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TVET, Higher Education and Innovation Policy Review Namibia

TVET, Higher Education
and Innovation
Policy Review
Namibia



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Foreword

In 2015, His Excellency Dr Hage Geingob, President of the Republic of Namibia, shortly after appointing his cabinet, adopted a visionary approach to development, enshrined in the *Harambee Prosperity Plan*. The plan aims to outline Namibia's development narrative and to elucidate how best to fast-track progress towards the objectives of the country's *Vision 2030*. In this plan, technical and vocational education and training (TVET), higher education and innovation are unambiguously documented as fundamental tools for development ends. In particular, they can help address the relatively high levels of poverty, inequality and unemployment from which Namibia suffers despite substantial progress made since Independence in 1990.

At the same time, a separate Ministry of Higher Education, Training and Innovation (MHETI) was created, and from the onset the government recognized the need to situate its broad mandate within Namibia's current socio-economic context. Therefore, the need arose for a situational analysis to reflect on where we are, where we want to be, and how to orient ourselves to use TVET, higher education and innovation as development tools. Identifying the deficiencies of the three systems and addressing them is even more important. These are hard questions, which call for self-reflection with external insights.

As part of the Namibian government's quest to ensure policy effectiveness and relevance, MHETI started engaging with several offices of UNESCO. The Organization had already been actively involved in Namibia's development efforts over the years, but specific cooperation with MHETI was born out of the fruitful deliberations I had with UNESCO, including the Director-General. I asked for an assessment of the current status of the three functional pillars of the ministry, namely TVET, higher education and innovation, which belong to the mandate of UNESCO. The assessment was also to guide strategic priorities and propose policy options. The quality of the report as well as the efficiency with which the team conducted the assessment attest to the commitment of UNESCO to this request.

The report provides a clear picture of TVET, higher education and innovation in the context of Namibia, highlighting how they underpin the visionary approach of the *Harambee Prosperity Plan* and can become tools for social and economic development. Systemic analysis provides new insights into the strengths and weaknesses of the three sectors. This will assist the Namibian government in crafting policy improvements. The report will further serve as a reference for defining the strategic direction and focus of the ministry. In this manner it is a springboard to advance Namibia's development aspirations to greater heights.

Hon. Dr Itah Kandjii-Murangi,

Minister of Higher Education, Training and Innovation

Acknowledgements

This policy review is the result of sustained collaboration between a team of experts assembled by UNESCO and Namibian stakeholders in the sectors of technical and vocational education and training, higher education and innovation. A scoping mission was conducted from 18–26 April 2016 in different parts of Namibia, followed with a validation workshop organized on 20–21 June in Windhoek, at which an earlier draft of the report was presented and discussed.

The policy review was further informed by, and has constituted a foundation for, intensive policy dialogue with the Minister of Higher Education, Training and Innovation of Namibia, Hon. Dr Itah Kandjii-Murangi and her team, as well as Dr Immolatrix Linda Geingos-Onuegbu, Deputy Permanent Delegate to UNESCO.

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List of abbreviations

ARU	Ardhi University
BEAR	Better Education for Africa's Rise
BIPA	Business and Intellectual Property Authority
CBET	competency-based education and training
COSDEC	community skills development centre
COSDEF	Community Skills Development Foundation
COST	College for Out of School Training
EMIS	education management information system
GDP	gross domestic product
GER	gross enrolment ratio
GERD	gross expenditure on research and development
GiZ	<i>Deutsche Gesellschaft für Internationale Zusammenarbeit</i> (German bilateral aid agency)
HEI	higher education institution
HEMIS	higher education management information system
ICT	information and communications technology
ILO	International Labour Organization
IUCEA	Inter-University Council for East Africa
IUM	International University of Management
KAYEC	Katutura Youth Enterprise Centre
MBEAC	Ministry of Basic Education, Arts and Culture
MHETI	Ministry of Higher Education, Training and Innovation
MIS	management information system
MOOC	massive open online course
MSMEs	micro, small and medium-sized enterprises
MUHAS	Muhimbili University of Health and Allied Sciences
NAMFI	Namibian Maritime and Fisheries Institute
NCCI	Namibia Chamber of Commerce and Industry
NCHE	National Council for Higher Education
NCRST	National Commission on Research, Science and Technology
NDP	National Development Plan
NEET	not in education, employment or training
NEF	Namibian Employers' Federation
NGO	non-governmental organization
NIMT	Namibian Institute of Mining and Technology
NM-AIST	Nelson Mandela African Institute of Science and Technology
NODSOM	Namibian Occupational Demand and Supply Outlook Model
NPC	National Planning Commission
NQA	Namibia Qualifications Authority
NQF	National Qualifications Framework
NRSTP	National Research, Science and Technology Policy
NSA	Namibia Statistics Agency

NSAT	National Standardized Achievement Tests
NSFAF	National Student Financial Assistance Fund
NSI	national system of innovation
NSSC	Namibia Senior Secondary Certificate
NTA	Namibia Training Authority
NTF	National Training Fund
NUST	Namibia University of Science and Technology
OECD	Organisation for Economic Co-operation and Development
PHEI	private higher education institution
R&D	research and development
RPL	recognition of prior learning
SACMEQ	Southern Africa Consortium for Measuring Educational Quality
SDG	Sustainable Development Goal(s)
SFP	Science Foundation Programme
SMEs	small and medium-sized enterprises
STEM	science, technology, engineering and mathematics
STI	science, technology and innovation
SWAPO	South West Africa People's Organization
TVET	technical and vocational education and training
UIS	UNESCO Institute for Statistics
UNAM	University of Namibia
UNDP	UN Development Programme
VET	vocational education and training
VETMIS	vocational education and training management information system
VTC	vocational training centre
VTDF	Vocational Training and Development Fund

Note: The sector known internationally as technical and vocational education and training (TVET) is named vocational education and training (VET) in Namibia. In this report, VET is therefore used to refer specifically to the Namibian system, while TVET is used when referring to the systems of other countries, or to the sector as mentioned in international development and education agendas.

Executive summary

Introduction

The Minister of Higher Education, Training and Innovation of Namibia, Hon. Dr Itah Kandji-Murangi, requested UNESCO to conduct a scoping mission with the aim of assisting the new ministry, established in 2015, in developing policies and programmes related to the three pillars of its mandate, by assessing the current status of vocational education and training (VET), higher education and innovation in Namibia, identifying strategic priorities, and proposing alternative interventions responding to those priorities.

This report presents the findings of the scoping mission, conducted from 18 to 28 April 2016 by a team of experts assembled by UNESCO. These findings were discussed at a validation workshop held in Windhoek on 20 and 21 June 2016. The report is intended to provide a basis for further cooperation between UNESCO and the Namibian Ministry of Higher Education, Training and Innovation (MHETI).

The report starts with three sections that analyse Namibia's country context, economy and labour market, and education system. The report then assesses the strengths and weaknesses of Namibia's systems for VET, higher education and innovation, before discussing cross-cutting issues. The final section presents six strategic priorities identified by the scoping mission, which could guide public policies led by MHETI, so that they contribute to reducing inequality, generating youth employment, and making development sustainable. These priorities are: transform and expand VET, and diversify higher education; improve quality; promote research, innovation and entrepreneurship; reduce inequality; engage employers and enhance responsiveness to labour market needs; and review the institutional structure and fill policy gaps.

Key findings

Country context. Inequality appears to be the central policy issue in Namibia. Twentieth-century history explains why Namibia is one of the most unequal societies in the world. As a result, a large proportion of the population live in poverty despite Namibia's relatively high per capita income. Sustained growth and urbanization of a very young population lend additional urgency to the implementation of public policies to address inequality, poverty and unemployment. Policy-makers face three specific constraints. First, most parts of Namibia have extremely arid to semi-arid climates, making water availability a permanent and growing concern. Second, Namibia's population is unusually sparse and unevenly distributed. Third, Namibia has had one of the worst HIV/AIDS epidemics in the world. Yet the country also has foundations for effective policies, including stable and democratic political institutions, abundant natural resources and efficient infrastructure. Namibia already has an elaborate array of ambitious national and sectoral development strategies, plans and policies.

Economy and labour market. Namibia appears to be an upper-middle income economy registering steady growth. Sound macroeconomic management has allowed the economy to remain more stable than others in the region. In international comparison, Namibia is relatively competitive, despite shortcomings in areas including education and training. However, Namibia's economy is characterized by the weight of the primary sector and the weakness of manufacturing industries. It remains dependent on a few key primary activities including commercial farming, fisheries and mining, especially for its exports. As a result, the labour market is dual, with small numbers of workers employed in high-skilled jobs in the formal economy, while most workers are employed, often informally, in low-skilled jobs in subsistence farming, construction, trade, or by private households. Only half the population of working age are in employment, owing to low levels of labour force participation and high levels of unemployment. In this context of job scarcity, young people face delayed and difficult transitions into the labour market. Recent employment, industry and rural development policies are seeking to address these issues. Models have also been developed to identify the demand for skills in key sectors over the next decade. However, a lack of policy coherence, harmonization and implementation has hampered the improvement in employment outcomes.

Education system. Namibia's education system does not provide a strong enough foundation for VET, higher education and innovation. Since Independence the constitutional commitment to education has been backed by high levels of public expenditure. This allowed an increase in enrolment, particularly at secondary and tertiary level, but the task of building an inclusive and equitable education system is unfinished. Primary education is not universal yet, and a large proportion of pupils leave school without completing secondary education. Learning outcomes are low in international comparison and their distribution within the country reflects patterns of inequality in Namibian society, although recent national assessments suggest that learning outcomes may have improved somewhat in recent years. These shortcomings of the education system imply that low and unequally distributed levels of education among the young people and adults who make up the labour force will persist into the future. The economy has to function with a scarcity of highly qualified persons, while youth illiteracy still is significant. Education and training beyond secondary level will therefore need to include a second-chance component, besides offering adequate opportunities to those who managed to complete senior secondary education.

Vocational education and training. Namibia's VET system is fragmented between different types of providers and does not constitute a comprehensive and consistent network. The system has poor linkages with basic education, with higher education and between its own components. Key issues arise regarding quantity, quality and relevance, which explain why the VET system produces very small numbers of adequately skilled workers, reinforcing the dual nature of Namibia's labour market:

- **Quantity:** the system lacks capacity to enrol sufficient numbers of trainees, given the large youth population of the country, and largely excludes young people who did not complete basic education. Lifelong learning opportunities exist but need to be scaled up.
- **Quality:** many trainees lack foundation skills and face precarious living conditions, which hampers their ability to learn. Initial qualifications and training of trainers appear inadequate. The equipment of training centres is sometimes deficient and outdated.
- **Relevance:** VET does not guarantee a smooth transition to employment or to entrepreneurship. Trainees face challenges finding job placements, while formal firms complain that VET does not respond to their demand for skills. Support for young entrepreneurs remains limited.

Reforms of the VET curriculum are going on or envisaged. A transition towards competency-based education and training has started, but remains incomplete. MHETI envisages creating new learning pathways between VET, basic and higher education, yet these are not compatible with the reform of basic education that is being rolled out by the Ministry of Basic Education, Arts and Culture (MBEAC). The two reforms will need to be harmonized.

Existing governance and financing arrangements, involving MHETI, the Namibia Training Authority (NTA), the Namibia Qualifications Authority (NQA), the National Training Fund (NTF) and the National Student Financial Assistance Fund (NSFAF) are complex, with five key features: non-separation of key functions, duplication and overlaps of mandates, difference between an institution's legal mandate and actual responsibilities, lack of capacities and actions regarding the evaluation of impact of VET, and lack of autonomy of VET institutions. Meanwhile the involvement of the private sector in the VET system appears insufficient, in terms of governance, contribution to curriculum development and contribution to delivery.

Higher education. Namibia's gross enrolment ratio (GER) in tertiary education is high by African standards. Indeed, Namibia's higher education system has expanded rapidly since Independence, especially in the last decade. However, the country still has only two public universities, the University of Namibia (UNAM) and the Namibia University of Science and Technology (NUST), and one private university, the International University of Management (IUM), besides other private higher education institutions. Issues have arisen concerning access, quality and relevance.

- **Access:** Admission criteria exclude a large share of applicants, even though both public universities have experimented with bridging programmes. Information and communications technology (ICT) and distance learning could help further broaden access to higher education.
- **Quality:** Both public universities suffer from severe shortages of qualified academic staff. Internal quality assurance systems have been introduced in the two public universities, and in some of the private higher education institutions, but they need to be harmonized.

- **Relevance:** Internships or entrepreneurship training have been introduced, and a few tracer studies conducted, but there are no sound policy frameworks and strategies to systematically guide these arrangements. Both public universities conduct research and provide outreach services, but they lack consistent research agendas and partnerships with industries appear weak.

Reforms of the institutional structures of universities and of the governance of higher education appear necessary. Choices have to be made regarding the duplication of programmes between UNAM and NUST; the status of the twelve campus colleges of UNAM, spread over the country, which could evolve into regional universities; the transformation of some departments into specialized universities; and the coordination of higher education institutions following a cluster model. Governance and financing arrangements are complex, involving the National Council for Higher Education (NCHE), National Commission on Research, Science and Technology (NCRST), NQA and NSFAF. Mandates tend to overlap, especially regarding accreditation.

Science, technology and innovation (STI). Namibia has a comprehensive policy and institutional framework for STI: The government of Namibia has recognized that STI is critical for socio-economic transformation, and adopted a range of explicit policies, legislation and regulations promoting STI. Namibia's national system of innovation (NSI) has grown in size and complexity, but public institutions seem to dominate the research and development (R&D) landscape, and scientific and technological dynamism is lacking, as illustrated by figures on expenditure, personnel and intellectual property filings. The incoherence of policies, their long gestation and poor implementation undermine Namibia's NSI. A weak entrepreneurial and innovation culture remains a barrier to job creation and economic diversification in Namibia.

Cross-cutting issues. Three cross-cutting issues arise for MHETI to address. The first is reducing inequality. The second is orienting policies towards employment creation by expanding work-based learning, removing barriers to innovation and entrepreneurship, and engaging enterprises in skills formation, innovation and jobs creation. The third is a need to improve policy implementation, by aligning policy design, oversight and service delivery, and developing monitoring and evaluation.

Strategic priorities and policy options

The areas under the mandate of Namibia's MHETI require policy action, with six strategic priorities associated with a range of policy options. The current international and national context offers several enabling factors: the coincidence with the adoption of the Sustainable Development Goals and the Education 2030 framework, which give attention to TVET and tertiary education; the establishment of MHETI, which brings together skills development beyond basic education and innovation; the ongoing review of *National Development Plan (NDP) 4* and preparation of *NDP 5*; the adoption of the *Harambee Prosperity Plan*, with its focus on VET; and collaboration with a wide range of partners in other countries and with international organizations.

Strategic priority I Transform and expand VET, and diversify higher education

Namibia's VET system needs a massive expansion to address the learning needs of the country's young people and adults and to create a pool of skilled workers for the development of the economy. Higher education has kept expanding rapidly, but needs to diversify to better contribute to the development of the country.

Policy option: Expand VET by relying on existing centres or creating new ones.

Two main alternatives can be considered: upgrade and scale up a number of selected, existing vocational training centres (VTCs) and community skills development centres (COSDECs), or build new centres. The first alternative allows a quicker start and simpler implementation given the availability of infrastructure, staff and operations. However, it is constrained by the small number of existing centres, their uneven distribution across the country, low performance, lack of attractiveness and weak relationship to the labour market. The second alternative is to expand the network with new regional centres covering all parts of the country, and responding to local needs. This alternative is particularly relevant given the scale of expansion needed. However, it requires heavier investment in buildings and equipment, the recruitment of teaching and managerial staff on a larger scale, and – most importantly – time. Whatever the alternative chosen, the expansion of VET should be preceded by the transformations of the VET model advocated under Strategic priority II.

Policy option: Cover levels 4 and 5 of the National Qualifications Framework (NQF).

The gap between VET and higher education should be bridged with the introduction of VET courses at levels 4 and 5 of the NQF. From a demand-side perspective, these levels correspond to intermediate skills that are needed in the labour market and affect the responsiveness of the economy to technological change and innovation.

Policy option: Raise the status of VET through centres of excellence.

To raise the status of VET, the government could facilitate the establishment of a network of centres of excellence. The centre of excellence constitutes a new model of VET institution, established in cooperation with firms in specific economic sectors to develop high-quality training courses at levels 4 and 5, in line with international standards. Trainees can then enter higher education in scientific and technological study fields. The model includes operational features of advanced TVET systems, including centre autonomy, the involvement of enterprises in governance, a better quality of teaching staff, a diversity of training services, and a strong work-based learning dimension. Centres of excellence also support incubation and entrepreneurship. In the Namibian context, such centres should be aimed at sectors with a higher growth potential, starting for instance with the nine sectors covered by sector skills plans.

Policy option: Diversify the provision of higher education.

Higher education should provide a greater diversity of learning opportunities in terms of qualifications, curricula, bridging programmes, structured learning pathways for individuals, forms of student support and institutional types. It should also draw on new groups of learners, including VET graduates and those already in the labour market.

Policy option: Strengthen private VET and higher education provision.

Private providers could be organized to make a major contribution to the expansion of VET and of higher education. MHETI should support the emergence of a professional body representing private providers. This would facilitate dialogue regarding the expansion of private provision, its regulation and its financing modalities.

Policy option: Develop a lifelong learning framework.

The scarcity of lifelong learning opportunities is a key concern. Existing mechanisms (including the NQF, recognition of prior learning (RPL), distance learning and in-company training) are not coordinated in a coherent, lifelong perspective and are not applied consistently throughout the education and training system. For instance, pathways for VET centre graduates are limited, and RPL is not envisaged at higher education level. Key measures that the government should consider are:

- Develop career guidance and counselling. Individuals will require more substantive information, counselling and careers guidance at different levels, underpinned by up-to-date information on jobs and learning opportunities;
- Develop greater recognition of workplace learning and capacities for RPL.

Strategic priority II Improve quality

Namibia's VET and higher education systems need to improve the quality of teaching and to raise learning outcomes even as they face pressure to increase enrolment.

Policy option: Harmonize VET curricula.

A consensus needs to emerge on the appropriate curricular model for Namibia's VET. At present three models coexist in the country: modular training, competency-based education and training (CBET) and the South African model. A debate is necessary to define an appropriate national model, to be translated into an implementation plan based on cost-effectiveness considerations, and associated with a clear strategy for monitoring and evaluation. The definition of such a model is a precondition for the expansion of the VET system, and should be accompanied by an upgrade of existing VET institutions, to transform their management and organization while reinforcing their infrastructure and equipment. This should also be an opportunity for reinforcing the supporting function of NTA, regarding the implementation of the harmonized curriculum, the introduction of new pedagogical approaches, the leveraging of ICT, and the quality of assessment systems.

Policy option: Review ministry proposals for a VET stream in secondary education.

The government may consider connecting secondary education with the world of work rather than creating a VET stream at secondary level. Both the ongoing reform of basic education by MBEAC and the learning pathways envisaged by MHETI imply the creation of a VET stream at junior and/or senior secondary levels. However, at this stage, the two proposals are not compatible with each other, even though they share the same concern about reducing school leaving after grade 10. Furthermore, the desirability and urgency of introducing a VET stream needs to be debated, given the lack of adequate laboratories and workshops, and of skilled and well-trained teachers. The two ministries should team up to discuss the overall architecture of the education and training system, and the implications of alternative reform proposals in terms of implementation timeline, capacity to take in flow of students/trainees, and costs.

Policy option: Enhance science, technology, engineering and mathematics (STEM) in VET and higher education.

STEM education needs to be strengthened. Both the international and the national assessments of learning outcomes show that mathematics scores of Namibian pupils in upper primary education are particularly low. This implies that foundations skills for STEM are missing, confirming concerns expressed by staff at VTCs and higher education institutions (HEIs). Professional development covering both content knowledge and pedagogy could help teachers and trainers in those institutions address the situation. At higher levels, cooperation between VET and HEIs, and public and private enterprises, could help respond to the country's needs in emerging areas of science, technology and engineering, and enhance student interest in STEM.

Policy option: Harness the potential of ICT.

The use of ICT could help reduce learning divides in Namibia. Online learning, including in the form of massive open online courses (MOOCs), has the potential to build new learning pathways towards higher education and expand lifelong learning opportunities. Namibia needs to establish appropriate mechanisms, such as an innovation fund, to stimulate initiatives to use ICT. It could further develop a national network of expertise and knowledge-sharing on ICT in education and training, connected with regional and international networks, and associated with a clearinghouse of good practices and lessons learned on technology-supported innovations.

Policy option: Recruit and train additional teachers and trainers.

Teachers and trainers in VET and higher education require professional development to improve their teaching skills and update their expertise and industry knowledge. Reforms including new curricula and pedagogical changes cannot be implemented without the full commitment and wide involvement of teachers and trainers. For VET, close coordination and a clear allocation of responsibilities between NTA and NUST is needed for consistent and effective pre-service, induction and in-service training. Trainers, tutors and master craftspeople involved in placement and apprenticeship schemes will require specific training and accreditation to deliver work-based learning. For higher education, the government should expand and strengthen postgraduate training. For instance, PhD training partnerships could be initiated with well-established universities in the region or farther overseas. Finally, managers of VET institutions and universities would benefit from training programmes aiming at leadership engagement and capacity-building. All these programmes require coordinated actions, capacity development of concerned institutions and financial resources.

Strategic priority III Engage employers and enhance responsiveness to labour market needs

The relevance of VET and higher education to labour market demand for skills is questioned. While government, NTA and other stakeholders champion employer engagement, relevant approaches for effective delivery in the context of Namibia have struggled to put employer engagement at scale and achieve the policy objectives associated with it.

Policy option: Set up a national framework for work-based learning.

The great benefit of work-based learning (student placements, apprenticeships, internships and so on) needs to be realized systematically in VET and higher education. The government might consider the establishment of a unified framework for work-based learning, which should include a consistent legal framework, appropriate incentives particularly for small and medium-sized enterprises (SMEs), involvement/integration of the various concerned bodies, quality assurance and development strategies, adequate financing arrangements, and an active promotion strategy.

Policy option: Use the NTF to set incentives for enterprises to engage in work-based learning.

The governance, management and budget allocation criteria of the NTF should be reviewed. Work placements and apprenticeships should be listed explicitly as programmes prioritized and financed by the Fund, including incentives for enterprises to engage in them. However, the present governance arrangements of the Fund do not allow this.

Policy option: Reward enterprises engaged in skills formation.

The government might consider setting up an accreditation or brand signalling that enterprises are great employers, excellent places to work or demonstrate a clear commitment to skills development. Smaller and informal-sector enterprises are often reluctant to engage with education and training provision in any capacity. An initial focus on business improvement and innovation might be one way to raise their interest.

Policy option: Promote partnerships between universities and industries.

The government should establish a national platform to promote the development of university–industry partnerships and university–industry dialogue to undertake joint research programmes, supervision of postgraduate students, and provision of practical training opportunities and field attachments.

Strategic priority IV Promote research, innovation and entrepreneurship

At present, the understanding of innovation in Namibia is conventional, with a focus on high-end R&D.

Policy option: Enhance institutional linkages and partnerships with companies and communities.

Review the whole institutional landscape to determine barriers to effective institutional linkages and to develop appropriate mechanisms to foster synergies, provide maximum support to companies and communities, universities, VTCs and other stakeholders. Networking and partnerships with companies and communities should be also envisaged to identify new niche products and services with high value added, promotion and development of innovation in the production of goods and services, and promotion of start-ups in areas of sustainable development.

Policy option: Mainstream entrepreneurship and innovation in education and training.

Public policy can facilitate the process of mainstreaming entrepreneurship and innovation. The main measures that the government might envisage include setting up an action plan for enhancing the prominence of entrepreneurship and innovation in VET and higher education, anchoring entrepreneurship and innovation support at top VET institutions and university-management level, facilitating networking and exchange, increasing learners' participation in entrepreneurship activities, and facilitating business development through incubation for start-ups in VTCs and universities.

Policy option: Prioritize partnerships between the government, universities and industries for research and innovation.

It is essential to stimulate government/university/industry partnerships in emerging areas of research that could serve the sustainable development of Namibia. Research in HEIs should be focused on multidisciplinary as well as interdisciplinary approaches, based on strategically established research areas, such as drought, water resources and management, agriculture, biotechnology, renewable energy, climate change and sustainable development, veterinary science/animal husbandry, fisheries, marine ecosystems, techno-sciences and mining.

Strategic priority V Reduce inequality in education and training

The persistence of extreme inequality is Independent Namibia's greatest failure, and jeopardizes the country's sustainable development.

Policy option: Build a strong foundation for training and higher education.

Support the expansion of early childhood care and education and the universalization of primary education of good quality. The decisive policy for equalizing opportunity in the long term is outside the specific mandate of MHETI. Yet the

ministry can play a part, through joint political advocacy and through the provision of specialized training, for instance programmes for professionals in early childhood issues.

Policy option: Provide second-chance programmes.

Palliate the poor outcomes of basic education by expanding second-chance, non-formal VET for young people and adults. Even if basic education improves decisively in the next years, Namibia will still have a large population of young people and adults with no qualifications and low skills for several decades. At present, these persons are excluded from formal VET and from the labour market. Non-formal education and training is therefore needed to offer them a second chance, covering literacy and numeracy, basic general education, life skills and vocational training, perhaps with a focus on entrepreneurship.

Policy option: Reduce disparities in the VET system.

Equalize the provision of VET across regions and review funding mechanisms to reduce disparities between VET centres. The present distribution of different types of VET providers reflects the history of Namibia rather than an assessment of the needs of each region for formal and non-formal VET, which should be carried out. The expansion of the VET system should ensure that remote areas are covered and that more densely populated regions have capacity in line with their population numbers and the realities of the world of work.

Policy option: Improve the use of English as the medium of instruction, and complement it with other languages.

The use of English as language of instruction contributes to inequality in the education and training system, owing to the poor mastery of English by both trainers and trainees. Policy options include investing in courses in English as a second language for trainers and trainees, and envisaging the use of other languages, especially in non-formal VET.

Policy option: Improve the living conditions of trainees and students to address dropping out.

Support trainees and students so that they have decent living conditions, conducive to learning. Most trainees and students enrol in courses far from their home, and face precarious living conditions, with difficulty in meeting transportation, accommodation and catering costs. This is one of the key causes for the very large dropout rates that affect VET in particular. A first option is to invest in the renovation of existing hostels and the construction of new buildings. However, this is costly and requires adequate maintenance and supervision if gains in safety in particular are to materialize. A second option is to provide funding to trainees and students – extending it to those enrolled in the private sector – so that they can find accommodation on the housing market, and afford sufficient food.

Strategic priority VI Review the institutional structure and fill policy gaps

It is time for a thorough review of VET, higher education and innovation policies and of the underpinning institutional structure, which shows evidence of inefficiency and overlaps.

Policy option: Establish the leadership of MHETI.

Establishing the leadership of the ministry requires an urgent reinforcement of its capacity and human resources. It is recommended to accelerate the organization of MHETI and the creation of its services. The institutional culture of MHETI needs to shift from administrative control to political leadership and evidence-based policy formulation linked to strategic and operational planning, monitoring and evaluation. MHETI should also reinforce its capacity to coordinate action across a number of policy domains including education, employment, social welfare, industrial policy and others.

Policy option: Revise institutional arrangements for regulation and financing.

A consensus has emerged among stakeholders on the need for a clear delineation of the respective areas of intervention of the ministry itself and of the pre-existing agencies (NTA, NQA, NCHE, NCRST) in charge with regulation and funding, with a particular focus on separating policy-setting from oversight and delivery. Responsibility for policy-setting should be consolidated at the ministry level, while the mandates of the regulatory agencies are revised to remove overlaps and inconsistencies, and their autonomy is maintained. Without such a clarification, redundancies and inefficiencies of the present institutional structure will persist, hampering the expansion and transformation of the VET, higher education and innovation systems.

Policy option: Develop a new policy framework.

It is recommended to fill policy gaps through the adoption of new policies that focus explicitly on promoting employment, innovation and entrepreneurship. MHETI should undertake an integrated sector reform through the adoption of evidence-based policy, planning and financial management procedures.

Policy option: Implement a monitoring and evaluation framework supported by a management information system (MIS).

Efforts are being undertaken by different institutions (the ministries of education, NTA, universities and so on) to develop MISs, but these are taking place in isolation. The government should support and facilitate the harmonization of the systems, regarding the information collected, the processing and reporting, and the development of key indicators of functioning and performance.

Policy option: Review the operations and criteria of the NTF.

The NTF should be used to steer the system, provide funding on a competitive and performance basis, and set incentives for enterprises to engage further in skills formation for their staff and for young people through work-based learning (internships, attachments, apprenticeship and so on). It is too early to assess the impact of the Fund on the performance of the VET system, or its progress towards its other objectives. However, the government could consider different scenarios for the development of the Fund and its transformation into a key policy lever for engaging enterprises in skills formation. As a first alternative, the NTF could continue operating under the NTA, with revised guidelines regarding the use of the Fund. A second, more radical alternative to create an independent body with a clear governance system involving representatives of the private sector, workers and MHETI, and with top policy priority to engage employers in skills development at all levels.

Introduction

This report presents the findings of a scoping mission on vocational education and training (VET), higher education and innovation in Namibia, conducted by UNESCO from 18 to 28 April 2016. These findings were discussed at a validation workshop held in Windhoek on 20 and 21 June 2016. The report is intended to provide a basis for further cooperation between UNESCO and the Namibian Ministry of Higher Education, Training and Innovation (MHETI).

Purpose and organization of the scoping mission

The Minister of Higher Education, Training and Innovation of Namibia, Hon. Dr Itah Kandjii-Murangi, requested UNESCO to conduct a scoping mission with the aim of assisting the new ministry, established in 2015, in developing policies and programmes related to the three pillars of its mandate, by assessing the current status of VET, higher education and innovation in Namibia, identifying strategic priorities, and proposing alternative interventions responding to those priorities. In the context of the 2030 global agenda, the overall perspective was to enhance the contribution of VET, higher education and innovation to Sustainable Development Goals (SDGs), especially in poverty reduction and the employment of young people in decent work. Particular attention was to be paid to the country context, including human development, economic activities and labour market functioning, and to key policy documents such as Namibia's *Vision 2030*, *National Development Plan 4* (2012/13–2016/17) and *Harambee Prosperity Plan* (2016/17–2019/20).

The scoping mission was undertaken by a team of experts composed of three representatives from UNESCO Headquarters (Borhene Chakroun, François Leclercq and Hassmik Tortian), two representatives from UNESCO Harare Office (Carolyn Medel-Anonuevo and Peggy Oti-Boateng), two external experts (Mayunga Nkunya and John Ouma-Mugabe) and an expert from the International Labour Organization (ILO) (Naomy Lintini) (**Annex 1**). The team started by reviewing VET, higher education and innovation, and complemented knowledge gained from existing studies and statistics with first-hand information collected during a number of meetings and visits to the field. In particular, the team sought to achieve a good understanding of current and future opportunities for youth employment and more broadly for human development given patterns of economic activity and labour market functioning in Namibia. During its two-week stay in Namibia, the team held numerous meetings with key stakeholders, and visited training centres, universities and workplaces (**Annex 2**). The validation workshop provided an opportunity to discuss the findings of the report, and considerably enriched its conclusions regarding strategic priorities and policy options (**Annex 3**).

Contents of the report

The report starts with three sections that analyse the context in which Namibia's VET, higher education and innovation systems operate. Given Namibia's history and development patterns since Independence in 1990, this context is highly specific. It implies an overall goal for policy-making – to address extreme inequality – and also constraints including the poverty faced by a large proportion of the population, poor learning outcomes in primary and secondary education, and a dual economy that generates mass unemployment, among young people in particular.

Section II introduces the country context, emphasizing the inequality that originates in Namibia's pre-Independence history, and specific constraints such as aridity, low and uneven population density, and a devastating HIV/AIDS epidemic. It also underscores the country's potential for effective policy-making, thanks to democratic politics and stable institutions, and to the existence of a formal economy based on abundant natural resources and reliable infrastructure.

Section III considers Namibia's economy and labour market. It emphasizes the lack of structural transformation in an otherwise relatively competitive economy, and probes into the country's unemployment crisis, before examining the demand for skills that could emanate from activity sectors with a potential for job creation.

Section IV describes Namibia's basic education system, which does not provide strong enough foundations for further learning given the scale of early school leaving and poor learning outcomes. Higher education and training policies

therefore need to have a second-chance dimension in the short and medium term, although expanding early childhood care and education will be the most effective measure in the long term.

The next three sections turn to the three pillars of the ministry's mandate.

Section V focuses on VET. The section notes that VET is far from producing the numbers and diversity of skilled workers that are necessary for developing Namibia's economy, especially for fostering youth employment and entrepreneurship, owing to the insufficient capacity, deficient quality and limited relevance of the system, which contrasts with the elaborate institutional architecture at the national level. It appears that the system needs to be transformed before it can be expanded. Suggested transformations pertain to the key building blocks of the VET system, including its quality, governance and links with the labour market.

Section VI discusses higher education, presenting information on Namibia's two public universities before discussing issues of access, quality, relevance, governance and financing.

Section VII addresses innovation, mapping the institutional landscape for research and innovation before analysing the system's strengths and weaknesses and its capacity to address youth unemployment and foster inclusive economic growth.

The last two sections, based on the evidence accumulated in **Sections II to VII**, answer the minister's request for the identification of strategic priorities and alternative policy options.

Section VIII identifies cross-cutting issues that emerge from the analysis of the three systems for VET, higher education and innovation: addressing inequality, orienting policies towards employment creation, and improving implementation.

Section IX presents the report's recommendations. These are structured around six strategic priorities, each associated with a set of policy options: transform and expand VET, and diversify higher education; improve quality; engage employers and enhance responsiveness to labour market needs; promote research, innovation and entrepreneurship; reduce inequality in education and training; and fill policy gaps and review the institutional structure.

Country context

This section analyses the context for policy-making in Namibia in the areas of VET, higher education and innovation. The country's unique degree of income inequality appears to be the central policy issue, along with two of its correlates, poverty and unemployment. Three further specific features of Namibia constrain public action by hampering economic development and threatening social cohesion: aridity, low and uneven population density, and a devastating HIV/AIDS epidemic. However, Namibia also has foundations for effective public policies responding to those challenges, which include its political and institutional stability and formal economy. An array of national and sectoral strategies, plans and policies have already been adopted, so that implementation seems to be the key challenge ahead.

Inequality constitutes the central policy issue in Namibia

Twentieth-century history explains why Namibia is one of the most unequal societies in the world. Owing to the inaccessibility of Namibia's coast and the remoteness of its interior, the country long escaped direct colonial rule. From the mid-eighteenth century, however, trade, Christian missions and the arrival of populations fleeing the Cape increasingly transformed economic activities, cultural identities and political entities in the central and southern regions. Supremacy over those regions was disputed between rapidly evolving social groups, including the Nama–Oorlam and the Herero. The north was shared between kingdoms which extended across the present border with Angola, of which Owambo had the largest population. Direct colonial rule over 'South West Africa' was imposed by Germany from 1884 onwards, especially in the central and southern regions which became a 'Police Zone'. Armed resistance was brutally suppressed, culminating in the genocide of the Herero and Nama populations during the war of 1904–08. South Africa took control of the German colony in 1915, in the context of the First World War, and received a mandate of the League of Nations in 1920 to administer it. South Africa soon started to impose racial segregation and more direct control over the northern kingdoms than had been the case under German colonization (Wallace and Kinahan, 2013).

From 1946 onwards, South Africa sought to incorporate South West Africa to its own territory and to apply apartheid. This led to the rise of nationalist movements, among which the South West Africa People's Organization (SWAPO), created in 1960, soon became dominant. Apartheid intensified after 1963, with the decision to create 'homelands', mostly in the northern regions. Forced displacement of populations and unequal spending on health and education generated extreme poverty in the homelands, even as public investment in infrastructure led to the development of a formal extractive economy relying on mines, fisheries and commercial farms. From 1966 onwards, SWAPO engaged in armed struggle, which was met with fierce repression, despite UN Security Council Resolution 435 of 1978 calling for Independence. War caused deaths, large-scale displacement, and worsened living conditions. During the late 1980s, South Africa's growing international isolation facilitated the transition towards Independence. A Constituent Assembly was elected in December 1989, Independence was declared on 21 March 1990, and the South African enclave around Walvis Bay was finally transferred to Namibia in 1994. Namibia's Constitution abolished apartheid and banned any kind of discrimination. However, the marks of colonization, apartheid and conflict are still visible, despite political change and active public policies implemented over a quarter-century (Melber, 2014; Wallace and Kinahan, 2013).

Owing to extreme income inequality, a large proportion of the population live in poverty despite Namibia's relatively high per capita income. The most prominent mark of Namibia's past is its persistent extreme level of income inequality. Judging by the Gini index, Namibia was one of the most unequal countries in the world a few years after Independence, and still is twenty-five years later. Inequality is greater in urban areas than in rural areas. It is comparatively moderate in the more rural, agricultural and poorer regions of the north, but extreme in the more urbanized and richer regions of the south and the centre of the country (**Table 1**). Therefore, Namibia's classification as an upper-middle income country since 2009, with an adjusted per capita income of N\$16,895 in 2009/10, is highly misleading – the vast majority of the population live much below that level of income, and a small minority much above it. In 2009/10, the richest 10 per cent of households earned forty-six times as much as the poorest 10 per cent (NSA, 2012). Patterns of inequality reflect Namibia's pre-Independence history as well as its current class structure – living standards are strikingly correlated with language, source of income and education (**Figure 1**).

The incidence of income poverty (defined with respect to the national poverty line) has fallen dramatically since the early 1990s but remains high, particularly in rural areas (**Table 2**). By 2013, material deprivation took the shape of significant or large proportions of households lacking basic amenities such as adequate drinking water and toilet facilities, electricity, telephone and means of transport – despite the country having some of the best infrastructure in Africa (**Table 3**).

Table 1 Income inequality is extreme in Namibia

Gini index, selected years

Area	1993/94	2003/04	2009/10
Urban areas	0.615	0.574	0.583
Rural areas	0.541	0.503	0.487
Highest regional value	0.681 (Omaheke)	0.657 (Hardap)	0.634 (!Karas)
Lowest regional value	0.436 (Ohangwena)	0.360 (Ohangwena)	0.405 (Ohangwena)
Namibia	0.646	0.600	0.597

Source: NSA (2012).

Table 2 Poverty remains widespread despite a dramatic reduction since the early 1990s

Poverty incidence, selected years, per cent

Area	1993/94	2003/04	2009/10
Urban areas	39.0	17.0	14.6
Rural areas	81.6	48.7	37.4
Highest regional value	89.2 (Ohangwena)	64.1 (Kavango)	55.2 (Kavango)
Lowest regional value	26.8 (Khomomas)	8.1 (Khomomas)	7.1 (Erongo)
Namibia	69.3	37.7	28.7

Source: NSA (2012).

Table 3 Many households lack access to basic amenities

Selected indicators of material deprivation, 2013, per cent

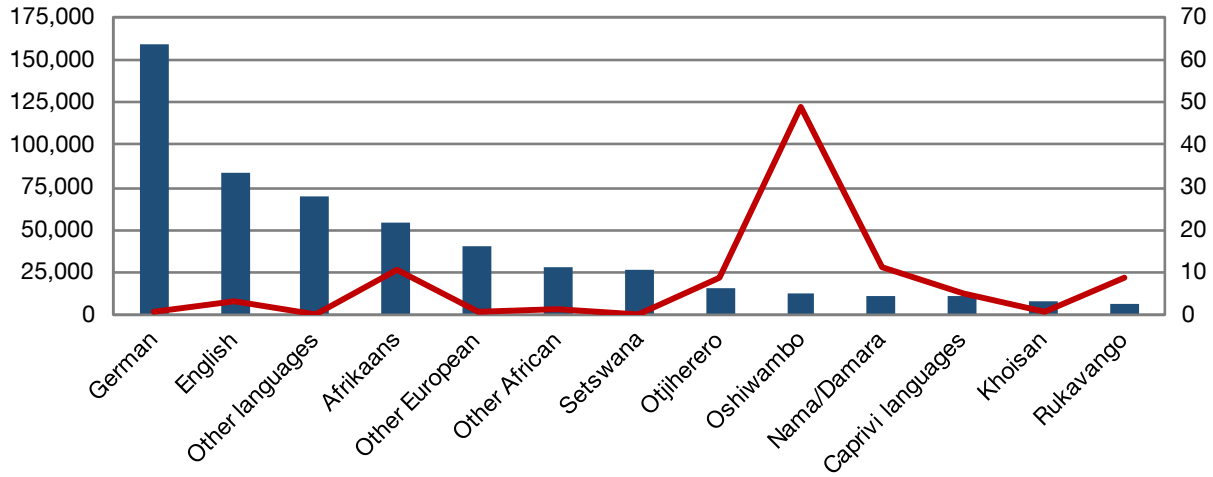
Households with	Rural	Urban	Total
Non-improved source of drinking water	13.2	0.3	6.5
Time to obtain drinking water: 30 minutes or longer	25.5	4.9	14.8
Shared or non-improved toilet facility	82.8	51.5	66.5
No electricity	79.5	27.8	52.6
No mobile telephone	18.6	5.0	11.5
No car/truck	82.4	65.0	73.3
No means of transport (bicycle, animal-drawn cart, motorcycle/scooter, car/truck, boat with a motor)	56.9	44.5	50.5

Source: NSA (2014b).

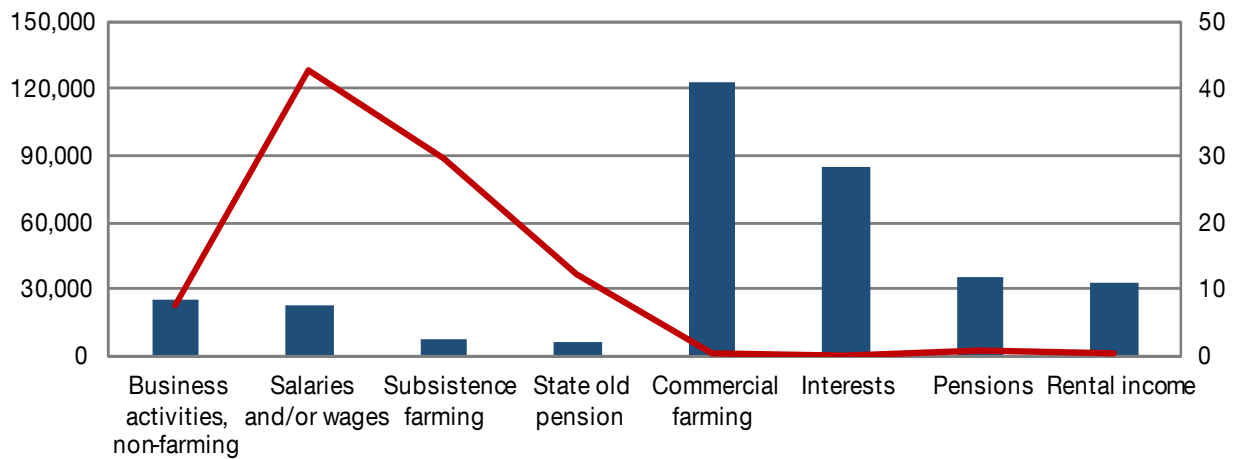
Figure 1 Namibia's pre-Independence past and its current class structure shape income inequality

Adjusted per-capita income, 2009/10, Namibian dollars (bars, left axis), and proportion of the population, 2009/10, per cent (line, right axis)

By main language spoken in household

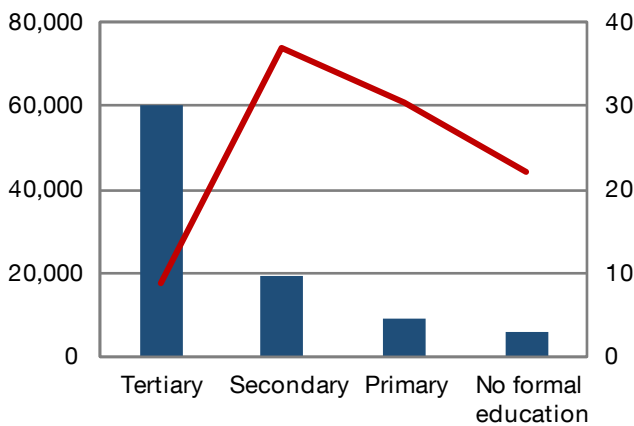


By main source of income of household



Note: four left columns: four most frequent sources of income, accounting for 91.8 per cent of the population; four right columns: four sources of income yielding the highest adjusted per capita income, accounting for 1.9 per cent of the population.

By level of education of the head of household

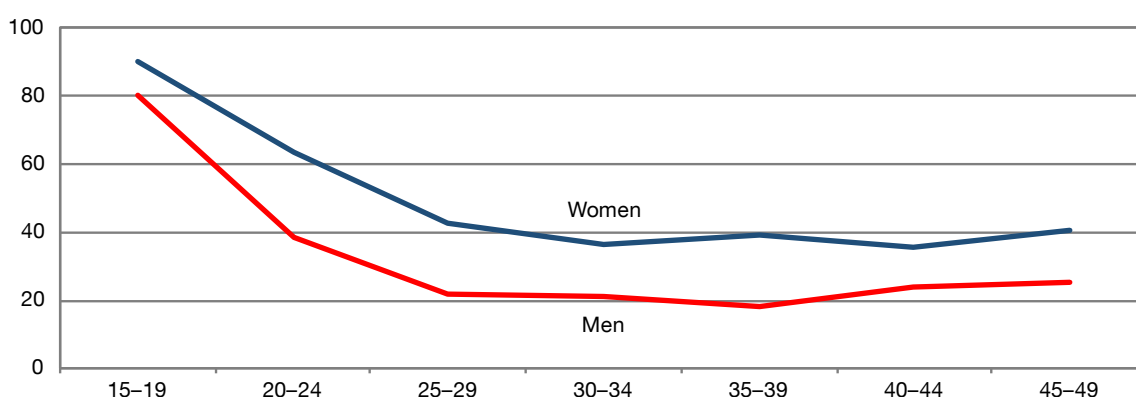


Source: NSA (2012).

Extreme levels of unemployment are closely associated with inequality and poverty, with dire consequences for the children of disadvantaged families. In 2013, more than half of women and more than one-third of men aged 15–49 had not been employed in the previous year (**Figure 2, Section III**). The lack of opportunities for poorer, less-educated young women to earn income (more than three-quarters of women in the poorest quintile are unemployed) is having a major impact on young children. Almost a quarter of all young children are chronically malnourished, as measured by stunting (that is, young children who are short for their age). In contrast with the incidence of income poverty, that proportion has not declined much in recent years (from 29 per cent in 2006/07 to 24 per cent in 2013). More than one-third of young children whose mother had received no formal education, or who were living in the most affected region (Ohangwena), were malnourished in 2013 (**Table 4**). Given the long-term consequences of chronic malnutrition on the formation of physical, cognitive and psychosocial skills in the early childhood, its persistence at such high levels in Namibia implies that – in the absence of urgent, large-scale policy intervention – a large proportion of the population will be disadvantaged in education and labour market outcomes for decades to come.

Figure 2 Unemployment is exceptionally high, especially among women

Proportion of persons not employed in the 12 months preceding the survey, by age group, 2013, per cent



Source: NSA (2014b).

Table 4 Almost a quarter of Namibian young children are chronically malnourished

Proportion of children aged 0–5 suffering from severe or moderate stunting, 2013, per cent

By area		By mother's education	
Urban areas	16.7	No education	33.8
Rural areas	27.8	Primary	29.0
Highest regional value	36.5 (Ohangwena)	Secondary	18.8
Lowest regional value	12.8 (Khomas)	More than secondary	8.5
Namibia	23.8		

Source: NSA (2014b).

Sustained growth and urbanization of a very young population lends additional urgency to the implementation of public policies to address inequality, poverty and unemployment. Namibia's small population size – estimated at 2.11 million in 2011, projected to increase to 2.32 million in 2016 – should not mask the demographic challenge the country is facing. Fertility declined fairly rapidly during the first fifteen years of Independence, but stabilized at the relatively high level of 3.6 children per woman between 2006/07 and 2013. It remains very high (above five children per woman) in one region (Ohangwena), and more generally for women from disadvantaged social backgrounds, among whom teenage pregnancies are frequent (**Table 5**). As a result, and as life expectancy is low (see below), Namibia's population is very young. In 2011 the country had 1.22 million children and young people aged 0–24, representing 58.0 per cent of the population; 0.454 million young people aged 15–24 accounted for 21.5 per cent. By 2026, these figures are projected to increase to 1.50 million aged 0–24 and 0.515 million aged 15–24 (NSA, 2014c). This implies that Namibia will need to

keep on scaling up public policies for early childhood development, education and training, and the introduction of young people to the labour market, with a focus on including the disadvantaged.

Table 5 Fertility remains high, especially among women with low education levels

Total fertility rate, 2013, and proportion of women aged 15–19 who have begun childbearing, 2013, per cent

By area	Fertility	By woman's education	Fertility	Childbearing
Urban areas	2.9	No education	5.3	45.1
Rural areas	4.7	Primary	4.8	25.7
Highest regional value	5.3 (Ohangwena)	Secondary	3.5	16.8
Lowest regional value	2.6 (Khomomas)	More than secondary	2.2	0.0
Namibia	3.6			

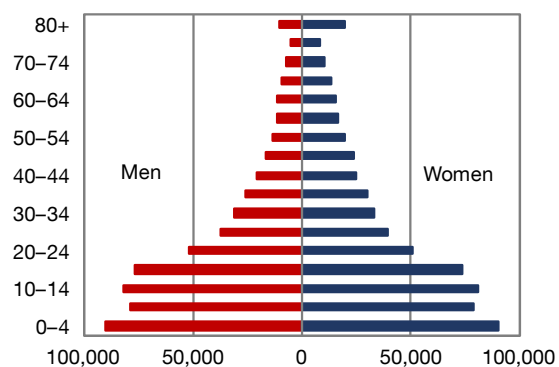
Source: NSA (2014b).

Moreover, population increase will be accompanied by rapid urbanization. Owing to rural-to-urban migration, the rural population is projected to decline by 2.2 per cent between 2011 and 2030, while the urban population will double, bringing the urbanization rate from 43 per cent to 60 per cent within twenty years. Most migrants to urban areas will be young adults looking for employment opportunities. The current pattern of rural areas lacking adults to take care of children and adolescents, while working-age young people and adults are concentrated in urban areas, will remain (**Figure 3**). The Khomas and Erongo regions, in which three of the country's four largest urban areas are located (respectively Windhoek, and Walvis Bay and Swakopmund), will contain an increasing proportion of the population, and their residential areas, infrastructure and economy will need to expand accordingly. Khomas alone should have about 650,000 inhabitants by 2030, up from 341,000 in 2011 (NSA, 2014c).

Figure 3 Population growth and rural-to-urban migration will be a challenge over the next decade

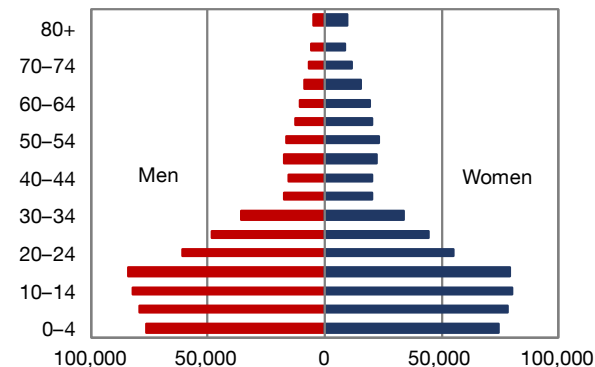
Population pyramids, 2011, estimates

Rural population

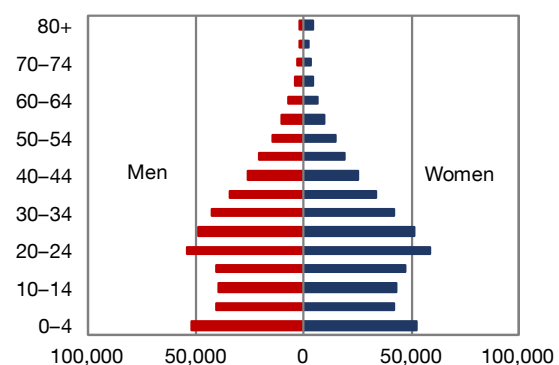


Population pyramids, 2026, projections

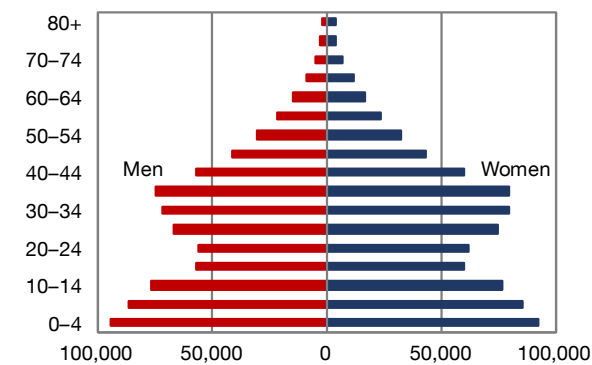
Rural population



Urban population



Urban population



Source: NSA (2014c).

To sum up, Namibia faces the urgent need to address the inequality, poverty and unemployment that prevent its young, increasing and urbanizing population from reaching their full potential. Policies for VET, higher education and innovation have a key part to play in this. They must take into account three further specific features of Namibia's geography and recent history, which represent major constraints on its future development: aridity, low and uneven population density, and a devastating HIV/AIDS epidemic.

Development is hampered by aridity, low population density and HIV/AIDS

Most parts of Namibia have extremely arid to semi-arid climates, making water availability a permanent and growing concern. Namibia's coastal region is occupied by the Namib desert, and receives less than 100 mm of rainfall a year – less than 50 mm along the Atlantic Ocean. The Kalahari Basin extends over most of the central and southern regions, with annual rainfall below 250 mm. Even the more populated northern regions are semi-arid (350–550 mm). Only a few areas, mostly in Zambezi region in the north-east, receive more than 600 mm (NSA, 2013b). As a consequence, Namibia's only perennial rivers are those that form its northern borders (the Kunene, Okavango, Kwando and Zambezi rivers) and southern border (Orange river), and 85 per cent of the country's renewable water resources flow in from neighbouring countries (FAO, 2016). Moreover, rainfall is extremely variable from one year to another. Over the course of the twentieth century Windhoek received less than 200 mm of rain in twelve years, but more than 600 mm in eleven years, for an average rainfall of 373 mm (NSA, 2013b).

Historically, this implied that only the north and north-east could sustain agriculture. In the southern and central regions, sparse populations relied on a mix of hunting-gathering and extensive cattle grazing, depending on fluctuations in water availability. The Namib desert meanwhile remained largely uninhabited. The present water production and distribution infrastructure ensures that more than nine in ten households have access to an improved source of water, and dams on ephemeral rivers such as the Fish river allow some water storage, although it is subject to intense evaporation. However, overexploitation of non-renewable water resources and recurring droughts jeopardize the country's development. In 2015 and 2016, Namibia was affected by the drought related to the El Niño-Southern Oscillation that extended over most of southern Africa. Water was rationed even as leakages in public buildings in Windhoek figured prominently in the media.

Water scarcity will intensify through the coming decades. Ensuring the highest possible efficiency in water distribution and recycling, whether for domestic consumption, agriculture or manufacturing, will be crucial to Namibia's long-term development. Indeed, owing to population increase, renewable water resources per capita have already declined by 38.4 per cent between 1992 and 2014 (FAO, 2016). Climate change will only accentuate the trend. According to the Intergovernmental Panel on Climate Change, rainfall could decrease by 0–10 per cent or 10–30 per cent by 2081–2100 from the 1986–2005 average, depending on the greenhouse gas emission scenario used. In the meantime, average surface temperatures could increase by either 1–1.5 °C or 4–7 °C, increasing evaporation and water stress, and reducing agricultural productivity (IPCC, 2014). These estimates are intrinsically conservative as the IPCC relies only on confirmed evidence from the published literature. Estimates of the 2014 report for instance do not take into account ice melt from the Antarctic, which was poorly modelled until recently, but might dramatically intensify climate change during the twenty-first century, particularly affecting Namibia through multi-metre sea-level rise and a modification of currents in the Southern Ocean (Hansen et al., 2016).

Water will remain a key sector for Namibia's development. Investments in this sector will be a condition for economic growth, job creation and inequality reduction. Skills and innovation are vital for the successful performance of the water sector. This is particularly important in view of the broadening fields of expertise that are needed, which include managing water resources, building and managing water infrastructure, and providing water-related services (WWAP, 2016).

Namibia's population is unusually sparse and unevenly distributed. Namibia's overall low population density is a corollary of its aridity. The present population of 2.11 million corresponds to a density of 2.56 inhabitants per square km, up from 1.71 in 1991, but still lower than in any other independent country in the world except Mongolia. However, the population is strongly concentrated. More than half of all Namibians live in parts of six regions in the north (Kavango East and West, Ohangwena, Omusati, Oshana and Oshikoto), where population density locally exceeds 50 inhabitants per sq km. A further 16 per cent live in Khomas region, in and around Windhoek (326,000 inhabitants), which is the only city with a population above 100,000. (The next three towns, Swakopmund and Walvis Bay on the coast, and Rundu in the north, have between 40,000 and 65,000 inhabitants.) Population density is thus below one inhabitant per

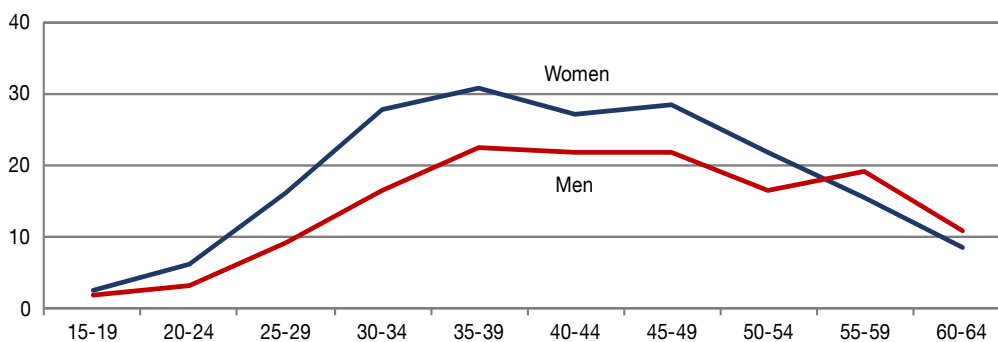
square km in most of the country (NSA, 2011, 2013a). These uneven settlement patterns result both from the country's physical geography – the more populated regions of the north are also the more humid ones – and from its history of land appropriation and population displacement under German and South African colonial rule. They keep entrenching inequality in Namibian society. Extreme remoteness in the least densely populated and less equipped regions, such as Kunene in the north-west, coexists with increasing land scarcity issues in the countryside and towns of the north, and with soaring property and housing prices in Windhoek. Uneven settlement patterns also challenge policy implementation. The extent of migration towards Windhoek seems to call for heavy investment in Khomas, but this risks reinforcing existing regional imbalances. Improving physical and social infrastructure in the densely populated regions thus appears as another priority, but should not be done at the expense of remote rural populations. And reaching the latter implies high unit costs and organizational difficulties.

Namibia has had one of the worst HIV/AIDS epidemics in the world. 'Arguably the most important development of the last twenty years', the HIV/AIDS epidemic started in 1986; by 2002, the virus had infected 22 per cent of the adult population (Wallace and Kinahan, 2013, p. 312). Public policies introduced in the early 2000s have succeeded in bringing prevalence down, starting in the late 2000s. Today, knowledge of AIDS is nearly universal among female and male young people and adults, and 85–90 per cent know about HIV prevention methods. However, HIV prevalence remains high both in absolute terms and in international comparison. By 2013, 14.0 per cent of young people and adults aged 15–49 were infected with HIV; the prevalence was highest among women (**Figure 4**), persons with less than secondary education, in rural areas, in the most densely populated regions of the north, and especially in the north-east (Zambezi), where nearly a quarter of 15–49-year-olds were infected.

The epidemic has had a devastating impact on Namibian society, which numbers can only hint at. Youth and adult mortality soared, leading to a collapse in life expectancy, which is still less than 50 years for men in four regions (**Figure 5**). As a result, with a total population of 2.11 million, Namibia has more than 150,000 orphans (defined as children and adolescents aged up to 18 who have lost either one or both parents), more than 80 per cent of whom are concentrated in the six northern regions that account for half of the population (NSA, 2011) (**Figure 6**). More generally, HIV/AIDS has contributed to a disruption of family structures that had already been weakened by pre-Independence population displacement, segregation and violence. Besides orphans, many more children are foster children, who live in households where neither of their parents is present – in rural areas, every second household includes at least one orphan or foster child (**Table 6**). Children who grow up without their parents are likely to be treated less well, and to suffer emotional distress. The combination of chronic malnutrition and disrupted family structures implies that a large proportion of children and young people in Namibia live in conditions that make it difficult for them to attend school regularly, to learn, and to imagine a future. This contributes to key deficiencies of the country's education and training system, such as poor learning outcomes, dropping out, and the large proportion of discouraged young workers (**Section III**).

Figure 4 HIV prevalence is exceptionally high, especially among women

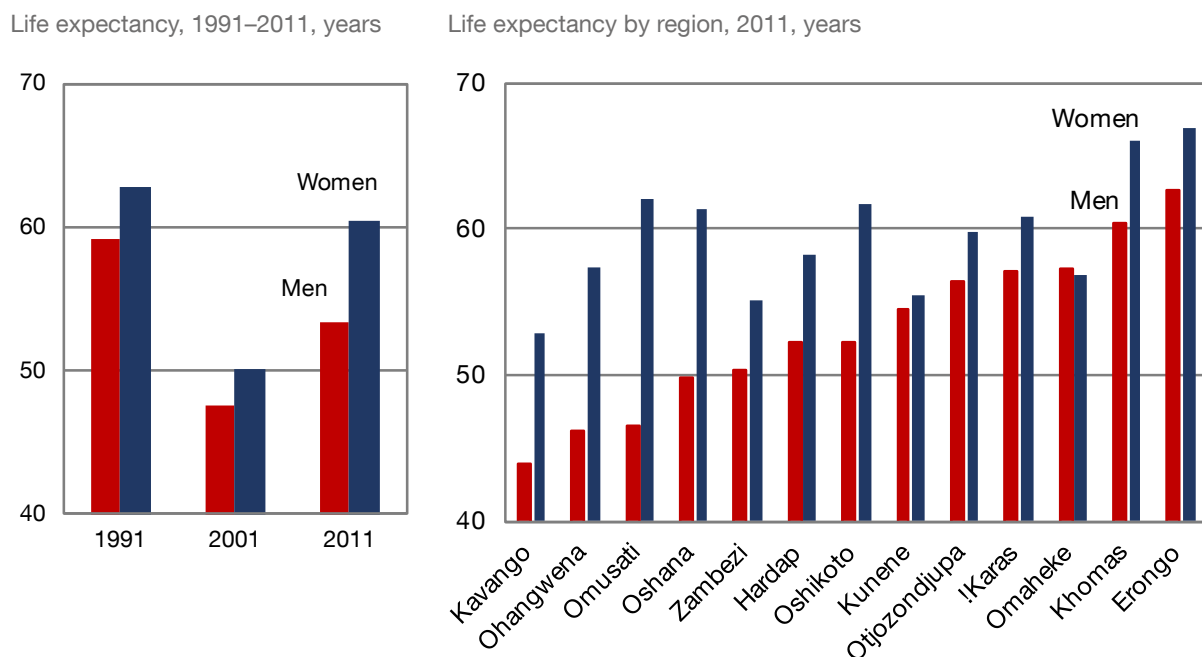
HIV prevalence by age, 2013, per cent



Source: NSA (2014b).

The admittedly bleak picture of Namibia painted so far is incomplete. Further features that characterize Namibia in distinction from other countries in Africa or in the middle-income category include its stable and democratic institutions and formal economy.

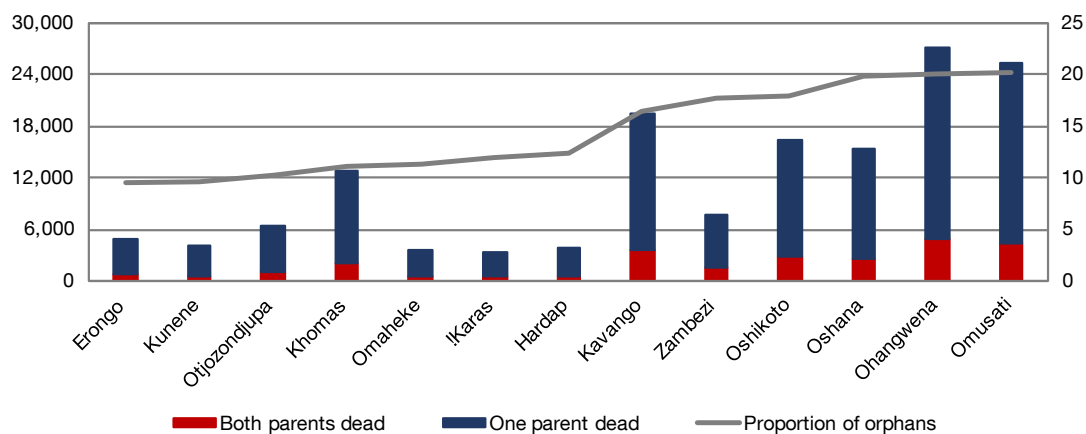
Figure 5 Life expectancy has not fully recovered from the impact of the HIV/AIDS epidemic



Source: NSA (2014a).

Figure 6 Across regions, from 10 to 20 per cent of children are orphans

Orphans, by region, 2013, numbers (bars, left axis) and proportion in the population aged less than 18 years, per cent (line, right axis)



Source: NSA (n.d.).

Table 6 Many Namibian children do not live with their parents

Proportion of households with orphans and foster children under age 18, 2013, per cent

Category	Rural	Urban	Total
Single orphans	19.9	9.5	14.5
Double orphans	3.5	2.0	2.7
Foster children	46.4	18.4	31.9
Foster and/or orphan children	49.6	22.1	35.3

Note: 'Single orphans' lost one of their parents, and 'double orphans' lost both; 'foster children' live in a household where neither of their parents is present.

Source: NSA (2014b).

Institutions, infrastructure and natural resources provide foundations for effective policies

Namibia has stable and democratic political institutions. At Independence, political stability was ensured by a policy of national reconciliation and the integration of troops from all sides into the National Defence Force. During the 1990s, it was further facilitated by the global and regional context, with the end of the Cold War, and South Africa's own democratic transition and abolition of apartheid. Peace prevailed despite separatist tension in the Caprivi (now Zambezi) region in 1999, and the continuation of civil war in Angola until 2002 (Wallace and Kinahan, 2013).

The Constitution adopted on 9 February 1990 provides for a multi-party democracy. Parliament has two chambers: the National Assembly, elected every five years through general elections, and the National Council, which comprises representatives of regional councils. The president plays a more prominent part than is typical of parliamentary regimes, as he/she is elected through direct, universal suffrage every five years. Three presidents have successively held office: Sam Nujoma, for three terms (1990–2005), Hifikepunye Pohamba (2005–15) for two, and the current president, Hage Geingob, elected in 2015. Both general and presidential elections have been held regularly, with fluctuating but relatively high voter turnout (between 60 per cent and 85 per cent across years and elections). However, the former nationalist movement, SWAPO, has been hegemonic, receiving around 75 per cent of the votes in general elections between 1994 and 2009, which went up to 80 per cent in 2014. In the same year, Hage Geingob was elected with 87 per cent of the votes (Electoral Commission of Namibia website). Critics argue that Namibia effectively has a single-party system (Melber, 2014).

Nevertheless, indicators of democracy and governance are good in international comparison, especially with other African countries. Namibia is particularly noteworthy for its freedom of the press. In 2016, it ranked seventeenth out of 180 countries on the World Press Freedom Index, between Germany and Canada, and first in Africa, well ahead of the second African country, Ghana (ranked twenty-sixth) (Reporters without Borders, 2016). On the Ibrahim Index of African Governance, in 2014, Namibia ranked third out of fifty-four countries in terms of participation and human rights, and fourth in terms of safety and rule of law; it had progressed significantly on both indices since 2000 (Mo Ibrahim Foundation, 2016). World Governance Indicators confirm those trends, as after constant progress since 2000 Namibia ranked ahead of nearly two-thirds of countries globally in terms of voice and accountability, and of rule of law. However, trends in other indices of governance were mixed (World Bank, 2016b). This included corruption, which was rated as 'very significant' by a 2011 study, although its magnitude could not be estimated. Tax fraud was the other main source of 'ill-gotten money', estimated at 9 per cent of gross domestic product (GDP) (Yikona et al., 2011).

Namibia has abundant natural resources and efficient infrastructure. Its natural resources led to the development of an extractive economy based on mines (especially diamonds and uranium), fisheries and commercial farming. Primary industries remain key contributors to production and exports, despite large fluctuations from one year to another (**Section III**). Since Independence, the country's natural beauty, preserved in its national parks and communal conservancies, has led to the development of tourism as a significant activity sector. The country also has a potential for solar energy production, which is beginning to be exploited.

Namibia's infrastructure is also among the best in Africa. For instance, the electricity supply, although it serves less than half of the population, is quite reliable, with only 3.1 hours of power outage per month in 2014, compared with 6 hours on average in upper-middle income economies, and 49 hours across Africa (World Bank, 2015). The transport infrastructure is also efficient, with the port of Walvis Bay, a network of paved roads mostly in acceptable condition, and a rail network used for freight – Namibia aims to be a regional hub for trade in southern Africa (**Section III**). In contrast with other developing countries, surveys of enterprises do not usually rank infrastructure deficiencies as key barriers to economic expansion. Instead they emphasize administrative procedures, access to land and finance, and above all deficiencies in education and training of the work force (NCCI et al., 2014; World Bank, 2014, 2015, 2016a).

Namibia's political institutions, natural resources and infrastructure place it ahead of most other countries in Africa. The country's bureaucracy has the capacity to produce detailed statistics and policy documents, while the formal economy generates enough income for Namibia to be classified as an upper-middle income economy, which could be mobilized to solve the country's human development issues. At present, a large proportion of the population do not benefit as much as they could from these assets. Implementation of existing development strategies and plans appears as the key challenge ahead to make Namibia a truly democratic and prosperous society.

Namibia's development strategy and plans are ambitious

Namibia has an elaborate array of national and sectoral development strategies, plans and policies. Planning started even before Independence, with the work of the United Nations Institute for Namibia established in the mid-1970s in Lusaka, Zambia (Melber, 2014). A three-year *Transitional National Development Plan* was adopted in the early 1990s, and since the mid-1990s the number of institutions involved in strategic planning has increased as Namibia's governance structure expanded. In recent years, key institutions involved in planning for areas relevant to education, training and innovation have included the Office of the President, the National Planning Commission (NPC), Ministries of Education and other ministries, as well as authorities such as the Namibia Training Authority (NTA), Namibia Qualifications Authority (NQA), National Council for Higher Education (NCHE) and National Commission for Research, Science and Technology (NCRST). Documents produced by these institutions analyse the past and present situation of the country in detail, and define strategic objectives, often down to numeric targets for very specific indicators. Their main limitations – often acknowledged by the author institutions themselves – are possible inconsistencies across documents, and especially the lack of implementation of the strategies, plans and policies once they have been adopted.

Three key documents define national priorities over the long, medium and short term: *Vision 2030* (NPC, 2004), *National Development Plan (NDP) 4* (NPC, 2012b) and the *Harambee Prosperity Plan* (Namibia, 2016). All of Namibia's planning documents are now framed by the country's long-term strategy, *Vision 2030*. Inspired by other national long-term perspective studies conducted in Africa at the initiative of the UN Development Programme (UNDP) since 1992, *Vision 2030* was adopted in 2004 (NPC, 2004). The overall vision is 'A prosperous and industrialised Namibia, developed by her human resources, enjoying peace, harmony and political stability', with specific objectives listed under a series of sectoral 'sub-visions'. Two key contributions of *Vision 2030* are its stocktaking of progress made since Independence and its analysis, for each sub-vision, of the situation of the country in the early 2000s, of a worst-case scenario for 2030 if no action were taken, and of actions needed to achieve the sub-vision. 'Sub-visions' related to the mandate of the Ministry of Higher Education, Training and Innovation (MHETI) include Employment and unemployment, Information and communication technology, Production technology, Youth in development, and especially Education and training (**Box 1**). Owing to its broad and comprehensive perspective on education, *Vision 2030* is consistent with Sustainable Development Goal (SDG) 4 adopted by the international community in September 2015, with its seven targets to be achieved by 2030 as well (**Box 2**).

Box 1 Vision 2030: 'sub-vision' for education and training

'Sub-vision: A fully integrated, unified and flexible education and training system, that prepares Namibian learners to take advantage of a rapidly changing environment and contributes to the economic, moral, cultural and social development of the citizens throughout their lives.'

'Where we want to be (2030)

- Education system is unified and adequate education infrastructure provided in all regions.
- Access to lifelong learning exists for all when and where they require it.
- Access to senior secondary education exists for at least 80 per cent of learners.
- Access to tertiary and career-oriented education exists for at least 75 per cent of school leavers.
- Large number of multipurpose learning centres are providing access to the Internet as well as education and training.
- Well-qualified teaching staff available for all levels.
- A national curriculum, focusing on science and technology, which equips the learners with competencies to continue their education after school, exists.
- Basic education concentrates on literacy and numeracy.
- A national education system allows learners to accumulate learning achievements as and when they need them.
- There exists a modularised curriculum that allows for small units of learning to be addressed and certified.
- A well-functioning research and development system is in place.
- Early childhood education and development provided.
- Schools and tertiary institutions are enhancing skills and other competencies.'

Source: NPC (2004, pp. 89–90).

Box 2 Sustainable Development Goal 4 pertaining to education

‘Goal 4. Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all.

4.1 By 2030, ensure that all girls and boys complete free, equitable and quality primary and secondary education leading to relevant and effective learning outcomes.

4.2 By 2030, ensure that all girls and boys have access to quality early childhood development, care and pre-primary education so that they are ready for primary education.

4.3 By 2030, ensure equal access for all women and men to affordable and quality technical, vocational and tertiary education, including university.

4.4 By 2030, substantially increase the number of youth and adults who have relevant skills, including technical and vocational skills, for employment, decent jobs and entrepreneurship.

4.5 By 2030, eliminate gender disparities in education and ensure equal access to all levels of education and vocational training for the vulnerable, including persons with disabilities, indigenous peoples and children in vulnerable situations.

4.6 By 2030, ensure that all youth and a substantial proportion of adults, both men and women, achieve literacy and numeracy.

4.7 By 2030, ensure that all learners acquire the knowledge and skills needed to promote sustainable development, including, among others, through education for sustainable development and sustainable lifestyles, human rights, gender equality, promotion of a culture of peace and non-violence, global citizenship and appreciation of cultural diversity and of culture’s contribution to sustainable development.

4.a Build and upgrade education facilities that are child, disability and gender sensitive and provide safe, non-violent, inclusive and effective learning environments for all.

4.b By 2020, substantially expand globally the number of scholarships available to developing countries, in particular least developed countries, small island developing States and African countries, for enrolment in higher education, including vocational training and information and communications technology, technical, engineering and scientific programmes, in developed countries and other developing countries.

4.c By 2030, substantially increase the supply of qualified teachers, including through international cooperation for teacher training in developing countries, especially least developed countries and small island developing States.’

Source: United Nations (2015, p. 17).

Medium-term objectives are articulated by five-year *National Development Plans (NDP)*. The current plan, *NDP 4* (2012/13–2016/17), defines three overall goals (high and sustained economic growth, employment creation, increased income equality) to be achieved via action in three priority areas: basic enablers (institutional environment, education and skills, health, reduction of extreme poverty, public infrastructure); economic priorities (logistics, tourism, manufacturing, agriculture); and execution, monitoring and evaluation, and progress reporting (NPC, 2012b). *NDP 4* is based on a critical assessment of progress under *NDP 3*, which did not achieve most targets related to overall economic goals, or to education and skills goals at secondary and higher education levels (**Table 7**).

The plan then states a ‘desired outcome’ for education as a whole, and lists objectives for VET, and for research and development (**Box 3**). *NDP 4* is now coming to the end of its term, and *NDP 5* is being prepared. Unfortunately, documents assessing progress under *NDP 4* and preliminary material for *NDP 5* were not available when the scoping mission was conducted.

Table 7 National Development Plan 4 emphasizes the mixed record of NDP 3Outcomes in 2011 or closest year available compared with *NDP 3* targets, selected indicators

Overall goals	NDP 3 target	Outcome
Real GDP growth (per cent per annum)	5.0	3.6
Real per capita income average growth rate (per cent)	3.4	1.7
Gini coefficient	0.58	0.58
Unemployment rate (per cent, broad definition)	33.3	51.2

Education and skills goals	NDP 3 target	Outcome
Children in early childhood development programmes	9,375	13,459
Net primary education enrolment rate (per cent)	99.1	99.8
Primary education completion rate (per cent)	80.2	85.5
Net secondary education enrolment rate (per cent)	65.4	57.1
Secondary education completion rate (per cent)	–	45.8
Tertiary education completion rate (per cent)	35.0	–
Vocational education completion rate (per cent)	85.0	50.0
Adult literacy rate (per cent)	91.8	89.0
Proportion of graduates employed (per cent)	95.0	76.3
Proportion of public expenditure used for education (per cent)	23.0	22.3
Expenditure on R&D (as percentage of GDP)	1.0	–

Note: in green: target achieved; in orange: insufficient progress, target missed; in red: negative evolution.

Source: NPC (2012b).

Box 3 National Development Plan 4: 'desired outcome' and strategy for education and skills

'Desired Outcome 2 (DO2): Namibia is characterised by a high-quality and internationally recognised education system that capacitates the population to meet current and future market demands for skills and innovation. By 2017, we see an increase from the 2011 level of 17.9 per cent to 25.0 per cent in respect of Grade 10 students achieving a pass mark (30 points overall, and at least an F for English). We also see an increase from the 2011 level of 29.5 per cent to 45.0 per cent in respect of students receiving a mark of at least 25 points overall at Grade 12 level.'

'Regarding the alignment of demand and supply, based on the Human Resources Development Plan, key areas of skills shortages will be identified and targeted for development over the next five years, with specific strategies that will include the following components:

- Linking VET as well as technical education in general to envisaged priority areas, starting off with tourism, logistics, mining, and manufacturing
- Increasing the provision of opportunities for VET and technical education, targeting the entire country, but impoverished areas in particular
- Introducing competency-based education and training
- Upgrading educator qualifications and expand throughputs of students undertaking studies to become educators
- Providing adequate equipment and infrastructure for VET centres, and
- Certifying acquired skills in the informal sector.'

'In order to increase the volume and quality of R&D in the country, it is important to increase spending on R&D to at least 0.3 per cent of GDP by 2017.'

Source: NPC (2012b, pp. 49–50).

As *NDP 4* makes clear, a dramatic acceleration of progress in most areas needs to take place in the near future if the objectives of *Vision 2030* are to be achieved. This is the objective of the *Harambee Prosperity Plan* (2016/17–2019/2020), a recent presidential initiative ‘to target bottlenecks, remove implementation challenges and accelerate development in clearly defined priority areas, with greater urgency’ (Namibia, 2016, p. 5). The Plan intends to complement rather than replace *Vision 2030* and *NDP 4*, yet it does cover much of the same ground with its four pillars (effective governance, economic advancement, social progression, infrastructure development), fourteen goals and forty-one targets, each assigned to a ministerial department or independent authority. The *Harambee Prosperity Plan* however differs by listing very circumscribed targets that are to be achieved in the short term (within one to three years). Targets assigned to MHETI and NTA respond to the following objectives: reaching under-served populations and regions by expanding and diversifying the network of VET institutions; improving the relevance of VET and its links with the labour market, with a specific focus on work-based learning (through placements and apprenticeships); and fostering entrepreneurship and self-employment (**Box 4**).

Box 4 Harambee Prosperity Plan: indications for MHETI and NTA

Sub-pillar: Vocational Skills Development

Harambee Performance Indicators:

- HPP10.1: Increase the number of VET trainers from 15,000 in 2015 to 25,000 by 2020.
- HPP10.2: Significantly improve the quality of VET training by 2020.
- HPP10.3: Improve the image of VET to become a subsector of choice by 2020.

Specific actions/milestones

For MHETI:

- Expansion of VET to have footprint of vocational skills development centres in all fourteen regions by 2020.
- Refurbishment of existing building in Kunene region to be used as a vocational training centre (VTC) in year one of *Harambee*.
- Establishment of VTC in Nkurenkuru in year two of *Harambee*.
- Establishment of VTC in Omuthiya in year three of *Harambee*.

For NTA:

- Recognition of prior learning: 2,000 candidates to be certified countrywide.
- Development of National Policy for VET practitioners, assessors, moderators, verifiers and instructional designers by year two of *Harambee*.
- Compulsory industry attachment for all VET trainees by end of the *Harambee* period.
- Introduction of VET apprenticeship programme in year one of *Harambee*.
- Introduction of financial schemes to assist qualifying VET graduates to start up their own business in year three of *Harambee*.

Source: Namibia (2016).

To conclude, the context of Namibia a quarter-century after Independence sets a clear priority for public policies in the areas of VET, higher education and innovation: to contribute to reducing inequality and foster youth employment and entrepreneurship, as a condition for stability and prosperity over the next decades. A number of strategies and plans have already been written to that effect. The challenge is to ensure their consistency and to implement them, taking into account two major constraints. First, Namibia’s economy remains largely dual, excluding a large proportion of the population from employment in decent work (**Section III**). Second, owing to the difficult living conditions of a large proportion of the population and to the deficiencies of the basic education system, the achievement of students entering upper levels of education and training is insufficient (**Section IV**).



Economy and labour market

This section analyses Namibia's economy and labour market. Namibia appears to be a competitive, upper-middle income economy going through steady growth in a stable macroeconomic environment. However, the economy and labour market are dual. The formal economy remains dependent on a few capital-intensive primary activities, especially for its exports, and has failed to diversify into higher value-added activities; the informal economy, ranging from subsistence agriculture to services, is particularly fragile. As a result, small numbers of Namibians are employed in formal and skilled jobs, while the majority of the population face high rates of inactivity, unemployment and informality. Recent employment, industry and rural development policies are seeking to address these issues. A model has also been developed to identify the demand for skills in key sectors by 2020. However, a lack of policy coherence, harmonization and implementation is hampering the improvement in employment outcomes.

Namibia appears to be a growing, competitive, upper-middle income economy

At first sight, Namibia appears to be an upper-middle income economy registering steady growth. Namibia has been classified as an upper-middle income economy by the World Bank since 2009, based on its gross national income per capita, which reached US\$5,630 in 2014 (using the Atlas method for currency conversions) (World Bank, 2016c). Expressed in purchasing power parity dollars, Namibia's per capita income has long been the third-highest in southern Africa, and is projected to overtake South Africa's by 2019, while it was close to Swaziland's during the 1990s (**Figure 7**). This is the outcome of slow but steady growth starting in the mid-1990s, peaking above 6 per cent in the early 2000s. The global financial and economic crisis brought the economy to a halt in 2009, but it bounced back in 2010 and has been growing by more than 5 per cent per year since then (**Figure 8**). By late 2015, the Bank of Namibia expected the country to prosper until at least 2017, despite marked slowdowns in Angola and South Africa (Bank of Namibia, 2015). Indeed, the International Monetary Fund projects growth to continue at 4 to 6 per cent per year until at least 2020. Growth in Namibia appears more dynamic than in South Africa, and slower but less volatile than in Angola, Botswana or Zambia (IMF, 2016).

Owing to sound macroeconomic management, Namibia's economy is stable. Expansionary fiscal policy has helped protect the country from the aftermath of the global financial and economic crisis, with budget deficits of 2 to 7 per cent of GDP since 2010. Yet total government expenditure has remained below 40 per cent of GDP. Government gross debt represented no more than 27 per cent of GDP in 2015, although it was projected to reach 32 per cent by 2017 (IMF, 2016). Meanwhile, monetary policy has been tightly managed to keep consumer price index inflation within the target range of 3 to 6 per cent. However, after slowing down in 2015, inflation was expected to pick up in 2016, owing to anticipated price increases for food products and fuel products (Schade, 2015; Phiri and Odhiambo, 2015).

Macroeconomic management is affected by the close ties that remain between the Namibian and the South African economies. The Namibian dollar is pegged one-to-one to the South African rand, and thus fell against the dollar and the euro in recent years. South Africa remains the first trade partner, providing 63.6 per cent of imports in 2015 (well ahead of China, 6.4 per cent), and absorbing 19.5 per cent of imports (preceded by Botswana, 22.5 per cent) (NSA, 2015b). Namibia receives 30 to 40 per cent of its revenues from the Southern African Customs Union, and volatility in the size of Namibia's annual allotment complicates budget planning (Phiri and Odhiambo, 2015).

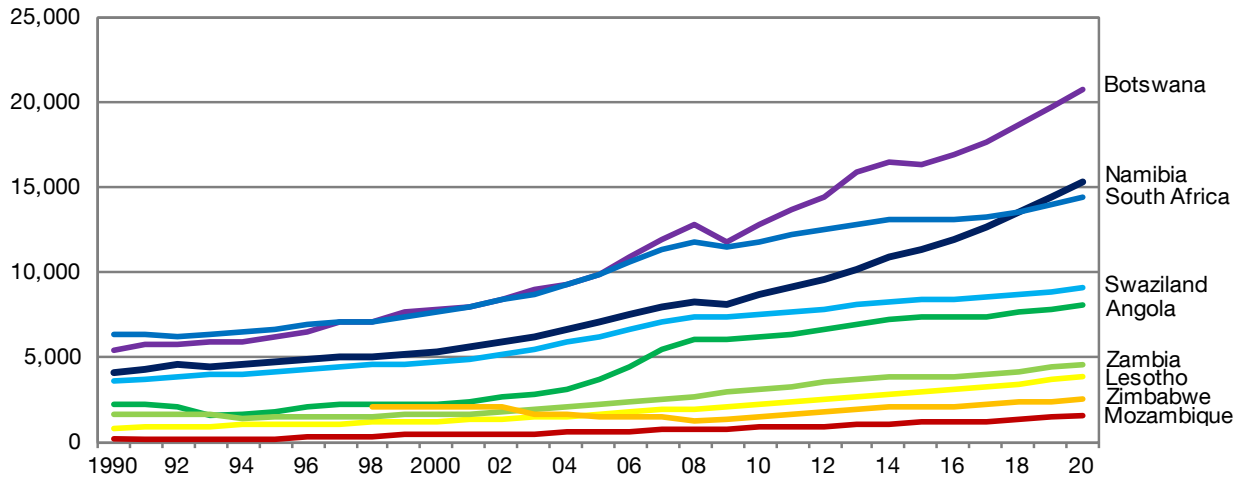
The competitiveness of the economy is affected by shortcomings in areas that include education and training.

The Namibian economy is relatively competitive overall, ranking eighty-fifth out of 140 countries on the 2015–16 Global Competitiveness Index published by the World Economic Forum, up from ninety-second out of 144 in 2012–13. In particular, Namibia is the fifth most competitive economy in Africa, after Mauritius (forty-sixth), South Africa (forty-ninth), Botswana (seventy-first) and Morocco (seventy-second). Sub-rankings on the twelve components of the index indicate that the country's key relative strengths are its institutions, labour market efficiency, financial market development and infrastructure. Besides its unavoidable small market size, the two key relative weaknesses are higher education and training, and health and primary education (**Figure 9**). Respondents to the Executive Opinion Survey collected as part of

the Global Competitiveness Index database mentioned an 'inadequately educated workforce' as the 'most problematic factor for doing business' in Namibia, ahead of 'access to financing', and 'poor work ethic in labour force' (Schwab, 2015).

Figure 7 Namibia's per capita GDP is among the highest in southern Africa

Per capita GDP based on purchasing power parity, 1990–2021, current international dollars

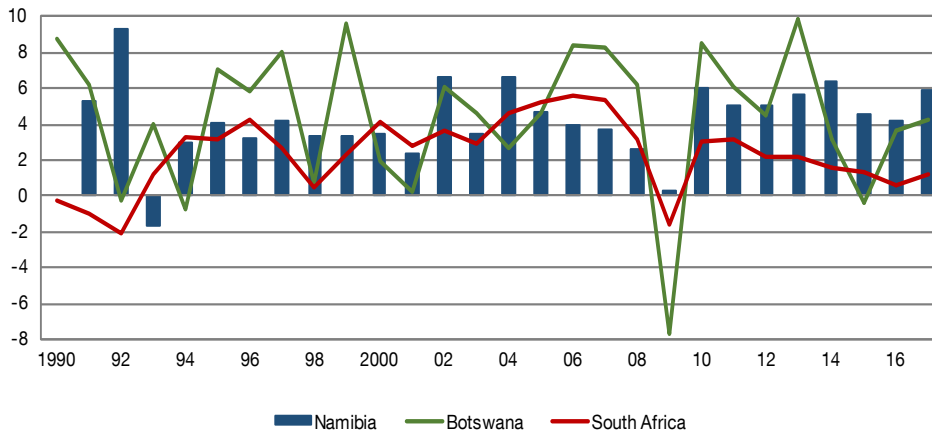


Notes: Per capita GDP here is expressed in purchasing power parity terms, hence the 2014 figure for Namibia, for instance (10,898 international dollars) is much higher than the figure of US\$5,630 quoted in the text above, which uses the Atlas method for currency conversions. Figures after various years in the 2010s are IMF estimates.

Source: IMF (2016).

Figure 8 The economy has grown steadily since 2010

Growth in GDP in constant prices, 1990–2017, per cent

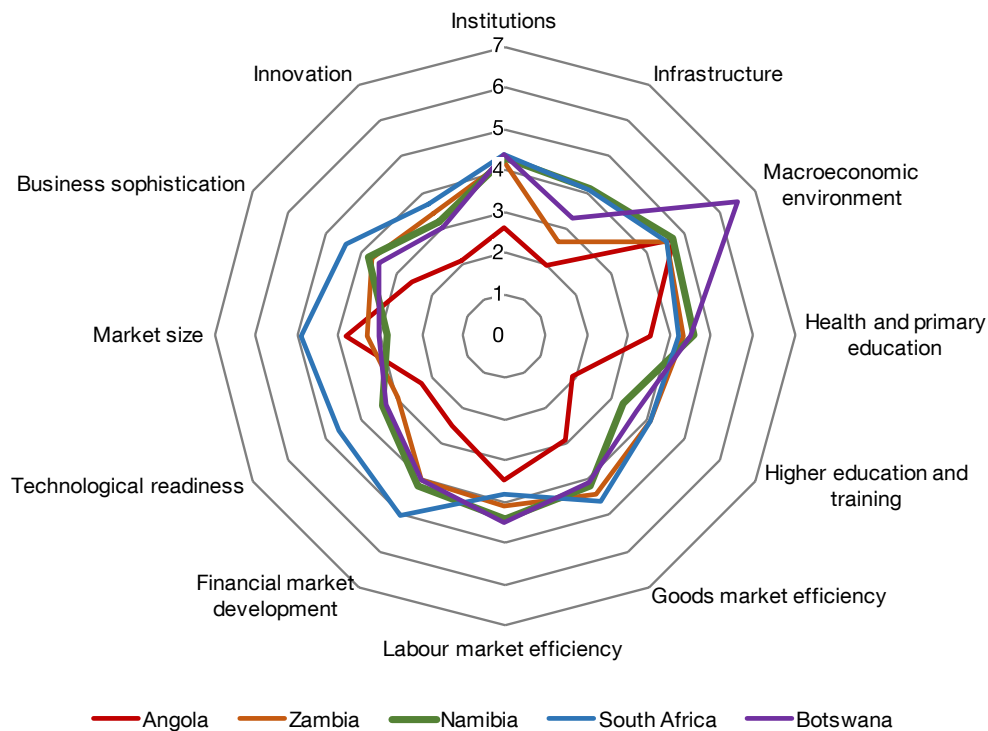


Notes: No data for Namibia in 1990. Data for Botswana after 2012 and for Namibia and South Africa after 2014 are IMF estimates.

Source: IMF (2016).

Figure 9 Namibia is one of the relatively competitive economies of southern Africa

Scores on components of the Global Competitiveness Index, Namibia and neighbouring countries, 2015–16



Note: Data for Angola are for 2014–15.
Source: Schwab (2015).

The Namibian financial sector is expected to play an important role in achieving the country’s projected economic expansion.

Namibia already has one of the most sophisticated banking systems in Africa. There are five commercial banks and four specialized financial institutions, which operate through a nation-wide network of branches and offer a comprehensive range of banking services, including current account and overdraft facilities, term deposits, discounting of bills, foreign exchange and a variety of loan products and general banking facilities. Most of the privately owned banks maintain strong links with South African financial institutions (for instance, most banks train their staff in South Africa, according to financial sector stakeholders). Membership of the Common Monetary Area provides banks with significant benefits, including free capital flows for more efficient allocation within the region. Links to South Africa’s financial markets also help the banks diversify risks and mitigate weaknesses in domestic supervision and human resources. One such risk is raising household indebtedness, which stood at 87 per cent of disposable income in 2013 and may cause financial instability (Phiri and Odhiambo, 2015). The Development Bank of Namibia is the main institution providing long and medium-term financing for private sector businesses, and public–private partnerships. The Bank also funds public sector infrastructure and local authorities, and provides bulk finance to micro-finance providers. However, financial sector stakeholders stated that long-term business financing was not readily available for small, medium and micro enterprises and that the special-purpose SME Bank established to bridge the access to finance gap for small and medium-sized enterprises (SMEs) was not delivering effectively on its mandate.

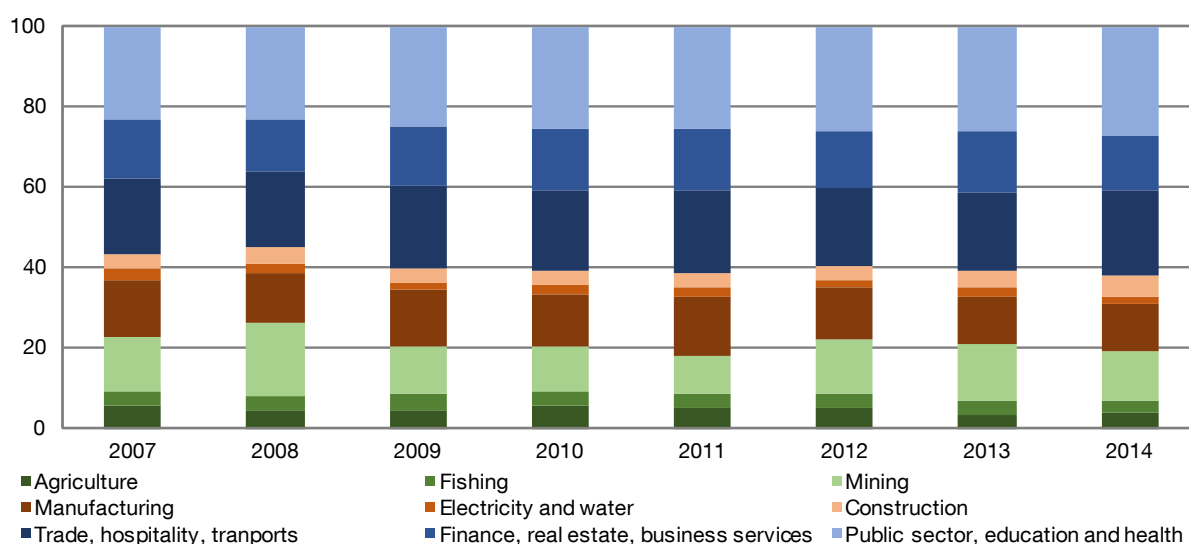
As the economy grows, the need for business financing from all levels of the economy will increase. This demand for financing will not be met by banks only, but will necessitate alternative financing in form of venture capital and private equity, among others. The government acknowledges this weakness and points out that the financial system is currently too shallow to contribute meaningfully to the economy. To this end, the Ministry of Finance has developed a financial sector development strategy whose objective is ‘to develop a more resilient, competitive and dynamic financial system with best practices in order for the sector to realise its full potential in respect of its contribution to the growth of the economy’ (Namibia, 2011a, p. 5). A strong financial institutional setting coupled with a well-thought-out financial sector strategy will be required as a firm foundation for economic growth.

The economy is dual and dependent on primary production

Namibia's formal economy is characterized by the weight of a capital-intensive primary sector and the weakness of manufacturing industries. The structure of production is not that of an industrializing and emerging economy. Economic growth is driven by capital-intensive, extractive activities inherited from the pre-Independence period, including commercial farming (livestock), fisheries and mining (diamonds, followed by uranium and metal ores). In 2014, the primary sector thus accounted for 18.0 per cent of GDP. By contrast, Namibia has a weak manufacturing sector, which contributed only 10.7 per cent of GDP in 2014, on a downward trend since the late 2000s. The secondary sector, which further includes electricity, water and a dynamic construction industry, accounted for no more than 17.7 per cent of GDP in 2014. The tertiary sector thus represented 57.7 per cent of GDP, dominated by public services, and by trade and transport-related activities. These shares have been remarkably stable since 2007, indicating a lack of structural transformation of the economy (**Figure 10**). On the other hand, the growth of specific activities is highly volatile from one year to the other. Agriculture is dependent on very variable rainfall, and thus was expected to contract massively in 2015 following drought and an outbreak of foot and mouth disease in the north of the country. Mining can be affected by the volatility of global prices and demand, or spurred by the opening of new mines – 2015 and 2016 will have seen the opening of new mines for copper, gold and uranium. Other uncertainties for future growth include electricity supply constraints spilling over from South Africa, and the impact of low oil prices on the Angolan economy (Bank of Namibia, 2015).

Figure 10 The composition of GDP has been stable over the past decade

Composition of GDP by activity sector, 2007–2014, per cent

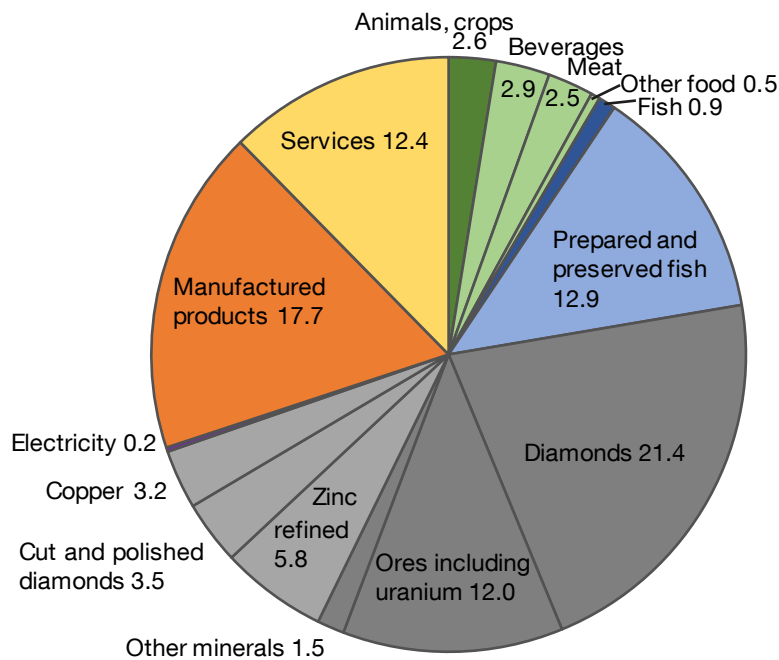


Source: NSA (2015a).

Namibia's dependence on its primary sector appears even more clearly when we consider the structure of exports. Unprocessed products from the primary sector represented 38.4 per cent of exports in 2014, compared with 49.0 per cent for manufactured products and 12.4 per cent for services. However, clubbed together, unprocessed and processed products from agriculture, fisheries and mines accounted for 69.7 per cent of exports, and other manufactured products for just 17.7 per cent (**Figure 11**).

Figure 11 Agriculture, fisheries and mines account for the bulk of exports

Structure of exports by activity sector, based on values in Namibian dollars, 2014, per cent



Source: NSA (2015a).

Namibia's economy is dual: The rural economy based on subsistence agriculture is isolated from the formal economy. Namibia's classification as an upper-middle income economy is misleading, and has been recently qualified by the president of the Republic as 'unfair' (Geingob, 2016, p. 5). Indeed, the urban and formal economies are concentrated in the southern and central regions, while the parts of the northern regions that comprise more than half of the population depend on low-productivity subsistence agriculture, coupled with pensions or remittances received by many households. Subsistence agriculture is labour-intensive, with little or no mechanization even though arable land is scarce – arable land constitutes only 1 per cent of the Namibia's land area. This part of the economy suffers from limited access to land, limited domestic demand, high transport costs, isolation from markets and stiff competition from foreign products, resulting in low incomes and trapping subsistence farmers into a vicious circle of poverty. As a consequence, food security, although it has improved considerably since Independence, remains a key concern – by 2012/13, 20.2 per cent of the rural population were estimated to be 'food insecure', and a further 27.3 per cent 'moderately food insecure' (FAO, n.d.; IFAD, n.d.). Addressing the duality of Namibia's economy and improving the situation of communities that depend on subsistence agriculture will require deliberate, concerted and long-term interventions. Diversification towards a more productive and inclusive economy can be facilitated by a policy of skills development targeting more productive and mechanized agriculture, promote value chains and fostering entrepreneurship.

Greening Namibia's economy can make growth more inclusive. Namibia needs broad-based structural reforms to sustain long-term growth and productivity gains and to promote diversification into higher value-added, non-mineral sectors that could create additional jobs and economic opportunities (Phiri and Odhiambo, 2015). A key option is to accelerate the transition towards a green economy – 'defined as one that results in improved human well-being, poverty reduction and social equity, while significantly reducing environmental risks and ecological scarcities' (UNEP, 2012, p. 4). Namibia already has significant experience with environmental protection. One of *Vision 2030's* strategic objectives is to 'ensure the development of Namibia's natural capital and its sustainable utilisation, for the well-being of the country's social, economic and ecological well-being' (NPC, 2004). More than two-fifths of the country's area is protected as national parks (which extend along most of the Atlantic coast and over large parts of the northern and north-eastern regions), communal conservancies, tourism concessions and so on. Initiated by the Nature Conservation Amendment Act of 1996, communal conservancies are arrangements whereby a community receives property rights over the use of

wildlife conditional on developing a system for natural resource management and the equitable distribution of benefits (mostly from tourism, trophy hunting and hunting by conservancy members). Overall, Namibia's Community-Based Natural Resource Management programme is considered successful (UNEP, 2012; World Bank, 2013). A qualification is that Namibia, like most other African countries, has no overall strategy for developing its green economy yet (Klein et al., 2013).

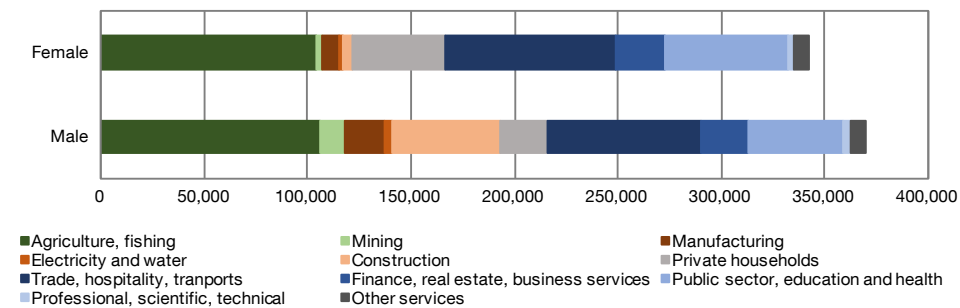
Greening Namibia's economy might be the catalyst needed to stimulate economic diversification and to tackle existing social inequalities. Agriculture, upon which a large proportion of the population depends, and tourism, if anchored on the country's rich biodiversity, present promising green economy potential in the areas of small-scale organic farming, agroforestry and ecotourism, among other sectors. The Capacity Building for Biotrade Project, initiated by the United Nations Environment Programme (UNEP) and supported by *Deutsche Gesellschaft für Zusammenarbeit (GIZ)*, aims to promote the sustainable use of Namibia's biodiversity to produce indigenous natural products, crops and vegetables, and fisheries, along with forest products. While such production remains minor in comparison with mainstream primary activities, UNEP (2012) claims that it has the potential to raise the incomes of a quarter of a million people.

The labour market is dual, with high levels of inactivity, unemployment and informality

Namibia's labour market is dual. The leading activities of Namibia's formal economy, which produce a significant share of GDP and most exports, employ very small numbers of workers. Commercial farming is the main source of income of very few Namibian households (**Section II**). Fishing and mining are capital-intensive industries that operate with few workers – mining employed no more than 14,500 persons in 2014. Other formal activities do not employ very large numbers either. Manufacturing is particularly weak, both compared with other upper-middle income economies and in absolute terms: it provided fewer than 29,000 jobs in 2014. The public sector and public services are more significant, with 105,000 jobs, including education and health (NSA, 2015c). Activities associated with low and uncertain income, poor working conditions and/or informal employment, in which women are often overrepresented, thus represent about two-thirds of total employment. These include subsistence farming, construction, trade and domestic work in private households (**Figure 12**). As a consequence, low-skilled jobs account for the bulk of employment (**Figure 13**).

Figure 12 Employment is concentrated in labour-intensive, low-productivity activity sectors

Persons employed by activity sector, 2014, numbers



Source: NSA (2015c).

Figure 13 Low-skilled jobs represent large proportions of employment

Persons employed by occupation, 2014, numbers



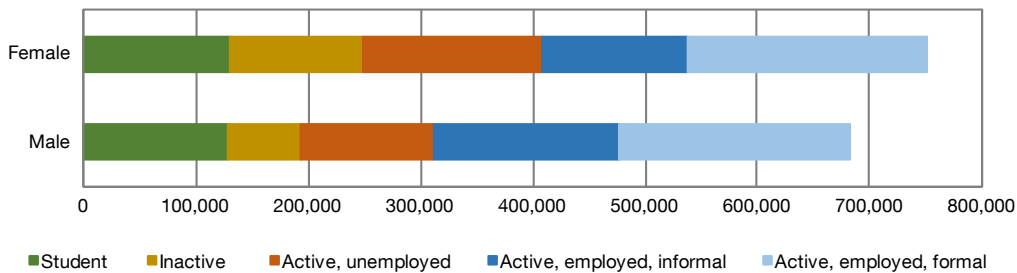
Source: NSA (2015c).

Namibia’s population of working age faces high rates of inactivity, unemployment and informal employment.

The scarcity of skilled jobs in formal activity sectors is one aspect of a broader issue of overall job scarcity. In 2014, out of every 100 Namibians aged 15 and above, 31 were inactive (most were students or elderly persons), while 69 participated in the labour force. Of those, 19 were unemployed (the unemployment rate was 28.1 per cent), 21 were employed informally, and only 29 were employed formally, that is, with a labour contract and benefits (**Figure 14**). Job scarcity is most acute for women who did not study beyond junior secondary level, and for men living in rural areas (**Table 8**). It is extreme in northern and north-eastern regions – 35.9 per cent of persons aged 15 and above were in employment in Oshana in 2014, and 37.7 per cent in Kavango East (NSA, 2015c).

Figure 14 A majority of Namibians are inactive, unemployed or informally employed

Population aged 15 and above by labour market status, 2014, numbers



Source: NSA (2015c).

Table 8 Women with low education levels are largely excluded from the labour market

Employment-to-population ratio, persons aged 15 and above, by education, area and gender, 2014, per cent

Highest level of education completed	Urban		Rural	
	Female	Male	Female	Male
None	32.0	55.0	42.2	61.1
Primary	35.6	54.6	43.5	44.1
Junior secondary	44.8	55.7	39.0	40.7
Senior secondary	53.8	62.9	45.2	53.4
Certificate/diploma	57.2	56.9	57.4	57.2
University	72.8	81.5	80.9	82.0
Postgraduate	88.8	87.0	71.9	100.0
Teacher training	91.1	90.7	88.5	91.1
Total	48.2	59.7	42.9	48.1

Source: NSA (2015c).

Young people are particularly affected. Nearly a quarter of young people aged 15–34 were neither in education or training nor in employment (NEET) in 2014, raising to more than one-third of those aged between 21 and 24. This translated into extremely high unemployment rates among young people who did participate in the labour force – 44.6 per cent among young women and 39.2 per cent among young men. Young people comprised nearly three-quarters of all unemployed persons in the country (NSA, 2015b). Youth unemployment in Namibia is systemic, highly correlated with gender, education levels, rural versus urban residence and regional disparities. Namibia’s *National Employment Policy* acknowledges that young people constitute the largest proportion of the population and that they are the most affected by unemployment, partly as a consequence of low skills levels, skills mismatches, limited access to start-up capital and inability to meet collateral requirements (Namibia, 2013). During consultations with stakeholders in 2012, there was consensus that broad reforms were needed involving education, skills and competencies, strengthening the delivery capacity of the state, including enhanced performance management and accountability, and strengthening institutions (Kanyenze and Lapeyre, 2012).

When they can find a job, young people are mostly employed in lower-skilled occupations. Compared with adults aged 35 and above, they are much less likely to work in skilled agriculture, reflecting migration patterns to urban areas, but much more likely to work in elementary occupations, and, especially for young women, in services and sales or as clerks. Despite rising education levels, young people are under-represented among professionals (**Table 9**).

Table 9 Young people are over-represented in low-skilled jobs

Employed persons by occupation, age group and gender, 2014, per cent

Occupation	Young people aged 15–34		Adults aged 35 and above	
	Female	Male	Female	Male
Armed forces	0.8	1.1	0.5	2.2
Legislators and managers	2.1	1.5	3.3	5.0
Professionals	8.1	5.6	9.1	5.8
Technicians and associate professionals	7.1	5.1	5.3	4.3
Clerks	10.1	3.1	4.3	1.9
Services and sales persons	23.4	12.7	12.8	11.6
Skilled agriculture	14.3	16.6	34.1	24.6
Craft and trade workers	5.2	22.8	6.3	18.1
Machine operators	0.5	8.0	0.2	9.0
Elementary	28.2	23.3	24.0	17.3

Source: NSA (2015b).

Employment and development policies are needed to boost skilled jobs creation

Namibia has a number of recent policies for employment and economic development, but their implementation and effectiveness will need to be assessed. The *National Employment Policy* is the main instrument for guiding and directing the country's employment outcomes (Namibia, 2013). Together with a multi-sectoral plan of action, it was designed to direct employment outcomes towards the priorities and targets of *NDP 4*. The policy is the core on which all active labour market policies and programmes are supposed to be anchored, including the *National Policy for Micro, Small and Medium-sized Enterprises (MSME)*, which was recently revised to make it more responsive to the need of MSMEs and to provide for a more coordinated implementation framework (Namibia, 2015). The revised policy has the mission to devise programmes and interventions aimed at developing MSMEs across key economic sectors, while creating synergies with the public and private sectors. The policy also provides for the promotion of an entrepreneurial culture in Namibia, through the promotion of entrepreneurship education, programmes on entrepreneurship for young people and women, and related support services, among other measures.

Namibia's Industrial Policy (Namibia, 2012a) and the *National Rural Development Policy* (Namibia, 2011c), if well aligned to the employment policy, could become tools to foster employment creation. Given the extent of deprivation in the more densely populated rural areas of the northern and north-eastern regions, rural development appears to be a priority. The *National Rural Development Policy* emphasizes implementation challenges including the present condition of the population (poverty, food insecurity, the HIV/AIDS epidemic and low skills levels), deficient infrastructure and weak governance – policy interventions are poorly coordinated and decentralization is progressing slowly. It defines seven strategic priorities: coordination and integration of rural development action, empowerment and civic participation, infrastructure and services development, environmental protection and sustainable use of natural resources, social welfare services, support to agriculture, and sustainable economic development (Namibia, 2011c). The European Union has supported rural development in Namibia, with key programmes in water and sanitation, climate change adaptation and mitigation, and communal land development (promoting the commercialization of crops and livestock production through land registration, land use planning, mentoring services and farm investments). It is developing a programme to develop the livestock value chain in communal areas in the northern regions (European Union, 2016).

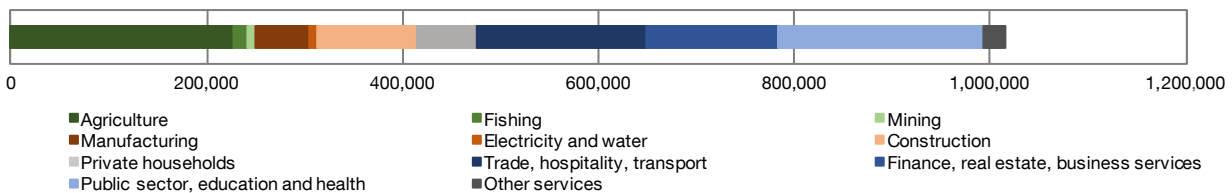
Finally, the *Namibia Financial Sector Strategy* could help provide the finance needed for entrepreneurial activity, including enterprise creation by young people (Namibia, 2011a). According to the 2012 *Finscope Consumer Survey*, more than half of the adult population in Namibia have bank accounts, but only 13 per cent have access to credit, including micro-finance (Keulder and Naidoo, 2012). Most people do not use the existing financial system for productive purposes that could facilitate employment creation.

Given the lack of structural transformation of Namibia's economy and the persistence of high rates of inactivity and unemployment over the past years, the implementation and effectiveness of these policies will need to be assessed. Indeed, recent forecasts of the demand for skills suggest that a potential for skilled jobs creation exists, but is limited.

Skills demand forecasts suggest that Namibia's economy will create a limited number of skilled jobs over the next decade. Namibian authorities have produced a number of forecasts of the demand for skills over the next decade. The NPC developed the Namibian Occupational Demand and Supply Outlook Model (NODSOM), which identified occupational shortages and surpluses based on forecasts regarding macroeconomic growth and the expansion of twenty-nine occupations on the demand side, and demographic growth, education and training, and labour force participation on the supply side. Fed with census and survey data, NODSOM was used to forecast human resource requirements by 2025, outlined in the *National Human Resources Plan 2010–2025* (NPC, 2012a). The results indicate that the net demand for workers will grow from 53,243 persons per year in 2012 to 93,611 by 2025. However, the fact that Namibia's economy will demand about one million workers in total over those fourteen years will not be accompanied with a radical transformation of labour market structures. First, agriculture and services will account for the bulk of the net demand, and within the secondary sector construction will still dominate over manufacturing industries (**Figure 15**). Second, elementary occupations will account for nearly a quarter of jobs needed, against one-fifth for technicians, professionals and managers taken together (**Figure 16**).

Figure 15 Job creation as forecast over 2012–25 will not transform Namibia's economy

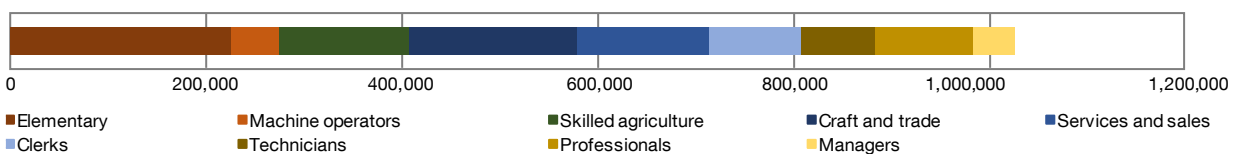
Net demand for human resources forecast by NODSOM by activity sector, 2012–2025, numbers



Source: NPC (2012).

Figure 16 Job creation as forecast over 2012–25 will not transform Namibia's labour market

Net demand for human resources forecast by NODSOM by occupation, 2012–2025, numbers



Source: NPC (2012a).

The NTA has developed *Sector Skills Plans* for nine key economic sectors: fisheries and maritime; mining and quarrying; manufacturing and related industries; energy, water and sanitation; construction; wholesale and retail trade; postal services and telecommunications; finance and business services; and health and social services. The plans are based on research, data analysis and consultation of a wide range of stakeholders, including industry skills committees in which firms are represented. Seven of them display detailed forecasts of the demand for workers at different levels of skills by 2015 and 2020. Overall, that demand is not very large, totalling about 36,000 workers across the seven sectors by 2020, mostly craft and related trade workers and artisans, as well as professionals. Construction and manufacturing are the two sectors with the largest demand, but this is still below 10,000 workers by 2020 in both cases (**Table 10**).

Table 10 Demand for skills by 2020 will be significant but limited

Skills demand in selected sectors by 2015 and 2020, numbers

Occupation	Fishing and maritime		Mining and quarrying		Manufacturing and related		Electricity and gas	
	2015	2020	2015	2020	2015	2020	2015	2020
Managers	95	151			615	1,060		
Professionals	395	725	335	580	1,465	2,600	210	330
Associate professionals							242	350
Technicians			579	813				
Artisans								
Craft and related trade workers	1,100	2,950	1,275	2,199	3,385	4,970	420	590
Plant and machine operators	700	1,150	231	289	500	800	258	363
Total	2,290	4,976	2,420	3,881	5,965	9,430	1,130	1,633

Occupation	Water and sanitation		Construction		Finance and business services		Total	
	2015	2020	2015	2020	2015	2020	2015	2020
Managers	233	337	460	830			1,403	2,378
Professionals	145	225	580	980	1,460	2,580	4,590	8,020
Associate professionals							242	350
Technicians			440	670	1,320	2,470	2,339	3,953
Artisans	560	855	4,060	7,250			4,620	8,105
Craft and related trade workers							6,180	10,709
Plant and machine operators	170	265					1,859	2,867
Total	1,108	1,682	5,540	9,730	2,780	5,050	21,233	36,382

Source: NTA website.

NODSOM and Sector Skills Plans forecasts have two implications. First, even though the demand for skills they imply is limited, it is significant, and meeting it will be a challenge especially as the VET system remains underdeveloped in Namibia, and does not cover several levels of the National Qualifications Framework (NQF) (**Section V**). Second, unless policies and other factors bring in structural change and boost job creation, Namibia in the 2020s will still have a paucity of skilled jobs, even as the numbers of young people educated at senior secondary and tertiary levels and their proportion in the labour force will have increased. This will perpetuate poverty and inequality, and risks creating tension in the country. The challenge is thus to transform the *National Human Resources Plan* and the *Sector Skills Plans* into tools for producing the type and level of skills needed to boost the demand for skills from the economy as well as the employability of young people. In this regard, more rigorous application of skills gap analysis can play a critical role in ensuring that skills development is aligned with the demand.

To conclude, while Namibia as a whole has experienced steady growth, its economy and labour market remain dual. The formal economy is capital-intensive and has not contributed to inequality reduction by creating large numbers of skilled jobs, while the informal economy remains extremely fragile. Namibia already has an array of articulated policy documents dealing with employment and economic development, but weak policy coherence, harmonization and implementation are hampering improvement in labour market outcomes. With a rapid increase in the numbers of young people entering the labour market every year, and increasingly migrating to urban areas, these concerns are becoming ever more pressing. Skills development broadly defined has a key part to play, yet at present VET and higher education operate in isolation, and do not produce either the quantity of skilled workers needed to cope with the demography of the country, or the quality of skills needed to guarantee their absorption by the economy (**Sections V and VI**). On the long term, however, a precondition for skills development will be the existence of a stronger basic education system than exists at present (**Section IV**).

IV Education system

This section analyses Namibia's education system, and argues that it does not provide a strong enough foundation for VET, higher education and innovation. Since Independence the constitutional commitment to education has been backed by high levels of public expenditure. This allowed an increase in enrolment but the task of building an inclusive and equitable education system is unfinished – a significant proportion of children have no access to education, and an even larger proportion leave school early and/or with poor learning outcomes. A consequence is low education levels among the young people and adults who make up the labour force, a situation which will persist into the future.

The constitutional commitment to education has been backed by public expenditure

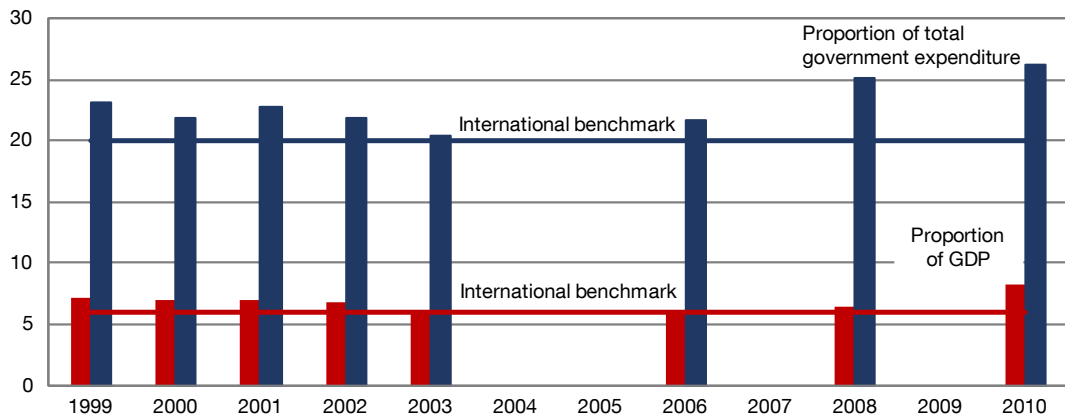
The constitutional commitment to free and compulsory primary education has been complemented by the objectives of current development strategies and plans. The Constitution of the Republic of Namibia provides that 'all persons shall have the right to education'. In particular, 'primary education shall be compulsory', and children are to attend until they either complete primary education or reach the age of 16 years (Article 20). The state has the main responsibility for making the right to education effective, through the creation and maintenance of free public schools. However, the Constitution also guarantees the right for all persons to create private schools, up to tertiary education level, conditional on registration, quality standards and the absence of restrictions on the admission of pupils and on the recruitment of staff (Namibia, 1990). The key education law is the Education Act no. 16 of 2001, which sets the overall architecture of the system. The Act has been recently reviewed and should be revised by Parliament in the second half of 2016. Other education laws relevant to the present report include the Vocational Education and Training Act no. 1 of 2008 and the Higher Education Act no. 26 of 2003 (IBE, 2010). *Vision 2030*, *NDP 4* and the *Harambee Prosperity Plan* all reaffirm the centrality of education to the country's development (**Section II**). However, the last of these has an exclusive focus on VET as a tool for 'social progression', while the earlier documents have a broader scope which includes early childhood development, basic education and higher education.

Pending the completion of a comprehensive reform undertaken by the Ministry of Basic Education, Arts and Culture (MBEAC) (**Section V**), the basic education curriculum is structured as follows: seven years of lower (Grades 1–4) then upper (Grades 5–7) primary education, followed with three years of junior secondary education (Grades 8–10) (Mutuku, n.d.). The official definition of basic education also includes pre-primary education, even though actual provision at that level remains minimal. Grade 10 leads to an external, certifying examination, after which pupils can enrol in senior secondary education for two years (Grades 11–12), leading to another external, certifying examination that conditions entry into higher education (**Section VI**). Grade 10 and 12 graduates can also enter VET or distance learning. Opportunities for pupils who drop out early or fail Grade 10 or 12 examinations include non-formal VET, but this operates on a very small scale compared with the numbers of young people in that situation (**Section V**).

Namibia has maintained high levels of public expenditure on education. Data availability on public expenditure on education in Namibia since Independence is patchy. The UNESCO Institute for Statistics (UIS) database has only eight years of data, all between 1999 and 2010 (UIS, 2016). Over that period, Namibia appears to have devoted consistently large shares of GDP and of government expenditure to education – above the values of 6 per cent and 20 per cent respectively which are often used as international benchmarks (**Figure 17**). Consistent with the constitutional commitment to free and compulsory primary education, that level of education received more than half of total expenditure on education over the period, followed by secondary education, which received nearly a quarter. The year 2010 marked a noticeable shift towards tertiary education, which needs to be confirmed by more recent data (**Figure 18**).

Figure 17 Spending on education has been higher than international benchmarks

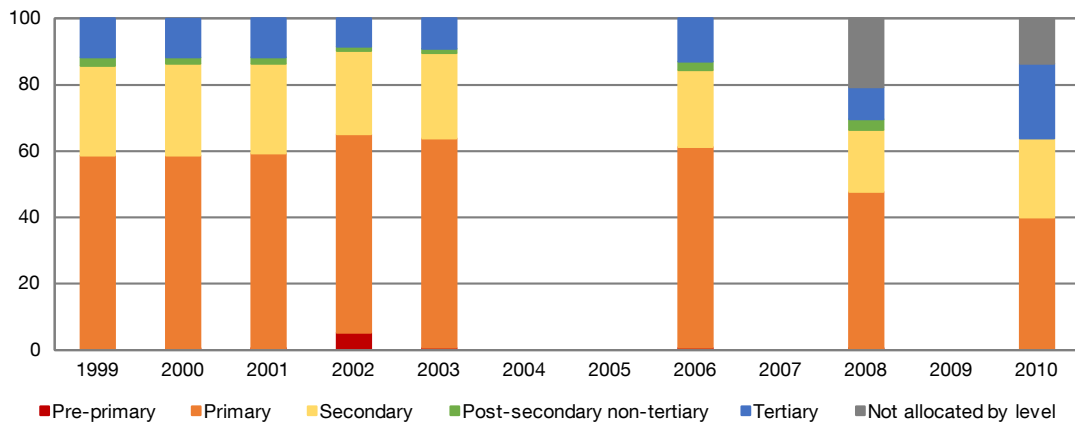
Government expenditure on education as a proportion of GDP and of total government expenditure, 1999–2010, per cent



Source: UIS (2016).

Figure 18 Expenditure has focused on primary and secondary education

Distribution of government expenditure by level of education, 1999–2010, per cent



Source: UIS (2016).

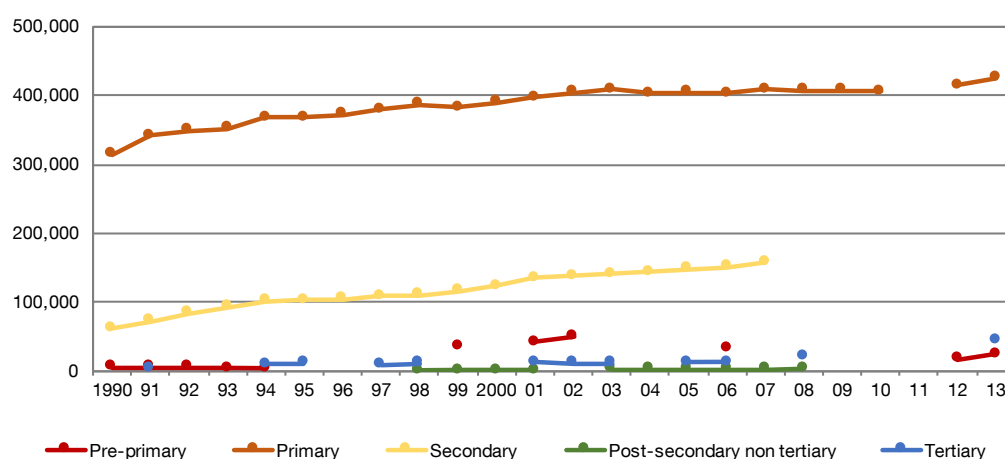
Public expenditure on education in Namibia being high already, the priority for the future is to improve the efficiency of spending, especially as the current performance of the system is disappointing. In this regard, two figures stand out. First, pre-primary education was barely financed from 1999 to 2010. *NDP 4* noted that the country still had no public early childhood development centre by 2012 (NPC, 2012b). Second, current expenditure accounted for 99.2 per cent of total expenditure in 2010, including 77.0 per cent for salaries. There was almost no capital expenditure, which is a constraint on school quality (UIS, 2016).

The task of building an inclusive and equitable education system remains unfinished

Enrolment has increased rapidly since 1990, particularly at secondary and tertiary levels. Legal commitments and high levels of public expenditure are only partly reflected in enrolment figures (**Figure 19**). Enrolment in primary education expanded rapidly in the 1990s, but stagnated during the 2000s – possibly in reaction to the HIV/AIDS epidemic – before resuming growth in the 2010s. Meanwhile, the 1990s and 2000s witnessed a rapid recovery of secondary and tertiary education from the exceptionally low levels of the pre-Independence period. Enrolment at those levels grew by 153 per cent over 1990–2007 and 374 per cent over 1991–2008. More recent administrative data indicate that tertiary education has kept expanding. By 2013, total enrolment in higher education would have reached 43,761, 122 per cent higher than in 2008 (NCHE, 2015). Pre-primary education on the other hand remains underdeveloped. Enrolment figures in the UIS database are erratic, with enrolment in 2013 representing less than half of the 2002 figure. Census data indicate that only 37,789 young children aged 0–4 were attending any form of early childhood care and education in 2011, representing a small proportion of the relevant population, especially in rural areas (**Table 11**).

Figure 19 The education system has expanded rapidly but irregularly

Enrolment by level of education, 1990–2013, numbers



Note: The 2013 figure for tertiary education is based on administrative data published by NCHE.

Sources: NCHE (2015), UIS (2016).

Table 11 Attendance at early childhood care and education remains minimal

Proportion of children aged 0–4 attending early childhood care and education, 2011, per cent

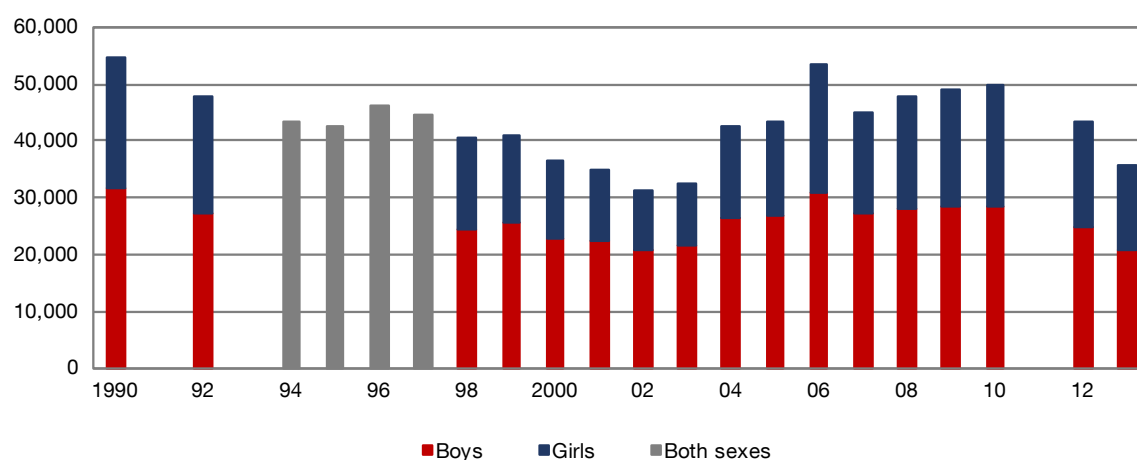
Programme	Urban	Rural
Edu-care programme	12.0	5.6
Pre-primary education	7.4	4.2
No attendance	79.5	89.5
Don't know	1.1	0.6

Source: NSA (2011).

Primary education is not universal yet, and little progress has been made since the late 1990s towards enrolling out-of-school children. The system in theory has the capacity to enrol all children of primary school-going age, as indicated by a GER above 100 per cent in all years since Independence. However, between 8.7 and 15.1 per cent of children of this age group were out of school between 1994 and 2013, numbering between 30,000 and 55,000, of whom 60 per cent were boys (UIS, 2016). Rapid progress made during the 1990s was reversed during the 2000s, so that despite a sharp decline between 2010 and 2013, Namibia still had more out-of-school children in 2013 than in 2002 (**Figure 20**).

Figure 20 Namibia still has significant numbers of children out of primary school

Out-of-school children, 1990–2013, numbers



Source: UIS (2016).

Namibian children struggle to complete basic education, as attested by indicators of internal efficiency. Almost half of all children enter Grade 1 later than the official age, more than one in seven are repeating grades in a given year, and almost one in ten leave school before completing the last grade year of primary education (Grade 7). Retention has improved steadily since 2003, when the dropout rate peaked at 26.7 per cent. However, taking into account children who never enrolled and those who left school early, nearly one-fifth of a cohort of children still fail to complete their primary education. While most pupils who do so now make the transition to junior secondary education, large proportions of junior secondary school pupils repeat grades and/or drop out before completing Grade 10 (**Table 12**). Finally, more than one-third leave the education system after Grade 10, instead of entering senior secondary education or VET (**Table 13**). As a result, Grade 10 remains the most frequent level of educational attainment in today's young population, even though higher education and most VET are accessible only to Grade 12 graduates with high enough marks – who are in small numbers given the low learning outcomes in basic education.

Table 12 The internal efficiency of the basic education system could improve

Indicators of internal efficiency at primary and junior secondary levels, most recent year available, per cent

Net intake rate to Grade 1	52.3
Percentage of repeaters in primary education	14.9
Cumulative drop-out rate to the last grade of primary education	9.4
Gross graduation ratio from primary education	82.2
Effective transition rate from primary to lower secondary general education	96.0
Percentage of repeaters in lower secondary general education	22.9
Cumulative drop-out rate to the last grade of lower secondary general education	22.4

Note: Data are for 2013 except drop-out and transition rates (2012) and intake rate (2010).

Source: UIS (2016).

Table 13 Grade 10 at the end of junior secondary education is a major exit point

School leaving rates between 2011 and 2012, by grade, per cent

Education level	Grade	Male	Female
Lower primary	Grade 1	2.4	2.5
	Grade 2	-0.2	0.2
	Grade 3	0.0	0.7
	Grade 4	0.8	0.6
Upper primary	Grade 5	2.3	4.0
	Grade 6	2.6	3.1
	Grade 7	3.2	3.3
Junior secondary	Grade 8	8.8	9.6
	Grade 9	7.5	7.2
	Grade 10	33.9	33.9
Senior secondary	Grade 11	2.4	2.9

Source: NSA (2015a).

Learning outcomes are low in international comparison, and their distribution within the country reflects patterns of inequality in Namibian society. Learning outcomes in basic education are documented by both an international and a national assessment. Namibia participated in the four rounds of the Southern and Eastern Africa Consortium for Monitoring Educational Quality (SACMEQ) survey, conducted in 1995, 2000, 2007 and 2012–14. Results of the last round, SACMEQ IV, are not publicly available yet, but those of SACMEQ II and III remain indicative of Namibia's situation within the region and of trends in achievement of Grade 6 pupils of the 2000s, who are now young adults.

Three facts stand out. First, the average scores of Namibia's Grade 6 pupils were among the lowest in the region in 2007 in mathematics (Namibia ranked thirteenth of fifteen countries and entities), and below average in reading (Namibia ranked ninth). Namibia thus performed more or less on a par with South Africa, but below Botswana or Swaziland, and way below countries with larger populations such as Kenya and the United Republic of Tanzania. Second, scores varied dramatically within Namibia. Reading scores in the Erongo and Khomas regions were as high as the average scores of the best-performing countries, while mathematics scores in the six northern and north-eastern regions that contain half the country's population were lower than the average scores of any SACMEQ country except Malawi and Zambia. Unsurprisingly, scores were also higher in urban than in rural areas, and were closely correlated with children's socio-economic status (**Figure 21**). Gender gaps on the other hand are insignificant. Third, these low and uneven scores were in fact the outcome of a significant improvement since 2000, especially in reading, with the distribution of pupils shifting towards intermediate skills levels. Despite this improvement, extremely few pupils mastered advanced skills in 2007, especially in mathematics (**Figure 22**).

Namibia's national assessment suggests that learning outcomes may have improved somewhat in recent years. Initiated in 2009 and 2010, the National Standardized Achievement Tests (NSAT) include all pupils in Grades 5 and 7. They cover English (as a second language) and mathematics, plus natural science in Grade 7. Results confirm that achievement is low and uneven, especially in mathematics. Even in the best performing region, Khomas, 70 per cent of Grade 5 pupils were at or below basic level in mathematics in 2013. There seems to have been some improvement, though, especially in 2014 and in Grade 7, which will need to be confirmed in the next rounds of the tests (**Table 14**).

Table 14 Namibia's national assessments confirm the need for improving learning outcomes

NSAT results, Grades 5 and 7, 2009–14, per cent

Grade 5: Average national percentage scores	2009	2011	2013	2014
English (second language)	42	46	44	44
Mathematics	43	43	44	47

Grade 5: proportion of pupils at or below basic level in mathematics	2009	2011	2013
Best performing region (Khomas)	71	73	70
Worst performing region (Ohangwena)	97	97	95

Grade 7: average national percentage scores	2010	2012	2014
English (second language)	45	45	49
Mathematics	42	45	48
Natural science	51	54	58

Source: Mutuku (n.d.).

The reasons behind the low performance of Namibia's education system are complex, but there are signs that the quality of schools is one issue. An analysis of the transmission of knowledge, skills and competencies from teachers to pupils in basic education is beyond the scope of the present report. However, a few key issues emerge that are also relevant to VET and to higher education (**Sections V and VI**). First, Namibia's late Independence after decades of occupation, apartheid and conflict implied that the country would face tremendous challenges in building an inclusive education system of good quality. The HIV/AIDS epidemic, which took a terrible toll on teachers, pupils and their parents, was an added obstacle, reflected in the stagnation of the system during the 2000s. HIV-positive children still risk facing stigmatization at school (Baxen and Haipinge, 2015).

Second, the transition towards English as the medium of instruction has been difficult, as few teachers have mastered the language. Proficiency in English appeared as a key determinant of achievement in mathematics in SACMEQ II data collected in 2000 (Garrouste, 2011), and was mentioned as a key determinant for success in education and employment by all stakeholders (**Section V**).

Third, some Namibian schools lack basic resources, in terms of teachers, buildings and equipment, and teaching/learning materials. The number of primary school teachers hovered between 12,000 and 14,000 between 1995 and 2010. Despite a discernible increasing trend after 2004, Namibia had only 10 per cent more primary school teachers in 2010 than in 1995. The pupil–teacher ratio was therefore high, at nearly 30:1 in 2010 (down from a peak at 33:1 in 2004) (UIS, 2016). In 2012 some schools still operated in precarious conditions, without electricity, potable water or toilets, although the situation had improved noticeably over that in 2010. On the other hand, a shortage of textbooks had appeared in primary schools (**Table 15**). More recent education management information systems (EMIS) data would be necessary to assess the present resources of schools, but conditions in the early 2010s certainly were constraining teaching and learning processes in a significant minority of schools.

Table 15 Many schools lack basic resources

Proportion of schools with basic infrastructure, per cent, and pupils per textbook, 2010 and 2012

School infrastructure	2010	2012
Primary schools with access to electricity	59.3	58.3
access to potable water	70.7	77.4
toilets	70.4	84.8
Secondary schools with access to electricity	59.8	79.8
access to potable water	89.8	87.6
toilets	68.3	97.6
Pupils per mathematics textbook in primary education	1.1	2.9
Pupils per reading textbook in primary education	1.1	1.6

Source: UIS (2016).

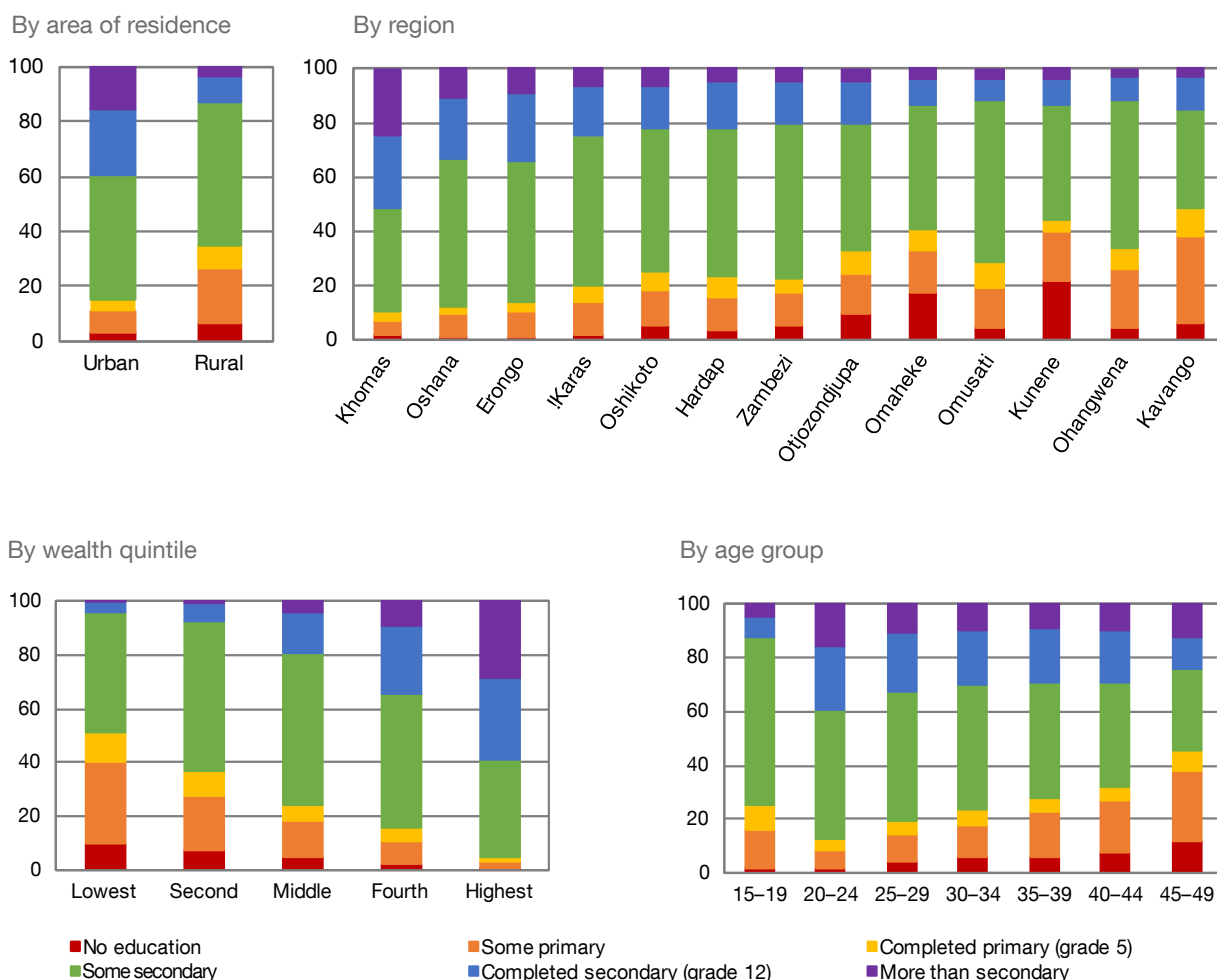
Low and unequal levels of qualifications in the labour force will persist into the future

Namibia's failure to universalize primary education implies that youth illiteracy is still a significant issue. By 2015, the youth literacy rate (ages 15–24) was estimated at 89.9 per cent, hardly higher than at Independence (88.1 per cent in 1991). Consistent with the majority of boys among children out of primary school, the rate is even lower among young men (86.5 per cent). Despite a significant decrease since 2007, the youth illiterate population is higher than at Independence or in the early 2000s; by 2015 it was estimated at more than 52,000 persons (UIS, 2016).

The distribution of attainment in the youth and adult population reflects broad patterns of inequality in Namibian society. The current population aged 15–49 years has low overall attainment: 72.1 per cent of women and 74.7 per cent of men did not complete senior secondary education (Grade 12) (NSA, 2014b). While gender gaps are very small and tend to favour women, major disparities appear between urban and rural areas, between regions, and between wealth quintiles. Comparisons between age groups reflect the expansion of the education system over the past couple of decades, but indicate that adults with education below senior secondary level will keep comprising the majority of the population over the horizon of current development strategies and plans (**Figure 23**).

Figure 23 Educational attainment in the youth and adult population is low and unequal

Highest level of educational attainment, women aged 15–49, 2013, per cent



Note: Figures for men are very similar, and show the same patterns.

Source: NSA (2014b).

A scarcity of highly qualified employees characterizes the Namibian labour force. The most recent survey data available, from the 2014 Labour Force Survey, show that education conditions access to employment in a context of job scarcity (**Section III**). The proportion of the population aged 15 and above in employment ranges from less than 50 per cent among those with either no education, primary education or junior secondary education, to more than 55 per cent among those with senior secondary education and 77.5 per cent among those with university education (NSA, 2015b). However, even among persons in employment the share of highly qualified workers is very low, translating into extremely small numbers (**Table 16**).

Table 16 Namibia's economy has to rely upon a very small pool of highly educated workers

Distribution of the employed population by highest level of education completed, 2014

Education level	Numbers	Per cent
No education	80,669	11.3
Primary education	161,544	22.7
Junior secondary education	244,103	34.2
Senior secondary education	152,042	21.3
Certificate/diploma	6,196	0.9
University	38,998	5.5
Postgraduate	7,797	1.1
Teacher training	12,258	1.7
Don't know	9,145	1.3
Total	712,752	100.0

Source: NSA (2015b).

To conclude, education has featured highly on Namibia's policy agenda since Independence, and has been a consistent priority of government expenditure. As a result, most Namibian children now enrol in primary education, and the numbers of students at secondary and tertiary levels have kept increasing rapidly through the past two decades. This has been achieved despite the devastating consequences of the country's pre-Independence history and of the HIV/AIDS epidemic. However, the task of building a truly inclusive education system of good quality is incomplete. About 10 per cent of children fail to enrol at all, many more leave school early with low learning outcomes, and there are only a few signs of the situation improving in recent years.

The consequences for Namibia's future are serious. First, the school system contributes to reproducing inequality in Namibian society. To mention but a few patterns of inequality, children belonging to poor households, growing up without exposure to English, living in rural areas or in disadvantaged regions – who comprise a majority of the child population – are unlikely to complete secondary education and to access decent employment. Second, basic education does not provide a strong foundation for learning in VET or in higher education. Not enough children pass Grade 12, or even Grade 10. Many of those who do have insufficient knowledge, skills and competencies compared with the entry requirements of VET institutions and universities. Third, Namibia's economy has to function with a very small pool of qualified, employed workers, which affects its capacity to expand and innovate.

An immediate implication for the public policies of MHETI is the double-headed urgency of providing remedial education and training for disadvantaged young people and adults and of expanding the supply of those with higher qualifications and skills. Keeping these concerns in mind, **Sections V, VI and VII** will respectively assess the current state of VET, higher education and innovation, before **Sections VIII and IX** draw conclusions on strategic priorities and policy options for the years to come.

V Vocational education and training

This section analyses the present situation of VET in Namibia, highlighting tensions which call for a transformation of the existing system as much as for its expansion. The current provision of centre-based VET is insufficient to meet demand: fragmented between different types of providers, VET has capacity to accommodate only a fraction of those who completed basic education, and excludes those who did not. High rates of drop-out and the poor quality of the training delivered further reduce the supply of skilled workers. Finally, the lack of relevance of VET to the needs of trainees and employers adds to the dysfunctions of Namibia's labour market. Ongoing or envisaged reforms of the curriculum aim to correct these deficiencies and to improve the articulation of the system, but they are not consistent with each other. Indeed, a clarification of the complex governance and financing architecture for VET and higher education that has evolved over the past couple of decades appears necessary to make the shift from policy development to implementation.

The current provision of centre-based VET is insufficient to meet demand

Namibia's VET system is fragmented between different types of providers and does not constitute a comprehensive and consistent network. The core of public provision consists of seven vocational training centres (VTC) run by the NTA, of which one is located in Windhoek and the others in the northern regions. These centres offer training in a relatively wide range of trades (ranging from manufacturing and general construction to office administration), mostly at levels 1–3 of the NQF. Several ministries also have training centres, usually focusing on their own sector, for instance the Namibian Maritime and Fisheries Institute (NAMFI) in Walvis Bay. Public firms, including Nampower and Namwater, run their own centres. Namwater's Human Resources Development Centre in Okahandja covers more or less the same trades as a VTC. The Namibia College of Open Learning (NAMCOL) offers non-formal training at levels 1–3 in four trades (automotive mechanics, plumbing and pipefitting, welding and metal fabrication, and office administration). Finally, the Namibia University for Science and Technology (NUST), in Windhoek, is responsible for VET at higher education level (**Section VI**).

Private provision comprises a great diversity of for-profit and not-for-profit centres run by business associations, Namibian or international non-government organizations (NGOs), community organizations, churches and individuals. The largest is the Namibian Institute of Mining and Technology (NIMT), which offers training in a wide range of technical trades at levels 1–3 on its three campuses in the west (Arandis), north (Tsumeb) and south (Keetmanshoop) of the country. More specialized training is provided by centres linked to a specific industry, mostly located in Windhoek, such as the Wolwedans Foundation Trust/Namibia Institute of Culinary Education (hospitality and tourism, levels 1–3) and the Institute of Bankers (levels 5–7). At higher education level, some providers offer initial training at levels 5 and 6, for instance Monitronic Success College (management, engineering, information technology, with branches in Ondangwa, Otjiwarongo). Advanced training up to levels 8 and 9 is provided by the International University of Management (IUM), which covers a wide range of subjects (**Section VI**), while Triumphant College focuses on electrical and electronic engineering and telecommunications. Non-formal training is delivered by the eight community skills development centres (COSDEC), spread across the country, run by the foundation of the same name (COSDEF), and by community-based training service providers such as the Katutura Youth Enterprise Centre (KAYEC).

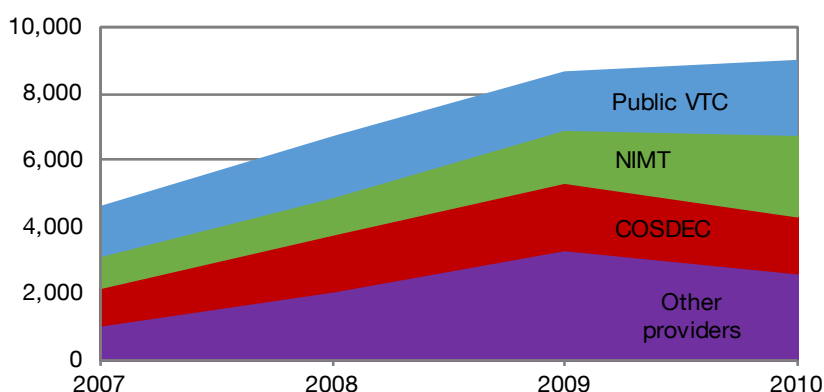
A great diversity of public and private TVET providers is a common feature of national systems, and may reflect the diversity of learners and of skills in demand in an economy. In Namibia, however, this diversity palliates the lack of a comprehensive and consistent network of training institutions. Incomplete geographical coverage is an obvious issue. The heavy concentration of public and especially private institutions in Windhoek adds to the many factors attracting large-scale migration to the city. Efforts to expand coverage have been concentrated on the north, in which half the population live, and have left out entire regions, especially in the south and west. For instance, public VTCs exist in only seven of the fourteen regions; neither Kunene, a remote rural region, nor Erongo, an infrastructure-rich, urbanized region, has a VTC. NIMT expanded from its main campus in Arandis, but its three campuses are still very distant from the homes of most of its trainees. Transportation and accommodation costs thus represent formidable barriers to accessing VET,

especially for disadvantaged young people. The coverage of trades and skills is uneven as well. Basic skills in areas such as general construction, metal fabrication, automotive mechanics and business services represent the bulk of the supply, and key advanced skills are offered only in niche centres, or not at all. In this case, firms, whether public or private, have to train their employees internally, send them abroad for training (often to South Africa, occasionally to Germany), or hire qualified expatriate workers.

The capacity of the system is not in line with the demography of the country. As the vocational education and training management information system (VETMIS) is still being developed and not all providers are accredited at all or by the same authority (see below), it is difficult to provide comprehensive and recent enrolment figures for VET in Namibia, and to compare them with enrolment in general education. Despite their limitations, however, available data clearly indicate that capacity is a major issue. In 2011, Namibia had about 239,000 young people aged 15–19 and 216,000 aged 20–24; by 2030 these figures will have risen substantially (**Section II**). Against this, in 2010, twenty-one public and private institutions, including the most significant institutions, together had no more than 9,018 trainees, of which public VTCs, NIMT and COSDECs accounted for more than 70 per cent (**Figure 24**). In 2014/15, twenty-four public and private institutions reporting to the NTA had a total of 7,877 trainees under either the competency-based education and training (CBET) or the modular training model, down from 8,490 the previous year (**Table 17**). These 2010 and 2014/15 figures are not comparable as they do not cover the same institutions and the latter exclude enrolment under other training models (among whom are a majority of NIMT trainees) (see below). Yet the evidence is clear: total enrolment in VET, which may have reached 15,000 in 2015 (Namibia, 2016), remains extremely low in comparison with Namibia's youth population.

Figure 24 Enrolment in VET increased rapidly, but remained low in 2010

Enrolment in VET by type of institution, 2007–10, numbers



Note: Missing data for individual centres affect the comparability of data over years. In particular, there is no 2010 figure for Katutura Youth Enterprise Centre, which accounted for 14 per cent of total enrolment in 2009.

Source: NPC (2012a).

Table 17 The capacity of VET remained insufficient by 2014/15

Enrolment in VET by type of institution and training model, 2013/14 and 2014/15, numbers

Institution	CBET		Modular training		Total	
	2013/14	2014/15	2013/14	2014/15	2013/14	2014/15
Public VTCs	3,923	2,967	1,625	1,860	5,548	4,827
National Youth Service	1,110	825	–	–	1,110	825
Other public institutions	226	532	380	447	606	979
NIMT	–	–	426	585	426	585
Other private institutions	387	289	413	372	800	661
Total	5,646	4,613	2,844	3,264	8,490	7,877

Notes: These figures do not include trainees following the South African model – the overwhelming majority of enrolment at NIMT and in a few other private institutions. – = not applicable (the training model is not in use at the institution).

Source: NTA (2015).

Capacity shortage in VET has been acknowledged by Namibian officials. NTA envisages bringing the capacity of the system to 30,000 trainees a year, after conducting a pre-feasibility study (Haufiku, 2015). The *Harambee Prosperity Plan* sets the target at 20,000 by 2020, assigning MHETI the task of establishing VTCs in all regions by 2020, starting with the creation of one new VTC in each of the first three years of the plan (**Section II**). Expansion is indeed urgent but will not be straightforward. At the centre level, increasing intake can bring workshops to their capacity limit and raises safety issues, as underlined by NIMT Keetmanshoop, unless funding and land are made available for the extension of facilities. At the system level, NTA argues that even without considering infrastructure constraints, mass expansion is not possible in the short term and specific skills will need to be targeted first. The government is therefore exploring the introduction of apprenticeship schemes, which are expected to reduce the need for recurrent, costly acquisition of equipment for trainees' practical work. Reducing the share of centre-based, full-time programmes in VET enrolment would be a way to increase the overall capacity of the system and therefore enlarge access.

VET largely excludes young people who did not complete basic education. Enrolment in primary and lower secondary education in Namibia is high but not universal, and learning outcomes are low, as shown by SACMEQ and NSAT (**Section IV**). As a result, large numbers of young people do not pass the Grade 10 and Grade 12 examinations, or do so with low marks (whether these are assessed as an aggregate number of 'points' or subject-specific 'symbols'). Entry requirements into core programmes of formal VET institutions exclude those individuals. For instance, the Namwater Human Resource Development Centre requires having passed Grade 10 with at least 22 points, including at least a D in mathematics and science, and an E in English. NIMT selects Grade 12 graduates based on their mathematics, science and English marks; there are no specific thresholds, but high demand for the institute implies that only students with high marks are admitted. Centres run by community organizations may have lower requirements: for instance, Katutura Community College takes in students who passed Grade 10 with 15 points and an F in English. On the other hand, requirements are even higher for specialized private providers. For example, the Wolwedans Desert Academy/ Namibian Institute of Culinary Education requires for training at levels 1–3 in hospitality and tourism proficiency in English and numerical skills, as well as a range of soft skills including an 'outgoing and pleasant personality', a 'neat and well-groomed appearance' and 'good communication and interpersonal skills'.

Non-formal programmes take in early school leavers. Most non-formal programmes are run by dedicated not-for-profit organizations such as COSDEF and KAYEC, or by a public institution, the National Youth Service. They typically offer training at levels 1 and 2 compressed into six months or one year, to young people who would not have been accepted in formal programmes. COSDEC courses in particular require no qualification, except for a few trades in highest demand such as information and communications technology (ICT) and hospitality and tourism (which specify Grade 10). NIMT itself admits a limited number of students who dropped out after Grade 10 to a special training course which includes only practical training and is complemented with an informal job attachment. Trainees are considered semi-skilled, but with several years of work experience are allowed to take trade-specific tests. The total capacity of non-formal programmes remains small, however: based on available data, trainees with COSDEC, KAYEC and the National Youth Service would total a few thousand. Besides, they may remain out of reach for the most disadvantaged, owing to their location or to the use of English as the medium of instruction. Finally, ongoing accreditation with the NQA or NTA might lead to these programmes losing their non-formal nature. As was pointed out by representatives of COSDEF, the authorities seem to require the alignment of entry requirements with those of formal VTCs, and a reorganization of the courses. In COSDECs, the ten-month course covering levels 1–3 had to give way to separate courses covering level 1 in five months and level 2 in eight (to be brought up to twelve); level 3 is no longer covered.

Reaching out to marginalized young people requires provision of more than vocational training. Young people who never enrolled in school or left very early are bound to be affected by Namibia's social problems (**Section II**). Failure to pass Grade 10 or 12 examinations also has a disengagement effect. In both cases, the individuals find it difficult to associate education and training with their future. Vocational training therefore needs to be complemented with courses in life skills. Given Namibia's HIV/AIDS epidemic and high rates of teenage pregnancies, sexual and reproductive health education delivered to young people aged 10–22 in the seven clinics of the Namibia Planned Parenthood Association (NAPPA) is a good example.

Namibia's VET system lacks the capacity to accommodate sufficient numbers of trainees, making access a challenge for graduates from secondary education. Furthermore, those who have entered the system struggle to complete their training, owing to deficiencies in quality.

Poor quality of training and high dropout rates reduce the provision of skilled workers

Many trainees lack foundation skills and face precarious living conditions, which hampers their ability to learn. Stakeholders repeatedly emphasized the lack of foundation skills among trainees. Owing to the suppression of technical schools, trainees enter VET without any initial knowledge of their trade. Even more problematically, many of those who have satisfied the entry requirements of formal VET centres still have limited proficiency in basic literacy and numeracy skills, and above all in English. The transition to English as the main medium of instruction in primary and secondary education has been complicated, as few teachers have sufficient mastery of the language. For VET institutions this translates into difficulties not only for theoretical training, but also for practical training – machine operations, for instance, require an adequate understanding of technical English. Swakopmund COSDEC mentioned attempts to use trainees' home languages, which proved unsuccessful.

Most trainees enrol in centres that are extremely distant from their home, and have to face high costs for transport, accommodation and catering. Where hostels exist, they are often of poor quality, and may lack basic equipment such as a kitchen or even bedding. Where they do not exist, trainees have to find accommodation in town, particularly expensive in Windhoek, where housing prices are extremely high by Namibian standards. In both cases, the lack of decent accommodation is detrimental to young women, who risk being exposed to gender-based violence. Living and learning conditions would be greatly improved either by the construction of hostels also offering nutrition and water, sanitation and hygiene services, or by subsidies that meant trainees could afford to rent decent housing on the general market. Yet institutions lack the resources necessary for such schemes, even when they are well aware of the difficulties faced by their trainees. NIMT officials insisted that some of their trainees can barely afford sufficient food once they have paid for fees and accommodation. At the Keetmanshoop campus, in the far south of the country, most trainees come from the north or from Windhoek, yet the hostel on the campus can accommodate only level 1 trainees. VET trainees may apply for loans from the National Student Financial Assistance Fund (NSFAF), but only for courses in priority fields at accredited and recognized VTCs. In practice, trainees in private centres are excluded, although the Fund is consulting with the NTA to extend its loans to the private sector.

Initial qualifications and training of trainers appear inadequate. Provisions for the training of trainers vary across public and private, formal and non-formal centres. For public, formal centres, training is the responsibility of NUST, whose Faculty of Human Science, through its Department of Education and Languages, runs courses in pedagogy and management. NUST does not offer training in vocational skills as such, and reckons that this should be the responsibility of the Windhoek VTC. Yet the trainer training programme which that VTC used to conduct in cooperation with German institutions was discontinued after the creation of NUST. The University of Namibia, meanwhile, stated that it did not have the capacity to undertake VET trainer training. Private and non-formal centres, including NIMT and COSDECs, do not rely on NUST and train their trainers internally; NIMT trains some of its alumni. In all cases, trainers must be qualified artisans. NUST further requires them to have at least three years of experience and pass an English and mathematics test. All centres emphasized the difficulty of attracting competent trainers, and employers argued that many trainers cannot answer basic questions regarding machine operations. Artisans recruited often did not study beyond Grade 10 of general education and level 3 of the NQF. Once they have become trainers, it is difficult for them to return to study to update or upgrade their skills. Several ongoing initiatives aim to improve on this situation. Windhoek VTC is discussing an attachment programme with NamDeb. NTA is building capacity in public VTCs: for instance twelve trainers were recently sent to Germany for intensive training. UNESCO, through the Better Education for Africa's Rise (BEAR) project, is supporting in-service training of VET teachers and managers.

The equipment in training centres is sometimes deficient and outdated. VET seems to have suffered from underinvestment during the period when the two ministries of education were merged. As a result, the equipment of workshops did not evolve to keep up with the increase in enrolment or with rapid technological change in the Namibian and global economies. Public VTCs seem to have been particularly affected, yet private centres including NIMT emphasized that they too were struggling to mobilize the necessary resources. According to some employers, no VET centre in Namibia has really up-to-date equipment, with the possible exceptions of Rundu VTC and NIMT. The situation however is complex, and deserves a review, as the quality of equipment varies between institutions, and also within them, depending on machines available for training for specific trades.

Indeed, funding has been made available in recent years, in a piecemeal rather than systematic way. NTA mentioned spending N\$20–25 million a year to improve the equipment of its seven public VTCs. Projects by the German aid agency

GiZ, the Millennium Challenge Account, the European Union and UNESCO are also playing a significant part, even though official development assistance to Namibia has receded in recent years following the country's development into being regarded as an upper-middle income economy and overall cuts in donor spending. GiZ and German training institutions have had numerous partnerships with Namibia's VET sector, with the overall aim of improving its quality and relevance. Among other interventions, GiZ currently has a pilot project supporting Eenhana, Okakarara and Valombola VTCs. The European Union has provided budget support for primary and secondary education, but is becoming more directly involved with VET. Its Delegation is funding a project to make Eenhana VTC a centre of excellence, with improvements in curricula, equipment and hygiene, to start in mid-2016. The Millennium Challenge Account funded the construction and equipment of new VTCs and equipment for already established VTCs and COSDECs. Among other projects, this allowed for building and equipping new facilities for the Swakopmund COSDEC in 2014. UNESCO's BEAR project has supported Namwater's Human Resource Development Centre, among others. However the financial situation of VET remains precarious, owing to uncertainties regarding government and public firm funding, the involvement of development partners and the limited participation of formal firms.

Low rates of retention and completion imply that the VET system produces very small numbers of skilled workers. In the absence of systematic data from the VETMIS, the output of the VET system is difficult to ascertain. Yet the figures available strongly indicate low internal efficiency. In 2015, Windhoek VTC had 1,305 trainees, including 709 from the 2015 intake, training at level 1, but only 334 from the 2014 intake now at level 2, and 142 from the 2013 intake at level 3, plus 120 participants in skills upgrading courses. This implies drop-out rates of about 50 per cent between levels. Overall, the centre produced only 1,965 graduates in twelve trades from 1997 to 2013. Internal efficiency is an issue as well at Valombola VTC, where the drop-out rate between levels 1 and 2 is 38 per cent, and the graduation rate is 51 per cent. According to NTA, in 2014/15 twenty-four public and private centres together had 2,877 trainees deemed 'competent' under the CBET model, and 1,632 who passed tests under the modular model, yielding success rates of 62 per cent and 50 per cent respectively (**Table 18**).

Table 18 The VET system produces few skilled workers

Graduates and graduation rates from VET, by type of institution and training model, 2013/14 and 2014/15

Numbers successful	CBET ('competent')		Modular training ('pass')		Both models combined	
	2013/14	2014/15	2013/14	2014/15	2013/14	2014/15
Public VTC	2,077	1,836	857	842	2,934	2,678
National Youth Service	729	607	-	-	729	607
Other public institutions	130	269	268	241	398	510
NIMT	-	-	272	393	272	393
Other private institutions	144	165	165	156	309	321
Total	3,080	2,877	1,562	1,632	4,642	4,509

Success rate (per cent)	CBET ('competent')		Modular training ('pass')		Both models combined	
	2013/14	2014/15	2013/14	2014/15	2013/14	2014/15
Public VTC	53	62	53	45	53	55
National Youth Service	66	74	-	-	66	74
Other public institutions	58	51	71	54	66	52
NIMT	-	-	64	67	64	67
Other private institutions	37	57	40	42	39	49
Total	55	62	55	50	55	57

Source: NTA (2015).

Owing to its low intake and low internal efficiency, Namibia's VET system produces small numbers of skilled workers. The relevance of the training they received to the labour market is questioned by many stakeholders, who pointed to the weakness of the links between the system and the economy.

Weak links with the economy limit the relevance of VET to the labour market

Trainees face challenges finding job placements. The curriculum of most training centres relies on a combination of theoretical and practical training at the centre and job placements. At Windhoek VTC, training at level 1 is entirely centre-based, but 40 per cent of training time at level 2 and 55 per cent at level 3 is supposed to be firm-based, and trainees are seconded to around 130 firms. At the Swakopmund COSDEC, training at level 2 comprises five months at the centre and three months in a placement (to be extended to seven months). The curriculum at NIMT follows the principles of the German dual apprenticeship system: trainees at levels 1, 2 and 3 undergo six months of centre-based training, after which they are seconded to firms, under NIMT supervision, for six months (one year at level 3).

Yet most stakeholders – including trainees met in several institutions – emphasized that given the frailty of Namibian small and micro-enterprises and the paucity of larger, formal firms, trainees struggle to find placements. Firms have no legal obligation to accept them, and may be reluctant to face the direct costs (NIMT, for instance, prescribes paying an allowance of at least N\$1,100 per month for trainees at level 1) and implicit costs involved. Trainees who do not find a placement lack initial work experience and are disadvantaged when they enter the labour market. At present, the challenge is most serious for trainees at lower levels of the NQF and in centres lacking established relationships with firms. Namwater's centre also mentioned gender-based discrimination from employers – garage owners refused female trainees in car mechanics. On the other hand, at NIMT Keetmanshoop, 70 per cent to 80 per cent of trainees at level 1 found a placement, and all those at levels 2 and 3. Firms were willing to pay at least the prescribed allowance, and some paid bursaries to trainees they employed at all three levels.

There is strong evidence from international experience that combining centre-based with workplace-based training improves the labour market outcomes of young people (ILO, 2010; ETF, 2014; UNESCO, 2015; OECD, 2016). Namibia would thus benefit from a policy of incentives for firms to take in trainees, as pointed out by NTA, and from the introduction of a formalized process for job placements (replacing the current ad hoc arrangements). Indeed, NTA is engaged in developing a policy framework for job placement and apprenticeship.

VET does not guarantee a smooth transition to employment or to entrepreneurship. The impact of VET on employment is difficult to evaluate, owing to the paucity of tracer studies. No regular study is conducted at the national level or at the centre level, including in major institutions such as Namwater and NIMT (which mentioned plans to engage in one). Some centres however do conduct occasional studies. Windhoek VTC found that 63 per cent of its graduates were employed in 2013, while 11 per cent were self-employed, leaving 26 per cent unemployed. The Swakopmund COSDEC in 2015 found that 70 per cent of its former trainees were employed, mostly through informal interactions with their own networks, which leaves 30 per cent unemployed. An evaluation of KAYEC in 2015 contacted 783 graduates of courses that ran between 2011 and 2014, of whom half responded. The level 1 training received had allowed graduates to start their own businesses (41 per cent were self-employed, up from 19 per cent before the training) yet some of the newly self-employed had quit salaried jobs, and the impact on unemployment was modest (15 per cent were unemployed, down from 24 per cent before the training). The evaluation also highlighted the specific difficulties faced by women: even after the training, only 17 per cent had been able to start a business, and 32 per cent remained jobless (KAYEC and USAID, n.d.). Centres that had received informal feedback from some of their graduates confirmed the general feeling that, given high levels of unemployment in Namibia, VET does not guarantee access to employment. Stakeholders including NTA raised the question whether the planned expansion of the system will be sufficient to boost job creation, or will result in skilled worker unemployment.

Facilitating entrepreneurship might be the way forward, yet at present would-be entrepreneurs face formidable barriers, starting with the unavailability of credit to all those who lack collateral, or the skills to draft and present a business plan and satisfy paperwork requirements. Small and micro-enterprises in Namibia are fragile, and many disappear within a few years. Entrepreneurship training would help, but is poorly offered in formal VET centres, while some COSDECs offer entrepreneurship training and act as incubators. The Namibia Chamber of Commerce and Industry (NCCI), a private body with no link to public authorities or training centres, also runs such training through its seventeen branches in the country. The training is informal and operates on a small scale, however. Sessions last for two to three days, include about twenty trainees, are conducted three times a year in each branch, and do not lead to qualifications.

VET does not respond to the demand for skills expressed by formal firms. Representatives of formal firms were in agreement on the difficulty they found in employing the graduates of most VET centres without training them further. As well as dissatisfaction with the basic skills levels acquired in some centres (of either general or technical and vocational

skills), two specific concerns emerged. First, VET graduates tend to have low levels of soft skills (such as behaviour, leadership and entrepreneurship), which are neglected in the Namibian system. Second, they do not have advanced vocational skills, as these are not offered by VET centres or NUST, or because the quality of training is too poor. This applies not only to specific technical fields such as brewing and ship piloting, but also to fairly generic service fields such as banking, finance, logistics or marketing.

Formal firms adapt by investing in training, which may be conducted:

- Internally. Namibia Breweries employs trainers from European countries to deliver a marketing training programme that was initially developed in South Africa. Pupkewitz recently created a talent pool whereby its best employees receive mentoring to move beyond middle-level management. Workers at Seaworks frozen fish factory in Walvis Bay receive induction training from internal instructors, with further training delivered by external instructors. They may become supervisors after undergoing further in-house training and external training on leadership and disciplinary matters. Seaworks employees working on sea vessels have to follow refresher courses at NAMFI every second year, which is difficult owing to capacity constraints and quality issues;
- Through branch-specific, ad hoc private training centres. The Institute of Bankers, associated with the Banking Association of Namibia, provides one to three years of training to future bankers. This complements internal training schemes run among others by Bank Windhoek and First National Bank;
- In cooperation with public institutions. Namport, the public authority in charge of Namibia's ports at Walvis Bay and Lüderitz, requires a wide range of skills, including very specific and advanced skills that are not available in Namibia. Namport offers its employees a number of in-house training programmes, and sends abroad professionals such as engineers and lawyers for advanced training. But Namport also funds a programme on logistics and transport at NUST, and projects to open a Maritime School of Namibia.

However, the dominant feeling among formal firms seems to be that public authorities should transform and expand the VET system, so as to improve its quality and relevance.

VET does not adequately reach those living in rural areas. The limited opportunity for the population living in rural areas to acquire the skills and knowledge needed to develop their capacity for work and life is a major barrier to the development of Namibia and the achievement of *NDP 4*. Building basic capital for economic growth, employment generation, and poverty alleviation in rural areas requires the strengthening of knowledge and information capital through access and ability to use scientific, technological, and market information related to agricultural products, farming techniques and crafts and trades (Basu and Majumdar, 2010). Equally important is the building of financial capital for the poor through micro-credit, rural banking, rural credit policy and rural employment guarantee schemes for people. At the heart of this approach is capacity development by building the requisite human capital through basic education, TVET, healthcare and nutrition (Marope et al., 2015). There are examples of programmatic interventions that have been implemented in rural settings (**Box 5**).

Lifelong learning opportunities need to be scaled up. In-company training can be expected to expand, as larger firms (with a payroll above N\$1,000,000) that pay the recently introduced VET Levy can receive support from the National Training Fund (NTF, see below). The amounts allocated through the Fund are substantial, and should allow workers to adapt to a rapidly changing labour market. However, the Fund is unlikely to benefit workers in informal firms, which have less capacity to train their employees. It is unclear how these workers can update and upgrade their skills, and improve their productivity. Recognition of prior learning (RPL) has been introduced and can potentially reach large numbers of workers, in both the formal and informal sectors. Assessors and mentors have been trained and are ready to start work. However, the number of beneficiaries is still very limited (forty-five applicants in 2015).

Overall, the weaknesses of VET reinforce the dual nature of Namibia's economy and labour market. On the one hand, an overwhelming majority of Namibia's large child and youth population are unlikely to receive training of good quality, which hampers the creation of formal jobs and is a barrier to entrepreneurship in the informal economy. On the other hand, formal firms are faced with shortages of Namibian skilled workers, with two consequences. First, they keep on employing expatriate workers, or Namibian workers trained abroad, especially in South Africa, in particular for the most advanced jobs. Second, according to employers, the existence of very small pools of workers employable in specific branches encourages employee turnover and leads to an inflation in salaries despite unsatisfactory competency levels. Escaping this trap will involve tightening links between key stakeholders, who tend to blame each other for the situation.

Box 5 Examples of rural development programmes

Multi-purpose community learning centres (MCLCs) in South East-Asia. These centres aimed to empower marginalized groups and poor communities by providing lifelong learning and income-generating opportunities for people living in villages, slums and poor urban areas. They have been organized and managed by the local communities. Some of their primary target audiences have been out-of-school children as well as underprivileged young people and women. They have served as places for community learning, offering flexible and participatory development activities which have even allowed for the development of leadership skills.

Community polytechnics in India. These were originally established to ensure that rural areas get a fair share of the benefits from investments in the technical education system. They were to impart skill development training to intended target groups and to provide support services to large rural populations. Community polytechnics served as focal points for science and technology applications in rural areas. They generated self- and wage-employment opportunities through non-formal, competency-based training and need-based courses in various trades or multiple skills. The scheme involved about 700 community polytechnics throughout India.

Brazil's National Service for Rural Apprenticeship (SENAR). SENAR is a public institution that is linked to the National Agriculture Confederation in Brazil. Its goals were to organize, administrate and execute rural vocational training and promote the social advancement of men, women and young people who work in rural areas throughout the country. SENAR developed integral activities and expanded benefits to workers and small rural producers. The Organization worked in a decentralized way and with trade unions as principal collaborators. SENAR went to where the learner is, using a great variety of facilities in rural areas and thus reducing transport and facilities costs for learners.

Source: Marope et al. (2015).

To sum up, issues of access, quality and relevance call for a transformation of Namibia's VET system, including the definition of a better articulated curriculum using a unified training model, and a revision of the institutional structure and financing arrangements of the VET system.

VET lacks a unified training model and good links with the education system

The transition towards a competency-based education and training model is incomplete. Namibia has no unified, national model of training. For historical reasons, three models coexist. The South African model in use before Independence is still followed by a number of private institutions, especially NIMT, which thus find it easier to send graduates to South Africa to complete their training. A modular model of training was in use in other public and private institutions until the VET policy of 2005 provided for a transition to CBET. Yet the transition towards CBET has been slow and remains very incomplete: by 2014/15, CBET accounted for less than 60 per cent of 7,877 trainees in twenty-four public and private institutions – not including trainees in programmes following the South African model (**Table 17**). Modular training and CBET coexist, sometimes in the same institutions, depending on the specific trade considered. Windhoek VTC now uses CBET for office administration, but modular training for other trades (which represented more than three-quarters of its enrolment in 2014/15). The transition is going on, however. For instance, CBET accounted for 40 per cent of enrolment at the Namwater centre in 2014/15, up from 16 per cent the previous year, and the centre was contracted by the BEAR project to start a CBET course in carpentry.

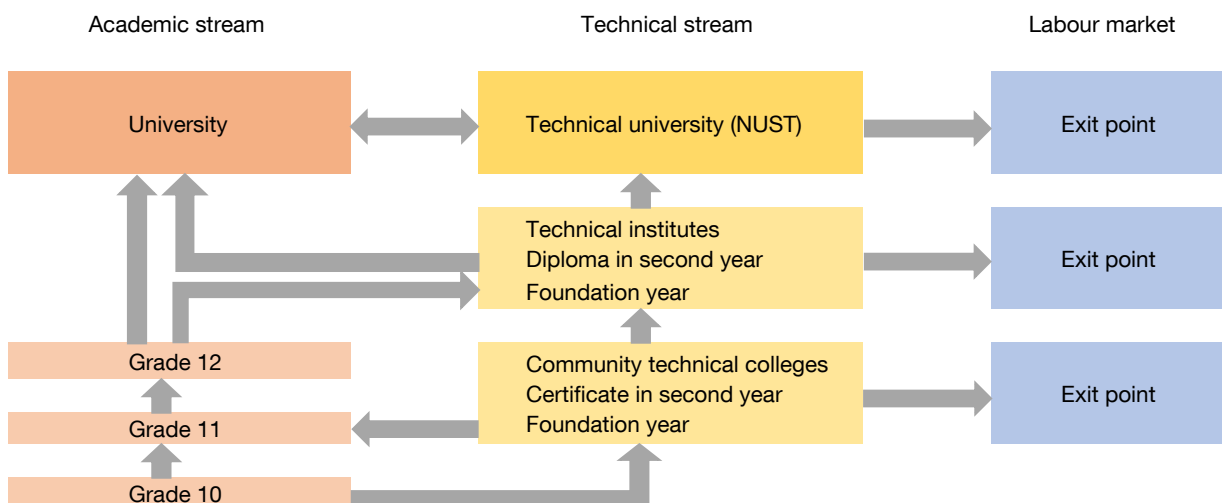
Reasons for the delayed transition towards CBET may include a premature introduction, in the sense that stakeholders lacked a clear understanding of what it entailed, and centres have found it difficult to implement the new model. The relevance of CBET continues to be contested by some stakeholders. A clarification of the situation is needed involving public authorities, training centres and employers, as the coexistence of three different models in a small-scale system generates much confusion. Some stakeholders argue that the South African model is best known by employers, yet others reply that its continued use at NIMT, a major provider, undermines the development of a national model.

The VET system has poor linkages with basic education, with higher education and between its own components. Past and recent reforms have modified the architecture of the education system to the detriment of VET. First, technical subjects, which used to be part of the secondary education curriculum, were phased out from 2003 onwards, and replaced with a single, broad subject of 'design and technology'. At present only fourteen technical schools remain, one in each region, which offer both technical and general subjects. Most young people who enrol in non-formal or formal VET after reaching or completing Grade 10 and 12 thus have no initial knowledge of the trades they will study. Second, once they have entered the VET track, trainees have very little chance of returning to general education or of accessing higher education, even for technological and scientific training. Among other reasons, this is a consequence of the transformation of the Polytechnic of Namibia into the Namibia University of Science and Technology (NUST), completed in 2015. Its courses now start at level 6 of the NQF, while most VET centres stop at level 3, so graduates from public VTCs for instance cannot qualify for access to the university. Stakeholders repeatedly emphasized the lack of coverage of levels 4 and 5 as a key deficiency of the VET system in its present state. (NIMT officials reckoned their institute was the only one bridging the gap.) Third, there is poor coordination within the VET system: persons who went through non-formal training, for instance at COSDECs, are unlikely to be admitted to formal centres for developing their skills further.

Ongoing or envisaged reforms and plans share the same understanding of the situation but propose solutions that are incompatible with each other. MBEAC, MHETI and the NTA share the same concerns. The lack of coordination between VET and the rest of the education system contributes to high rates of young people leaving education after Grades 10 and 12, maintains a rigid separation between general secondary schools and VET institutions, and prevents VET graduates from entering higher education. Several initiatives have been taken that could alleviate this last concern. The NTA plan for the expansion of VTCs should cover levels 4 and 5 and allow entry into university. The proposed centre of excellence for VET would also cover those levels. The University of Namibia mentioned the development of a policy to take in graduates from VET programmes recognized by the NTA.

However, broader visions by MHETI and MBEAC for reforming the overall architecture of the education and training system stand in contradiction with each other. MHETI shared an envisaged reform of secondary and tertiary education (**Figure 25**). Community technical colleges would be created to enrol trainees after Grade 10, for courses lasting two years and leading to a certificate. The certificate can either be used to re-enter general education in Grade 11, to proceed in the VET stream, or to enter the labour market with a basic qualification. Technical institutes would be created to enrol Grade 12 or VET graduates, for courses lasting two years and leading to a diploma. This diploma would bridge the gap between VET and higher education, allowing entry into both general and scientific and technological universities, or a transition to the labour market.

Figure 25 MHETI envisages new learning pathways between the academic and technical streams

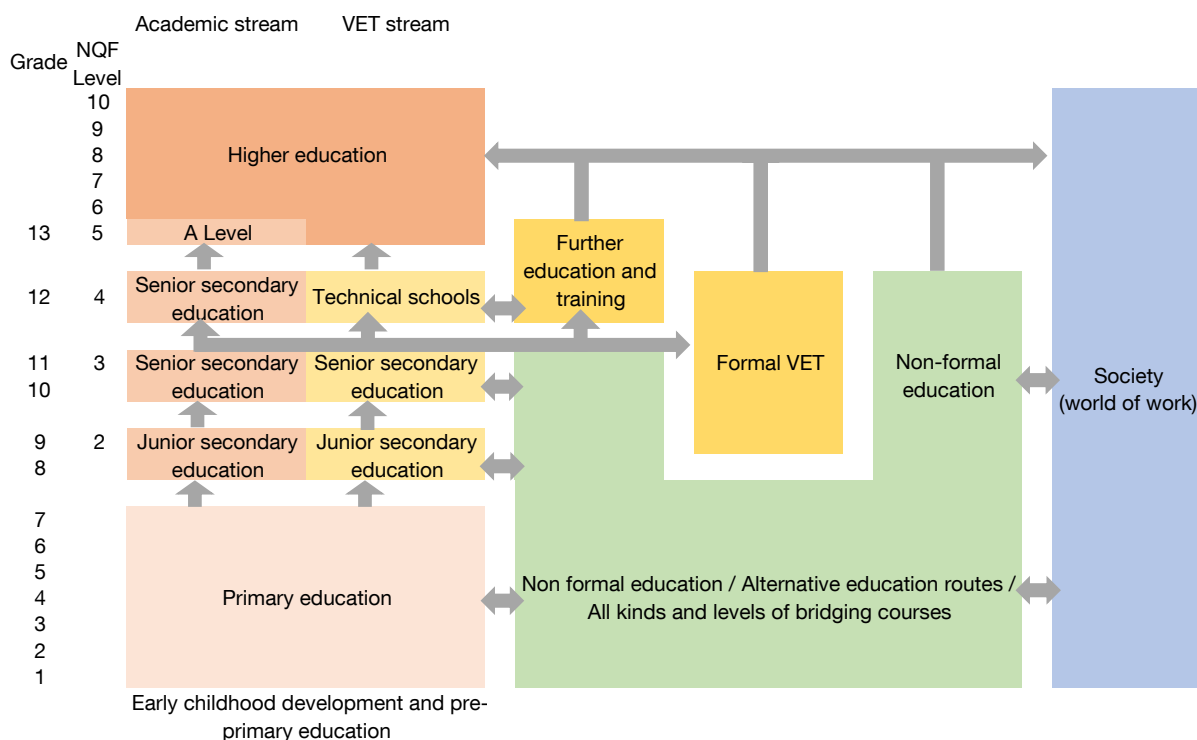


Source: MHETI.

The reform envisaged by MHETI is based on the current structure of secondary education, with examinations at the ends of Grade 10 and Grade 12. Yet this structure is expected to disappear within a few years, as MBEAC has just started to roll out a reform of primary and secondary education, the main feature of which is to remove end-of-Grade-10 examinations

(Figure 26). Under the new curriculum, primary education will cover Grades 1–7, lower secondary education Grades 8 and 9, and upper secondary education Grades 10–12 – there will no longer be an external examination leading to a certificate at the end of Grade 10. Besides, from Grade 8 onwards, students will be able to choose ‘pre-vocational subjects’ among two optional subjects that will complement the seven compulsory ones. Doubts were expressed by several stakeholders regarding the feasibility of giving adequate training to secondary school teachers to teach the pre-vocational subjects (most teachers who used to teach the technical subjects of the pre-2003 curriculum have now retired). A Grade 13 will lead to an internationally recognized ‘A level’ allowing entry into university, yet access to higher education should also be possible for Grade 12 graduates who chose pre-vocational subjects – and for VET graduates. Furthermore, a new level of VET, ‘Further Education and Training’, would be added to cover levels 4 and 5 of the NQF. The reform is being introduced gradually, starting in 2014/15, and should reach Grade 12 by 2021.

Figure 26 MBEAC is implementing a reform of Namibia’s education system



Source: MBEAC.

Harmonizing the reform of the VET curriculum envisaged by MHETI with the ongoing reform of the secondary education curriculum by MBEAC appears to be an urgent priority. The transformation and expansion of VET will further require a clarification of its governance and financing arrangements, for which the creation of MHETI can provide impetus.

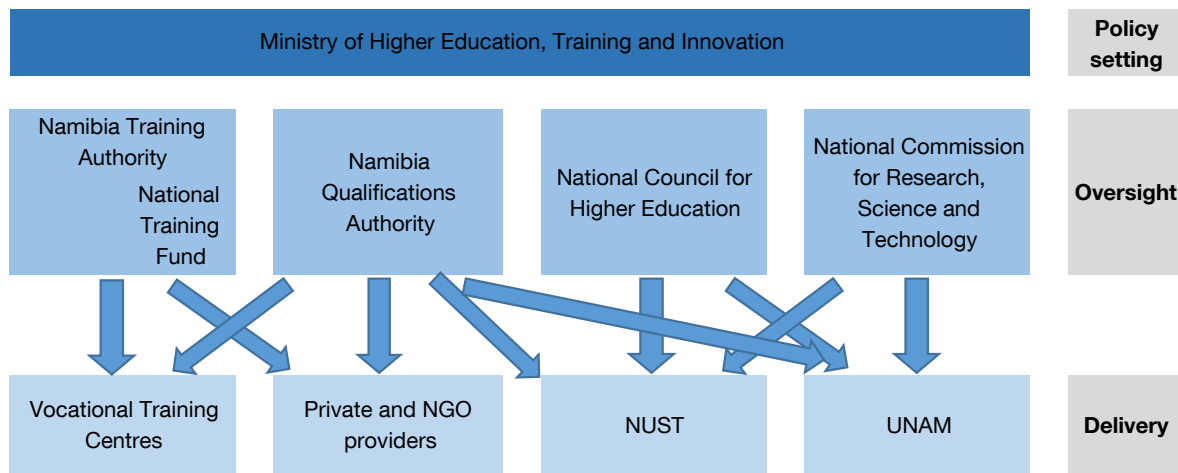
Governance and financing arrangements need clarification to enhance efficiency

Namibia’s complex VET and higher education governance arrangements do not ensure a clear definition and separation of policy-setting, oversight and delivery functions. In order to understand a country’s TVET governance arrangements, it is useful to classify institutions as primarily responsible for policy-setting, for oversight or for delivery. In some countries, a small number of central government institutions carry out most of these functions. In others, a larger number of institutions share the responsibility to ensure quality and relevance by performing some of the functions. Most successful TVET systems maintain a separation of the three functions.

Namibia’s existing VET and higher education governance arrangements are complex (Figure 27). MHETI is the most important policy-setting authority. NTA, created in 2008 as an independent and autonomous regulatory institution, has policy-setting, oversight and delivery responsibilities, the last of which are performed through the public VETCs. Like the

ministry, it is responsible for setting performance standards and operational requirements for all VTCs, both public and private. In addition, NTA is responsible for developing curricula, organizing in-service teacher training, and developing guidelines for registering and accrediting VET institutions. NQA is responsible for setting up and managing the NQF. NCHE is responsible for regulating all non-vocational post-secondary education and training (higher education) institutions and programmes, and registering private higher education institutions (PHEIs).

Figure 27 Governance arrangements for VET and higher education are complex



Source: authors, based on legal documents and interviews with stakeholders.

These governance arrangements have five problematic features:

- Non-separation of policy-setting and oversight functions, affecting the effectiveness of the VET system as whole. For instance, NTA defines VET policies, sets standards for operation, manages VET institutions, funds them and reports on performance;
- Duplication and overlap of functions across institutions, particularly salient regarding the oversight functions between NTA, NQA and NCHE. The independence of institutions that have oversight functions is in line with the experience of successful education and training systems – in order to provide useful insights into the quality and relevance of TVET systems, oversight institutions should be allowed to question the underlying policies and regulations. However, in the case of Namibia, not only are NTA, NQA and NCHE independent from MHETI, but their mandates overlap with each other, which inevitably leads to an inefficient use of resources, and harms their credibility, accountability and effectiveness. Overlapping mandates also lead to confusion and low transparency for training providers, enterprises and individuals. Many countries have reformed TVET governance to separate policy-setting and oversight functions, and to reduce overlaps of mandates (**Box 6**).

Box 6 Models of TVET oversight arrangements

Mauritius

Mauritius has separated the oversight and delivery functions of its TVET system by creating dedicated institutions. Initially, the Industrial and Vocational Training Board (IVTB) created in 1988 was at the same time a regulator, a provider and a facilitator of training, similar to NTA. A Technical School Management Trust Fund (TSMTF) was set up in 1990 to deliver technical education. Eventually as the number of private training centres increased significantly (presently there are some 400 private training centres in Mauritius), the IVTB was felt to be both judge and judged, leading many private training centres to protest. An Act of the National Assembly in 2001 created the Mauritius Qualifications Authority to assume the role of regulator, leaving the IVTB as a provider of training, with all its training centres having to be registered. This brought public and private training centres on a par regarding compliance with registration and accreditation regulations. The Human Resource Development Council was further created in 2003 to take over the role of facilitator. Finally, the IVTB was merged with part of the TSMTF to form the Mauritius Institute of Training and Development, consolidating the TVET delivery function.

Ireland

Ireland has merged its oversight authorities under a single institution to avoid duplication and overlaps of mandates. The Qualifications (Education and Training) Act of 1999 provided for the establishment of a Further Education and Training Awards Council (FETAC) 2001, succeeding the earlier National Council for Vocational Awards. FETAC was a statutory awarding body for further education, and also validated, monitored and ensured the quality of teaching programmes and determined standards. Ireland also had a Higher Education and Training Awards Council, Irish Universities Quality Board and a National Qualifications Authority of Ireland. In 2012, FETAC and the other institutions were merged into a single authority, Quality and Qualifications Ireland.

Source: Dubois and Athumane (2016).

- Differences between an institution's legal mandate and responsibilities and its actual functions. The gap between mandated functions and their implementation is particularly evident in the case of NTA, which is at the same time setting standards for operations, as specified in its mandate, and involved in funding and implementation.
- Lack of capacity and action of all institutions in the areas of monitoring and evaluation of performance and impact. There is no evidence of rigorous evaluations of training programmes, and there is currently no intention to conduct a review of the VET policy adopted in 2005. This situation hampers the development of feedback for policy learning. According to international experience and UNESCO's Recommendation on TVET (UNESCO, 2015), evaluations should include studies of the impacts and outcomes of TVET policies and programmes; investigation of the costs and benefits of TVET for a broad range of public and private actors including individuals, enterprises and communities; and evaluation of labour market and social outcomes (including tracer studies and longitudinal studies).
- Lack of autonomy of VET institutions in managing their budgets, adapting to local labour market needs, and engaging in innovation. VET institutions have no specific status, and mainly depend on NTA for resources and strategic decision-making. Action plans established between NTA and VET institutions, which set targets and define budgets, imply a form of contracting and accountability. However, these plans lack key components of institutional development, regarding internal effectiveness (drop-out and pass rates), relevance (including job placements) and efficiency. Over the last decade, many TVET systems have devolved management responsibilities to the local level and provided training institutions with greater autonomy (**Box 7**). Local management of TVET brings institutions closer to the labour market they serve, and is expected to improve their effectiveness as a result. Autonomy can foster innovations and relevance in TVET.

Box 7 Examples of the autonomy of TVET institutions

Autonomy of TVET institutions in Denmark

Vocational education in Denmark is administered by the Ministry of Education's VET Department. There are no other intermediary levels between the ministry and the training schools. The ministry's management responsibilities have changed from direct administration of schools to the development of VET policies and targets, promulgation of Education Orders delineating a broad framework for VET courses, and regulation of financing.

Vocational schools are now organized as private, non-profit and independent institutions. They have considerable freedom in the programming of delivery and enrolment, curriculum development and teaching. Individual schools decide which courses to offer and how to organize teaching within the national guidelines and financial framework. All central regulations regarding class size have been abolished, while regulations covering the number of lessons to be taught to students have been modified. Rules on teachers' working hours have been made more flexible. Instructors' wages and employment conditions are regulated through collective agreements which are negotiated every second year. The independent schools that wish to obtain public funds have to offer programmes which comply with government regulations. Public grants are not earmarked, and schools are free to allocate resources as they see fit. Schools now compete for students, and must assess their intake capacity and utilize it effectively in competition with other providers.

Aarhus Tech, an independent institution with a board of governors, is an example. The school is associated with the local business community and the field of industry which the school covers. Employer and employee representatives are equally represented in the board. Like all other Danish vocational colleges, Aarhus Tech is a self-governing, non-profit institution with a long tradition of involving social partners at all levels of management and training provision. A governing board with equal representation of local employers' associations and trade unions is responsible overall for college management, and social partners are also represented in a large number of sector-specific local training committees advising the college on the provision of VET programmes and continuing training courses. This is one of several ways of ensuring that programmes always meet the needs of the local/regional labour market. Activities are governed by a legal framework developed in consultation with the social partners and issued by the Ministry of Education, and are financed through a per-student state grant system supplemented by income-generating activities.

Autonomy of TVET institutions in Tunisia

In Tunisia, the TVET reform attempted to change the way VTCs operate. A new management model was conceived with three types of requirements. First, at a strategic level, the model provided training institutions with an organizational and management framework to operate efficiently in a market-based economy with an understanding of management's accountability for results. Second, at the organizational level, the model defined the functions required in the new framework: that is, the organization and management structure of the training centres, their relationships with enterprises, their funding and financial management, accountability, and quality assurance. Third, at the operational level, the model established procedures on how to carry out the functions and objectives of the training institution, and the establishment of a management board.

Sources: Aarhus Tech website; ETF and World Bank (2005).

To sum up, for the moment, the governance of the Namibian VET system is highly sophisticated, in contrast to the small numbers of trainees and poor outcomes. The key challenge for the government is to develop appropriate institutions for the benefit of a large number of stakeholders and individuals, rather than institutions with overlaps of functions and mandates, acting for an elite group of clients. While MHETI is committed to improving the system, as illustrated by its request to UNESCO for support, at present it lacks the capacity to lead the system.

The new Ministry of Higher Education, Training and Innovation needs to establish its leadership over the VET and higher education systems. In 2015 policy responsibility for education and training beyond basic level was removed from the Ministry of Education with the creation of MHETI as a dedicated 'skills ministry' covering VET and higher education. The intention was to increase the prominence given to skills development across public policies and to align post-basic education with the *NDP 4* agenda. While there is clear leadership by the minister, the ministry lacks capacity and human resources to lead the sector and achieve the expected objectives. Without a clear structure and operational department, it is difficult for the ministry to manage multiple semi-independent institutions and to ensure strategic coherence and coordination.

However, momentum exists for MHETI to establish its leadership. The separation of VET and higher education from basic education and their unification under a single ministry benefits from key enabling factors, both international and national: the adoption by the international community of the Sustainable Development Goals and the Education 2030 framework, which give attention to TVET and tertiary education; the review of *NDP 4* and the preparation of *NDP 5*; and the adoption of the *Harambee Prosperity Plan* and its focus on skills development. Namibian authorities are already taking advantage of international collaboration opportunities, working with a wide range of partners in other countries and with international organizations. Relevant examples include the BEAR project (UNESCO) and the ProVET programme (GIZ).

Coordination will also be required with other ministries, agencies and departments, owing to the broad mandate of MHETI. Coordination is a wide-ranging term which can be interpreted as covering interaction between different ministries and government agencies at a national level; the interaction between national, subnational and local structures and agencies; and interaction with social partners such as employers, trade unions and civil society organizations. A wide range of approaches have been used in different countries (**Box 8**). International experience shows that governments that are able to establish coordination and coherence between policy domains so that they inform and complement each other (by having an economic investment policy providing incentives for companies to develop skills, for instance) are better placed to drive inclusive economic growth than countries where these domains conflict and operate in isolation. There

is increased realization that developing and implementing the Sustainable Development agenda will require interaction and coordination across a number of policy domains. These policy domains each have a role to play in shaping national skills systems, and include education, employment, social welfare, industrial policy, science and technology, innovation migration, taxation and public finance (UNESCO, 2015; OECD, 2011).

Box 8 Approaches to inter-ministerial coordination for TVET

Countries have adopted different approaches to inter-ministerial coordination for TVET:

- Informal coordination occurs through meetings or on an ad hoc basis in Australia and Sweden, both considered to have a longstanding tradition of coordination despite the lack of formal mechanisms.
- Specific bodies may take the shape of a committee coordinating line ministries. In the USA, a Skills Working Group formed in 2014 brings together thirteen federal agencies and the White House. This working group exists alongside a system of ad hoc meetings about specific skills issues involving a smaller number of agencies. Austria has a highly complex skills governance system with shared responsibility between various ministries and agencies as well as levels of government.
- Issue-specific coordination has been used in the Netherlands, where labour market assessment exercises predicting a significant shortage of skills related to science, technology, engineering and mathematics (STEM) led to the formation of the *Techniekpact* (Technology Pact) in 2013. The *Techniekpact* involves a partnership of ministries (Ministry of Economic Affairs, Ministry of Education, Culture and Science, and Ministry of Social Affairs and Employment), social partners (employers' groups, sector bodies and others) and five regional authorities united around the achievement of twenty-two specific activities. These will run until 2020 to increase the number of students enrolled in STEM subjects while strengthening linkages between education and employers. The *Techniekpact* is monitored by a National Steering Group composed of representatives from the five regions, central government, employers and workers. The Netherlands government recognizes that the key to success of the *Techniekpact* is effective regional-level implementation, hence this is the focus of coordination and implementation structures.
- Cross-sectoral strategies have been adopted in a number of countries including the Republic of Korea, where the National Human Resource Development Strategy provides a clear and ambitious vision for socio-economic development which ministries can use to focus and coordinate activities across relevant policy domains. The existence of such a strategy assists in providing coherence across a disaggregated system in which vocational training is governed by the Ministry of Employment and Labour while vocational education is overseen by the Ministry of Education.

Sources: ILO/UNESCO (forthcoming); OECD (2014).

Private sector involvement in skills development is not sufficient. The involvement of the private sector in skills development can be assessed around four major areas: institutional dimension, contribution to curriculum, contribution to delivery and financing.

Institutional dimension. Firms are involved in VET governance through the NTA board. The board was established under the VET Act of 2008 with the primary purpose of administering the activities of the NTA: determining policies and procedures, controlling the exercise of powers and the performance of functions, and administering and controlling the NTF, among other functions (NTA, 2015). However, there was no evidence of involvement of enterprises in the governance of other VET institutions.

Private firms are represented by several organizations at the national level. NCCI is the main body representing the interests of both formal and informal enterprises. Its 2,500 members include 80 per cent of small and micro enterprises. The Namibian Employers Federation (NEF) is also an important stakeholder, and a member of the NTA Board. The informal sector and rural farm and non-farm enterprises are further represented through a range of association such as the Namibia National Farmers Union (NNFU).

Contribution to curriculum. Firms are involved in the development of unit standards and qualifications. NTA has produced sector skills plans based on public-private dialogue. Firms were consulted regarding their skills needs and the definition of new training programmes. Plans published in 2014 and 2015 covered nine sectors corresponding to clusters of firms paying the VET levy: fisheries and maritime; mining and quarrying; manufacturing and related industries; energy, water and sanitation; construction; wholesale and retail trade; finance and business services; postal services and telecommunications; and health care and social services. The plans will be used to direct the NTA's key priority interventions funded by the VET levy. These efforts are in line with the strategic priorities of involving the private sector

and meeting labour market needs, but they remain insufficient in terms of the scope (they mostly cover formal sectors) and scale reached, given the time elapsed since the adoption of the VET Act and the establishment of the NTA.

Contribution to delivery. Weak involvement of enterprises in VET delivery is the main challenge. Few work placement opportunities are offered and there is no formal commitment from enterprises and their representative organizations (NCCI and NEF) to scale up their workplace offer. More worryingly, discussion regarding policy frameworks for placements and apprenticeships barely involves enterprises.

Financing: Enterprises are involved in funding VET mainly through the levy (see below).

Financing for VET does not provide incentives for the efficiency of training institutions. Financing of VET trainees in Namibia is managed by NSFAP. The Government created the Fund and provides the resources it disburses. NSFAP funding is open to VET trainees and to higher education students (at undergraduate and postgraduate levels) conditional on performance at Grade 12 examinations, among other criteria. As far as VET is concerned, funding is given only to students enrolled in the public VTCs. Funding of trainees in private centres has not yet been resolved between the Fund and NTA, primarily because of the nature of some courses offered by the centres.

Public and private VET institutions are funded by NTA using a uniform unit cost (N\$11,000). Financing is not linked to efficiency and accountability in terms of outputs or outcomes: budgets remain the same whether the institution is performing well or not, and instructors and managers get paid regardless of the quality of training delivered or the pass rate of the trainees. Financing reforms in other countries have been moving away from this input-driven approach to a more output-driven approach. For example, in Denmark, the Netherlands and the United Kingdom, traditional funding mechanisms based on past enrolments and courses offered are complemented by new funding mechanisms that use performance-based allocations for training institutions, training funds directed to end-users of training services, and increased cost-recovery with targeted assistance to the poor usually through the use of vouchers (Gasskov, 2002; Marope et al., 2015).

Another important source of funding for skills development is the National Training Fund (NTF), which was introduced by the 2005 VET Policy and established by the VET Act no. 1 of 2008, before the imposition of the levy on employers was approved by the Cabinet in 2012. The fund was finally operationalized in 2015. Its objectives include the mobilization of additional resources for skills development, and the allocation of the funds generated to priority training programmes that meet economic, technical and financial criteria. The NTF has additional responsibilities and ambitious policy objectives with a view to steering the system towards more and better enterprise-based training; the development of the training market and enhancement of the capacity of private training providers; instilling incentives for better performance by public training providers; and reducing skill shortages that impede enterprise growth.

The set of programmes that the NTF is expected to fund include in-company training (allocated grants amounting to 50 per cent of the levy collected) and training in key priority areas that reflect national training needs (accounting for 35 per cent of the levy collected), with the rest of its funding capacity (15 per cent of the levy collected) going to administrative expenditure. At the end of March 2015, 2,202 employers had registered for the VET levy, up from 1,713 one year before. They mainly belonged to five economic sectors: wholesale and retail (21 per cent); financial and business services (18 per cent); mining, quarrying, construction, energy and related activities (17 per cent); tourism and hospitality (8 per cent); and health and social services (7 per cent). This corresponds to the importance of these sectors in the economy and their contribution to GDP. By 2015, the NTF had collected around N\$241.9 million in levies. The fund was expected to train 171 trainees in a number of key priority areas, with courses to a total value of N\$24.5 million.

While it is too early to assess the impact of the NTF on skills formation, it is possible to discuss its governance arrangements, the type of activities and target groups it supports, and even more importantly, the opportunity for the government to use the NTF among other sources of VET financing to improve the outcomes of the system and to support policy objectives such as developing work placement and apprenticeship opportunities. Many countries such as Algeria, Côte d'Ivoire and France use their levies to fund apprenticeship and other work-based training programmes, which encourages enterprises to offer apprenticeship places. Côte d'Ivoire's training fund has reached a large number of beneficiaries, and combines in-service training with apprenticeship (**Box 9**).

Box 9 Côte d'Ivoire's Vocational Training and Development Fund

Côte d'Ivoire's Vocational Training and Development Fund (VTDF) is funded through a hybrid levy scheme:

- Two compulsory payroll levies are set at 0.4 per cent for apprentice training and 1.2 per cent for continued vocational training;
- A 0.6 per cent levy exemption is possible for some approved company training plans;
- Any funds not exempted can be used directly by the VTDF. They can also be employed to fund additional training schemes for micro-enterprises, female entrepreneurs, and enterprises in the informal sector. In this case the FDFP will work in the same way as a revenue-generating system.

The scheme has proven quite successful. Between 1993 and 2006, 24,600 programmes were carried out that reached 483,000 employees, and 71,000 individuals received training in the year 2000 alone. Survey data revealed that the scheme has met with satisfaction from the beneficiaries. One reason for FDFP's success is its autonomous nature with regard to funding. The FDFP is funded directly through the tax authority and is independent of the government. This structure guarantees stable funding and control over the type of training provided. However, research revealed that the benefits of the training were limited by the lack of key infrastructure in the country, such as access to credit and water.

Sources: ADEA and AFC (2014); Johanson (2009); Müller and Behringer (2012).

To conclude, VET does not respond to the learning needs of Namibia's young people, or to the demand for skills on the labour market. The large proportion of young people who did not attain the last grades of secondary education, or did so with low marks, have no access to formal VTCs. They also have very limited alternative opportunities to receive non-formal or informal training. Young people who are able to study beyond the secondary level tend to prefer general education: VET is unattractive owing to the perceived poor quality and relevance of the training offered in most centres. A skills survey conducted by NEF confirmed that skills are a concern across activity sectors – 70 per cent of the survey respondents indicated that they had critical vacancies requiring specialist skills and expertise in their organization, which could not be filled from the existing labour force (NEF, 2010). As a result, the VET system struggles both to equalize social opportunity by training the disadvantaged and to foster economic development through the formation of advanced skills. This stands in contradiction with the high profile of skills development in key official documents including *Vision 2030* and *NDP 4*. The overall policy priority should be to solve this contradiction, by setting the conditions for implementing the adopted strategies and achieving their expected goals. The creation of a new ministry which separates VET from basic education and brings it together with higher education and innovation can be hoped to provide the necessary political and policy impetus and leadership, to which the very specific measures for VET listed in the recent *Harambee Prosperity Plan* may also contribute.

VI Higher education

This section analyses higher education in the Namibian context. The higher education system is very recent as key institutions were established in the early 1990s; enrolment has grown explosively, leaving the two public universities with serious shortages of qualified academic staff. Access to higher education can be further broadened, for instance by facilitating enrolment of students from disadvantaged social backgrounds via bridging courses, or by using ICT to develop distance education. The relevance of higher education could be enhanced if universities did more to promote the employability and entrepreneurship of their graduates, and established strong links with industries for their research and outreach activities. International experience suggests that it would be useful to reform the institutional structures of the universities, especially the division of academic labour between the University of Namibia (UNAM) and NUST, and the role of the campus colleges of UNAM. Finally, as for VET, the governance of higher education in Namibia could be improved by clarifying the legal mandates and actual functions of the regulatory agencies, and building capacity for quality assurance, monitoring and evaluation.

Higher education in Namibia has expanded very rapidly and lacks qualified staff

The higher education system is particularly recent. Until the 1970s, Namibia had no higher education institutions. The present system was initiated after Independence, in the early 1990s, and is still evolving, for instance with the recent establishment of a second public university in 2015. The history of higher education in Namibia can be described in four phases: pre-Independence initiatives in the 1980s, creation and consolidation of public and then private institutions in the 1990s, and accelerated expansion since the late 2000s (**Table 19**).

Table 19 The history of higher education in Namibia can be described in four phases

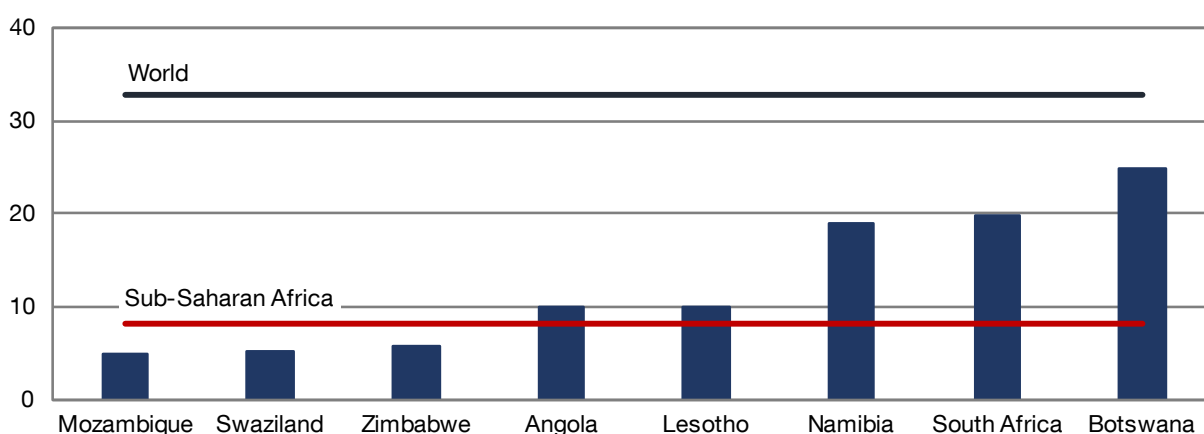
Phase I Pre-Independence initiatives	1979–80	Initial plans to establish higher education led to the establishment of the Academy for Tertiary Education in 1980.
	1985	The Academy was separated into three components responsible for university education, technical education in science and technology under the Technikon, and VET under the College for Out-of-School Training (COST).
Phase II Establishment of University of Namibia (UNAM) and Polytechnic of Namibia	1990–92	UNAM was established in 1992. Technikon and COST were placed under UNAM until 1995 when they were merged to form the Polytechnic of Namibia (PoN). The 1994 Act provided for gradual phasing-out of vocational training courses and the granting of degrees by the polytechnic. The four colleges of education in Windhoek, Ongwediva, Rundu, and Caprivi (now Zambezi), and three colleges of agriculture at Neudamm, Ogongo, and Tsumis Park further improved access to higher education.
Phase III Establishment of PHEIs	1994	The first PHEI, the International University of Management (IUM), was established as a non-degree-awarding institute, and accredited by the NQA as a university in 2002.
Phase IV Expansion of UNAM and transformation of PoN into NUST	2008–15	The Neudamm and Ogongo Colleges of Agriculture were integrated into UNAM's Faculty of Agriculture and Natural Resources in 2008, and the four colleges of education were merged into UNAM's Faculty of Education in 2010. The 2015 Act of Parliament transformed PoN into Namibia University of Science and Technology (NUST), which also led to the phasing-out within five years of the one-year diploma and one-semester certificate courses previously offered by PoN.

Sources: NCHE (2015); IUM, NCHE and NTA websites.

Enrolment has grown explosively and is high by southern African standards. The number of tertiary education students increased by a factor of ten in the two decades following Independence, to 43,761 in 2013, largely owing to explosive growth since the late 2000s – 60 per cent of the increase took place after 2008 (**Section IV**). By 2013, Namibia reached a GER of 19.0 per cent, much higher than the average ratio for sub-Saharan Africa and ratios in many other southern African countries, but still well below the global average of 32.8 per cent (**Figure 28**). Given Namibia's population growth and progress in enrolment at secondary level, the trend in enrolment should continue over the next decades. Consolidating higher education institutions so that they can cope with the influx of students while guaranteeing the quality of teaching and research appears to be the key priority, starting with the two public universities, UNAM and NUST.

Figure 28 Enrolment in tertiary education in Namibia is high by southern African standards

GER in tertiary education, 2013, per cent



Sources: NCHE (2015); UIS (2016).

The University of Namibia plays a key part in providing access to higher education across the country, but lacks qualified teaching and research staff. The largest of the two public universities in Namibia, UNAM offers thirty-six undergraduate degrees, nineteen master's degrees, and twelve doctoral degree programmes in its twelve campuses and nine regional centres located in different parts of the country. The university has undergone rapid expansion, from 1,400 students in 1992/93 to 24,280 by March 2016 (UNAM management). About 11,000 students (about 45 per cent) are registered at the main campus in Windhoek, and the remaining 13,280 (about 55 per cent) are spread among the eleven other campuses (UNAM management). The campuses thus play an important role in extending access to higher education to different parts of the country.

However, UNAM has a critical shortage of academic staff, particularly those with PhD qualifications. Of 1,961 staff members in March 2016, only 916 (46.7 per cent) were full-time academic staff. The rest constituted administrative staff (756 or 38.6 per cent) and part-time staff (289 or 14.7 per cent) (UNAM management). This translates into a student/academic staff ratio of 26.5, much higher than the OECD average (16 in 2013) (OECD, 2015). Another alarming fact is that only 191 academic staff hold PhD degrees (20.8 per cent of the full-time staff), 510 have master's degrees as their highest qualification (55.7 per cent), and 215 have only bachelor's honours degrees (23.5 per cent) (UNAM management). This does not compare well with other universities in Africa (**Table 20**).

At present, the UNAM staffing is insufficient to deliver good-quality higher education, undertake research and provide outreach services at the level expected from universities worldwide. The University therefore needs to maintain a sound staff development strategy and strong postgraduate programmes able to produce internationally competitive master's and PhD qualifications. This would be cost-effective compared with the current reliance on overseas training, and would cater for the training of staff of other institutions in the country, including higher education institutions (HEIs). But to achieve this the University needs to establish appropriate mechanisms to ensure that the qualifications to be awarded reach international standards. One of the strategic approaches to achieve that could be the establishment of PhD training partnerships with well-established universities in the region and farther overseas.

Table 20 UNAM has a shortage of academic staff holding PhD degrees

Proportion of academic staff with PhD degrees in African universities, 2011, and at UNAM, 2016, per cent

University of Botswana	65
University of Cape Town	63
University of Ghana	50
University of Nairobi	46
University of Dar es Salaam	45
University of Mauritius	42
Makerere University (Uganda)	31
University of Namibia	21

Sources: Bunting et al. (2015); UNAM management.

The creation of NUST has diversified the supply of higher education, but left a gap between higher education and VET. NUST offers vocational and academic degrees in technical subjects and applied fields at undergraduate, master's and PhD levels, including business and management, engineering, information technology, journalism, hospitality and natural resource management (NUST website). With 12,946 students enrolled in 2014, NUST makes an important contribution to diversifying the supply of higher education in Namibia towards science- and technology-related disciplines. However, NUST has an even more critical shortage of academic staff than UNAM. The University currently has about seventy academic staff, of whom only fifteen have PhDs (NUST management). NUST thus faces a major challenge to recruit academic staff and raise their qualification levels. It could establish its own staff development strategy along the lines suggested above for UNAM, or, considering that it may lack the capacity to do so, participate in UNAM postgraduate training programmes.

The transformation of PoN into NUST expanded the provision of university education in Namibia, but removed an intermediary level in the higher education and VET sub-sectors that the PoN was offering, which provided a link between VET and university degree programmes (**Section V**). Such an intermediary level would have been an important platform to link VET with university programmes. Nonetheless, NUST intends to establish a Centre of Excellence to cater for the development and expansion of VET in the country. This is an important option, which should also be used to create the aforesaid linkage platform.

Access can be further broadened if pathways are streamlined and diversified

Namibia lacks a national student admission policy framework which would streamline access to HEIs. HEIs all have their own entry requirements, which exclude a significant proportion of graduates from senior secondary education, are not harmonized with each other and prevent articulation between VET and higher education. As emphasized by stakeholders, many Grade 12 students have insufficient marks ('points' and 'symbols') to enter public universities, yet many of those admitted lack sufficient knowledge and skills. Admission criteria for PHEIs are lower than those applicable to public institutions. This is a serious concern: PHEIs could be regarded as gateways for students who are not fit for higher education, which could affect the quality of higher education in the long run. Finally, universities are poorly linked with the VET system; in particular, there is no pathway from VTCs to NUST. A national student admission policy framework is needed to harmonize the quality of students entering higher education irrespective of the type of institution. A national credit accumulation and transfer system, embedded into the NQF and based on clearly defined learning outcomes for the qualification level descriptors, would further help create multiple entry and exit pathways to VET and higher education, with no dead end at any education and training level.

UNAM and NUST have experimented with bridging courses opening access to higher education to young people from disadvantaged background. Namibia's public universities have attempted to diversify recruitment and devised bridging programmes for students who did not do well in the Namibia Senior Secondary Certificate (NSSC) and for persons who have entered the labour market already. UNAM admits mature applicants and candidates with a two-year diploma certificate from a recognized institution, provided these meet the relevant admission criteria. NUST – which is normally able to fill only about 50 per cent of its capacity – offers bridging courses for entry into bachelor of engineering,

natural resources and special science programmes. These initiatives should be sustained, most appropriately through the establishment of a structured national guiding framework.

In 2005, UNAM introduced a bridging course called Science Foundation Programme (SFP), offered at its Oshakati campus (**Box 10**). The programme was later extended to Khomasdal campus to cater for students from southern regions. Even though it operates on a small scale, SFP has succeeded in expanding access to higher education to young people from disadvantaged communities, as UNAM has established appropriate safeguards for quality and effectiveness (**Table 21**).

Box 10 The Science Foundation Programme at UNAM

The primary purpose of UNAM's one-year, full-time, face-to-face Science Foundation Programme (SFP) is to open access to higher education to learners from disadvantaged backgrounds and marginalized communities by affording them opportunities to enrol in science-related degree programmes at UNAM. SFP thus contributes to increasing the numbers of graduates in science-related fields at UNAM. SFP students enrol for five compulsory examinable foundation subjects (English, mathematics, biology, chemistry and physics). The emphasis of the programme is on developing practical skills and understanding of concepts in science and mathematics as well as scientific writing and communication skills in English. Students are also offered a non-assessed module on career and personal development, which includes life skills, career guidance and basic information technology. According to the senate-approved course plan, the SFP has additional tutorial support built in, which is provided face-to-face and/or online. The SFP was planned so that students would secure automatic admission to the first year of science degrees of their choice upon successful completion of the programme. The minimum pass for an SFP student to be admitted to any diploma programme at UNAM is a 50 per cent (D) average score. The minimum pass mark for an SFP student to be admitted into a degree programme is a 60 per cent (C) average score. A minimum of a B average score is required for medicine and engineering degree programmes, and it has proved difficult for SFP students to be admitted in those programmes.

Source: UNAM management.

Table 21 The SFP at UNAM is an alternative pathway to higher education

Enrolment in the SFP and admission to degree and diploma programmes, 2005–16

Year	Students	Per cent admitted in	
		degree programmes	diploma programmes
2005	60	96	4
2006	60	95	5
2007	66	95	5
2008	73	93	7
2009	100	92	8
2010	120	95	5
2011	147	94	6
2012	130	91	9
2013	137	93	7
2014	141	96	4
2015	140	97	3
2016	123	–	–

Source: UNAM management.

Successful as it appears to be, the SFP faces challenges that affect its contribution to the expansion of access to higher education in Namibia. First, the SFP is only designed for UNAM programmes, and the lack of accommodation prevents students from other regions in the country from participating. Second, the programme has been affected by recent changes in NSFAP loan requirements. The original admission criterion of 17 points in the five best NSSC subjects (or equivalent Grade 12 qualification) had to be raised to a minimum of 22 points, plus passing an aptitude test approved by the Senate, in order to make students eligible for NSFAP loans. However, some students from marginalized communities

are still admitted on special case appeals based on national affirmative action guidelines, even if they do not meet all the admission criteria. Third, participation in SFP has become costly for students who suffer from the lack of donors or sponsors: this compels students to shoulder the financing on their own or through their parents. The ability to participate in SFP thus depends on their resources, which goes against the spirit of the programme.

The use of ICT in teaching and learning and the creation of an open university could further expand access to higher education while reducing teaching staff overload. As both UNAM and NUST are faced with challenges related to the inadequacy of their teaching staff, those in post are inevitably overloaded with teaching, leaving not enough time for them to do research and provide outreach services. One approach to address this challenge is to incorporate ICT into teaching and learning. For example, video conferencing could be used to teach large classes scattered in different places, perhaps on distant campuses or at other centres. In addition, the universities could introduce a blended course delivery mode involving both face-to-face and e-enabled teaching and learning, as well as the use of open access e-learning materials, such as massive open online courses (MOOCs). The two universities in Namibia may wish to explore these approaches, which could also facilitate expansion of access to higher education in the country.

Beyond this, Namibia needs to institute different delivery modes, including an open and distance education arrangement. While several African countries in the region have expanded higher education through the establishment of open universities, such as the University of South Africa, the Open University of Tanzania and the Open University of Zimbabwe, Namibia has not done so – with the exception of UNAM's small-scale distance education programme, which had 4,700 students in 2016 (19 per cent of total UNAM enrolment) (UNAM management). This would provide a flexible learning pathway, particularly to those who cannot attend regular classes, and would support lifelong learning in the country.

The relevance of teaching, research and outreach activities could be enhanced

The relevance of Namibian university curricula to graduate employability and entrepreneurship has been questioned. Universities in many countries are often accused of not developing adequate strategies to address the employability of their graduates. According to stakeholders, Namibian universities do not systematically address graduate employability. Academic programmes are not linked to the needs of the labour market, and particularly to future needs given foreseeable transformations of the economy. Concerted efforts are required at the national and institutional levels for programmes such as student job attachments and internships to be successfully implemented by the two public universities. Students themselves have a role to play in promoting their own employability upon graduation, particularly in developing skills for self-employment and in job creation.

Indeed, universities in Namibia as well as in other African countries are now devoting greater attention to entrepreneurship training, aimed at empowering students with entrepreneurial skills in the expectation that the students will be able to create their own employment opportunities after they graduate. However, entrepreneurship programmes in most universities including UNAM and NUST are generally treated just like the traditional programmes. They are offered by university staff who have little or no experience of entrepreneurship. In order to ensure that the initiative of imparting entrepreneurship skills to university students achieves its intended goal, entrepreneurship programmes need to be supported by appropriate curricula whose delivery is structured differently than for regular courses. This can only be achieved by universities working closely with entrepreneurs in the entire course development and delivery chain. This requires universities to establish strong partnerships with industries, which do not seem to exist yet in Namibia.

Projects done by students at both undergraduate and postgraduate levels could be one entry point. In most cases, students (and staff) take these projects merely as instruments to meet prescribed requirements for the degree awards. Rarely are student research projects conceived as entry points into enterprise development. However, there are some good examples of people having established business ventures based on their student research projects. For instance, Dr Askwar Hilonga from the Nelson Mandela African Institute of Science and Technology in Arusha, Tanzania, has developed a company based on water purification technology developed from his PhD research project (**Box 11**).

Box 11 PhD research leading to a business venture: the case of Dr Hilonga from Tanzania

Dr Askwar Hilonga, a Tanzanian scientist and senior lecturer at Nelson Mandela African Institute of Science and Technology (NM-AIST) in Arusha, Tanzania, created a water filter that can remove 99.9 per cent of bacteria, microorganisms and viruses, as well as heavy metals, using nanotechnology to filter out water contaminants. Born in rural Tanzania and raised by a poor family, Dr Hilonga was one of only four students in his year to graduate from primary school. He went on to study chemistry at the University of Dar es Salaam in Tanzania before winning a scholarship to study a PhD in nanotechnology in South Korea. He explains: 'When I graduated with my PhD from South Korea (specializing in nanotechnology), I asked myself an ethical question: What does my PhD mean to my community in Tanzania which is still suffering from water-borne diseases? So, now I am focused on developing nano-materials that are suitable for water purification, and I am seeing commercial feasibility of this adventure.' Dr Hilonga and his wife have since founded a company based on the water purification technology, as a spin-off company of NM-AIST. The company offers employment to university graduates as its products are quickly gaining markets in Tanzania.

Sources: Nicholl (2014); Jewell (2015).

Conducting regular tracer studies would help improve the labour market relevance of the curriculum. Although UNAM has already produced over 17,000 graduates (UNAM website), the university does not have details regarding their subsequent careers. No detailed tracer study has been conducted yet, and whether the intention of conducting one in 2016, indicated by UNAM management, will be followed remains to be seen. By April 2016 the university had not developed and tested the appropriate tools, a time-demanding task in itself (Mkude and Ishumi, 2004).

NCHE does conduct tracer studies, whose results are disseminated to universities. This is an appropriate alternative if universities do not have the capacity and resources to undertake them. Considering that Namibia has only three universities, for NCHE to do this centrally would be more cost-effective. However, there is a need for NCHE in Namibia to establish a policy framework and guidelines for conducting tracer studies in collaboration with HEIs, the results from which would feed into curriculum improvement. This feedback could help in addressing deficiencies related to curricula and the employability of graduates. Tracer studies will also help universities to link up with their alumni, who could help to market the universities, and in particular assist with fundraising.

Research and outreach activities towards industries and communities are conducted on a small scale and on an ad hoc basis. As in most universities in Africa, research at UNAM and NUST is influenced more by the availability of funding from external agencies than by national needs or issues, for which funding invariably would come from the government. Both UNAM and NUST indicated that they were not aware of any national research agenda for Namibia. Unfortunately, they also did not have their own agendas.

UNAM could function as a national think-tank. Research at UNAM is mainly conducted by the Multidisciplinary Research Centre established in 1993, whose activities are linked to postgraduate training and to the achievement of goals spelt out in *Vision 2030* and the *Harambee Prosperity Plan* (UNAM management) – although there no documentation to illustrate these linkages. The Centre is well suited to participate in research that could feed into the formulation, development, monitoring and evaluation of national policies and development strategies. The Centre does not seem to have played that part yet. Such engagement would provide an entry platform for UNAM to act as one of the think-tanks of the government of Namibia. UNAM also conducts outreach programmes, notably the Kalembeza Rice Project, which also involves barley production. This project contributed to promoting rice growing in Namibia, in the Zambezi region (UNAM management). This initiative could be extended to other crops in order to contribute further to the transformation and diversification of Namibia's agriculture.

Strengthening partnerships between universities and industries is a priority. Such partnerships can foster innovation, facilitate income generation by universities, contribute to student job placement programmes and support research linked to postgraduate training. UNAM and NUST both indicated that they maintained partnerships with industries, but they did not elaborate on their active participation in the creation of effective partnerships. Existing arrangements seem to be weak and ad hoc (at UNAM they consist mainly of the provision of consultancy services), rather than based on a national policy framework and broad-based institutional strategies that would ensure their effectiveness and sustainability. Substantial intervention by the top management of universities seems necessary to improve on this situation, and also to inculcate a spirit and attitude among staff that facilitates building trust between universities and industries. The emerging support to NUST by GIZ could contribute to the establishment of partnerships with industries based on the German model.

To sum up, Namibia's higher education system, as it keeps expanding, will need to recruit and train qualified academic staff, reinforce research and outreach activities, and tighten its links with the economy and labour market. Achieving this may require a revision of the institutional structures of universities, which can be guided by the experience of other countries in Africa and beyond. In particular, Namibia faces choices regarding the distribution of academic fields between UNAM and NUST, the status of the regional campuses of UNAM, their possible evolution into specialized universities, and the adoption of a cluster model to coordinate public HEIs in the country.

International experience suggests possible reforms of the public universities

A choice has to be made between the specialization of UNAM and NUST and the duplication of academic programmes across the two universities. As Namibia has only two public universities, MHETI and NCHE face a clear choice, which needs to be informed by a thorough examination of advantages and drawbacks, between giving both universities the freedom to establish academic programmes as they wish, even if this leads to duplication, or restricting them so that each university offers specific programmes. Duplication has the advantage of bringing in some competition and thus creativity in attracting the best students and a diversity of resources, and garnering greater recognition and fame. This may lead to the promotion of quality. Specialization the other hand could ensure that adequate financial, human and other resources are allocated per programme offered in the country instead of being thinly distributed to the same programme in the two institutions. Each university would concentrate in niche areas, which would also be a driver to quality, creativity and innovativeness in both teaching and research.

The status of the campus colleges of UNAM in the future architecture of the higher education system should be specified. UNAM operates in twelve campus colleges, established to enhance access to higher education across the vast country, to the benefit of communities located away from the main campus in Windhoek, through reduced travel and living costs for students. Campus colleges can also drive the socio-economic development of the surrounding communities. In a long-term perspective, the campus colleges may be seen as nuclei for the establishment of fully fledged universities in different parts of the country, through the upgrading of specific colleges or clusters of colleges into regional universities. The regional universities would develop synergies among practitioners working on economic growth, trade and private sector development. However, having campus colleges of a single university risks spreading resources too thinly, compromising governance, management and the overall quality of the institution, especially given the long distances separating the campus colleges from Windhoek. The proper management of the campus colleges is also a challenge, because of the scarcity of senior academics who have leadership and management experience and could be deployed to manage the campus colleges in a professionally effective manner.

Other countries have a university with campus colleges in many parts of the country, including Rwanda (**Box 12**). In the short term, Namibia may thus want to maintain the status quo, and benefit from the experience of those countries. Professors from other parts of the world, with diverse knowledge and experience, could support the establishment and initial running of new campus colleges, as the local universities groom and mentor Namibians to take over academic leadership within specified timeframes. Such interventions would impart cross-fertilization of experiences from well-established foreign universities into the Namibian context. On the long term, developing a strategy for transforming the campus colleges into fully fledged universities would become a viable intervention.

Box 12 The University of Rwanda: a model of a unified university under campus colleges

Rwanda used to have a National University of Rwanda and several other autonomous higher education institutions with university status scattered in the country. In 2013 all these institutions were merged into one university, the University of Rwanda, with the former institutions becoming colleges of the university, specialized in specific fields. The aim was to improve the quality of education and effectively respond to current national and global needs by ensuring that the higher education system in the country had a common agenda and a harmonized system steered centrally, with some autonomy given to the colleges. This also ensures judicious deployment of national resources with a central framework for disbursement, management, monitoring and evaluation.

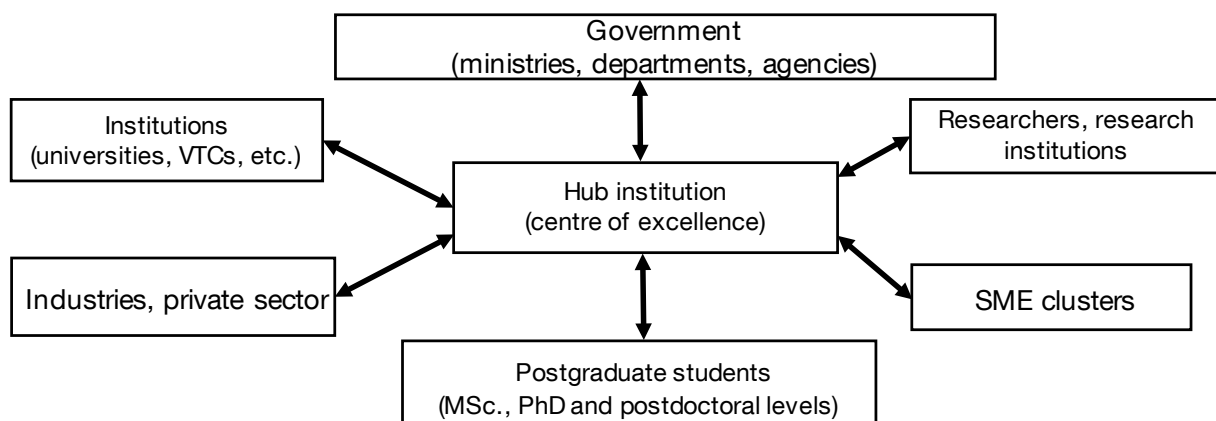
Source: University of Rwanda website.

The establishment of specialized universities could contribute to the development of the country. UNAM is based on the model of a comprehensive university, with faculties for disciplinary fields such as health sciences, education, agriculture, and engineering and technology. These academic units may have some autonomy, but cannot grow and diversify. Several universities in East Africa, including the University of Nairobi, the University of Dar es Salaam and Makerere University (Uganda), have restructured and decentralized their academic units into semi-autonomous on- or off-campus colleges headed by college principals. Decision-making and other administrative functions were transferred to these campus colleges, which is anticipated to bring in institutional growth, diversification of activities, and stimulate operational efficiency.

Other countries have established universities with disciplinary specialization by upgrading specific academic units or colleges in the existing universities, or establishing totally new ones focusing in their disciplinary areas. China for instance has both comprehensive and specialized universities. This has enabled the country to produce a large pool of highly specialized experts in a diversity of specific academic, technological and other socio-economic fields. Some countries in Africa are doing the same. In Tanzania in 1984 the then Faculty of Agriculture of the University of Dar es Salaam was converted into the current Sokoine University of Agriculture, specializing in agricultural, veterinary and forestry sciences. In the mid-2000s the then colleges of health and allied sciences, and lands and architectural studies of the University of Dar es Salaam were transformed into independent universities, namely Muhimbili University of Health and Allied Sciences (MUHAS) and Ardhi University (ARU), specializing in lands and architectural studies. The two new universities have been able to develop institutional growth strategies and to diversify academic activities centred on their core specializations. MUHAS is now being developed to be among the largest medical universities in East Africa (ARU and MUHAS websites). Both MUHAS and ARU have introduced programmes in social sciences and humanities that are linked to the core institutional programmes. This is intended to enable the production of human resources in multidisciplinary specializations essential for managerial and policy-making functions. This arrangement cannot be easily achieved where the professional disciplines are within discrete academic units in a comprehensive university, primarily because of the empire-building tendencies that normally hinder institutional cross-fertilization.

A cluster model would be relevant to Namibia's universities. Cooperation is limited between UNAM and NUST, between UNAM and the VTCs, and between both universities and industries. The institutions are unable to pool their resources and utilize them for enhanced productivity, and in promoting synergy and efficiency, especially for the development of innovations and inter-disciplinary networks. Internationally, there is now a strong drive for HEIs to operate under a cluster model involving one strong HEI acting as the cluster hub or centre of excellence, which is well resourced and linked to the other educational and research institutions, government, industry/private sector, SME clusters, and postgraduate/postdoctoral students (**Figure 29**). A properly configured cluster model strengthens the capacities of individual institutions to deliver high-quality training, research and innovation, owing to the synergy between institutions. The cluster is better able to address national developmental challenges, and to support policy development, implementation and monitoring and evaluation processes. The African Centres of Excellence Programme of the World Bank provides a template (IUCEA website). Namibian HEIs could thus consider developing a collaborative engagement based on the cluster model.

Figure 29 A cluster model would be relevant to Namibia's universities



NCHE could manage a higher education observatory. In Namibia, as in many African countries, training and research systems depend on the ad hoc interests of individual HEIs and of government institutions. The design and implementation of human resources and research programmes linked to the national developmental agenda suffer from the absence of the coordination that a national observatory could provide. NCHE appears to be the suitable institution to manage the national higher education observatory, as one of its main functions is to advise the government on higher education matters, as spelt out in the act that established the agency. Although the act does not explicitly define what the advisory role entails, in other countries this has been defined as providing expert and evidence-based advice to policy-makers and higher education leaders, either proactively or reactively in response to specific requests (Bailey, 2015; NCHE website).

Strengthening governance will be a condition for further expanding the system

Both public and private HEIs lack capacity for quality assurance. NCHE has an overall responsibility to build the capacity of HEIs, whether public or private, to design and implement internal quality assurance systems. Yet existing arrangements are not necessarily linked to the framework developed by NCHE, and do not harmonize the quality of education across institutions. The two public universities, UNAM and NUST, have established institutional units for quality assurance, but these do not yet constitute elaborate internal quality assurance systems. UNAM also runs an external examiner system that could be perceived as a component of the institution's quality assurance arrangements, and should be embedded into it. PHEIs are young institutions which may not all have sufficient human resource capacity to conduct quality assurance. In theory they are not-for-profit organizations, but in reality there is considerable pressure on them to keep costs down, and this might discourage them further from introducing appropriate internal quality assurance safeguards. It is unclear whether the quality assurance policies and procedures which NCHE allows PHEIs to establish and apply of their own (NCHE website) are linked to the national system under NCHE, as they should be. NCHE could lead a capacity-building process to provide quality assurance skills to staff at UNAM, NUST, IUM and NCHE itself. The process would enable these institutions to develop appropriate instruments for quality assurance, and to make them operational. NCHE should further develop national quality assurance tools, including a policy framework, guidelines and procedures, programme benchmarks, and standards, for these to guide internal quality assurance systems.

The roles and functions of higher education regulatory agencies are not defined clearly enough. Most higher education regulatory agencies in Africa were established during the 1990s as a response to the rapid expansion and diversification of the subsector and to the proliferation of private providers that followed its liberalization (World Bank, 2007). Increased demand for quality, efficiency and accountability created a need for regulation and quality assurance of the new (and in some cases existing) institutions and academic programmes. The agencies were established to handle this emerging agenda based on specific roles and functions (**Table 22**). Since then, several countries have undertaken reviews of their 'first generation' regulatory agencies and replaced them with 'second generation' agencies (**Table 23**).

In Namibia, NQA was established in this context in 1996 and has remained a 'first generation' agency, despite being supplemented with NCHE in 2003, and by NTA in 2008. Indeed the three agencies share the responsibility to regulate post-secondary education and training: NQA, NCHE and NTA, established separately and at different times under acts of Parliament. NQA deals with the entire post-secondary education system including VTCs and universities. NCHE is responsible for regulating all non-vocational post-secondary education and training institutions and programmes, and for registering PHEIs. NTA handles the VET system only (**Section V**). As is apparent from the acts establishing the three agencies, their legal mandates overlap, especially between NQA and NTA and between NQA and NCHE. In particular, VET and higher education are not clearly delineated. The apparent lack of cooperation between the agencies aggravates overlaps in their actual operations. Another cause for confusion is the use of 'accreditation' to refer to various regulatory actions, including quality assurance, certification that an institution or programme meets the quality requirements set by the regulatory authority, and registration or even chartering of institutions to operate in the country.

Table 22 Higher education councils can fulfil multiple roles and functions

Roles	Functions
Regulatory	<p>Determining norms and standards for subsectors, the equivalence of qualifications between institutions, and credit accumulation and transfer policies and procedures.</p> <p>Determining the regulatory framework (procedures, guidelines, criteria) for institutional and programme accreditation.</p> <p>Registering, licensing and accrediting new (and in some cases existing) public and private HEIs.</p> <p>Accrediting new and existing academic programmes of public and private institutions.</p>
Distributive	<p>Determining budget allocation for HEIs and the subsector as a whole.</p> <p>Distributing financial resources from the state to institutions, units or individuals in the subsector.</p> <p>Monitoring expenditure at both institutional and subsector level.</p>
Monitoring	<p>Collecting and analysing system and institutional-level data, including the development of performance indicators.</p> <p>Tracking developments and trends in the system, and performance and quality of institutions, against the norms and standards set for the subsector or against stated national goals or system targets.</p> <p>Monitoring the quality assurance mechanisms or systems within institutions.</p> <p>Communicating identified problem areas to the minister or institutions, where relevant.</p>
Advisory	<p>Providing expert and evidence-based advice to policy-makers and other higher education leaders in government and institutions, either proactively or reactively in response to specific requests.</p> <p>Commenting on or formulating draft policies on behalf of the ministry responsible for higher education.</p> <p>Providing advice to the relevant government body on the licensing and accreditation of HEIs and the accreditation of their academic programmes.</p>
Coordination	<p>Enabling interaction between key stakeholders and policy spheres.</p> <p>Developing and maintaining agreement between stakeholders about central higher education objectives and issues.</p> <p>Promoting the objectives of HEIs or the subsector to the market and within government itself.</p> <p>Managing the relationships between key stakeholders (especially government and HEIs).</p> <p>Strategic and financial planning (including setting targets) for HEIs and the sector (enrolments, institutional differentiation, financial human resources and facilities).</p> <p>Developing data and knowledge flows between different system-level governance roles.</p> <p>Oversight function ensuring no duplication, confusion or gaps with regard to who is doing what in the overall governance system.</p>

Source: Bailey (2015).

Table 23 Several African countries have 'second generation' higher education agencies

Country	Current agency	Year	Predecessor agency	Year
Kenya	Commission for University Education	2014	Commission for Higher Education	1985
Tanzania	Tanzania Commission for Universities	2005	Higher Education Accreditation Council	1995

Sources: Bailey (2015); CUE and TCU websites.

NCHE is mandated to regulate HEIs, register and promote quality assurance in the institutions (that is, in post-secondary education institutions at Level 5 of the NQF and above), and accredit their programmes ('with the concurrence of NQA') (NCHE website). This function is one of the major causes for the operational confusion between NCHE and NQA. According to NQA management, quality assurance and the NQF should be under NQA. However, this contradicts international practice, where quality assurance is the responsibility of the regulatory agencies (such as NCHE in Namibia), and not the qualifications authority such as NQA, unless there is only one body, such as in Botswana (Bailey, 2015)

and Malaysia (MQA website). The overlap of mandates between NQA and NCHE needs to be resolved, as the current situation has led to confusion among the regulatory system players, higher education providers and other clients.

Considering the current set of Namibia's regulatory agencies and the small size of the higher education subsector, the country may not need such a multitude of agencies dealing with the regulatory function for higher education. At the least, the mandates of the agencies should be clarified. Namibia could draw lessons from international experience here as well. Several African countries, including Kenya, Nigeria and the United Republic of Tanzania, have separate legislative provisions establishing TVET regulatory frameworks operating alongside those responsible for university education (CUE, NUC and TCU websites). Other countries have a unified higher education regulatory framework, such as Botswana (Bailey, 2015) and Malaysia (MQA website). In these countries, functions related to the NQF and quality assurance are handled by the same agency.

Namibia needs a management information system for monitoring and evaluation. Reliable information on the performance of higher education is crucial in guiding its transformation and to support the performance of other socio-economic sectors. The importance of information and data increases on a daily basis, particularly within the framework of achieving Agenda 2030 for Sustainable Development and for the creation of research and knowledge-based economies, where precise information actively contributes to decision-making.

Unfortunately, this is one of the major challenges facing many universities in Africa including those in Namibia, as the institutions generally lack appropriate management systems to store and provide the information required for planning purposes. Although NCHE has now established a higher education management information system (HEMIS), this seems not to be linked to departments of other sectors. The NPC faced challenges in obtaining data from universities and other training institutions, which were needed as a basis for incorporating higher education issues into *National Development Plans*. This is an area where HEIs and NCHE need external support in human resources capacity-building in data management and in the acquisition of electronic data management tools, both hardware and software.

Public universities have no elaborate income-generation or fundraising strategies, and depend on government subventions for their financing. One of the immediate responsibilities of the newly engaged pro-vice chancellor responsible for resource mobilization at UNAM will be to develop a fundraising strategy for the university. NUST management did not consider fundraising as one of its responsibilities, under the premise that since NUST is a government institution, it is the obligation of the government to provide all necessary financial resources. This perspective is not in line with current global trends in higher education financing.

Student financing through the provision of loans is the responsibility of NSFAP (**Section V**). Although NTA and NCHE are also mandated to provide student scholarships, the three agencies seem to work in isolation, which is inefficient. The student financing system could be restructured, either by merging the funding functions under the umbrella of a single agency, or by establishing a mechanism that will ensure effective networking of the three agencies.

To conclude, Namibia's higher education system is facing the double challenge of rapid expansion to cope with the inflow of students as youth numbers and graduation rates from junior secondary education continue to increase, and consolidation to improve its quality and relevance to society and economy. As the system is very recent, choices will need to be made regarding the institutional structures of universities and governance. Many of the issues raised in this section also apply to VET (**Section V**). If transformed and expanded successfully, higher education could provide a decisive boost to Namibia's science, technology and innovation system.

VII Science, technology and innovation

This section analyses the situation of science, technology and innovation (STI) in Namibia. The country has a comprehensive policy framework for STI, based on *Vision 2030* and development plans, as well as a number of public institutions engaging in R&D. However, while the national system of innovation (NSI) has grown in size and complexity, it lacks dynamism, especially by international comparison. Reasons for this situation include the long gestation and poor implementation of STI policies, insufficient links between universities, R&D institutions and industries, low private-sector participation, and the lack of an innovation and entrepreneurship culture in the country.

Namibia has a comprehensive policy and institutional framework for STI

The government of Namibia has recognized that STI is critical for socio-economic transformation. *Vision 2030* and the related *National Development Plans* and *Harambee Prosperity Plan* clearly articulate the importance of STI and research and development (R&D) for poverty reduction, employment creation, industrialization and economic diversification:

- *Vision 2030* emphasizes the importance of 'leveraging knowledge and technology for the benefit of the people' (Namibia, 2004, p. 41), and states that by the 2030 the country should have 'a critical mass of knowledge workers and the contribution of SMEs to GDP [should] not [be] less than 30 per cent' (Namibia, 2004, p. 39);
- *NDP 4* states that 'Industrialisation in Namibia, driven by innovation and respect for the sustainability of [the] environment, will ensure the expansion of the country's capacity to produce secondary goods and services' (NPC, 2012b, p. xvii). The plan emphasizes that without the development of capacity to conduct R&D, the country will not be able to achieve industrialization. It states that 'R&D ... is underdeveloped in Namibia, with few institutions carrying out R&D on a significant scale, resulting in low levels of product development. Moreover, there is limited tracking of funds spent on R&D in the country. Conversely, for example, our neighbours Botswana and South Africa spend approximately 0.5 and 0.9 per cent, respectively, of GDP on R&D' (NPC, 2012b, p. 51). *NDP 4* sets a target for gross expenditure on R&D (GERD) of at least 0.3 per cent of GDP to be attained by 2017;
- The *Harambee Prosperity Plan* establishes a clear link between productivity, skills development and the use of knowledge and technology. For example, it states that the government will prioritize VET and invest in it as 'a source of skills, knowledge and technology needed to drive productivity in knowledge-based and transitional societies' (Namibia, 2016, p. 44).

One qualification is that the concept of 'innovation' is often understood in a restrictive sense in Namibia. Stakeholders often equated innovation with R&D, and held the view that innovation emerges from scientific research alone. Namibia's policies would gain from embracing a broader concept of innovation (**Box 13**).

Box 13 Defining innovation

Innovation is the introduction and/or application of new and novel products, processes, practices and ideas to create value in an economy or enterprise. It may entail the development or procurement and introduction of a technology (product, process and practice) or an idea into society with the aim of diversifying economic activities and increasing productivity. Innovation is not a single event or activity, but a process that is cumulative, building on old and new stocks of knowledge. It should not be confused with R&D, which largely involves the generation or production of knowledge.

An NSI comprises the interconnected sets of public and private institutions that collectively and individually contribute to the development and diffusion of new products, processes, practices and ideas in a national economy. The NSI provides the framework within which governments form and implement policies to influence innovation activities and processes in a country. It is largely measured in terms of interactions, such as the diffusion of knowledge or the mobility of personnel between enterprises, universities and research institutes.

Sources: Aubert (2005); Freeman (1981); Lundvall (2002); OECD (1997).

Namibia has adopted a range of explicit policies, legislation and regulations promoting STI. The *National Research, Science and Technology Policy* of 1999 is the main policy instrument. It espouses the concepts of ‘innovation’ and ‘systems of innovation’, and the government is putting increasing emphasis on the role of innovation in economic development, particularly in addressing challenges of unemployment and poverty (**Table 24**). Namibia also has implicit policies which are not intended to promote or govern R&D and innovation, but have indirect effects on them, such as the *Health Research Policy* of 2002, the *National Human Resources Development Plan 2010–2025*, defence and security policies, tax and foreign exchange regulations, immigration and labour laws, environmental impact assessment regulations, competition law, and foreign direct investment regulations.

Table 24 Namibia has several explicit policy instruments for STI

Policy instrument	Examples of specific measures for STI
<i>National Research, Science and Technology Policy</i> (NRSTP) of 1999	<ul style="list-style-type: none"> - Establishment of the National Commission on Research, Science and Technology (NCRST). - Establishment of the Fund for Research, Science and Innovation. - Objective to spend at least 1 per cent of GDP on R&D. - Government to provide fiscal/tax incentives for private sector to spend on R&D. - Skills in STEM subject and infrastructure for R&D and production of technology to be developed. - Establishment of science parks and innovation incubators.
Research, Science and Technology (RST) Act No. 23 of 2004	<ul style="list-style-type: none"> - President shall be the patron of research, science and technology. - Specific legal provisions for the establishment of NCRST. - Specific legal provisions for the establishment of the Fund for Research, Science and Innovation.
Research, Science and Technology (RST) Regulations of 2011	<ul style="list-style-type: none"> - Improved coordination and administration of R&D through research permits issued by NCRST. - Establishment of parliamentary committee on research, science and technology.
<i>Industrial Policy</i> of 2012 and <i>Growth at Home</i> strategy	<ul style="list-style-type: none"> - Establishment of the Business and Intellectual Property Authority (BIPA) and enactment of national intellectual property rights legislation. - Promotion of partnerships among public and private sector institutions by creating innovation platforms. - Namibia Standards Institution (standards, testing, calibration, etc.) and Namibia Business and Innovation Institute (NBII) (R&D, technology transfer, design, etc.) reinforced to ensure comprehensive support and to develop and test technologies.

Sources: Namibia (1999a, 2004, 2011b, 2012b).

Public institutions seem to dominate the R&D landscape. Besides MHETI, the main agencies or bodies responsible for the formulation and implementation of policies for R&D and innovation are the National Commission on Research, Science and Technology (NCRST), the Ministry of Trade, Industrialization and SME Development, and sectoral ministries for health, agriculture and tourism. NCRST was established in 2012 under the RST Act No. 23 of 2004. It is a parastatal body reporting to MHETI, responsible for preparing national programmes as well as coordinating policy implementation. NCRST administers the main mechanism for funding R&D in the country, namely the National Research, Science and Technology Fund established in accordance with sections 23 and 24 of the RST Act No. 23 of 2004. The Ministry of Trade, Industrialization and SME Development is responsible for the formulation and implementation of industrial policies, and policies and regulations pertaining to manufacturing, foreign direct investment and enterprise development. It deals with policies for tax incentives for enterprises, procurement of technologies for SMEs, and training in entrepreneurship. Under the auspices of the ministry, the newly established Business and Intellectual Property Authority (BIPA) is an autonomous agency for administering the protection of intellectual property. Non-state agencies that have direct influence on R&D and innovation policies and activities include NCCI, which also offers enterprise development services and is a key player in the procurement of technologies for SMEs. The Chamber offers training programmes in areas related to entrepreneurship, and has supported some SMEs in procuring equipment.

R&D activities as such are conducted by the two public universities, UNAM and NUST, as well as in sectoral institutions: the National Botanical Research Institute of Namibia (NBRIN), the Habitat Research and Development Centre, the National Forestry Research Centre, NIMT, the Central Veterinary Laboratory and the Desert Research Foundation of Namibia (DRFN). State-owned enterprises such as NamPower also play important roles in R&D in the country. NamPower pursues a wide range of R&D and innovation activities in the energy sector. It has developed a number of renewable energy technology initiatives such as the Tsumkwe Hybrid Energy project and the Combating Bush Electricity for Namibia Development (CBEND) project.

The NSI has grown in size and complexity, but lacks dynamism

Namibia's NSI has grown in size and complexity. The number of institutional actors, particularly R&D institutions and programmes and private enterprises, has increased, especially in recent years, with the creation of MHETI, NCRST, BIPA, besides the two public universities and a number of SMEs. There has also been an increase in the number of R&D programmes being implemented by national public R&D institutes.

The expansion of the institutional landscape has not necessarily stimulated scientific and technological dynamism. First, investment in STEM education is low. Specific figures on enrolment in STEM-related courses and their results are not available, but recent data show that Namibia has few scientists, engineers and technicians directly engaged in R&D and innovation activities, especially in comparison with neighbouring or other reference countries. Botswana, which adopted its own STI policy regime at about the same time as Namibia, has more R&D personnel. South Africa as well has a much higher proportion of R&D personnel in its population (**Table 25**). Deficiencies in basic education and the low profile of STEM in higher education contribute to this situation. SACMEQ and NSAT results indicate a poor quality of teaching/learning in mathematics and science in primary education, which leaves most school children without foundation skills for STEM (**Section IV**). Stakeholders pointed out that engineering education is a particular challenge in Namibia, with few students choosing the field, especially females. Retaining students in STEM is also difficult because of a lack of incentives and the poor remuneration of professionals. A national campaign could create awareness of the importance of STEM and the job potential its offers to students.

Table 25 Namibia lacks scientists, engineers and technicians for R&D and innovation

R&D personnel and researchers per million inhabitants, most recent year available

Country	Total R&D personnel		Researchers	
	Headcount	Full-time equivalent	Headcount	Full-time equivalent
Mozambique	136	89	65	38
Namibia	433	...	341	...
Botswana	534	305	324	165
South Africa	1,229	663	811	405
Germany	10,384	7,491	6,491	4,472

Notes: Data are for 2010 (Mozambique, Namibia), 2011 (Germany: headcount), 2012 (Botswana and South Africa) and 2013 (Germany: full-time equivalent). ... = not available.

Source: UIS (2016).

Second, Namibia's gross expenditure on R&D remains low, despite progress made over the past decade. In the mid-to late 1990s, gross expenditure on R&D was below 0.1 per cent of GDP; by 2010 it had reached 0.14 per cent. This remains way below the target of 1 per cent of GDP set in the NRSTP of 1999, and below the levels reached by neighbouring countries such as Botswana, South Africa and even Mozambique (**Table 26**).

Table 26 Investment in R&D is low in international comparison

GERD as proportion of GDP, most recent year available, per cent

Namibia	0.14
Botswana	0.25
Mozambique	0.42
South Africa	0.73
Germany	2.85

Note: Data are for 2010 (Mozambique and Namibia), 2012 (Botswana and South Africa) and 2013 (Germany).

Source: UIS (2016).

Third, Namibia performs poorly in terms of innovation drivers such as higher education and training, the quality of scientific research institutions, university–industry collaboration, and government procurement of advanced technology products, as reflected by global indices produced by the World Economic Forum (Global Competitiveness Index, **Section III**) and by Cornell University, INSEAD and WIPO (Global Innovation Index, 2015). In 2015, Namibia ranked 107th out of 141 countries on the Global Innovation Index, below comparator countries (**Table 27**). Data on patent grants and on trademark and industrial design registrations collected by the World Intellectual Property Organization (WIPO 2016), available mostly since 2004, suggest small numbers of intellectual property filings, and no clear, increasing trend. Namibia has thus been overtaken by Botswana since 2011 as far as trademarks are concerned, while South Africa remains the innovation hub in the region (**Table 28**). Two fields of technology accounted for half the fifty-six patent applications filed over 2000–14: pharmaceuticals (32.6 per cent of all application) and organic fine chemistry (17.2 per cent) (WIPO, 2016).

Table 27 Namibia ranks poorly on global indices of innovation

Global Innovation Index ranking, 2015

Germany	18
South Africa	54
Botswana	90
Mozambique	93
Namibia	107

Source: Cornell University, INSEAD, and WIPO (2015).

Table 28 Namibia files limited numbers of patents, industrial designs and trademarks

Intellectual property filings, 2014

Country	Patent grants	Industrial design registrations	Trademark registrations
Mozambique	0	0	1,153
Namibia	8	32	966
Botswana	3	30	1,690
South Africa	5,968	2,334	38,650
Germany	87,929	117,187	657,423

Note: Figures above are sums of filings made by residents, non-residents and abroad. In the case of Namibia, most filings are done by non-residents, and the rest abroad.

Source: WIPO (2016).

Innovation requires better governance and stronger links between R&D and industries

The incoherence of policies, their long gestation and poor implementation undermine Namibia's NSI.

Stakeholders, confirming earlier reviews of innovation of Namibia (Nyiira, 2005), pointed to incoherence between the NRSTP of 1999 and other policy instruments, for instance the *Industrial Policy* of 2012. The coordination of policies and their implementation is also deficient, as ministries tend to have diverging views on STI and a limited understanding of the role of the NCRST. Causes for this situation include the unclear definition of the mandates of NCRST and of MHETI, a lack of capacity of both institutions to coordinate STI policy, and more generally, low levels of STI policy 'literacy' in the country. The consequence is unnecessarily long policy gestation. After NRSTP 1999 was adopted, it took five years for the RST Act to be enacted by Parliament in 2004, and a further seven for the RST Act Regulations to be taken in 2011. Stakeholders attributed long policy gestation to low levels of engagement by political institutions and the National Assembly in STI policy processes. For instance, no parliamentary committee is dedicated to STI.

Links between universities, R&D institutes and industry are weak. According to stakeholders, this is the result of a mismatch between R&D priorities of the universities and those of industry, a weak entrepreneurial culture in universities, the restriction of government and international funding to university-based R&D with no industrial applications, and the absence of financing mechanisms such as venture capital to stimulate industry-oriented R&D.

Private sector participation in R&D and innovation is limited. Although there has been a significant increase in the number of enterprises, particularly SMEs, and inflows of foreign direct investment have increased over the past two decades, the private sector is not playing a significant role in R&D and innovation, and accounts for just about 20 per cent of gross expenditure on R&D compared with about 50 per cent in South Africa (NEPAD, 2014). According to stakeholders, this is the result of a lack of specific incentives such as tax relief and weak intellectual property protection in the country.

A weak entrepreneurial and innovation culture is a barrier to job creation and economic diversification in Namibia. Unions, industry and ministry representatives all argued that skills development needs to be accompanied by the creation of an entrepreneurial and innovation culture in order to address youth unemployment and related socio-economic challenges. At present, some of the VET centres and HEIs offer courses on entrepreneurship, but their quality and relevance were questioned by most stakeholders, who indicated that the courses were often taught as 'add-ons' and did not respond to market needs. Several COSDECs have an incubation programme that supports some of their graduates to establish start-up enterprises. Several enterprises have come out of the programme and may be creating jobs for the young people in the region. For instance, the Swakopmund COSDEC has demonstrated potential for incremental innovation in furniture manufacturing. On a larger scale, the government plans to establish an innovation hub in Windhoek and UNAM plans to build innovation centres in some of its colleges or campuses. However, it is not clear whether the plans will be executed or implemented as part of education and training, or whether these will be stand-alone or detached programmes.

To conclude, Namibia has a number of policies for STI, but these are not well coordinated and implemented, and fail to make a difference to the country's development priorities. The NSI has expanded in terms of new institutions, but lacks the dynamism. This is because of a range of factors including low investment in STEM education and R&D, and weak institutional capacity to implement existing STI policies and to ensure policy coherence. Namibia will need to undertake a range of institutional and policy reforms to strengthen its NSI: sharpening the remits of institutions such as the NCRST, building innovation policy leadership capacity in the MHETI, and mainstreaming STEM in the education system. Such policy options are outlined in **Section IX**, after **Section VIII** discusses cross-cutting issues that have emerged from the analyses of VET, higher education and STI in **Sections V, VI** and **VII**.

VIII Cross-cutting issues

This brief section highlights three issues common to VET, higher education and innovation. First, addressing inequality is the overall policy priority in Namibia. Second, education and training at all levels, as well as innovation, should be made more relevant to the resolution of the country's employment crisis. Third, for this to take place, a shift is needed from policy design to implementation.

Addressing inequality

The overall goal of public policies in Namibia should be to address the country's extreme inequality. MHETI policies for VET, higher education and innovation should clearly articulate measures addressing this goal in a consistent way. This will involve coordination with MBEAC, not only to ensure that the basic education and VET curricula fit with each other and guarantee pathways between the academic and technical streams, but also because basic education at present does not provide a strong enough foundation for learning at further levels. In this regard, there is scope for MHETI to develop programmes that train early childhood development specialists and other social workers. In addition, alternative, non-formal programmes are needed on a much larger scale than today to address the needs of those who could not complete basic education and are excluded from formal VET, not to mention higher education. Finally, VET appears to be a promising strategy for inequality reduction in Namibia, if it is part of broader efforts to facilitate entrepreneurship, as the country's formal economy is not forecast to create large numbers of skilled jobs in the near future.

Orienting training, higher education, and innovation towards employment

Expanding work-based learning. Both MHETI and providers such as VTCs and universities consider work-based learning an important element of their education and training programmes. Different stakeholders are currently developing frameworks for work-based learning (job placements, apprenticeships and others), but they do so in isolation. A national task force has been constituted to prepare a strategy on student placements and a Cabinet draft document has already been prepared. MHETI is engaged in dialogue with the private sector on the possibility of establishing a structured national student placement arrangement. UNAM is currently drafting guidelines for the university, students and receiving institutions on the conduct of student placements so that the practical training provided focuses on achieving learning outcomes. Finally, the Ministry of Labour is also working on a policy of placements for job seekers as part of its active labour market measures. These efforts should be finalized in a consistent manner as soon as possible.

Removing barriers to innovation and entrepreneurship. Innovation and entrepreneurship are becoming increasingly important for growth, and for reducing inequality and poverty, especially as Namibia needs to diversify away from the extractive activities that have made it an upper-middle income economy. Innovation requires public policies that foster creative thinking, while entrepreneurship requires bringing together a great diversity of stakeholders to turn ideas into business applications. At present Namibia has no specific action plan for innovation and entrepreneurship in education and training. NCRST does offer support to innovative enterprises and start-ups, but on a very small scale.

Engaging enterprises in skills formation and innovation. Employers complain about the mismatch between skills developed in schools, VET centres and universities, and skills needed by companies. Yet there appears to be scope for reinforcing the engagement of firms in skills formation, including corporate social responsibility activities for the largest firms. At present, there is a structural division between the world of work and the education and training system, between study and work (as a learning process), and between theory and practice. While NTA has been conducting sectoral skills reviews, facilitating sectoral committees and financing in-service training through the training fund, collaboration with the private sector remains insufficient in the VET sector, and is even less structured in higher education.

Improving policy implementation

Namibian authorities have been able to write several clear strategies, plans and policies, but have lacked capacity to shift from policy design to effective implementation. Examples include the long gestation of the NTF, which was provided for by the 2005 VET Policy but started operation almost ten years later, and the 1999 NRSTP, which was not fully implemented until the 2010s.

Reforming the governance of VET, higher education and innovation systems will be key to improving policy implementation. The current distribution of policy-setting, oversight and delivery functions across MHETI and semi-independent institutions such as NTA, NQA, NCHE and NCRST is not functional. This situation is aggravated by the overlap of mandates of different regulatory bodies and the absence of a mechanism for inter-ministerial coordination, which seems to be organized on ad hoc basis. Furthermore, while quality assurance is well established, a proper monitoring and evaluation framework is lacking, as evidenced by deficient management information systems (MIS) and the absence of an evaluation culture (there is no evidence of an evaluation of the 2005 VET Policy), which would rely on tools such as VET and HEI evaluations, tracer studies and impact studies.

Successful policy implementation depends on enhancing the leadership of MHETI, breaking down barriers to effective inter-ministerial coordination, streamlining the oversight function, and developing monitoring and evaluation procedures.

IX Strategic priorities and policy options

The scoping mission identified six strategic priorities which could guide public policies led by MHETI, so that they contribute to reducing inequality, generating youth employment, and making development sustainable. These priorities are to transform and expand VET, and diversify higher education; improve quality; engage employers and enhance responsiveness to labour market needs; promote research, innovation and entrepreneurship; reduce inequality in education and training; and review the institutional structure and fill policy gaps. This section presents these strategic priorities, each associated with a set of policy options for implementation.

Strategic priority I Transform and expand VET, and diversify higher education

Rationale: Namibia's VET system needs a massive expansion to address the learning needs of the country's young people and adults. That expansion should aim to correct key deficiencies of the current system: the effective exclusion of disadvantaged young people, the uneven coverage of regions and trades, the gaps in qualification levels, the lack of coordination and linkages with the rest of the education system, and the scarcity of lifelong learning opportunities. Besides creating new VET centres, this should involve a better use of the available infrastructure and the mobilization of workplace-based, community-based and distance learning. Meanwhile, higher education has kept expanding rapidly, but needs to diversify to better contribute to the development of the country.

Policy option: Expand VET by relying on existing centres or creating new ones.

The expansion of the network of training centres should coincide with their transformation. Two main alternatives can be considered: upgrade and scale up a number of selected, existing VTCs and COSDECs, or build new centres. The first alternative allows a quicker start and simpler implementation given the availability of infrastructure, staff and operations. However, it is constrained by the small number of existing centres, their uneven distribution across the country, low performance, lack of attractiveness and weak relationship to the labour market. The second alternative is to expand the network with new regional centres covering all parts of the country, and responding to local needs. This alternative would be particularly relevant given the scale of expansion needed. However, it requires heavier investment in buildings and equipment, the recruitment of teaching and managerial staff on a larger scale, and – most importantly – time. Whatever the alternative chosen, the expansion of VET should be preceded by the transformations of the VET model advocated under Strategic priority II.

Policy option: Cover Levels 4 and 5 of the NQF.

The gap between VET and higher education should be bridged with the introduction of VET courses at levels 4 and 5 of the NQF. From a demand-side perspective, these levels correspond to intermediate skills that are needed in the labour market and affect the responsiveness of the economy to technological change and innovation. International experience shows the importance of intermediate skills, and points to large differences in shop-floor, supervisory and managerial skills levels that largely account for differences in firm productivity and product marketing strategies. Higher rates of innovation and technology adoption were also attributed to higher intermediate skills held by supervisory staff. A qualification is that recent research shows an increasing polarization of the labour market, leading to a reduction in intermediate-level employment in many OECD countries and increasingly in middle-income countries (World Bank, 2015).

Policy option: Raise the status of VET through centres of excellence.

To raise the status of VET, the government could facilitate the establishment of a network of centres of excellence. The centre of excellence constitutes a new model of VET institution, established in cooperation with firms in specific economic sectors to develop high-quality training courses at levels 4 and 5, in line with international standards. Trainees can then enter higher education in scientific and technological study fields. The model includes operational features of advanced TVET systems, including centre autonomy, the involvement of enterprises in governance, a better quality of teaching staff, a diversity of training services, and a strong work-based learning dimension. Centres of excellence also support incubation and entrepreneurship. In the Namibian context, such centres should be aimed at sectors with a higher growth potential, starting for instance with the nine sectors covered by sector skills plans. Relevant international

experience includes the Meister high schools in the Republic of Korea, centres of excellence in Viet Nam and sector centres in Morocco, Senegal and Tunisia.

Policy option: Diversify the provision of higher education.

Higher education should provide a greater diversity of learning opportunities in terms of qualifications, curricula, bridging programmes, structured learning pathways for individuals, forms of student support and institutional types. It should also draw on new groups of learners, including VET graduates and those already in the labour market.

Policy option: Strengthen private VET and higher education provision.

Private providers could be organized to make a major contribution to the expansion of VET and of higher education. MHETI should support the emergence of a professional body representing private providers. This would facilitate dialogue regarding the expansion of private provision, its regulation and its financing modalities. Indeed, to ensure their credibility, private providers should receive incentives to fully commit to policy objectives and to the quality assurance framework, for instance through their financing modalities. NCHE could help develop quality assurance tools in PHEIs by undertaking the training of their staff handling quality assurance matters.

Policy option: Develop a lifelong learning framework.

The scarcity of lifelong learning opportunities is a key concern. Existing mechanisms (including the NQF, RPL, distance learning and in-company training) are not coordinated in a coherent, lifelong perspective and are not applied consistently throughout the education and training system. For instance, pathways for VET centre graduates are limited, and RPL is not envisaged at higher education level. Key measures that the government should consider are:

- Develop career guidance and counselling. Individuals will require more substantive information, counselling and careers guidance at different levels, underpinned by up-to-date information on jobs and learning opportunities;
- Develop greater recognition of workplace learning and capacities for RPL.

Strategic priority II Improve quality

Rationale: Namibia's VET and higher education systems need to improve the quality of teaching and to raise learning outcomes while facing pressure to increase enrolment. Investment in facilities appears a necessity to avoid compromising quality and safety, especially in the VET system, but the key challenge will be to make choices regarding the curriculum and teaching methods, while ensuring adequate professional development for teachers and trainers.

Policy option: Harmonize VET curricula.

A consensus needs to emerge on the appropriate curricular model for Namibia's VET. At present three models coexist in Namibia: modular training, CBET and the South African model. International experience is in favour of CBET. However in Namibia issues have arisen regarding its linkages with the basic education curriculum, available resources, and most importantly its understanding and acceptance by stakeholders, including trainers. A debate is necessary to define an appropriate national model, to be translated into an implementation plan based on cost-effectiveness considerations, and associated with a clear strategy for monitoring and evaluation. The definition of such a model is a precondition for the expansion of the VET system, and should be accompanied by an upgrade of existing VET institutions, to transform their management and organization while reinforcing their infrastructure and equipment. This should also be an opportunity for reinforcing the supporting function of NTA, regarding the implementation of the harmonized curriculum, the introduction of new pedagogical approaches, the leveraging of ICT, and the quality of assessment systems.

Policy option: Review ministry proposals for a VET stream in secondary education.

The government may consider connecting secondary education with the world of work rather than creating a VET stream at secondary level. Both the ongoing reform of basic education by MBEAC and the learning pathways envisaged by MHETI imply the creation of a VET stream at junior and/or senior secondary levels. However, at this stage, the two proposals are not compatible with each other, although they share the same concern about reducing school leaving after Grade 10. Furthermore, the desirability and urgency of introducing a VET stream needs to be debated, given the lack of adequate laboratories and workshops, and of skilled and well-trained teachers. The VET stream would require heavy capital investment, with significant regular replacement costs, and recurrent maintenance and operational costs.

An alternative would be the adaptation of secondary education to foster skills, such as critical thinking, problem-solving, communication and interpersonal skills, and entrepreneurial skills, which students will need to enter the labour market and adapt to different work environments. The two ministries should team up to discuss the overall architecture of the education and training system, and the implications of alternative reform proposals in terms of implementation timeline, capacity to take in flows of students/trainees, and costs.

Policy option: Enhance STEM in VET and higher education.

STEM education needs to be strengthened. Both the international and the national assessments of learning outcomes show that mathematics scores of Namibian pupils in upper primary education are particularly low. This implies that foundations skills for STEM are missing, confirming concerns expressed by staff at VTCs and HEIs. Professional development covering both content knowledge and pedagogy could help teachers and trainers in those institutions address the situation. At higher levels, cooperation between VET and HEIs, and public and private enterprises, could help respond to the country's needs in emerging areas of science, technology and engineering, and enhance student interest in STEM.

Policy option: Harness the potential of ICT.

The use of ICT could help reduce learning divides in Namibia. Online learning, including in the form of MOOCs, has the potential to build new learning pathways towards higher education and expand lifelong learning opportunities. Namibia needs to establish appropriate mechanisms, such as an innovation fund, to stimulate initiatives to use ICT. It could further develop a national network of expertise and knowledge-sharing on ICT in education and training, connected with regional and international networks, and associated with a clearinghouse of good practices and lessons learned on technology-supported innovations.

Policy option: Recruit and train additional teachers and trainers.

Teachers and trainers in VET and higher education require professional development to improve their teaching skills and update their expertise and industry knowledge. Reforms including new curricula and pedagogical changes cannot be implemented without the full commitment and wide involvement of teachers and trainers. For VET, close coordination and a clear allocation of responsibilities between NTA and NUST is needed for consistent and effective pre-service, induction and in-service training. Trainers, tutors and master craftspeople involved in placement and apprenticeship schemes will require specific training and accreditation to deliver work-based learning. For higher education, the government should expand and strengthen postgraduate training. For instance, PhD training partnerships could be initiated with well-established universities in the region or overseas. Finally, managers of VET institutions and universities would benefit from training programmes aiming at leadership engagement and capacity-building. All these programmes require coordinated actions, capacity development of concerned institutions and financial resources.

Strategic priority III Engage employers and enhance responsiveness to labour market needs

Rationale: The relevance of VET and higher education to labour market demand for skills is questioned. Firms often express dissatisfaction with the competencies of graduates they hire. Yet their direct engagement in skills development is limited, and their incentives to cooperate with VTCs and universities are weak. Stakeholders understand these challenges and are working to find solutions. However, given the competing initiatives mentioned in the report, there is a risk of a fragmented and ad hoc approach to work-based learning which might limit the impact of these measures.

Policy option: Set up a national framework for work-based learning.

The great benefit of work-based learning (student placements, apprenticeships, internships and so on) needs to be realized systematically in VET and higher education. The government might consider the establishment of a unified framework for work-based learning, which should include a consistent legal framework, appropriate incentives particularly for SMEs, involvement/integration of the various bodies concerned, quality assurance and development strategies, adequate financing arrangements, and an active promotion strategy.

Policy option: Use the NTF to set incentives for enterprises to engage in work-based learning.

The governance, management and budget allocation criteria of the NTF should be reviewed. Work placements and apprenticeships should be listed explicitly as programmes prioritized and financed by the Fund, including incentives for enterprises to engage in them. However, the present governance arrangements of the Fund do not allow this.

Policy option: Reward enterprises engaged in skills formation.

In partnership with organizations such as NCCI and NEF, the government might consider setting up an accreditation or brand signalling that enterprises are great employers, excellent places to work or demonstrate a clear commitment to skills development. Smaller and informal-sector enterprises are often reluctant to engage with education and training provision in any capacity. An initial focus on business improvement and innovation might be one way to raise their interest.

Policy option: Promote partnerships between universities and industries.

The government should establish a national platform to promote the development of university–industry partnerships and university–industry dialogue to undertake joint research programmes, supervision of postgraduate students, and provision of practical training opportunities and field attachments.

Strategic priority IV Promote research, innovation and entrepreneurship

Rationale: At present, the understanding of innovation in Namibia is conventional, with a focus on high-end research and development. At the same time the links between R&D and industrial activities are weak, and the two public universities are not collaborating adequately with each other or with the private sector. While there is opportunity for Namibia to leapfrog into the digital and green economies, there is no evidence of engagement in this field at policy level and no skills response is envisaged. There is also no evidence of considering innovation at the grassroots level, for example in workplaces and communities. Teaching entrepreneurship, innovation and creativity, and providing hands-on support are still new to Namibia. The number of business incubators is limited, and entrepreneurship skills are not mainstreamed in the curricula.

Policy option: enhance institutional linkages and partnerships with companies and communities.

Review the whole institutional landscape to determine barriers to effective institutional linkages and to develop appropriate mechanisms to foster synergies, provide maximum support to companies and communities, universities, VTCs and other stakeholders. Networking and partnerships with companies and communities should also be envisaged to identify new niche products and services with high value added, promotion and development of innovation in the production of goods and services, and promotion of start-ups in areas of sustainable development.

Policy option: Mainstream entrepreneurship and innovation in education and training.

Public policy can facilitate the process of mainstreaming entrepreneurship and innovation. The main measures that the government might envisage include setting up an action plan for enhancing the prominence of entrepreneurship and innovation in VET and higher education, anchoring entrepreneurship and innovation support at top VET institutions and university-management level, facilitating networking and exchange, increasing learners' participation in entrepreneurship activities, and facilitating business development through incubation for start-ups in VTCs and universities.

Policy option: Prioritize partnerships between the government, universities and industries for research and innovation.

It is essential to stimulate government/university/industry partnerships in emerging areas of research that could serve the sustainable development of Namibia. Research in HEIs should be focused on multidisciplinary as well as interdisciplinary approaches, based on strategically established research areas, such as drought, water resources and management, agriculture, biotechnology, renewable energy, climate change and sustainable development, veterinary science/animal husbandry, fisheries, marine ecosystems, techno-sciences and mining.

Strategic priority V Reduce inequality in education and training

Rationale: The persistence of extreme inequality is Independent Namibia's greatest failure, and jeopardizes the country's sustainable development. Reducing inequality down to the level envisaged by *Vision 2030* (a Gini coefficient of 0.30) will require sustained policy efforts extending well beyond the mandate of MHETI. However, dysfunctions in the education and training system associated with a dual economy and labour market have been playing a key part, by adding a class dimension to patterns of inequality inherited from the pre-Independence period. The significant proportion of children and young people who remain out of the school system, or leave early with very low skills levels, are excluded from training and from the labour market. Meanwhile a small minority are able to complete higher education, sometimes abroad, and command high salaries in the formal sector. The rest struggle with levels of education ranging from junior to senior secondary, in a context of job scarcity and barriers to entrepreneurship. Education and training policies therefore have a key part to play in setting Namibia on a different trajectory than the current trend of sluggish decline in indicators of inequality and deprivation. Some will need to be designed and implemented in coordination with MBEAC.

Policy option: Build a strong foundation for training and higher education.

Support the expansion of early childhood care and education and the universalization of primary education of good quality. The decisive policy for equalizing opportunity in the long term is outside the specific mandate of MHETI. Yet the ministry can play a part, through joint political advocacy and through the provision of specialized training, for instance programmes for professionals in early childhood development. Without a strong foundation of basic education, training and higher education will not be able to expand and will continue to fail to have an equalizing impact on Namibian society.

Policy option: Provide second-chance programmes.

Palliate the poor outcomes of basic education by expanding second-chance, non-formal VET for young people and adults. Even if basic education improves decisively in the near future, Namibia will still have a large population of young people and adults with no qualifications and low skills for several decades. At present, these persons are excluded from formal VET and from the labour market. Non-formal education and training is therefore needed to offer them a second chance, covering literacy and numeracy, basic general education, life skills and vocational training, perhaps with a focus on entrepreneurship. The sector exists in theory, but has very limited capacity in practice, and stakeholders focus on formal VET. COSDECs for example operate on a very small scale, and their model might not be suited to addressing severely disadvantaged young people and adults, especially as it is tending towards formal VET to satisfy accreditation requirements. The focus should be on allowing trainees to work, rather than on establishing links with the formal system, which few would enter anyway. To have a real impact on inequality, second-chance education and training need to be offered on a large scale, and should therefore be part of a broader strategy involving other ministries.

Policy option: Reduce disparities in the VET system.

Equalize the provision of VET across regions and review funding mechanisms to reduce disparities between VET centres. The present distribution of different types of VET providers reflects the history of Namibia rather than an assessment of the needs of each region for formal and non-formal VET, which should be carried out. The expansion of the VET system should ensure that remote areas are covered and that more densely populated regions have capacity in line with their population numbers and the realities of the world of work. This would limit the need for trainees to migrate far from their community, and thus improve access for disadvantaged young people. Quality disparities between VET centres could be reduced by the use of a funding formula taking into account both their needs for expansion and upgrading and their training outcomes.

Policy option: Improve the use of English as the medium of instruction, and complement it with other languages.

Invest in courses in English as a second language for trainers and trainees, and envisage the use of other languages, especially in non-formal VET. English is the main language spoken in less than 4 per cent of Namibian households, yet it is the medium of instruction after the early grades of primary education. The use of English contributes to inequality in the education and training system, owing to the poor mastery of English by both trainers and trainees. Policy options include making the use of English more efficient, and using other languages. The former would involve courses in English as a second language for both trainers and trainees. The latter would be difficult given the multilingual context of most VET centres, yet the use of other languages, for instance Oshiwambo languages spoken by half the population, might be possible as a complement to English.

Policy option: Improve the living conditions of trainees and students to address dropping out.

Support trainees and students so that they have decent living conditions, conducive to learning. Most trainees and students enrol in courses far from their home, and face precarious living conditions, with difficulty in meeting transportation, accommodation and catering costs. This is one of the key causes of the very large dropout rates that affect VET in particular. A first option is to invest in the renovation of existing hostels and the construction of new buildings. However, this is costly and requires adequate maintenance and supervision if gains in safety in particular are to materialize. A second option is to provide funding to trainees and students – extending it to those enrolled in the private sector – so that they can find accommodation on the housing market, and afford sufficient food. Whatever the option, MHETI should consider the provision of nutrition and water, sanitation and hygiene services through the VET centres.

Strategic priority VI Review the institutional structure and fill policy gaps

Rationale: The establishment of MHETI as separate from MBEAC is a strong signal of the government's commitment to VET, higher education and innovation. The new ministry should establish a clear leadership on policy definition, strategic planning and monitoring and evaluation, to maintain a focus on national development objectives and avoid misuse of resources.

The substantial overlap in functions and mandates assigned to central government agencies which pre-existed the ministry has been a key barrier to effective policy implementation. The entire regulatory system needs to be revised and updated in the light of national and international experiences. The appropriate number of regulatory agencies for Namibia should be determined, and legal and operational inconsistencies between NTA, NQA, NCRST and NCHE should be resolved. The present financing system and the functioning of NTF should be revised as well. The slow pace and limited scope of NTF interventions, combined with the low profile of NTF among enterprises, training providers and learners, have hampered progress in financing skills formation and innovation.

A thorough review of national policies is necessary, to which the present assessment aims to contribute. The 2005 VET policy took important steps toward developing a Namibian system, with important achievements including the network of VET providers, regulating institutions and partnerships with the private sector. However, the initial diagnosis and design overlooked important issues such as the competing challenges of expanding the system and improving quality; the identification of the right incentives to promote stakeholder involvement (particularly among employers) in the VET policy implementation process; and the challenge and time needed for establishing new institutional arrangements and shifting from policy design to implementation. The same remark can be made regarding the 1999 NRSTP, which set the basis for a new system, more than fifteen years ago. Again the initial diagnosis missed some key elements, with a weak focus on technology and innovation policy measures coupled with poor policy implementation as evident from the long period between the adoption of the NRSTP in 1999 and the establishment of NCRST in 2013.

Policy option: Establish the leadership of MHETI.

Establishing the leadership of the ministry requires an urgent reinforcement of its capacity and human resources. It is recommended to accelerate the organization of MHETI and the creation of its services. The institutional culture of MHETI needs to shift from administrative control to political leadership and evidence-based policy formulation linked to strategic and operational planning, monitoring and evaluation. MHETI should also reinforce its capacity to coordinate action across a number of policy domains including education, employment, social welfare, industrial policy and others.

Policy option: Revise institutional arrangements for regulation and financing.

A consensus has emerged among stakeholders on the need for a clear delineation of the respective areas of intervention of the ministry itself and of the pre-existing agencies in charge with regulation and funding, with a particular focus on separating policy-setting from oversight and delivery. Without such a clarification, redundancies and inefficiencies of the present institutional structure will persist, hampering the expansion and transformation of the VET, higher education and innovation systems.

It is time to review the mandates of the regulatory agencies (NTA, NQA, NCHE, NCRST) to remove overlaps and inconsistencies and to consolidate responsibility for policy-setting at the ministry level while maintaining the autonomy of the oversight agencies. In the short term, this option minimizes the risk of instability caused by institutional changes.

In the long term, the government might want to conduct a more comprehensive restructuring of the regulatory agencies in charge with the VET, higher education and innovation systems, to ensure coherence and efficiency, while offering greater autonomy to VTCs and HEIs. However, this option requires attention to several factors. First, stakeholders might resist the redistribution and devolution of responsibilities. Second, new legislation and cabinet decisions are required, which might take time. Third, the result might be limited implementation capacity, staff demotivation, and in delays in completing the reform.

Policy option: Develop a new policy framework.

It is recommended to fill policy gaps through the adoption of new policies that focus explicitly on promoting employment, innovation and entrepreneurship. MHETI should undertake an integrated sector reform through the adoption of evidence-based policy, planning and financial management procedures.

Policy option: Implement a monitoring and evaluation framework supported by a management information system.

Efforts are being undertaken by different institutions (the ministries of education, NTA, universities and so on) to develop MISs, but these are taking place in isolation. The government should support and facilitate the harmonization of the systems, regarding the information collected, the processing and reporting, and the development of key indicators of functioning and performance. For all learners, MHETI in coordination with the institutions involved (NCHE, NTA, universities, VET providers and others) should establish and operationalize a policy framework and guidelines on the conduct of tracer studies on a periodic basis.

Policy options: Review the operations and criteria of the NTF.

The NTF should be used to steer the system, provide funding on a competitive and performance basis, and set incentives for enterprises to engage further in skills formation for their staff and for young people through work-based learning (internships, attachments, apprenticeships and so on). It is too early to assess the impact of the Fund on the performance of the VET system, or its progress towards its other objectives. However, the government could consider different scenarios for the development of the Fund and its transformation into a key policy lever for engaging enterprises in skills formation. As a first alternative, the NTF could continue operating under the NTA, with revised guidelines regarding the use of the Fund. A second, more radical alternative to create an independent body with a clear governance system involving representatives of the private sector, workers and MHETI, and with the top policy priority of engaging employers in skills development at all levels.

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University of Namibia (UNAM). www.unam.edu.na

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Annexes

Annex 1 Experts team

UNESCO specialists

Borhene Chakroun (UNESCO Headquarters, Paris): TVET, team leader

François Leclercq (UNESCO Headquarters, Paris): TVET

Carolyn Medel-Anonuevo (UNESCO Regional Office, Harare): Education and training

Peggy Oti-Boateng (UNESCO Regional Office, Harare): Science, technology and innovation

Hassmik Tortian (UNESCO Headquarters, Paris): Higher education

External specialists

Naomy Lintini (ILO Malawi): Economy, labour market

John Ouma-Mugabe (University of Pretoria): Science, technology and innovation

Mayunga Nkunya (formerly Inter-University Council for East Africa): Higher education

Officials accompanying the team

Immolatrix Linda Geingos-Onuegbu (Permanent Delegation of the Republic of Namibia to UNESCO)

Jean Pierre Ilboudo (UNESCO Country Office, Windhoek)

Joseph Ilonga (UNESCO Country Office, Windhoek)

Veruschka McKay (UNESCO Country Office, Windhoek)

Victor Sioka (Ministry of Higher Education, Training and Innovation)

Helena Ujambala (Ministry of Higher Education, Training and Innovation)

Vincent van Rooi (Ministry of Higher Education, Training and Innovation)

Frieda Kanime (National Commission for UNESCO)

Ferdinand Katire (National Commission for UNESCO)

Annex 2 Mission programme

Sunday 17 April 2016 – Windhoek			
18:30	Welcoming cocktail dinner with MHETI officials, NATCOM and UNESCO Windhoek Office		

Monday 18 April 2016 – Windhoek			
8:30–9:30	Meeting with Dr Jean-Pierre Ilboudo, UNESCO Representative		
10:00–11:00	Audience with Hon. Dr Itah Kandjii-Murangi, Minister of Higher Education, Training and Innovation		
11:00–11:30	Press release		
12:00–13:00	MBEAC with National Institute for Educational Development		
14:30–17:00	NUST		
19:00	Working dinner at Namibia Institute of Culinary Education		

Tuesday 19 April 2016 – Windhoek			
8:30–11:00	NTA, Acting Chief Executive Officer Windhoek VTC		
11:30–13:00	Ministry of Labour, Industrial Relations and Employment Creation, Permanent Secretary		
14:00–17:00	Namibia National Student Association, Namibia Teachers Union Ministry of Health and Social Services		

Wednesday 20 April 2016 – Windhoek			
8:00–11:00	UNAM, Windhoek campus		
12:00–13:00	NPC and NSA		
14:30–17:00	NCHE	14:30–15:30	NOA
		16:00–17:00	NCRST

Thursday 21 April 2016 – Windhoek			
08:30–13:00	<p>Meeting with private training providers: International University of Management, International Training College of Lingua, Institute for Open Learning, Triumphant College Namibia, Katutura Community College, Inara Training Centre, Institute of Information Technology, National Academic Training College, Monitronic Success College, Institute of Management Sciences.</p> <p>Meeting with INGOs and NGOs: Young Africa Namibia, NANGOF, Namibia Development Trust, Helsinki Deaconess Institute, Fawena, Namibia Development Trust, National Youth Council of Namibia, Namibia Red Cross Society, Interteam, Hanns Seidel Stiftung, Namibia Association of Norway, Collective Resources PTY, Women's Solidarity, Namibia Development Trust, The Rainbow Project, NAPPA.</p>		

Friday 22 April 2016 – Oshakati, Eenhana / Keetmanshoop			
8:30–10:30	UNAM, Hifikepunye Pohamba campus UNAM, Oshakati campus including School of Engineering	8:00–10:00	NIMT Keetmanshoop
8:30–10:30	Oshakati, Onwegdiwa and Ondangwa municipalities	10:30–12:30	Keetmanshoop municipality
15:00–16:00	Eenhana VTC	15:00–16:00	UNAM, Southern Campus

Monday 25 April 2016 – Walvis Bay, Swakopmund, Arandis

8:00–9:00	NAMPORT Walvis Bay
9:30–10:30	Seaworks Fish Processors, Walvis Bay
11:30–13:00	Swakopmund COSDEC
15:00–16:00	NIMT Arandis

Tuesday 26 April 2016 – Okahandja, Katutura

10:00–12:00	Okahandja: Namwater Training Centre
14:00–17:00	Katutura: Habitat Research Centre
18:00	Katutura: cultural dinner at Xwama Restaurant

Wednesday 27 April 2016 – Windhoek

7:30–10:30	Sectoral Ministries: Ministry of Agriculture, Water and Forestry, Ministry of Environment and Tourism, Ministry of Information and Communication Technology, Ministry of Mines and Energy, Ministry of Trade and Industry, Ministry of Works and Transport, Ministry of Youth
11:00–13:00	Industrial firms: Pupkewitz, Namdeb, Namibia Breweries, NamPower
14:30–15:30	NSFAF
15:45–17:00	Delegation of the European Union to the Republic of Namibia

Thursday, 28 April 2016 – Windhoek

8:30-10:30	Financial sector: Bank Windhoek, First National Bank, NCCI
11:00-13:00	Labour Resource and Research Institute
15:30-16:00	Meeting with Alfred van Kent, Permanent Secretary, MHETI
19:00	Farewell dinner with MHETI officials, NATCOM and UNESCO Windhoek Office

Annex 3 Validation workshop programme

Monday, 20 June 2016			
8:30–9:30	Official session Welcome by Dr Alfred van Kent, Permanent Secretary, MHETI Address by UNESCO Representative Remarks by UN Country Representative Official opening by Hon. Dr Itah Kandjii-Murangi, Minister of Higher Education Training and Innovation		
9:30–10:45	Presentation of the report Country context State of basic education Economy and labour market <i>Harambee Prosperity Plan</i> Questions and discussion		
10:45–11:00	Introduction to parallel sessions		
11:30–13:00 14:30–16:00	Parallel sessions: sectoral discussions		
	TVET	Higher education	Innovation
	For each sector, as applicable: Quality and internal efficiency External efficiency and relevance to labour market needs Institutional structure Financing Stakeholder engagement		
16:15–17:30	Plenary session: reports from parallel sessions and discussion		
Tuesday, 21 June 2016			
8:30–9:00	Introduction to parallel sessions		
9:00–11:00	Parallel sessions: thematic discussions		
	Reorienting TVET, higher education and innovation systems towards 2030 development objectives and towards youth employment	Reviewing the architecture of the education and training system	Governance, leadership and institutional structure
11:15–13:00	Policy discussion Alternative options for public policy Priorities for action and way forward Closing remarks		

Knowledge and skills are critical to poverty reduction, economic growth and sustainable development worldwide. The 2030 Agenda for Sustainable Development, adopted in 2015 by the international community, therefore emphasizes technical and vocational education and training (TVET), tertiary education and innovation. Member States of UNESCO are devoting renewed policy attention to those sectors, which have become priorities in the programme of the Organization.

UNESCO conducts TVET policy reviews as a foundation for policy dialogue with governments concerned with the quality of the sector and its relevance to the labour market needs of individuals and firms. The present report extends the methodology of TVET policy reviews to higher education and innovation in response to an invitation from the Ministry of Higher Education, Training and Innovation (MHETI) of Namibia. Created in 2015, the ministry requested UNESCO for assistance in developing its policies and programmes, by assessing the current status of the three sectors, identifying strategic priorities and proposing policy options responding to those priorities.

A quarter century after achieving Independence in 1990, Namibia has become a stable, democratic country, whose abundant natural resources and efficient infrastructure make it a relatively competitive, upper-middle income economy. Yet Namibia remains one of the most unequal societies in the world. The country has had to face one of the worst HIV/AIDS epidemics in sub-Saharan Africa, and a large proportion of the population lives in poverty. Indeed, the economy and labour market are dual: a resource-based, formal economy employs small numbers of qualified workers, while the majority of young people and adults are inactive, unemployed or have poorly-paid, informal jobs. Sustained growth and rapid urbanization of a very young population lend urgency to the implementation of public policies to equalize opportunity, diversify the economy and boost job creation.

Namibian authorities have responded to those challenges with a range of policies and programmes framed by a long-term strategy, *Vision 2030*, a series of five-year *National Development Plans*, and the recent *Harambee Prosperity Plan*, which emphasize TVET, higher education and innovation as engines for Namibia's development. Yet, as this report argues, the quantity, quality and relevance of education and training delivered by TVET and higher education institutions could be improved, and the national system of innovation be made more dynamic. This will require strong leadership from MHETI and a revision of existing governance and financing arrangements.

The policy review starts with an analysis of Namibia's country context, economy and labour market, and education system. The report then assesses the strengths and weaknesses of Namibia's systems for TVET, higher education and innovation, before discussing cross-cutting issues. The final section presents six strategic priorities, each associated with a set of policy options, which could guide public policies led by MHETI in cooperation with other ministries and the private sector: transform and expand TVET, and diversify higher education; improve quality; promote research, innovation and entrepreneurship; reduce inequality; engage employers and enhance responsiveness to labour market needs; and review the institutional structure and fill policy gaps.