturing
Chartered human resource manager	Safety, health, environmental & quality (SHEQ) officer
Accountant	Energy
Financial analyst	Mechanical engineer
Financial manager	Tourism & Hospitality
Auditor	Beauty Therapist
Risk manager	Chef
Sales manager	F&B Manager
Retail	Beauty Therapist
Sales agents	F&B Managers
Call centre agents	Agriculture
	Farm Manager

Annexure C: Sector–Specific Skills Assessment Summary

Table 15 — Specific Skills Assessment Summary

Title	Education (January 2022)	
Occupational Demand *(Key occupations in demand only)*	• Specialists in IT, light design, media imaging, video, sound, web design, and animation. • Engineers • Garment and shoe • production experts • Data Scientists • Economists • Statisticians • Business and Financial analysts • Accounting experts	• Translators and interpreters • Event managers • Tour guides • Beauty, sports, fitness, and recreation specialists • Specialists in: construction, ore and metals, aviation, mobile phone, biogas & biomass technology, geothermal, programmers, carpentry & wood technicians, land surveying • Human resource managers
Skills Gaps *(Top up skills needed)*	• Managing Resources • (Human, Financial, logistics) • Strategic thinking • Technical skills • Business Fundamentals	• Pedagogical skills • Organising and planning • Information Technology • School Management • Language skills

Title	Energy (January 2022)	
Occupational Demand *(Key occupations in demand only)*	• Product research and development • Financial Management • Electrical Design Engineer • Planning & Production	• Project management skills • Electrical Interconnection Engineer • Mechanics and hydraulics • Electric Power Engineer
Skills Gaps *(Top up skills needed)*	• Electric Power Engineering • Electrical Interconnection Engineering • Electrical Design Engineering • Distribution management and Electrical Engineering	• High voltages and high currents • Mechanical and thermal issues • Multi rail operation • Troubleshooting • Quality Control Analysis

Title	Health (April 2022)	
Occupational Demand *(Key occupations in demand only)*	• General medical practitioners • Specialists • Midwives • Specialist nurses • Professional health practitioners in all disciplines	
Skills Gaps *(Top up skills needed)*	• Technical skills • Leadership • Work Independently • Emotional intelligence • Problem–solving • Managerial skills • Attention to details • Entrepreneurial Skills	• Self–Motivated • Teamwork • Strategic thinking • Organising and planning • Adaptability • Communication Skills

Title	Information Technology (April 2022)	
Occupational Demand *(Key occupations in demand only)*	• Network security • Wireless & transmission security • Application security • Security auditor • System administrator • Windows system specialist • Storage specialist • Network administrator • IP network engineer • Fiber engineers • Wimax specialist • Voice engineer • Data centre manager • Radio frequency planning specialist • Radio transmission specialists • Telecommunication network	• Database administrator • Graphic designer • Multimedia Specialist • Game designing and development • Industrial designer • Software Developer • Mobile applications developer • Business analyst • Enterprise Architect • IT project manager • Online work skills • Switching specialist • Telecommunication network • Performance optimisation specialist
Skills Gaps *(Top up skills needed)*	• AI and machine learning (Artificial intelligence) • Graphic Design • Radio Transmission • Systems and enterprise architecture • Telecommunication network switching	• Analytics and data management • Cloud computing • Project planning and management • Application development and programming • ICT Project management system and software

Title	Manufacturing (March 2022)	
Occupational demand *(Key occupations in demand only)*	• Process, Plant, Machine Operatives • Product and process Designers • Planner /Project Manager • Skilled Trades or Skilled Labourers • Quality Control Professionals	• Plant Manager / Production • Manager/Specialised Engineers • Manufacturing Engineers/Operations Engineer
Skills Gaps *(Top up skills needed)*	• Managing Resources • (Human, Financial) • Supply Chain Management & Logistics • Regulatory Compliance • Computerised design technologies • Health and Safety • Organising, planning skills, problem–solving, decision making • Entrepreneurial skills	• Quality control • R&D • Strategic management • Process & operations • Information technology • Customer service • Project management • Business Communication • Advanced Production / Process Operations

Title	Mining (March 2022)	
Occupational Demand *(Key occupations in demand only)*	• Geological Engineer • Geophysicists • Geochemists • Geologist • Chemist • Metallurgists • Mining Lawyer • Mining engineer • Mineral Auditor • Mechanical Engineer • Mineral Economist • Drilling Engineers • Installation, Maintenance and repair occupation • Mining Research and Development Manager • Commercial Production Manager	• Applied ICT on Mining Specialist • Shot firers and Blasters • Geo–statistician • Jeweller • Metallurgical Control Analyst • Metallurgical Engineer • Process Engineer • Prospector • Quality Control Engineer • Surveyor • Environmentalist Impact Assessment specialist • Geological Technician • Geophysical Technician • Geological and mineral technology technicians •
Skills Gaps *(Top up skills needed)*	• Entrepreneurial Skills • Managerial skills • Technical competencies • Technical skills related to the sector/field	• Strategic thinking • Marketing and selling skills • Organizing and planning skills

Title	Real Estate And Construction (January 2022)	
Occupational Demand *(Key occupations in demand only)*	• Architects, bidding engineers, construction project managers, real estate managers, construction project / real estate engineers, building control surveyors, mechanical engineers, environmental engineers, and skilled building and construction trades. • Construction manager, and construction researchers, finishers and artisans,	
Skills Gaps *(Top up skills needed)*	• Bricklaying, carpentry, painting, pouring cement, putting up drywall, and installing specific types of equipment, construction project management, architectural design, structural design, building completion and finishing, estate management, and construction of roads and railways.	• Entrepreneurship, technical testing and analysis, strategic thinking, communication, demolition and site preparation, electrical, plumbing and other construction installation, organising and planning, roofing, decision making, IT, and project management.

Title	Tourism & Hospitality (January 2022)	
Occupational Demand *(Key occupations in demand only)*	• Researchers • Events managers • Project managers • Exhibition / Conference Producer • Hotel General Manager • Advertising and marketing • Professionals • Public relations professionals	• Cooks • Chefs • Pastry Chef • Executive chef • Restaurant manager/supervisor • Food and Beverage Manager • Translators • Customer service professionals
Skills Gaps *(Top up skills needed)*	• Working ethics • Translation/interpretation • Communication skills • Customer service skills • Air Ticketing	• Language skills • Multitasking skills • Problem–solving skills • Attention to details • Digital skills

Title	Tourism & Hospitality (January 2022)	
	• Data collection and market research skills	

Title	Agro–Processing (November 2021)	
Occupational Demand *(Key occupations in demand only)*	• Marketing Research Manager • Financial Manager • Innovative Agro–Processing Manager	• Project Planning Manager • Product Research and Development Manager
Skills Gaps *(Top up skills needed)*	• Marketing skills • Managerial skills • Strategic thinking skills	• Organising and planning skills • Negotiation skills • Communication skills

Title	Financial Services (March 2022)	
Occupational Demand *(Key occupations in demand only)*	• Financial and Investment Advisor • Financial and mathematical associate professionals • Economist • Statistician • Financial and insurance service manager • Advertising and marketing manager	• Actuaries • Securities and financial dealers and brokers • Policy and planning managers • Insurance representative or investigator • Business service and administration manager
Skills Gaps *(Top up skills needed)*	• Evaluation and analysis of consequences of actions in an organisation. • Analyse and interpret financial markets. • Numerical and logical thinking • Compile financial evidence to compile reports.	• Numeracy and mathematical skills. • Capacity to use digital tools and strategies to analyse business data. • Analytical and critical thinking skills. • Knowledge of international trade financing.

Annexure D: Occupations In–Demand Scoring Sheet

The ten sector assessments, MIFOTRA Occupations in Demand List (work permits), job vacancy analysis, and NST2 sector priorities provide a comprehensive list of occupations in demand (OID) in the labour market. From these, a PRIORITY OCCUPATIONS LIST is produced.

Table 16 — Occupations In Demand Scoring Sheet

Occupations in Demand	Sector Assessment	MIFOTRA OID List	Literature	Vacancy Analysis
Transport				
Aeronautical engineer	X			
Airworthiness engineer		X		
Flight engineer		X		
Aircraft maintenance engineer		X		
Aeronautical technician	X			
Air traffic safety technician		X		
Avionics technician	X	X		
Pilot	X	X	X	
Flight Instructor	X	X		
Flying instructor	X	X		
Drone pilot			X	
Drone mechanics			X	
Logistics analyst	X		X	
Transport economist	X		X	
Air traffic controller		X		
Air transport service supervisor		X		
Insulation Installer		X		
Aircraft restorer		X		
Aircraft engine mechanic	X	X	X	
Airframe mechanic	X	X		
Aviation maintenance technician	X	X		
Jet engine mechanic		X		
Lifts Mechanic	X	X		
Lightning Arrestors Expert	X			
Locomotive engine drivers		X		
Railway brake, signal and switch operator		X		
Composite material technician		x		
Hospitality & Tourism				
Tour guide	X			
Beauty, sports, fitness, and recreation specialist	X			
Researcher	X			
Exhibition / Conference producer	X		X	
Hotel manager	X	X		
Advertising and marketing professional	X			
Public relations professional	X			
Chef (executive, pastry, sous)	X	X		
Cook	X			
Restaurant manager	X			
Food and beverage manager	X	X		
Customer service manager	X			
Ecotourism educator	X	X		
Wellness coach		X		
Events manager	X	X		
Interpreters/translators	X	X		
Market researcher	X	X		

ICT and Media				
Social media content writer	X	X	X	
Graphic designer	X	X		
Software Developer	X		X	
App Developer	X			
Systems analyst	X	X	X	
Cyber security expert	X	X	X	
Network Engineer	X	X	X	
Network technician	X	X	X	
System administrator	X			
Call centre manager	X		X	
Cloud engineer	X		X	
DevOps Engineer		X	X	
Fiber technician	X			
Data centre manager	X			
Radio (frequency planning, transmission specialist)	X			
Business analyst	X			
Enterprise Architect	X			
IT Project manager	X	X	X	
Database administrator	X			
AI and Machine Learning Specialist			X	
Big data developers			X	
Mobile application (App) Developer			X	
Coder	X		X	
ICT Business analyst		X		
Systems Designer		X		
Programmer		X		
Software designer		X		
Software engineer		X		
Internet developer		X		
Computer games programmer		X		
Artificial Intelligence engineer		X		
Machine learning engineer		X		
Deep learning engineer		X		
Augmented reality engineer		X		
Virtual Reality engineer		X		
Additive manufacturing Engineer		X		
Quantum computing engineer		X		
Network infrastructure Engineer	X	X	X	
Quality assurance analyst (computers)		X		
Fintech Developers (blockchain and digital currency)		X		
Software Tester		X		
ICT E–learning professional		X		
Internet of Things Expert		X		
Applications programmer		X		
Database analyst		X		
Database architect		X		
Database designer		X		
Database security specialist		X		
Radio (frequency planning, transmission specialist)	X			
System administrator	X			
Enterprise Architect	X			
Database administrator	X			
Big Data Developer			X	
Environmental Protection and Energy				
Wastewater engineer	X	X		

Clean car engineer			X	
R&D manager	X			
Solar PV technician	X		X	
Wind turbine technician	X		X	
Environmental protection officer	X			
Soil and water conservationist	X			
Environmental restoration planner	X			
Energy auditor	X		X	
Materials scientist			X	
Ecologist		X		
Environmental research scientist	X	X		
Water quality analyst		X		
Air pollution analyst		X		
Conservation scientist		X		
Disaster management expert	X	X		
Biosafety experts/Laboratory experts in the detection of Genetically Modified Organism (GMOs)		X		
Air quality modelling expert		X		
Geochemist	X	X		
Limnologist		X		
Climate and atmospheric scientist		X		
Wildlife specialist		X		
Wildland firefighter		X		
Green procurement expert		X		
Climate modelling expert		X		
Ecosystem restoration analyst		X		
Environment and climate action planning specialist		X		
Circular economy analyst		X		
Geoscientist		X		
Generating station operator		X		
Hydroelectric power plant operator		X		
Power system operator		X		
Solar power plant operator	X	X		
Incinerator operator		X		
Pumping–station operator		X		
Sewage plant operator		X		
Water treatment plant operator	X	X		
Supervisory control and data acquisition (SCADA) engineers		X		
Gas plant operator		X		
Operator, blender/petroleum and natural gas refining		X		
Refinery process technician		X		
Manufacturing				
Electrical engineer	X	X	X	
Mechanical engineer	X	X	X	
Civil engineer	X	X	X	
Structural engineer	X	X	X	
Production planner	X			
Product and process designer	X			
Quality controller	X	X		
Production manager	X			
Robotic engineer		X		
Artisans	X		X	
ISO facilitator		X		
Quality management system analyst	X	X		
Built Environment (Construction/Real Estate)				
Land surveyor	X	X		

Architects	X	X		
Bidding engineer	X			
Construction project manager	X	X		
Construction manager	X			
Construction evaluation manager		X		
Real estate manager	X			
Building control surveyor	X			
Building architect		X		
Interior architect		X		
Landscape architect		X		
Interior designer		X		
Artisan (plumber, electrician, carpenter, roofer)	X	X	X	
Occupational health & safety officer	X		X	
Quantity surveyor	X	X	X	
Mining				
Metallurgist	X	X		
Mining engineer	X	X	X	
Drilling engineer	X	X	X	
Mechanical engineer	X	X	X	
Process Engineer	X	X	X	
Electrical engineer	X	X	X	
Geologists	X		X	
Geological technicians	X			
Geological and mineral technologists and technicians	X		X	
Geological and mineral				
Geophysical technicians	X			
Geophysicists	X		X	
Mining lawyer	X			
Mining auditor	X			
Mine manager	X	X		
Production manager (mine, gas, quarry)	X	X		
Industrial chemist	X			
Mining economist	X			
Millwright	X			
Installation, maintenance and repair technician	X			
Mining research and development manager	X			
Commercial production manager	X			
Shot firers and blaster	X			
Geo–statistician	X			
Jeweller	X			
Prospector	X			
Environmentalist impact assessment specialist	X			
Heavy–duty equipment mechanics			X	
Process automation specialist			X	
Power systems operator			X	
Steamfitter			X	
Pipefitters and sprinkler system operator			X	
Underground production and development miners			X	
Finance				
Economist	X	X	X	
Certified financial analyst	X	X	X	
Financial and investment advisor	X	X	X	
Investment manager			X	
Data analyst	X	X	X	
Data scientist	X	X	X	
Insurance service manager	X			

Certified Accountants (ACCA)	**X**	**X**		
Advertising and marketing manager	**X**			
Securities and financial dealer and broker	**X**			
Policy and planning managers	**X**			
Insurance representative or investigator	**X**			
Business service and administration manager	**X**	**X**	**X**	
Human resource manager	**X**	**X**	**X**	
Financial manager	**X**	**X**	**X**	
Digital marketing specialists			**X**	
Strategy specialists			**X**	
Risk managers			**X**	
Administration managers				
Investment Bankers		**X**		
Funds managers		**X**		
Reinsurer (international reinsurance expert)		**X**		
Auditor (Certified)	**X**	**X**	**X**	
Financial controller		**X**		
Fraud investigator		**X**		
Estate planner/Management		**X**		
Bond analyst		**X**		
Financial Securities analyst		**X**		
Insurance underwriter		**X**		
Securities broker		**X**		
Stocks and shares broker		**X**		
Actuary	**X**	**X**	**X**	
Sports, Recreation and Cultural Centre Managers				
Casino managers		**X**		
Recreation and leisure centre managers		**X**		
Sports team executive managers		**X**		
Fitness and wellness centre managers		**X**		
Maths, Statistics, Natural & Life Sciences and Agriculture				
Astronomer		**X**		
Physicist		**X**		
Nuclear physicist		**X**		
Medical Physicist		**X**		
Space engineers		**X**		
Meteorologist	**X**	**X**	**X**	
Weather forecaster		**X**		
Climatologist		**X**		
Hydro meteorologist		**X**		
Chemist, Analytical		**X**		
Chemist, Industrial		**X**		
Chemist, researcher		**X**		
Geologist		**X**		
Geophysicist		**X**		
Hydrologist		**X**		
Seismologist		**X**		
Statistician	**X**	**X**		
Actuary	**X**	**X**		
Mathematician		**X**		
Operations research analyst		**X**		
Data scientist	**X**	**X**	**X**	
Data analyst		**X**	**X**	
Biologist		**X**		
Botanist		**X**		

Zoologist		X		
Entomologist		X		
Pisciculturist		X		
Bacteriologist		X		
Pathologist, plant		X		
Pharmacologist		X		
Animal behaviourist		X		
Biochemist		X		
Biomedical researcher	X	X		
Biotechnologist		X		
Biomedical Engineer		X		
Silviculturist		X		
Pisciculturist		X		
Horticulture scientist		X	X	
Hillside irrigation management expert		X	X	
Mechanisation expert		X		
Banana breeding expert		X		
Irish potato breeding expert		X		
Rice breeding expert		X		
Soil laboratory expert		X	X	
Climate–smart agriculture expert		X	X	
Seed technology expert		X		
Crop Biological control expert		X		
Horticulture virology expert		X		
Poultry hatchery expert		X	X	
Fish health and genetic expert		X		
Meat science expert		X		
Bee health and genetic expert		X		
Livestock digitalization expert		X		
Marketing research manager	X		X	
Agro–processing manager	X		X	
Project planning manager	X		X	
Product R&D manager	X			
Engineering				
Industrial Engineer		X	X	
Industrial quality control engineer		X		
Plant Engineer		X		
Production Engineer	X	X	X	
Civil engineer (Railway, Highway, Road and Street)	X	X	X	
Structural engineer	X	X	X	
Air pollution control engineer		X		
Wastewater management engineer		X	X	
Aeronautical, mechanical engineer	X	X	X	
Agriculture mechanical engineer		X		
Automotive mechanical engineer		X		
Marine mechanical engineer		X		
Aircraft maintenance engineer	X	X	X	
Industrial Chemical engineer		X		
Plastic and rubber technologist		X		
Metallurgist	X	X	X	
Mining Engineer		X		
Petroleum and gas extraction engineer		X		
Explosive engineer		X		
Aeronautics engineering technician		X		

Mechanical engineering estimator		X		
Marine engineering technician		X		
Chemical engineer	X	X	X	
Petroleum and gas engineering technician	X	X	X	
Mining Metallurgical technician		X		
Forensic science technician		X		
Battery Technology Engineers		X		
EV/Motorcycle Manufacturing Technicians		X		
EV Roadside Assistance Technicians		X		
Charging Station Technicians		X		
Battery Recycling Specialists		X		
EV/H Maintenance and Repair Technicians		X		
E–Mobility Standards and Certification Specialists		X		
Autonomous Vehicle Engineers		X		
Metal processing control operator		X		
Rolling mill control operator		X		
Automated assembly line operator		X		
Axle Load Control		X		
Road Asset Management		X		
Road safety expert		X		
Electric power generation engineer		X		
Electrical engineer	X	X	X	
Electromechanical engineer	X	X	X	
Instrumentation Engineer		X		
Aeronautical communications engineer		X		
Telecommunications Engineer	X	X	X	
Telecommunications radar engineer		X		
Telecommunications signal systems engineer		X		
Environmental engineer	X	X		
Clothing, Textiles, Footwear & Leather				
Garment and shoe production manager	X			
Fashion designer		X		
Garment designer		X		
Industrial designer		X		
Dehairing/hiding machine operator		X		
Staining/leather machine operator		X		
Tanning machine operator		X		
Product designer		X		
Stylist		X		
Health				
General Practitioner	X	X	X	
Chief Medical officer		X		
Junior medical officer		X		
Medical officer		X		
Senior medical officer		X		
Anaesthetist	X	X	X	
Cardiologist	X	X	X	
Ear–Nose–Throat surgeon	X	X	X	
Emergency medicine specialist	X	X	X	
General Surgeon	X	X	X	
Gynaecologist	X	X	X	
Neuro surgeon	X	X	X	
Obstetrician	X	X	X	
Ophthalmologist	X	X	X	

Orthopaedist plastic surgeon	X	X	X	
Pathologist	X	X	X	
Paediatrician	X	X	X	
Psychiatrist	X	X	X	
Radiation oncologist	X	X	X	
Radiologist	X	X	X	
Specialist physician	X	X	X	
Urologist	X	X	X	
Rheumatologist	X	X	X	
Invasive Gastro Enterologist	X	X	X	
Nephrologist	X	X	X	
Critical care cardiologist	X	X	X	
Infectiologist	X	X	X	
Geriatrics	X	X	X	
Interventional Radiology	X	X	X	
Renal Transplant Specialist	X	X	X	
Intensivist		X		
Maternal Foetal Medicine Specialist		X		
Paediatric Surgery		X		
Endocrinologist		X		
Dermatology–Venereologist		X		
Pulmonologist		X		
Kidney transplant Specialist		X		
Neonatologist		X		
Medical fellowship Specialist		X		
Human Anatomy Specialist		X		
Human Physiology Specialist		X		
Virologist		X		
Immunologist		X		
Microbiologist		X		
Hematologist		X		
Parasitologist		X		
Specialist nurse		X		
Midwives	X	X	X	
Advanced and Primary care paramedic		X		
Clinical officer (paramedical)		X		
Surgical technician		X		
Animal pathologist		X		
Veterinarians (Companion Animal, Large Animal, Equine, Exotic Animal, Wildlife)		X		
Veterinary epidemiologist		X		
Veterinary surgeon		X		
Dental Practitioner		X	X	
Dental Surgeon		X		
Oral and maxillofacial surgeon		X		
Orthodontist		X		
Stomatologist		X		
Dental Conservative		X		
Pediatric Dentistry		X		
Dental Endodontics		X		
Dental Pendodotist		X		
Critical care pharmacist		X		
Emergency medicine pharmacist		X		
Mental health pharmacist		X		

Nuclear/Radio pharmacist		X		
Palliative care pharmacist		X		
Home health pharmacist		X		
Pharmacoepidemiologist		X		
Pharmacoeconomist		X		
Pharmacogenetics specialist		X		
Military pharmacist		X		
Clinical trials pharmacist		X		
Compounding pharmacist		X		
Oncology pharmacist		X		
Palliative care pharmacist		X		
Sales pharmacist		X	X	
Marketing pharmacist		X		
Medical information pharmacist		X		
Drug safety pharmacist		X		
Regulatory affairs pharmacist		X		
Quality assurance pharmacist		X		
Pharmacologist		X		
Pharmaceutics		X		
Drug design & drug development specialist		X		
Pharmacognosy		X		
Toxicology		X		
Drug analyst		X		
Therapeutics specialist		X		
Medication safety and quality Pharmacist		X		
Poison information pharmacist specialist		X		
Regulatory & policy maker Pharmacist		X		
Pharmacist attorney		X		
Inspector pharmacist		X		
Academic pharmacist		X		
Environmental Health and Safety Technician		X		
Occupational Health and Safety Adviser		X		
Occupational Health and Hygiene Technician		X		
Orthopaedic physical therapist		X		
Paediatric physical therapist,		X		
Physical therapist		X		
Physiotherapist		X		
Audiologist		X		
Language therapist		X		
Speech pathologist		X		
Speech therapist		X		
Ophthalmic Optician		X		
Optometrist		X		
Orthoptist		X		
Arts therapist		X		
Chiropractor		X		
Occupational therapist	X	X	X	
Podiatrist		X		
Recreational therapist		X		
Diagnostic Medical Sonographer	X	X	X	
Medical Imaging/Nuclear Medicine Technologist		X		
Medical Physicist		X		
Clinical Perfusionist/Technologist		X	X	
Phlebotomists	X			

Health Informatics Specialists			X	
Mental health counsellor			X	
Radiologic technicians			X	
Childcare centre managers			X	
Aged care centre managers			X	
Educational Psychologist		X		
Organizational Psychologist		X		
Psychotherapist		X		
Food service dietician		X		
Nutritionist		X		
Public health nutritionist		X		
Diagnostic medical radiographer		X		
Mammographer		X		
Medical radiation therapist		X		
Nuclear medicine technologist		X		
Sonographer		X		
Blood bank technician		X		
Cytology technician		X		
Medical laboratory technician		X		
Pharmaceutical technician		X		
Pharmacy technician		X		
Dental therapist technician		X		
Orthotic technician		X		
Prosthetic technician		X		
Anaesthetist technician		X		
Physiotherapist technician		X		
Dental therapist technician		X		
Ophthalmologist technician		X		
Dermatologist technician		X		
Radiologist technician		X		
Mental health officer		X		
Clinical Psychology technician		X		
Associate professional nurse		X		
Contact lens optician		X		
Dispensing optician		X		
Electrotherapist		X		
Hydro therapist		X		
Massage therapist		X		
Physical rehabilitation technician		X		
Physiotherapy technician		X		
Occupational health and safety inspector		X		
Osteopath		X		
Education				
Academic staff / Professor in rare skills	X	X	X	
Academic staff / Associate Professor in rare skills	X	X	X	
Academic staff / Senior Lecturer in rare skills	X	X	X	
Academic staff / Lecturer in rare skills	X	X	X	
Statistician		X		
Polytechnic Instructor		X		
TVET Teacher		X		
Qualified Secondary school teacher with at least 5–years experience in teaching and training other teachers		X		
Qualified Primary school teacher with at least 5–years experience in teaching and training other teachers		X		

Qualified preschool teacher		X		
Disabilities Special Education Teacher		X		
Teacher of mentally handicapped		X		
Teacher of deaf people/ deaf		X		
Teacher of the sight impaired/ blind		X		
Guitar teacher		X		
Piano teacher		X		
Singing teacher		X		
Violin teacher		X		
Dance teacher		X		
Drama teacher		X		
Painting teacher		X		
Sculpture teacher		X		
Curriculum developer	X		X	
Teaching and learning aids specialist		X		
e–learning curriculum designer	X		X	
Legal				
Sports lawyer		X		
Sports				
Team Technical Director		X		
Sports coach		X		
Sport Medical Doctor		X		
Fitness and Wellness Expert/Instructor/ Operator		X		
Sports Talent Detector/ Developer		X		
Sports Analyst (Data, Performance,..)		X		
Sports Technology Operator		X		
Sports Facilities Engineer		X		

END