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Final Report

Consultancy

to forecast and identify a list of priority vocational skills and develop strategies to fast track priority skills development

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List of Acronyms and Abbreviations

ABCON	Association of Botswana Building and Civil Engineering Contractors
BAPTEP	Botswana Association of Private Tertiary Education Providers
BCET	Botswana College of Engineering and Technology
BEAC	Business Economic Advisory Council
BEDIA	Botswana Export Development and Investment Authority
BIAC	The Botswana Institution of Administration and Commerce
BIDPA	Botswana Institute for Development Policy Analysis
BIH	Botswana Innovation Hub
BIFM	Botswana Insurance Fund Management
BIUST	Botswana International University of Science and Technology
BNVQF	Botswana National Vocational Qualifications Framework
BOCCIM	Botswana Confederation of Commerce, Industry and Manpower.
BOTA	Botswana Training Authority
BDS	Botswana Demographic Survey
BTC	Botswana Telecommunications Corporation
BTEP	Botswana Technical Education Programme
CEDA	Citizen Entrepreneurial Development Agency
CGE	Computable General Equilibrium
CITF	Construction Industry Training Fund
CSO	Central Statistics Office
DBES	Department of Building and Engineering Services
DPSM	Directorate of Public Service Management
D(T)VET	Department of (Technical and) Vocational Education and Training
EH	Education Hub
EMB	Employment and Manpower Bureau (Hong Kong)
FAP	Financial Assistance Policy
FCVTE	Francistown College of Vocational and Technical Education
FDI	Foreign Direct Investment
FTE	Full Time Equivalent
GDP	Gross Domestic Product
GoB	Government of Botswana
GTZ	Deutsche Gesellschaft für Technische Zusammenarbeit
HIES	Household Income and Expenditure Survey
HRD	Human Resource Development
HRDAC	Human Resource Development Advisory Council
ICT	Information and Communications Technology

IDM	Institute of Development Management
ILO	International Labour Organisation
JOI	Job Opportunities Index
LEA	Local Enterprises Authority
LFS	Labour Force Survey
LMIA	Labour market information and analysis
LMIS	Labour Market Information System
LMO	Labour Market Observatory
MDG	Millennium Development Goals
MEP	Mmamabula Energy Project
MFDP	Ministry of Finance and Development Planning
MLHA	Ministry of Labour and Home Affairs
MoESD	Ministry of Education and Skills Development
MTTC	Madirelo Training and Testing Centre
NAPVET	National Policy on Vocational Education and Training
NCC	National Craft Certificate
NCQF	National Credit and Qualifications Framework
NDP	National Development Plan
NHRDS	National Human Resource Development Strategy
NIP	National Internship Programme
OCAAT	Oodi College of Applied Arts and Technology
ODI	Overseas Development Institute
OECD	Organisation for Economic Cooperation and Development
RQF	Regional Qualifications Framework
RNPE	Revised National Policy on Education
SADC	Southern African Development Community
SAM	Social Accounting Matrix
TCCA	Technical Committee for Certification and Accreditation (SADC)
TEC	Tertiary Education Council
TFP	Total Factor Productivity
TVET	Technical and Vocational Education and Training
UB	University of Botswana
VTC	Vocational Training Centre
VTF	Vocational Training Fund
UNESCO	United Nations Educational, Scientific and Cultural Organisation

Foreword

I am very pleased to share the result of the ‘Consultancy to forecast and identify a list of priority vocational skills and develop strategies to fast track priority skills development’. Our mission as the Botswana Training Authority is to coordinate an integrated accessible vocational training system that drives to meet the needs of learners and industry. Over the years since BOTA was establishment in 2000, we have experienced a steady growth in the number of registered and accredited institutions. Currently, we have registered 290 institutions from which 250 are already accredited. These institutions are expected to supply the local industries with relevant vocational skills. While much has been achieved in the supply of vocational skills, there has also been high unemployment of TVET graduates which might be a result of skills mismatch. This was revealed by our recently completed Tracer Study which revealed that 49.6% of the graduate respondents were unemployed.

Botswana’s national unemployment rate of 17.5% remains a challenge to all of us, particularly the high unemployment rate of graduates. There has been a serious lag in determining whether supply is responding to present demand in the workplace and industries. As a nation we have to acknowledge the fact that little is known about the extent or nature of the country’s skills shortages and consequently the future skills needs.

It was important therefore to forecast and identify a list of priority vocational skills as well as develop strategies to fast track priority skills development to advise the decision makers, institutions, employers and the public at large. This is a national report which is very important to all sectors of the economy as skills are an important driver of economic growth and poverty alleviation. The report is an important addition to national efforts of achieving an educated and informed nation and to achieving our human resource development strategies.

Mr. Abel Modungwa

Chief Executive Officer, BOTA

Executive Summary

This study is one of several complementary initiatives designed to increase the coherence of education and training in Botswana; by rationalising provision, co-ordinating institutional arrangements; and balancing the demand for skills with the supply of graduates. The study addresses in particular the mismatch of vocational and technical skills supply and demand for artisans and technicians, which is evident in the high unemployment of TVET graduates in the context of strong demand for skilled workers.

Economic growth has slowed due to the impact of recession on the mining sector, and high economic growth rates based on mineral wealth are not expected to be sustainable beyond 2016. Future growth depends on the improved performance of sectors other than mining, and the government has set in motion a strategy for diversification, to support development in areas of strategic importance, including diamonds, agriculture, transport, education, health and innovation.

Productivity has also fallen in recent years despite heavy investment in education and training. Although participation in employment is high compared with neighbouring countries, the unemployment rate of 17.5% remains a challenge, and the high rate of unemployed graduates is of particular concern. Policy coherence is important since improving productivity does not depend only on skills development, but also on improving conditions of employment, respect for labour rights, higher wages and the sustainability of enterprises.

This study employs a variety of research methods to supplement a basic manpower forecast and determine the skills needed most urgently in Botswana within the next five years. Research tools included a job opportunity index, surveys, interviews, consultation meetings, focus group interviews and a prioritization method. Research data was triangulated with other information streams, including government policy and strategy, and current initiatives and developments. Altogether about 300 stakeholders, including employers, trainers, trade unions, government hubs, Ministries, professional associations, and consultants, have contributed information and their views to the findings of this research.

Using all these methods the study identifies current and future skills shortages and skills gaps, and shows that currently, in most cases, the technical and vocational education and training sector lacks the capacity to meet both the social demand for education and training places and the labour market demand for critical skills. The report presents a list of sixteen critical skills and six priorities. The sixteen skills areas identified as critical are:

- Transport Operations
- Technical/ Vocational Teaching
- Hospitality and Catering
- Electrician
- Radio/ Electronics/ Computer Engineering (including telecommunications)
- Diamond Cutting/ Polishing and Jewellery Making
- Masonry and Bricklaying

- Refrigeration and Air Conditioning
- Carpentry/ Joinery
- Basic Nursing and other Health Related
- Welding and Fabricating
- Marketing/ Sales
- Plumbing and Sheet metal
- Machine Tool Repair/Fitting
- Motor Mechanics
- Agriculture

Of these, the six priorities identified for fast track development are:

- Transport Operations
- Technical/ Vocational Teaching
- Hospitality and Catering
- Electrician
- Radio/ Electronics/ Computer Engineering (including telecommunications)
- Diamond Cutting/ Polishing and Jewellery Making

Our findings include identification of a number of issues impacting on the accessibility, quality, relevance and efficiency of TVET training and 25 recommendations are made for the TVET sector in general, and for the development of the critical skills which were not prioritized. Six strategies articulate objectives for the prioritized skills. The strategies reflect global convergence of thinking on best practice approaches to skills development, and in many respects they reinforce recommendations made previously in internal and external reviews and reports. The report includes high level implementation guidelines which indicate the steps to be taken to implement the strategies. The strategies address issues of funding and financial support; facilities and equipment; staffing; policy and processes; qualifications, standards; modes of delivery, learners and learner support.

1. Background

The Botswana Training Authority has the mandate to ‘monitor the skills needs of the economy’ in Botswana (RNPE, 1994). Despite increasing numbers of post secondary graduates there is high unemployment, especially amongst graduates of TVET qualifications. There is a need for detailed information on skills gaps and skills shortages in order to align education and training provision with the demands of the labour market. This BOTA consultancy to forecast and identify a list of priority vocational skills and develop strategies to fast track priority skills development is concurrent with the operationalisation of the National Human Resource Development Strategy, including the development of the Labour Market Observatory, and the National Credit and Qualifications Framework (NCQF). Full implementation of the NHRDS and the NCQF will take place within the next few years. In the meantime there is an urgent need to inform the rationalisation of TVET provision, and provide detailed information about skills to be prioritised to meet the current and future demand in the short term (i.e. within the next five years).

1.1 Context for this study

According to the ILO (2008) a ‘low skill, low productivity, low wage economy is unsustainable in the long term and is incompatible with poverty reduction’. This scenario is described as a vicious cycle which traps the working poor, excludes workers from participating in social and economic development, and negatively impacts on the competitiveness of enterprises. A virtuous cycle, on the other hand, is a holistic approach which has the following elements:

- **Continuous and seamless pathways of learning**
including good basic education, lifelong access to training, labour market information and career guidance. Strategies for ensuring inclusion of target groups include distance learning, mobile training, skills recognition systems and modular approach to training; so that those who cannot participate in long term training can access short modules which ultimately amount to a qualification;
- **Development of core skills**
including such skills as communication, teamwork, problem solving, adaptability and entrepreneurship;
- **Development of higher level skills**
including professional and technical specialist skills for accessing high-skills, high-wage jobs;
- **Portability of skills**
including systems that codify and certify skills so that they can be recognised e.g. qualifications frameworks;

Policy coherence is important since improving productivity does not depend on skills development alone, but also on improving conditions of employment, respect for labour rights, higher wages and the sustainability of enterprises. Investment in people, technology, research and development and

progressive remuneration policies are seen to be the keys to high performance workplaces. International practice shows that enabling policy frameworks have three major objectives:

1. Matching supply to current demand

The first objective, to which this study contributes, concerns forecasting skills needs and developing strategies to meet the needs of the labour market. It also includes ongoing labour market information and employment services. Qualitative and quantitative forecasting should also identify sectors and occupations in decline, so that strategies can be developed for those at risk of losing their jobs.

2. Helping workers and enterprises adjust to the change

Workers and enterprises need to be supported to move from low productivity to high productivity activities i.e. workers need to upgrade their skills to maintain employability and enterprises need to remain competitive while they train their workers and adopt new technologies. In particular small and medium sized enterprises (SMEs) need help to overcome difficulties such as making time available for training, reluctance to invest in training for fear of losing workers, and lack of resources to invest in training.

3. Anticipating and delivering the new and different skills that will be needed in the future

This third objective is partly addressed in this study, and in the longer term will be addressed through the Labour Market Observatory, the strategies of the HRDC sector committees, and the National Credit and Qualifications Framework currently being developed.

1.2 International practice in forecasting and prioritising skills needs

1.2.1 Introduction to key concepts

According to Shah and Burke (2003) there are different meanings of the term skills shortage. In general a shortage occurs when demand for workers for a particular occupation is greater than supply; conversely, if supply is greater than demand we have a surplus.

In theoretical terms, the market is supposed to clear (i.e. recover equilibrium), either through price adjustment or quantity adjustment. When there is a surplus in a commodity either the price declines or the quantity declines, or both decline, so that the market reaches equilibrium. On the other hand, when there is a shortage, either the price will rise or quantity will rise, or both will increase to clear the market and reach equilibrium. Unlike the commodity market, the labour market tends to have inflexible wages and therefore tends to clear through quantity adjustments. Adjustment also tends to come with a time lag, due to the existence of internal labour markets and other institutional inflexibilities in the labour market. Unlike production of goods, skills production has a long lead in time and therefore the market clearing mechanism tends to work differently in the labour market. There is therefore need in most cases for government intervention to guide the market in terms of what should be produced, to eliminate either the surplus or deficit in skills, rather than leaving it to market forces. This is partly the reason why governments still intervene in different forms, even in economies where the market is the predominant resource allocation mechanism.

A skills deficit can come in the form of a skills gap or a recruitment difficulty. A skills gap describes the situation when employers are hiring workers whom they consider under-skilled for the desired job. Recruitment difficulties can describe the situation when employers are unable to fill vacancies in spite of an adequate supply of workers. These could be due to low wages, poor working conditions, or labour market imperfections.

Skills are generally classified as general and specific skills. General skills are those that increase the employee's productivity in a number of organizations and are therefore portable between organizations. In general it does not make economic sense for a profit motivated private sector to pay for such training, since there is usually no guarantee of return on the investment and therefore the state normally intervenes in subsidizing such training or giving out incentives for the private sector to be involved in general training. Specific skills' training, on the other hand, is the acquisition of skills that increase the employee's productivity in just one employment situation. These skills are therefore less portable between employers. An example is training as a train driver which can only be used for Botswana Railways in Botswana, unless one gets employed outside the country. Because of the nature of the skill, both the employer and employee should share the training costs and benefits.

1.2.2 Manpower Planning

The old way of forecasting skills needs of the labour market was through a manpower plan or Manpower Planning Requirements approach. The three major steps in manpower forecasting are:

- (a) projecting the demand for educated manpower;
- (b) projecting the supply of educated manpower;
- (c) balancing supply and demand.

On the demand side the steps are:

- (i) estimating the future level of output;
- (ii) estimating the structural transformation of the economy over time;
- (iii) estimating labour productivity by economic sector;
- (iv) estimating the occupational structure of the labour force within economic sectors and its evolution over time;
- (v) estimating the educational structure of the labour force in given occupations within economic sectors over time.

On the supply side, the four basic steps involve

- (i) estimating the population by education level;
- (ii) assessing the number of graduates, dropouts by education levels;
- (iii) finding the labour force participation rate;
- (iv) estimating the occupational supply based on the supply by education, using an education to occupation matrix.

The final step is to balance supply and demand for labour. The manpower planner does this by adjusting key assumptions, for example labour productivity.

The use of manpower planning has diminished due to a number of limitations of this approach.

Firstly, the approach was relevant for the development paradigm of the time when most economies of developing countries were dominated by the government sector and focussed on the formal part of the labour market. It was part of the belief that economic growth and development could be planned to benefit the general population as a whole (Sparreboom and Powell, 2009). The economies of most developing countries have however changed over time. They are now predominantly driven by the private sector and are therefore too complex for the simple manpower plans. Almost 50 percent of employment in Botswana's labour force is now employed in the private sector and in the informal sector, whereas in the past government employed more than 50 percent of the labour force.

The second limitation with manpower planning in methodological terms is the assumption that a fixed relationship exists between labour and quantity of goods and services produced as well as labour productivity and education skills. There has been international recognition that manpower plans were producing considerable forecast errors due to the assumption of fixed coefficients and assumed labour productivity among other issues. Forecasting errors were larger the longer the time-horizon of the forecast. After decades of use of this method it was recognised that the labour market is much more complex and unpredictable than this model could handle. The relationship between output and employment is dynamic and is affected by factors such as technology, new forms of work organisation, migration and diseases such as HIV/AIDS. Moreover, globalization has brought new challenges for developing countries and their labour markets. One imperative is for them to be more competitive in the world market, which is driven by scientific and technological innovations. Therefore education and training must be needs oriented, multi-skill and flexible to meet changing needs of the local industry and overseas demand (Kazmi, 2007).

1.2.3 Alternative methodology for skills forecasting

Various methods have emerged over time to address the inadequacies of the manpower planning models. Best practice still shows that the developments of quantitative, national level employment projections are still the predominant method of forecasting skills. These are then complemented by other methods that we discuss in this review.

The appeal of projections based on the quantitative formal model is that they are comprehensive, consistent, transparent and quantitative (Wilson, Woolard, and Lee, 2004, pg 6). It therefore has an appeal, especially to economists, as it provides a generally accepted methodology for economic analysis. The disadvantage of such an approach is that it requires a lot of data (which may not exist for developing countries), is costly, and may give a misleading impression of precision.

One of the quantitative modelling approaches of forecasting skills needs and gaps is Computable General Equilibrium Model (CGE). A CGE is an economy wide model based on a Social Accounting Matrix (SAM) and addresses the weakness in assumption of partial equilibrium of holding everything

else constant. This allows for interactions and feedback cycles in macroeconomic determination and also models second round effects of policy shocks. A CGE would for instance be used to simulate the impact of a change in some policy on macroeconomic variables such as economic growth, poverty or labour productivity. Given the sectoral links provided for in terms of CGE analysis, the modeler is capable of analyzing the effect of a change in the whole economic system. While a CGE is quite useful in terms of providing the economy wide skills forecasts, it tends to be highly consuming in terms of data and time. Botswana's social accounting matrix, which is the basis for constructing a CGE is quite old (most up to date is 1996/97) and may not be useful to provide an accurate picture of the skills needs. Given this limitation a CGE approach is therefore not attempted for this study.

A second quantitative modeling approach is an econometric approach. It should be noted that the econometric approach as a method of analysis has even been used in the manpower projections, to project demand and supply for labour. It is for this reason that some scholars do not make a clear distinction between manpower planning approach and econometric approach and sometimes use the terminology interchangeably. Econometrics is generally a quantitative analysis of actual economic phenomenon based on the development of theory and observation related by appropriate methods of inference. As a tool it can be used in different analyses including manpower planning, estimating of growth and its determinants, etc.

On the demand side, the econometric method is used to estimate a particular issue such as economic growth and estimation of the necessary elasticities and coefficients for each sector. The estimated elasticities are then used to project the future growth of the demand for skills from a base period and also based on projected growth of the economy. The benefits of the econometric approach according to Sparreboom and Powell (2009) are that it is able to provide a consistent overview of future demand for specific occupational areas and skills. Just like the CGE, it is highly consuming in terms of data and time. Some other econometric problems are associated with poor quality of data found in developing countries. BIDPA (2001) abandoned the approach in favour of a simple elasticity approach, as the results of the econometric approach were not robust. Most coefficients were found to be insignificant for all the sectors in estimating labour demand functions for different specifications of the demand function.

As Wilson, Woolard, and Lee, (2004) emphasize, 'none of today's forecasters claim that they can predict the detailed skill needs in different sectors with great quantitative precision. The question to be asked is not whether or not such projections are accurate, but whether or not they are useful' (pg5). It is now felt that the most useful approaches rely on a variety of methods, based on both qualitative and quantitative information (Sparreboom and Powell, 2009) and timeframes not exceeding five years.

Information on labour market trends based on indicators is especially useful for forecasting skills needs when used in conjunction with other sources of information. A simpler version of a fully fledged econometric model is an industry/occupation matrix which can be supported by a variety of other data such as rates of return (tracer studies), enterprise surveys, job opportunity index (vacancies), administrative data (e.g. enrolments), and qualitative information from stakeholder forums.

Labour market signaling is recommended for short-term assessment of training needs. Signaling can be useful in determining whether there will be upward or downward pressure on the economic returns to investment in specific skills. This is then used to guide the development of a training programme and help focus on skills that are of strategic importance to the economy. The main indicators or labour market signals used are: wages, employment trends by education and training, costs of specific education and training programs, enrolment data for institutions, advertisements in newspapers and journals, and unemployment rates by education, skill, occupation, etc.

The benefits of using the job opportunity index are that it provides a comprehensive index of how demand for different skills is changing. The limitations are that the advertised vacancies may be difficult to match with skills; and the method is resource intensive, with limited coverage of demand from smaller companies (Sparreboom and Powell, 2009). For Botswana in particular, job opportunities in the agricultural sector may be inflated by the need to provide for work permits for other sectors currently not covered, as it is assumed that there is no scarcity of those skills.

As regards stakeholder forums, the main advantage lies in providing the most effective and efficient means of obtaining information about the labour market. The disadvantage is that, if not properly managed, certain individuals might dominate the process and provide a distorted view of the labour market.

In terms of the enterprise training survey, the main advantage is that it is a relatively flexible and efficient means of predicting changes in the demand for skills. The disadvantage is that it relies on the perceptions and expectations of respondents, which may be different from other actors. The success of such survey depends on the rate of response and willingness to share information (Sparreboom and Powell, 2009).

Generally, the non quantitative methods can be considered to be subjective, inconsistent, and unsystematic. Despite some of the indicated weaknesses, the qualitative methods are very useful in complementing the quantitative methods, since the quantitative methods are also found to be inadequate.

As a result of dissatisfaction with forecasting methods some scholars have advocated for the use of what are called Labour Market Information systems (LMIS). Even though it is fashionable, LMIS is critiqued for lack of an analytical framework and for the extent to which it ignores the macroeconomic framework that affects the demand side of the economy. Without understanding the growth aspects and their determinants, the data in a LMIS may not provide a useful framework for policy response in terms of training.

A more acceptable methodology is to be eclectic or pragmatic by combining quantitative and qualitative analysis to provide a better picture of the labour market. The quantitative approach provides the precision that is needed for understanding the labour market especially in terms of its past and current nature. It includes information about and analysis of indicators such as:

- unemployment by different characteristics;
- vacancy rates;

- main employing industries;
- course providers, course fees;
- wages by sector;
- skills requirements.

Generally complementing the quantitative method of skills forecasting is data from interviews with key informants, job opportunity index, interactions with stakeholders, etc.

1.3 Case studies of successful interventions to meet projected skills needs

In this section we outline how planners identify and act on the labour market to forecast future skills. The countries reviewed are Pakistan, Hong Kong, and South Africa.

1.3.1 Pakistan

Pakistan, just like Botswana has had an impressive economic performance due to a number of reforms in key sectors. The economy has however a key challenge of trying to diversify from a low skill, low technology export manufacturing focus (especially textiles). The key challenge to diversification was identified as the very low level of human resources development. As part of a solution to the low levels of skills, Pakistan embarked on a Medium Term Development Framework 2005-10, which aimed to move Pakistan towards a knowledge economy. Technical and vocational education and training have been made the central pillar of the human resources development policies (Sparreboom and Powell, 2009).

In order to address the skills gap, Pakistan developed a Labour Market Information Analysis (LMIA). The skills policy document aims to have information and analysis inform skills development policies and provision. This uses a number of methods such as labour market signaling, use of tracer studies, the construction of job opportunity index and sector studies. For Pakistan, the most important source of labour market information is the Labour Force Survey.

Our current study uses some of these methods to determine a list of priority skills for Botswana. The Labour Force Survey is still the most comprehensive data source in terms of labour market information for Botswana as well. Its limitation is that it is done every 10 years, which is a long period of time to provide for regular information on the labour market. Just like the Pakistan case, there is lack of timely analysis and interpretation of basic labour market and related indicators, low awareness of basic international concepts such as unemployment, classifications and definitions among policy makers, social partners and other stakeholders including the media (Sparreboom and Powell, 2009).

1.3.2 Hong Kong, China

Hong Kong has been very successful in manufacturing exports especially apparel and clothing. Economic focus has however been shifting towards re-exporting and trade in services especially in electrical machinery and appliances. Services now make up 90 percent of the economy. Even

though the government has a hands-off policy towards the economy, it still plays a significant role in supporting the development of pre-vocational skills.

For Hong Kong, the Education and Manpower Bureau (EMB) is responsible for tracking skills that are in high demand. It has a focus on the demand for and supply of skills in sectors that are strategic to the county's development. The methodology used involves a two pronged approach consisting of a number of quantitative projections as well as qualitative studies. The quantitative projections identify demand for broad skills and how they change over time. That information is supplemented by a series of surveys and qualitative information (Sparreboom and Powell, 2009).

This confirms the approach we have taken in this project for forecasting and prioritizing vocational skills in Botswana.

In terms of understanding future demand, the EMB determines the manpower requirements for a period of five to six years and tries to understand which sectors are likely to expand or contract. The EMB also predicts manpower requirements by major occupational categories and the educational attainment over the same period. A second component involves understanding demand through annual surveys of the Vocational Training Board (Sparreboom and Powell, 2009).

1.3.3 South Africa

As a country emerging from the system of apartheid, South Africa had a mammoth task of developing the skills of its black majority population which was underprivileged during the past era. The country therefore came up with a series of legislations aiming to ensure a more appropriate and sustained investment in the people of South Africa. Central to information on skills development was the establishment of the Skills Development Planning Unit (SDPU), whose aim was to research and analyse the labour market, to assist in the formulation of skills development strategy and sector development plans among others.

The South African skills development strategies use most of the known methods for identifying skills needs. This is based on the belief that there is no one superior method to inform skills development and identify future skills needs (Sparreboom and Powell, 2009). Among the methods used are the multi-sectorial macroeconomic models, occupational models, a module to forecast replacement demand, and a qualifications module for forecasting the implications for qualification intensities within occupations (Wilson, Woolard and Lee, 2004). South Africa also has a wealth of data sources and expertise from among its institutions including universities. Since February 2000, Stats SA introduced a twice yearly Labour Force Survey. In South Africa, apart from the regular LFS there are supplementary enterprise based surveys, a survey of the average monthly earnings, household surveys, census data, and data from private data houses such as Quantec and Global Insight (Wilson, Woolard and Lee, 2004). Even though data are still considered insufficient for the South African situation, it is much richer than the Botswana data.

Botswana's production of the LFS every 10 years is quite inadequate for provision of labour market information and analysis. In Botswana, household surveys also collect information on the labour market, but there are always problems of comparability between the different data sets.

1.3.4 Lessons from Case Studies

Lessons learnt from these case studies are that:

- Neither the quantitative approach nor the qualitative approach is adequate to provide information for skills gaps in the future. It is therefore useful to use a series of methods together to get a more reliable projection of the future.
- Most countries that have better projections have more regular data collection to enable them to provide current information on the labour market. Botswana will need to have much more regular Labour Force Surveys. For better information about the labour market there is a need for the LFS to be done at least every 2 years, if not every year.
- Once data are available, there will also be a need to develop the local expertise in terms of analysis of data to be able to feed into labour market policy decision in a timely manner.

2 Review of the economy and labour market context

Botswana was rated as one of the poorest countries in Africa at the time of independence in 1966. Within a period of three decades, it has managed to emerge as an upper middle-income developing country with an annual growth rate of per capita income of 8.4% (Siphambe et al. 2005). In the 1980s and the 1990s, real GDP per capita grew at about 5% per annum. In particular, during the 1980s annual growth in GDP per capita reached more than 7%. However, it declined to around 3% in the 1990s. Overall, Botswana's average growth has been quite high compared to its neighbouring countries in the African region. The economy has however experienced a decline in the current period due to the global financial crisis, that has impacted negatively on diamond sales in the world market. In real terms, GDP declined by about 4.6% in 2009/10 (MFDP 2010).

Appendix 1 shows the sectoral distribution of Botswana's gross domestic product (GDP) for the period from 1966 to the financial year 2008/09.

In 1966, the country's real GDP amounted to 908.6 million Pula (valued at 1993/94 prices). Of this total, agriculture accounted for about 43 per cent of total value added, while banks, insurance and other business services, the second largest sector, contributed about 20 per cent. None of the other major sectors of the economy accounted for as much as 10 per cent of total value added in 1966. The share of manufacturing was only 5.6 per cent, while that of construction and general government was 7.8 per cent and 9.8 per cent respectively. This shows that on the attainment of independence in 1966, the country's economy was predominantly agricultural (cattle rearing and beef production in particular), and had a particularly weak industrial base.

In the post-independence period, the value added in virtually all the sectors of the economy grew rapidly, as shown in Appendix 1. This rapid growth of the economy was accompanied by important structural changes, the most significant of which was the dramatic decline in the relative size and contribution of the agricultural sector. By 1985/86, the contribution of agriculture to total value added was only 5.8 per cent, and this was to decline further to 4.1 per cent in 1995/96 and currently (08/09) stands at just 2.3 per cent. A major factor in this structural shift in the economy was the discovery of minerals, especially diamonds in the early 1970s. A diamond mine was opened in 1971 followed by a nickel-copper mine in 1973. More diamond mines have since become operational in the country, transforming Botswana into the world's largest exporter of diamonds. By 1985/86, real GDP has increased three-fold, and this impressive growth rate was maintained for the remaining part of the 1980s and the 1990s. Thus, over the period 1974/75 to 2007/08, growth in the economy averaged 7.9 per cent in real terms. The growth of non-mining over the same period, on the other hand, was 6.9 per cent. However, within the non-mining economy, it is obvious from the tables in Appendix 1 that with the exception of agriculture, growth was spread fairly evenly across the other sectors, over the period 1975/76 to 2008/09, since their GDP shares remained more or less constant. Therefore, while the wealth of the mining sector may have provided the impetus that allowed the economy to grow rather rapidly over the years, the resulting growth has *not* been broad-based, and was in many senses *not* diversified.

2.1 Projections of GDP in NDP 10 (Base case)

The base case projections for output in NDP 10 are based on an expectation that the impact of the global recession will last for 2 years, meaning that most of the NDP 10 period will be normal years. Table 2 shows the projected output for the entire plan period in constant 2008 prices. It is projected that the non-mining private sector will continue to grow in real terms, partly because government will be able to sustain the real level of spending by drawing from savings from past budget surpluses. Secondly, the fact that the non-mining private sector began to grow faster despite the impact of the global recession shows that non private sector growth is at least partly independent of government expenditure (MFDP, NDP 10). Overall as shown in Table 2, the compound rate of growth in NDP 10 is projected to be 3.1 percent. Current data from CSO for the first quarter of 2010 do give confidence to the NDP 10 forecasts. Over 12 months to March 2010 the economy grew by 7.5 % with the recovery being driven largely by mining which grew at 10.1 % over the year to March 2010. The growth in the first quarter of 2010 is in line with the forecasts for the full year's growth for 2010 and therefore not likely to affect the NDP 10 base case forecasts. In terms of the effect of the recession on the likely scenario for output growth, we are likely to be correct if we use the NDP 10 base case estimates of compounded growth.

Table 1 Base Case projections of GDP in NDP 10 (P billion, constant 2008 prices)

Fiscal Year	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16
Mining Sector	19.4	20.3	26.6	34.4	45.1	48.2	41.3
General Government	14.5	14.4	14.2	14.2	14.2	14.2	14.2
Non mining private sector	44.2	46.0	48.3	51.2	54.8	58.6	62.7
GDP	78.1	80.6	89.1	99.8	114.1	121.0	118.3

Source: MFDP, National Development Plan 10.pg 75

Table 2: Base Case projections of GDP annual growth rates in NDP 10 (percentages)

Fiscal Year	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	Compound growth rate
Mining Sector	-49.5	4.7	30.7	29.8	4.5	13.3	-3.5	0.2
General Government	-0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.1
Non mining private sector	3.8	3.8	4.7	5.7	7.0	7.0	7.0	5.6
GDP	-16.5	3.2	9.7	11.1	5.1	7.9	2.6	3.1

2.2 Formal sector employment

Table 3 shows the sectoral distribution of formal sector employment between 1980 and 2008 on the basis of enterprise surveys. The share of agriculture in total formal sector employment declined from 5.2 per cent in 1980 to 1.8 per cent in 2008. Currently, the mining sector has the largest share of output (dropping from 45.2% in 2005/6 to 28% in 2008/9), but its contribution to employment has fallen from 8.6 per cent in 1980 to about 3.7 per cent in 2008. The small share of mining in employment reflects its capital-intensive nature, and, therefore, the limited opportunities for employment creation in this sector. The shares of manufacturing, commerce, finance and business services as well as education by non-government providers in total employment increased substantially between 1980 and 2008. The highest annual growth rates in employment over the period from 1980 to 2005 were achieved in education (7.6 per cent), manufacturing (6.4 per cent) and finance and business services (6.0 per cent). Other than agriculture, mining had the lowest annual growth rate in employment, at about 0.7 percent, during the period from 1980 to 2005 – which contrasts with the above-average performance of the sector in terms of output growth.

Table 3: Number of paid employees in the formal sector by economic activity, 1980-2008 (selected years)

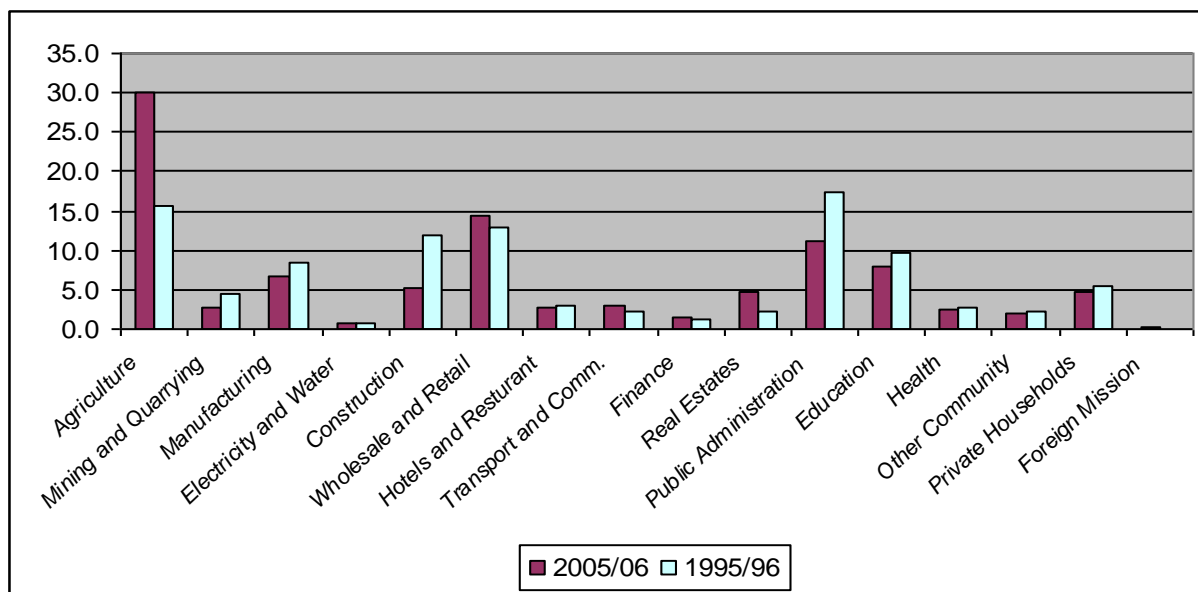
Economic Activity	Number of Persons Employed [Percentage Share]								Annual Growth Rate (in %)
	1980	1985	1990	1995	2000	2005	2008	2009	
Agriculture ^b	4,300 [5.2]	4,000 [3.4]	6,400 [3.1]	4,500 [1.9]	5,800 [2.2]	5,554 [1.9]	5563 [1.8]	5906 (1.5)	0.7
Mining and Quarrying	7,200 [8.6]	7,300 [6.3]	8,100 [3.9]	8,100 [3.5]	7,900 [3.0]	9,270 [3.1]	11538 [3.7]	10592 (2.8)	0.7
Manufacturing	5,600 [6.7]	9,900 [8.5]	24,300 [11.6]	24,200 [10.4]	29,800 [11.2]	32,397 [10.8]	36135 [11.6]	35704 (9.3)	6.3
Electricity and Water	1,500 [1.8]	1,900 [1.6]	2,100 [1.0]	2,500 [1.1]	2,900 [1.1]	2,430 [0.8]	2819 [0.9]	2894 (0.8)	2.1
Construction	13,400 [16.1]	11,500 [9.8]	31,000 [14.8]	22,400 [9.6]	27,300 [10.3]	24,364 [8.2]	22097 [7.1]	22062 (5.7)	3.5
Commerce	10,400 [12.5]	18,300 [15.7]	38,300 [18.3]	45,500 [19.5]	47,600 [17.9]	55,979 [18.7]	60269 [19.3]	61892 (16.1)	5.9
Transport and Communication	3,400 [4.1]	5,700 [4.9]	8,500 [4.1]	8,700 [3.7]	9,900 [3.7]	12,608 [4.2]	12195 [3.9]	12474 (3.2)	4.5
Finance and Business Services	4,300 [5.2]	6,800 [5.8]	14,700 [7.0]	17,700 [7.6]	18,300 [6.9]	21,763 [7.3]	25302 [8.2]	25959 (6.7)	6.0
Community and Personal Services	2,400 [2.9]	3,900 [3.3]	8,200 [3.9]	9,800 [4.2]	4,300 [1.6]	5,137 [1.7]	5707 [1.8]	6282 (1.6)	1.3
Education	1,300 [1.6]	1,900 [1.6]	2,100 [1.0]	3,800 [1.6]	6,200 [2.3]	7,850 [2.6]	9638 [3.1]	9736 (2.5)	7.6
Government (local and central)	29,500 [35.4]	45,600 [39.0]	65,100 [31.1]	86,200 [36.9]	105,200 [39.7]	121,364 [40.6]	119778 [38.5]	124329 (32.3)	5.6
Total	83,400	116,800	209,000	233,400	265,300	298,715	311164	384633	4.9

Source: Various CSO Statistical Bulletins

A similar breakdown of employment distribution by industry is provided from the two Labour Force Survey (LFS) data sets by industry, sector, education, occupation, training, gender, and region. The LFS includes employment in the informal sector. In the 2005/06 LFS those currently employed were 539,150, of which 52% were males and 48% were females. Figure 1 shows the distribution of currently employed by industry. Main employers are agriculture (30%), wholesale and retail (14%),

public administration (11%), education (8%) and manufacturing (7%)¹. In 1995/96 public administration had the largest share of industrial employment at 17%, followed by agriculture with 16%. The employment share of most industries has declined compared to 1995/96, except wholesale and retail, real estates and agriculture. The mining sector, which has been the driving force in terms of output and export earnings also declined from a share of 4.4% in 1995/96 to 2.6% in 2005/06.

Figure 1 Distribution of employees by industry: 1995/96 and 2005/06



Source: LFS 1995/96 and 2005/06.

In 1995/96, the major employer was government, with 33%. The second largest employer was the private sector with 32%. Parastatals employed the fewest employees with a share of 4%². By 2005/06 the private sector had grown in terms of employment and was now the dominant sector with 42% of the total labour force. Government employment had on the other hand declined in terms of share from 33% in 1995/96 to 21% in 2005/06 making it the third largest employer in 2005/06. Subsistence farming is the second largest sector of employment with 24% share of total employment.

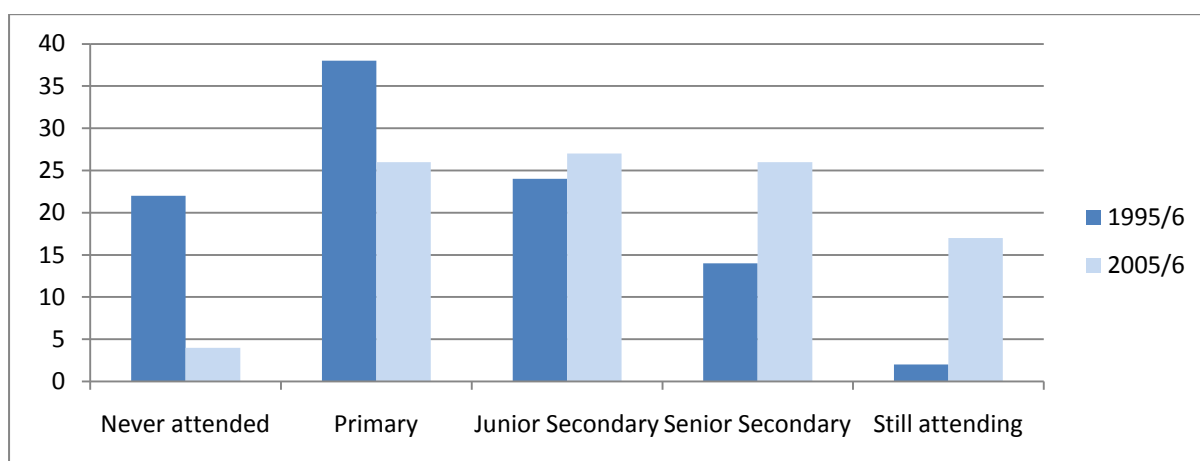
In 1995/95, 80% of the workers were paid employees. The second largest was own farm/lands with employees at 9%. In 2005/06 the workers in paid employment made up 60% share. The second largest share is in own farm/lands, but now with a larger share of 24% share to employment. Self employment, both with employees and without had also grown marginally from 3% and 7 % to 4% and 9% respectively by 2005/06.

¹ Note that these would not necessarily tally with those presented in Table 1 given that the LFS data includes the informal sector and subsistence agriculture employees.

² Parastatals include a wide range of enterprises owned at least 50% by the Government, either profit making or non-profit making.

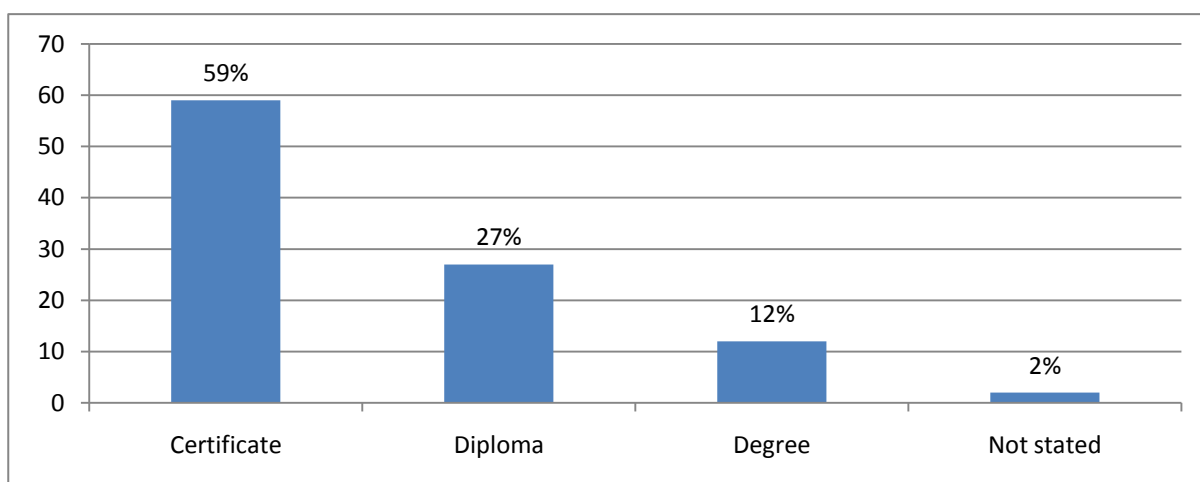
Figure 2 shows the distribution of currently employed by education level for 1995/96 and 2005/06. For 1995/95 the biggest proportions of employees were those with primary education at 38%, followed by those with Junior Certificate at 24%. For 2005/06 the largest group was those with Junior Certificate at 27% followed by those with primary and senior secondary at 26% each. Those who have never attended school made up a very small proportion of 4% of the total currently employed. Clearly the labour force is shifting towards those with at least junior secondary, while those with no education and primary education are decreasing. This is a result of the increased investment in education over time that has seen the graduation rate increasing. The transition rate from primary to junior secondary has been 97% while the rate for students moving from junior secondary to senior secondary education increased from 49% in 2004 to 66% in 2008; it was targeted to reach 70% by end of NDP 9 (MFDP, 2009).

Figure 2: Employment by education level: 2005/06



In terms of currently employed workers by training, a majority of them (79%) indicated that they had no training. Amongst the 21% that had training, most of them at 59% had training at certificate level, followed by diploma at 27%. Degree was the lowest with 12%. The distribution in terms of training is shown in Figure 3.

Figure 3: Distribution of workers by type of training: 2005/06



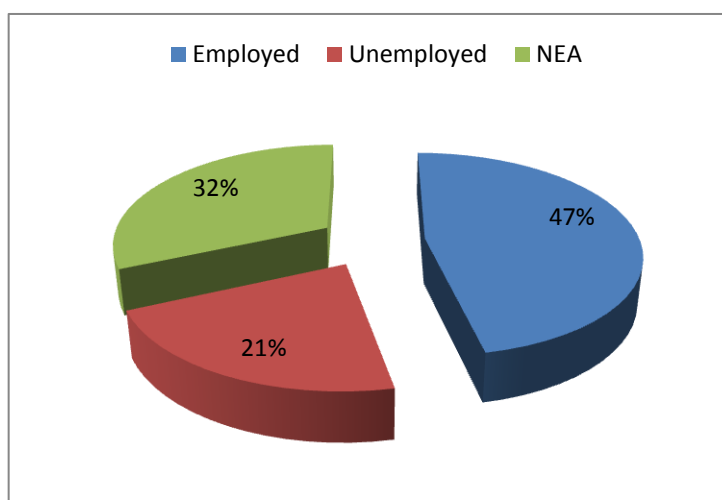
Source: LFS 2005/06 data.

2.3 General characteristics of the labour force

Figure 4 shows the distribution of Botswana’s population aged 12 years and above by employment status. A large portion of the population (47%) is employed. The second largest group is those who are economically inactive (32%). This group is made up of students, retired persons, and those doing unpaid household duties. Most of the economically inactive (61%) were women. 21% of the total population were classified as being unemployed in 2005/06. The labour force participation rate (i.e. those who are economically active) is estimated at 68%. This is 12% higher than the estimate for the 1995/96 LFS (56%).

The increase in labour force participation rates is partly a result of changes in culture, which saw more women entering the labour force. This is also a result of education which tends to encourage more labour force participation especially amongst females. This trend, if continued, means a significant increase in labour supply, which will need to be matched with increases in labour demand. If labour demand does not increase in line with labour supply, the result will be an increase in unemployment. This could also be a problem if the labour does not have the right skills to match the demand.

Figure 4: Percentage of whole Population employed, Unemployed and NEA



Source: 2005/06 LFS.

The total labour force employed in the informal sector in 2005/06 is estimated at 77,392, which is about 10% of the total labour force. In 1995/96, employment in the informal sector was 57,240, which was also about 10% of the total labour force. In nominal terms the informal sector grew between the two periods, which probably reflects the inadequate employment growth in the formal sector. About 60% of those who work in the informal sector as their main activity are women. Forty percent of the informal sector workers are employed in Wholesale and Retail. The second largest is Real Estate with 21% followed by Manufacturing with 11% percent of total employment.

2.4 Unemployment, economic growth & relationship to training and education

Figure 5 plots indices of GDP and employment for the period from 1980 to 2005.

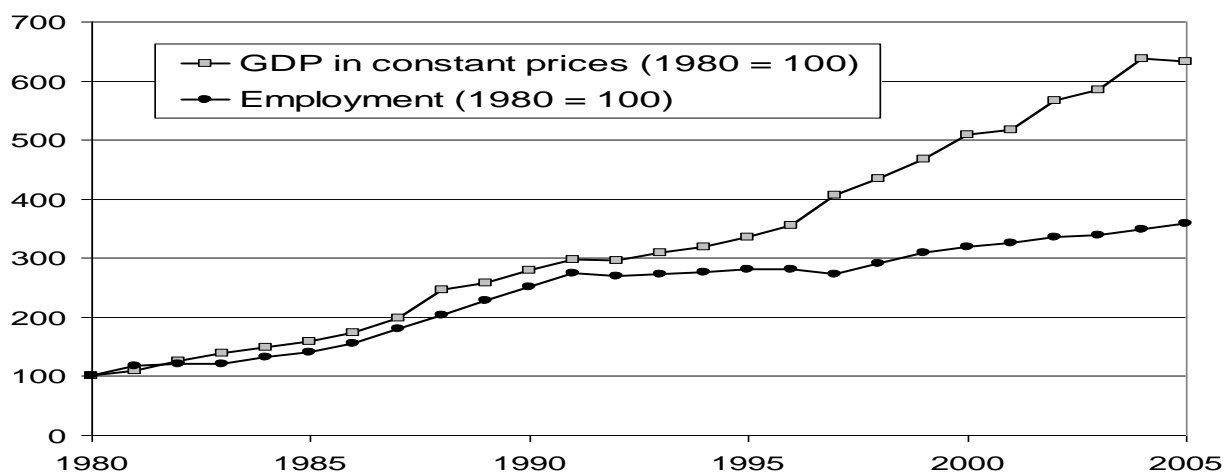
While Botswana has had impressive growth in GDP as indicated earlier, such growth has not been able to create enough employment for the economy. This is partly because the mining sector has been a major source of the reported growth. The nature of mining work is capital-intensive and thus has limited opportunities for employment creation.

On the other hand, the other sectors earmarked for economic diversification also did not perform as expected due to several problems. Some of these were to do with business failures due to lack of managerial and entrepreneurial skills, competition from cheaper imports and high cost of doing business generally.

Most of the problems of lack of diversification has little to do with the Dutch Disease (theory of the relationship between the increase in exploitation of natural resources and a decline in the manufacturing sector) as Botswana managed the revenue from the diamonds very well and avoided some of the macroeconomic effects of a boom such as appreciation of exchange rates. In fact, the country has kept a reasonable exchange rate and has had to devalue its currency, the Pula, on several occasions to support non diamond exports.

Figure 5 shows that prior to the 1990s there was a close relationship between GDP growth and employment growth. What can be observed is that employment growth almost matched GDP growth up to 1991, but then de-coupled from it and shifted to a much lower trend growth rate in the 1990s. Moreover formal sector jobs were initially created at a rate higher than population growth, but from 1991 job creation in the formal sector lagged behind population growth. This can also explain why unemployment has been on the rise in Botswana since 1991. Indeed, during 1991-2005 the labour force has been growing at around 3 per cent per annum, whilst the annual growth rate of formal sector employment was lower at 2.2 per cent.

Figure 5: Indices of GDP and employment



Source: Central Statistics Office, Labour Statistics (various issues); Bank of Botswana (GDP series).

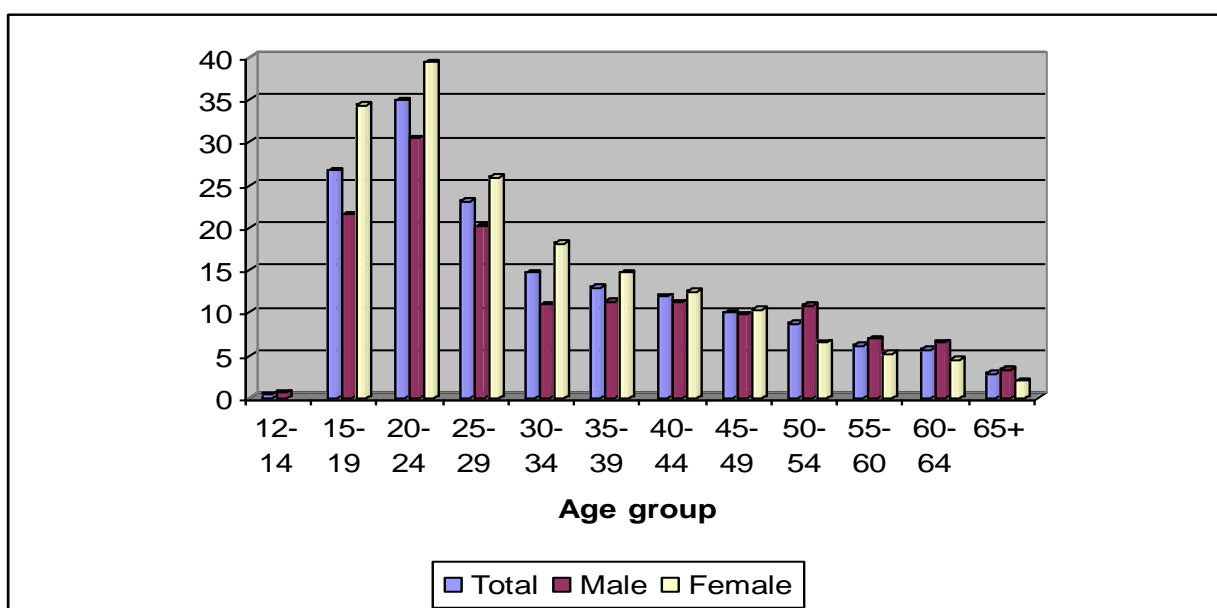
To make a fair comparison of the dynamics of unemployment in Botswana we use two data sets, 1995/96 and 2005/06 Labour Force Surveys. These surveys define unemployed persons as those individuals who did not do any work in the last 7 days, either for payment in cash or in kind, or who were not in self employment for profit or family gain. These are divided into those who were actively seeking for work (unemployment A) and those who have not taken active steps to find work in the last 30 days [discouraged job seekers] (unemployment B).

Overall unemployment was according to unemployment A estimated at 17.5%, which is lower than the 1995/96 figure of 21.5%. Unemployment for the discouraged job seekers only was 17.1%, which is higher than the 1995/96 estimates which stood at 16.7%. The total unemployment rate (A+B) was estimated at 31.6% which is lower than the 1995/96 estimates which stood at 34.6%. There was a general shift between the two periods towards more unemployed being those who were discouraged. In 1995/96, 52% of the unemployed were actively seeking work, while in 2005/06 active job seekers had declined to 46%.

Overall unemployment (those seeking for work) is higher for females at 19.7% than males at 15.3%. It was also higher for females in 1995/96 at 23.9% compared to 19.4% for males.

Unemployment is highest for ages 20-24 at 35%, followed by age 15-19 at 27%. Unemployment is lowest for 12-14, who as expected will still be at school. Unemployment in general is highest for the youth (15-34) as shown in Figure 6. As a percentage of the total unemployed persons, the age group 15-34 made up about 72% of the total. The youth in general have less labour market experience and some also have no skills. For all age groups, except above 50 years of age, females have higher unemployment rates than males. Unemployment is therefore concentrated among the youth and females in general.

Figure 6 Unemployment rate by age and gender: 2005/06

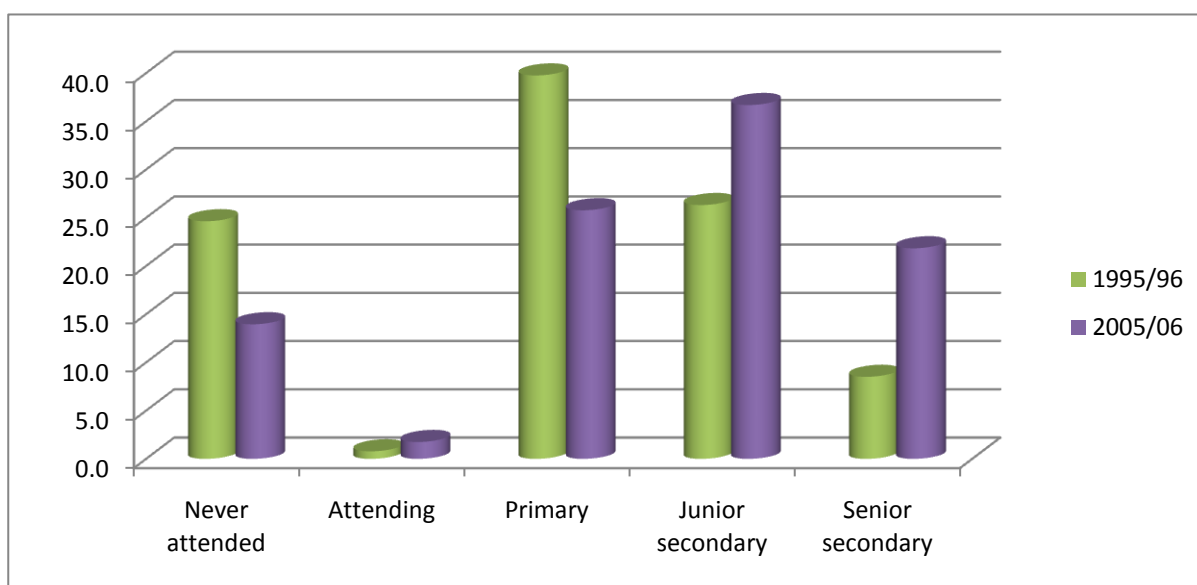


Source: LFS 2005/06 data.

Most of the unemployed (57%) are found in urban areas. This could reflect real or perceived better job opportunities in urban areas than rural areas. A more prevalent form of unemployment in rural areas is disguised unemployment, which takes the form of underemployment. Underemployment was estimated at 8.3% in 1995/96 and had declined to 4.6 % of the currently employed persons.

Between 1995/96 and 2005/06 period the unemployment by education shifted to having more Junior Certificate holders making a bigger proportion of the unemployed (37%). In 1995/96, a majority of those unemployed were those with primary education at 40% of the total, followed by those with junior secondary education at 26%. These results are summarized in Figure 7.

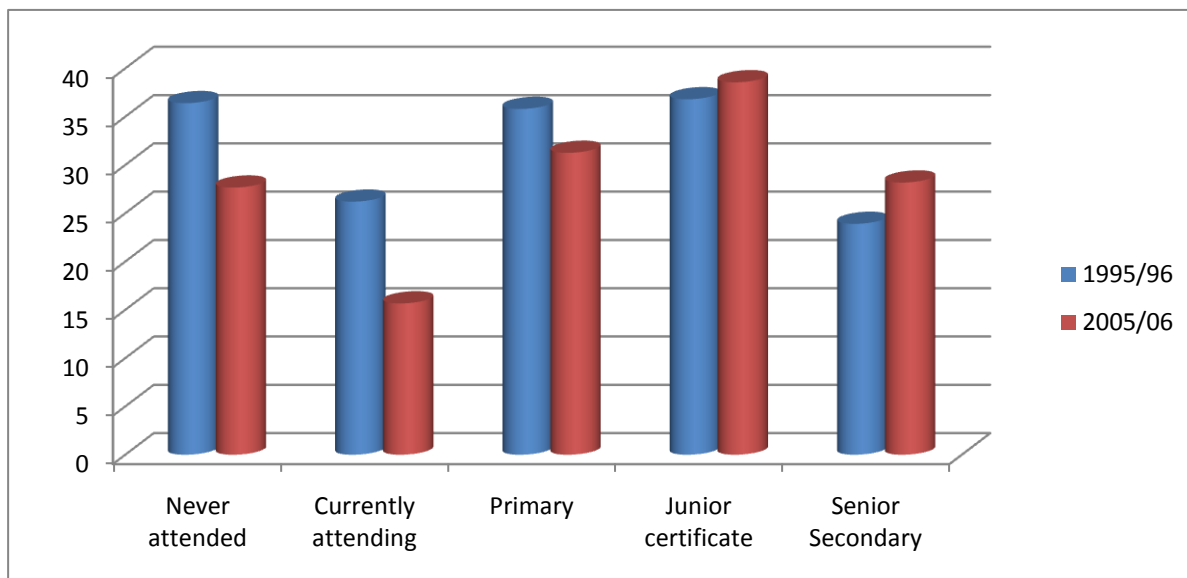
Figure 7: Unemployed persons by school education level (proportion of the total)



Source: LFS 1995/96 and 2005/06 data.

Using the broader definition of unemployment, that includes the discouraged unemployed, the data indicate that the labour force that experienced the highest unemployment rate at 37 and 38 percent in 1995/96 and 2005/06 respectively is those with Junior Certificate. The unemployment rate for people with senior secondary education also increased from 23.9% in 1995/96 to 28.2% in 2005/06. Junior and senior secondary education graduates are therefore increasingly unemployed. This shows that the increase in enrolment in secondary education was not matched by the increase in employment of secondary graduates in the same period.

Figure 8: Unemployment rate by level of education



Source: LFS 1995/96 and 2005/06 data.

In terms of previous occupation, a significant number of the unemployed (20%) were previously in traditional agriculture. The other significant previous occupations are domestic maids/cleaners and construction labourers at 14% each.

Most of the unemployed had been looking for work for prolonged periods. A majority of them (41%) had looked for work for more than 2 years. A further 18% of them had been looking for work for between 1 and 2 years. This probably explains why the proportion of discouraged workers had increased by 2005/06 compared to 1995/96 as noted earlier.

Of the sample of unemployed 46% had made an effort to look for a job. This means that 54% had not made an effort to look for a job. For those who did not look for work in the last 30 days prior to the survey, about 40% thought no work was available, while 29% were occupied with household activities. This is similar to the 1995/96 data, where 55% indicated that they did not look for work because they thought no work was available. Despite prolonged unemployment, paid employment is still the predominant kind of job sought. 87% of those who actively sought for work looked for paid employment, while only 13% looked for self employment jobs with a bias towards small scale business and less towards agriculture.

The percentage of unemployed tertiary graduates in 2005 slightly exceeds the national unemployment rate (17.5%). This does suggest that training is not providing graduates with competitive edge in the employment market, i.e. there is a mismatch between what the workforce is offering and what employers are looking for. In 2005 unemployment was evident at all levels of attainment and across all areas of training as shown in Table 4.

Table 4 Currently Unemployed by Area of Training 2005 (CSO)

	Unemployment	Employed	Labour Force	Unemployment Rate
Total	248 812	539 150	787 962	32%
No training	213 443	375 334	588 777	36%
General Training Programs	70	64	134	52%
Education training	1 785	23 705	25 490	7%
Fine & Applied Arts	168	1 065	1 233	14%
Programs in Languages	173	520	693	25%
Other Humanity	618	2 683	3 301	19%
Social & Behavioral Sciences	885	4 809	5 694	16%
Commerce, Clerical, Business & PA	11 629	46 151	57 780	20%
Programs in Law	46	1 403	1 449	3%
Natural Science Programs	295	2 454	2 749	11%
Maths & Computer Science	879	3 749	4 628	19%
Medicine & Health related	550	7 965	8 515	6%
Construction Trade programs	5 684	15 778	21 462	26%
Other Craft, Trades & In	3 915	15 908	19 823	20%
Engineering & Allied programs	1 572	9 500	11 072	14%
Architectural & Town Planning	461	1 029	1 490	31%
Agric Forestry & Fishery	1 149	5 221	6 370	18%
Home Economics & Domestic Science	193	754	947	20%
Transport & Comm. programs	2 113	10 330	12 443	17%
Service Trades programs	2 695	8 665	11 360	24%
Mass Comm. & Document	336	1 136	1 472	23%
Other Programs	153	926	1 079	14%

Source: CSO 2005

2.5 Wages changes and incomes policy in Botswana

Employment of labour is determined, among other things, by the wage paid to labour. A major element of Botswana's labour market policy framework has been the government's wage and incomes policy. It was intended to cover areas where the market forces determining prices, wages and incomes would not result in efficient and/or equitable results. Botswana's incomes policy was adopted in 1972 with a view to avoiding rapid wage escalation that could lead to growing income disparities and social discord. At that time, the incomes policy emphasised rural development and employment creation, which were viewed as key operational targets for achieving the national development goals and objectives. With most of the population living in rural areas and engaged in subsistence farming as their main livelihood, there was concern that the mineral developments underway and the urbanisation processes would lead to manpower shortages, rapid wage escalation, widening income disparities, urban migration, growing urban unemployment and social tensions.

As a result of this wage restraint policy, inequality in wages was kept at a minimum until the 1990s. Towards the end of the 1980s, government began to realize that the incomes policy was no longer serving its purpose given the changes in the economic environment, especially the growth of the

private sector. The strategy of wage restraint, which had worked for the early 1970s and some part of the 1980s, was losing relevance in the late 1980s, as private sector firms found ways of undermining the policy to be able to attract skilled labour through offering generous fringe benefits. While the policy was to encourage the use of unskilled labour through low pay, firms were on the other hand looking for skilled labour, which was difficult to attract given the non-competitive wage.

Government therefore commissioned a review of the 1972 Incomes Policy. The Revised Incomes Policy was adopted in 1990. Some of the main features of this policy are that the private sector was allowed to determine its wages guided by the need to become profitable. There was a recognition that the private sector had now grown and needed to be de-linked from the government pay structure to encourage its growth and competitiveness. The incomes policy, however, maintained minimum wages to protect unskilled workers from exploitation by private sector employers. The parastatal sector was and is still linked to the government pay scale, but, unlike in the past, it can determine its own pay structure in between the top and bottom of the government pay scale.

Just two years after the private sector was freed from the incomes policy, the share of factor payment of skilled labour rose from 36.6% in 1985/86 to 41.7 per cent in 1992/93. That of unskilled labour fell marginally from 20.8% to 20.3% during the same period (Leith, 1997). It is quite possible that the relaxation in terms of the revised incomes policy was contributing to increasing income inequalities as has been witnessed in the current period. There were also a series of Salaries Review Commissions, whose efforts were to decompress the government salary structure to attract scarce skills to government, which also led to increases in salaries disparities.

The Revised National Policy on Incomes, Employment, Prices and Profits was reviewed again in 2003 with a view to aligning Botswana's incomes policy with best international practices, as well as with the country's Vision 2016 and other national policies. As a result of the review, minimum wages were introduced for agriculture and domestic service workers in April 2008. Some of the major proposals still not implemented are the proposal to remove the tie to some parastatals in terms of being linked to government pay, so that they can attract skilled personnel that can make them globally competitive.

Table 5: Average monthly nominal wages by economic activity

Economic Activity	1980	1985	1990	1995	1997	2002	2003	2004	2005	2006	2007	2008
Agriculture	238	189	269	250	266	599	542	618	677	1010	689	883
Mining and Quarrying	921	1,032	1,517	1,185	1,482	3,176	3,362	4587	5049	6936	7944	5491
Manufacturing	683	779	695	582	500	889	944	1351	1476	1590	2174	2271
Electricity and Water	1,124	1,041	1,599	1,350	1,597	4,438	5,569	6328	6527	7777	7769	11920
Construction	594	590	615	633	552	979	1,050	1354	1532	2698	1808	3278
Commerce	525	549	635	580	672	1,282	1,253	1832	2122	2065	2822	2550
Transport and Communication	1,000	808	1,167	1,206	1,404	3,632	3,597	1145	3957	1208	1593	3312
Finance and Business Services	1,045	1,088	1,321	1,265	1,301	3,114	3,080	3311	7780	9191	8704	9805
Community and Personal Services	787	723	780	776	1,062	1,967	1,965	1831	2795	1966	1953	1804
Education	985	997	1,372	1,618	1,563	3,359	2,830	5170	6009	5577	6667	4927
Government	n.a.	1,676	1,789	2,015	1,987	2,822	2,502	3437	3577	4232	4443	4956
National Average	970	941	1,062	1,022	1,067	2,359	2,781	2584	2885	3417	3858	3990

Source: Various Labour Statistics

Table 5 shows the changes in average wages between 1980 and 2008 by economic sector. Wages increased quite slowly until the 1980s and then started to increase quite drastically after the 1990, which was when the old incomes policy was replaced by a new liberal one. As seen, the highest average real wages in 1980 were in Electricity and Water, and Finance and Business Services. By 2008, Finance and Business had the highest average monthly wages, followed by mining and quarrying. In agriculture, wages were far exceeded by those of other economic activities throughout the period.

Minimum wages were also adjusted regularly for cost of living, and by 2009 in most trades they were at P3.80 per hour (Table 6). This was an increase of more than 200 percent between 1993 and 2009. Most studies done on the impact of minimum wages have concluded that they have not had a negative impact on employment (For instance Szawelski, 1977, Scoville and Nyamadzabo, 1988, Mokgosi, 1999). Part of the reason could be that the minimum wages are not set too high and therefore are not a binding constraint to most employers in terms of employment creation in the urban areas. Low impact during the earlier period is also explicable in terms of the labour subsidy provided through the Financial Assistance Policy Scheme which allowed for employers to pass the increased cost of labour to the programme.

Table 6: Minimum monthly wages in Pula (selected years)

Sector	1993	1998	2000	2002	2005	2009
Building, construction, exploration and quarrying	125	175	205	240	310	380
Manufacturing, services and repair trades	125	175	205	240	310	380
Wholesale distributive trades	119	165	205	240	310	380
Retail distributive trades	112	155	185	215	270	330
Hotel, catering and entertainment trades	125	175	205	240	310	380
Garage, motor trades and road transport	125	175	205	240	310	380
Retail and wholesale night watchmen	104	150	180	210	265	320
Other night watchmen (security guards employed by security companies)	104	150	180	240	310	380

Source: Bank of Botswana Annual Reports.

While average wages were increasing sharply in the current period, productivity was lagging behind. As shown in Table 7, while Botswana has been experiencing rapid growth in output, it was also accompanied by a fall in productivity despite heavy investments in education and health. Calculation of Total Factor Productivity (TFP) by Leith (2000) indicate that TFP growth for Botswana over the two decades was about 2.2%, which is similar to that calculated for the very fast growing Asian countries over somewhat longer periods (Hong Kong recorded 2.3 per annum for 1961-91 and Taiwan 2.1 percent per annum for 1966-90). However, when the data are broken into the earlier and the later decades, they reveal a marked change. TFP growth drops from a rate of 4% for the earlier decade to 0.5% for the later decade.

Table 7: Input and Total Factor Productivity Growth: 1974/75 to 1993/94

	Full Period	Earlier Decade	Later decade
Real Output	8.5	9.4	7.6
Capital Stock	7.3	6.2	8.5
Skilled Labour	7.7	6.9	8.5
Unskilled Labour	1.2	0.9	1.6
Total factor Productivity	2.2	4.0	0.5

Source: Leith 2000.

2.6 Localisation

The basic aim of the Botswana localisation policy is to reduce reliance on expatriate manpower over time, and enable Botswana to hold key positions in the national economy. To facilitate localization, the Employment Act requires all private companies and parastatals employing non-citizens to have in place manpower development and training plans, policies and programmes aimed at imparting skills to citizen employees. According to the report of the Presidential Commission of Equal Opportunities, citizens should fill all positions in all sections of the economy as soon as they qualify by training and experience. Localisation is a way of placing ownership of the country's major development decisions in the hands of Botswana. In general the Government has adopted a pragmatic approach to localization of technical and middle-management positions, while fast tracking localization of low-level and clerical positions. However, as shown in the next section, more recently there has been an increase in issuing of work permits to unskilled workers.

2.7 Work permits

One of the indicators of skills shortage is the number of work permit holders in different occupations and industries. This also gives us some indication of whether the idea of localisation is being achieved or not. In terms of the latest statistics from December 2009, there were 19,080 work permit holders recorded of which 71% were employees while 29% were self employed.

Most of the work permit holders (77%) were males. In terms of nationalities, Zimbabweans recorded the highest employee work permit holders with 59% of the total followed by Chinese with 14%. Agriculture has the highest number of work permit holders at 30% of the total followed by construction and Real Estate with 21 % and 14% respectively (CSO, 2010).

A bigger proportion of new employee work permit holders was in Elementary Occupations with 29% followed by Professionals with 18% and Technicians (16%), Craft Workers (14%) and Managers (12%). While it makes some sense to have a significant number of work permit holders in high level occupations such as those classified as Professionals, it is surprising to find the dominant category being that of Elementary occupations. These include Labourers in mining, construction, agriculture and those in sales and service. Part of the reason could be that Botswana are reluctant to be employed as agricultural labourers, which has prompted Government to allow for hiring of non citizens as agricultural and related labourers. It is also possible that some of those with work

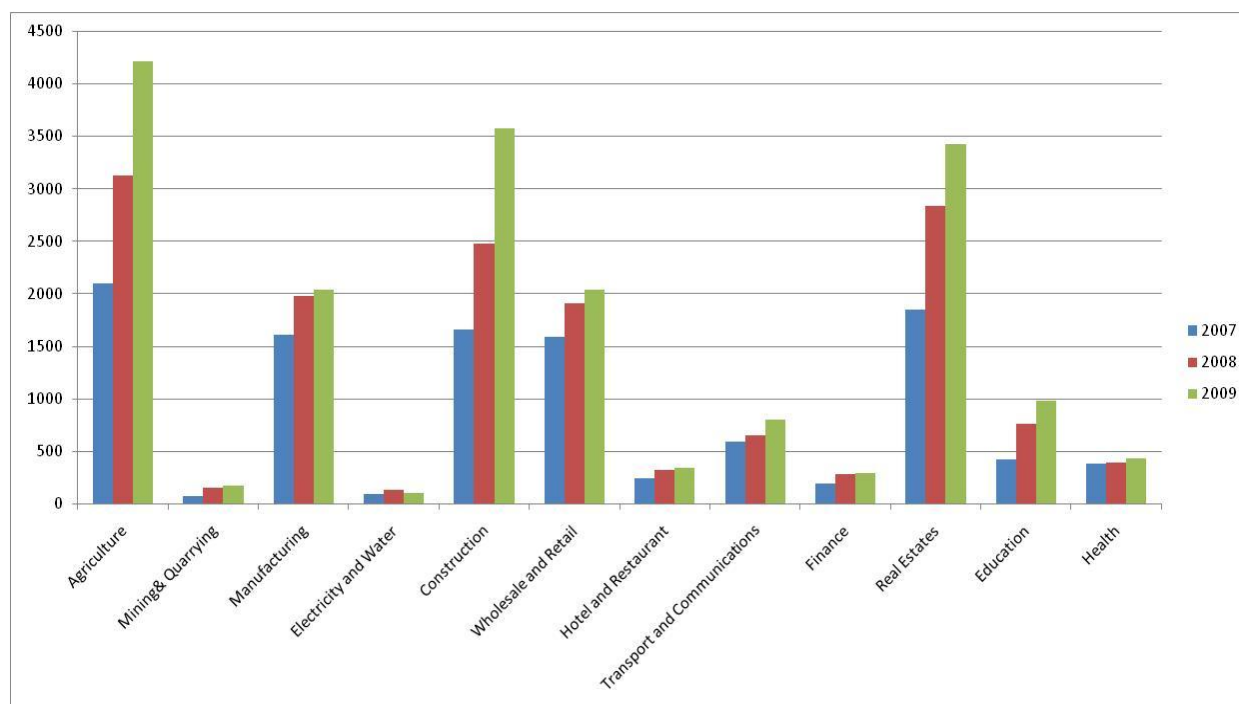
permits to work in agriculture are actually using them to work in other sectors such as domestic services, where there are currently restrictions on hiring non citizens. It is also worth noting the significant number of work permit holders in occupations such as Craft Workers and Plant and Machine Operators, indicating some level of shortage of local skills in these occupations. Table 8 summarises the work permit holders by industry for the years 2002 to 2009, while Figure 9 shows the recent increase in work permits in selected sectors in graphic form.

Table 8 Total Work Permit Holders by Year and Industry

Industry	2002	2003	2004	2005	2006	2007	2008	2009
Agriculture	248	215	602	1229	1189	2098	3130	4209
Mining & Quarrying	256	143	53	45	38	76	154	175
Manufacturing	1178	774	938	1164	1041	1613	1982	2035
Electricity and Water	33	25	23	24	35	97	137	101
Construction	1380	984	1184	1384	1158	1658	2474	3579
Wholesale and Retail	1842	1421	1668	1592	1327	1586	1908	2042
Hotel and Restaurant	244	179	188	214	168	246	321	340
Transport and Communications	465	307	349	484	425	596	649	803
Finance	129	77	130	157	136	198	284	296
Real Estate	1341	907	1049	1373	1177	1848	2837	3429
Education	508	73	401	309	241	424	767	980
Health	241	363	233	528	275	382	394	436
Other Community	322	208	274	348	317	433	492	582
Private Households	4	122	11	20	20	25	29	40
Foreign Mission	-	4	-	8	39	45	44	2
Not Stated	23	24	24	15	-	-	-	31
Total	8214	5826	7127	8894	7586	11325	15602	19080

Source: CSO (2010).

Figure 9: Recent growth in work permits issued



Source: CSO 2010

The processes of obtaining work and residence permits have been consistently identified as the most difficult investment procedures in Botswana. However, Bennell and Siphambe, (2005) observe that the problems encountered by enterprises when employing non-citizen may well be overstated. They found that in general employers do not see labour regulations as an impediment to doing business in the country. Nevertheless, they reported a backlog of 7474 work permit applications. In an effort to eliminate the backlog the Department of Labour (work permits) and the Department of Immigration (residence permits) now meet weekly, and a second board will be established. Temporary renewable work permit waivers enable many foreign investors to circumvent unwieldy and bureaucratic work permit procedures. However, some applicants are reported to have been on waivers for more than three years. The high degree of uncertainty and delays in obtaining work permits is a source of frustration for foreign investors, and is likely to impact negatively on long term planning.

2.8 Botswana labour force in comparison with other SADC countries

Botswana is doing comparatively better than many SADC countries in terms of labour market indicators. In terms of total labour market participation rates, Botswana’s rate of 68 percent in 2005/06 was higher than all the selected countries except for Lesotho, as shown in Table 9. It is also interesting to observe that the labour market participation for males is higher than for females in Botswana and all the selected countries. The key policy implication is to encourage females to participate more in the labour market as a sustainable strategy to achieve the Millennium Development Goals (MDGs).

With regard to total unemployment rates³, Botswana’s rate of 17.5 percent in 2005/06 was lower than Namibia (21.9 percent), South Africa (22.9%), and Lesotho (27.3%). However, Botswana’s total unemployment rate was higher than for Mauritius (7.2%). This implies that Botswana is doing relatively well as compared to most of the selected countries. When benchmarked against Botswana’s Vision 2016, the unemployment rate of 17.5% still poses a challenge.

Table 9: Comparative Labour Market Participation Rates and Unemployment Rates for Selected Countries

Country	Botswana	Mauritius	Namibia	South Africa	Lesotho
Year of Labour Force Survey	2006	2008	2004	2008	1999
Age Group	12+	16+	15+	15 -64	15+
Labour Market Participation Rates					
Total	68	58.9	48.1	57.8	72.9
Male	72	77.2	56.5	65.5	79.2
Female	65	41.2	40.8	50.9	67.5
Unemployment Rates					
Total	17.5	7.2	21.9	22.9	27.3
Male	15.3	4.1	19.4	20.0	20.8
Female	19.7	12.7	25.0	26.3	34.2

Source: International Labour Organization (ILO) <http://laborsta.ilo.org> and CSO, 2008.

³ Unemployment rate based on those actively seeking for work.

2.9 Relationship between output and employment elasticity

Results from a simple elasticity of output with respect to employment approach are presented in Table 10. These try to measure how much employment creation is associated with output growth (i.e. the average percentage change in employment in a sector divided by the average percentage change in the sector's value added over the same period). Employment elasticities can be useful in identifying where initiatives can be focused to accelerate the growth of jobs and incomes: the higher the employment elasticity of a sector, the greater will be the proportionate increase in jobs that is prompted by increasing output in a sector. The elasticities are used together with growth forecasts to forecast future employment demand. Looking at the total economy first, average annual output growth was 10.3% in the first period, which was almost matched by an annual growth in employment of 9.1%— giving rise to a high employment elasticity of 0.89. This performance, however, was not replicated in the second period: output growth slowed to 6.3% and employment creation declined even sharper to 2.2%, resulting in a low employment elasticity of only 0.34.

In terms of sectors, while employment elasticities declined in each sector from the first to the second period, there remain large differences between the sectors with respect to the degree to which growth resulted in employment creation. For example, the mining sector was growing robustly at 8.9 and 7.8 per cent in the two periods respectively, but at the same time recorded only minimal employment growth at 0.8 per cent and 0.1 per cent annually. The corresponding elasticity figures of 0.09 and 0.01 are the lowest of all sectors in both periods. The mining sector was thus hardly creating jobs, even as it was growing substantially. What these elasticity figures indicate is that, as a whole, there is a lack of connection between the output growth in mining and employment growth in the sector. This is to be expected given the capital intensive nature of the mining sector in Botswana.

By contrast, in the manufacturing sector, which recorded an annual output growth of 11.0 and 3.4 per cent in the two periods, employment was increasing by 14.3 and 3.0 per cent respectively. Thus, the sector was increasing employment by almost 1.3 per cent and 0.87 per cent for each per cent increase in output, respectively, indicating very high employment elasticities. This could be explained by the nature of industries in manufacturing, including textile and garment manufacturing, which were highly labour intensive in nature.

Other sectors with consistently relatively high employment elasticities included government (0.70 and 0.52), transport and communications (0.53 and 0.41) and hotels and restaurants (0.9 and 0.23), while social and personal services (0.53 and 0.04) and construction (1.3 and -0.07) did not repeat the employment-creation they achieved between 1980 and 1991 during 1991 to 2005. The water and electricity sector had relatively low employment elasticity, with each percentage increase in value added giving rise to a 0.25 per cent increase in employment during 1980-1991 and 0.10 during 1991 to 2005.

From these estimates it is shown that manufacturing has had significant growth in output and employment, yet this growth seems to be pulled along by the economy rather than driving growth itself. Its contribution to employment is also very small, at five percent or less. This raises an

important policy question in terms of whether this sector can be a leading sector in terms of employment creation. Another sector that is promising in the second period in terms of employment growth is trade, hotel and restaurants, which is probably being influenced positively by the tourism sector. In terms of Botswana's future for employment creation this seems to be a second sector on which the country can pin its hopes if properly harnessed.

Table 10: Sectoral employment elasticities, 1980 to 1991 and 1991 to 2005

	1980 to 1991			1991 to 2005		
	Annual Output Growth in %	Annual Employment Growth in %	Employment Elasticity	Annual Output Growth in %	Annual Employment Growth in %	Employment Elasticity
Agriculture	3.6	4.2	1.18	-1.3	1.0	-0.78
Mining	8.9	0.8	0.09	7.8	0.1	0.01
Manufacturing	11.0	14.3	1.30	3.4	3.0	0.87
Water and Electricity	12.8	3.2	0.25	7.3	0.7	0.10
Construction	12.0	9.5	0.79	3.2	-0.2	-0.07
Trade, Hotels & Restaurants	15.6	11.6	0.74	9.5	2.2	0.23
Transport & communications	17.9	9.6	0.53	4.5	1.9	0.41
Finance & Business Services	16.0	12.4	0.78	5.9	1.2	0.20
Social and Personal Services	17.5	9.2	0.53	5.1	0.2	0.04
General Government	11.5	8.0	0.70	6.7	3.5	0.52
Total economy	10.3	9.1	0.89	6.3	2.2	0.34

Source: Various CSO

2.10 Review of key sectors

Traditionally the government has been the largest single employer. It was still the largest employer in 1995/6 with a share of 33%, but this declined to 21% in 2005/6, making government the third largest single employer. Growth in Government job creation had slowed to 2.8% by 2005/6. In the future the Government of Botswana will support job creation, not by providing jobs, but by supporting private sector developments that will create jobs and entrepreneurial opportunities.

The Government of Botswana has continued, through the recession in 2009, to dominate the economy with expenditure in GDP of 35- 40%. The government has been the channel through which wealth created in the mines has been reinvested in the economy (Siphambe, 2007). Through its public expenditure the government creates demand in other sectors of the economy.

The Business and Economic Advisory Council (BEAC) was established in 2005 to find ways to drive the economy forward; by attracting more foreign direct investment, streamlining the civil service and addressing challenges such as lack of economic diversification. To achieve the envisaged economic revival, BEAC identified a number of key sectors for promotion. In 2008 the Botswana Export Development and Investment Authority (BEDIA) identified seven areas for the development of high skills to meet the internal demands of the other sectors and for the purpose of exporting skills in niche service areas of the Botswana knowledge economy.

The National Human Resource Development Strategy (NHRDS), approved in 2009, also identified a number of sectors which are seen as critical players in the strategy to increase economic growth and create employment. The vision of the National Human Resource Development Strategy is the development of an economy in which ‘the quality, productivity and motivation of its people will be Botswana’s single greatest and valuable resource’ (Vision 2016). That is, it aims to leverage Botswana from its current position as an economy based on natural resources and low skills, to an economy based on the ‘value-added’ of a highly skilled workforce.

The *Botswana Excellence Strategy for Economic Diversification and Sustainable Growth*, which was approved in November 2008, is an enabling framework for Botswana's transformation into a higher income economy. The Government of Botswana is committed to empowering its citizens to create wealth in the private sector by promoting new economic growth areas where Botswana can achieve comparative economic advantage. Government has clustered a number of major development projects into six Hubs to attract internal and external investment:

- **A Diamond Hub** to facilitate beneficiation and promote Botswana as one of the world's major diamond trading centers.
- **A Transport Hub** to expand and promote synergy in the air, road, and rail sectors.
- **An Agricultural Hub** to serve as a catalyst for the commercialisation and diversification of the sector, as well as to improve food security.
- **A Health Hub** to make Botswana a centre of excellence in the provision of healthcare services for medical tourists as well as local patients.
- **An Education Hub** to enable Botswana to have a competitive edge both regionally and globally through the promotion of education, training and academic research
- **An Innovation Hub**, which will serve as a commercial nexus for applied research by catering for ICT and Research and Development companies.

Clearly there is a high level of coherence in high level perspectives on sectors which have a key role to play in the future of Botswana. Table 11 shows commonality between the various lists and shows how the sectors reviewed in this section relate to identified sectors of interest. The information provided on each sector is compiled from the literature, statistics from various sources and interviews with key players conducted as part of this research.

Table 11: Sectors of interest

BEAC	HRDS	BEDIA	HUBS	Sectors reviewed in this section
Mining	Mining and Resources	Mining and Energy		Mining Energy
Trade	Manufacturing and Commercial Agriculture		Diamonds	Manufacturing
Agriculture		Agriculture and livestock	Agriculture	Agriculture
Tourism	Tourism	Hospitality and tourism		Tourism and Hospitality
Transport	Transport and Communications		Transport	Transport
ICT	ICT			ICT
Banking and Financial Services	Financial and Business Services	Business Management		Financial and Business Services
	Education and Training		Education	Education and Training
	Health	Medical Science and Research	Health	Health
	Research and Innovation	Conservation and Veterinary science	Innovation	
	Science and Technology	Peace and Justice		Construction

Various initiatives identified to accelerate economic diversification include: commercialisation of the cattle industry; production of high value agricultural crops; economic free zones; minerals beneficiation and related processing activities; projects based on energy resources; and growth of the tourism industry. Occupational areas/types for future skills demand include mining, mechanical, electrical engineering, technicians, artisans, agricultural scientists, ICT specialists, gas and energy specialists, finance, and tourism specialists.

2.10.1 Mining

The first diamond mine opened in Botswana in 1971, followed by nickel and copper in 1973. Until 2009 diamonds accounted for three-quarters of Botswana’s exports, more than one third of GDP, fifty percent of government revenue but only 5% of total formal sector employment. Employment growth in mining has decreased from 0.09% in 1980-1991 to 0.01% in 2005. The sector contributed 41% to GDP in 2008, dropping to 26% in 2009. However the mining sector has made a quick recovery from the recession in 2009 with copper prices returning in the first quarter of 2010 to the peak levels achieved in 2009 and doubling of nickel prices in the last year. Botswana has also experienced a sharp increase in diamond sales after a dramatic decline in 2009 (BIFM Economic Review 1st Quarter 2010).

Economic growth of Botswana based on diamond revenues accruing to Government is thought not to be sustainable, since these are projected to decline. Open cast diamond mining will be replaced by relatively expensive underground mining in the next ten to fifteen years. The existing major ore bodies are expected to be exhausted by the end of NDP 12 (2029). Nevertheless exploration of Botswana’s mineral wealth continues with plans to open new mines for uranium, diamonds, coal, gas and copper.

In the past Botswana has to a large extent relied on skills from South Africa and Zimbabwe. Now South Africa has its own skills shortages. The CEO of the Botswana Chamber of Mines expresses concern about the quality of Botswana trained artisans. Junior Certificate (entry level for Brigades, Technical Colleges) is considered too low as an entry qualification for producing skilled artisans. Rapid skills training such as provided through CITF (with no specified entry qualification) is considered inadequate. There are two mining schools at Jwaneng and Orapa. A proposal to improve the quality of artisans for the mines includes closer liaison with MTTC through structured mining exposure for both staff and graduates. Skills sets for mining are:

- Electrician
- Welder
- Boiler maker
- Mechanic
- Heavy Plant
- Skills related to digging, i.e. drilling, explosives, blasting, loading

Technicians for the mines are currently trained at University of Botswana where they complete a three year Diploma in Mining Engineering, with a strong practical component, supported by the mining industry. Although training at this level has been sufficient up to the present, there is expansion in this area at UB, while BIUST is establishing a Mining College.

2.10.2 Energy

50% of Botswana’s energy is consumed by the mining sector. Currently the country only has one power station in Morupule. However, plans to develop a second power station at Morupule (Morupule B) are well advanced and employment is expected to increase in 2011.

Furthermore the following projects, which are intended to reduce reliance on power imported from South Africa, and develop capacity to export power, are under development:

Mmamabula Energy Project	Currently the development of this 1200 megawatt (net) capacity power station is expected to start in 2011. Construction will take 42 months. Total number of employees will be 1100 once it is operational. This project is at risk because South Africa has not signed up to buy the generated power as expected.
Mookane Domestic Power Project	This power station will have 550 permanent employees when operational. Operation is planned to commence in the second half of 2013. Initially there will be a big Chinese contingent running the mine and power plant, followed by a period of skills transfer
Export Coal Project	The aim of the project is to export 16 million tones of coal per year. This project does not produce energy since the goal is to export unprocessed minerals
Coal-to-Hydrocarbons Project	This project involves the conversion of coal to gas and then into fuel and petrochemical products

The skills sets for all projects include artisan (coal) miners, basic construction skills, heavy plant and general power plant skills, and electrician skills.

2.10.3 Manufacturing

The dramatic economic development of Botswana is notable for relatively low industrialization, compared with other fast growing economies. In spite of the fast pace of modernization and multifaceted diversification initiatives, the share of manufacturing has remained small, largely because of the smallness of the domestic market and high cost of transport. The manufacturing sector shows little overall growth in the last ten years but percentage contribution to GDP has increased steadily over the past four years to 4% in 2009. Manufacturing accounted for 7% of employment in 2005 according to the LFS and 10.8% rising to 11.6% in 2008 according to CSO enterprise surveys.

At independence the only significant manufacturing industry was meat processing. A brewery was established in the 1970s and the Hyundai motor plant (which later folded) was established in the 1990s. More recently there has been an emphasis on textile and garment production for export, but this has not been sustainable.

As part of a national strategy to reduce reliance on primary resources through the development of value-adding processes, a Diamond Hub was established in 2008. The hub has identified four major areas of concentration which include promotion and active facilitation of the diamond cutting and polishing sector; establishment of a rough and polished diamond trading facility; development of diamond jewellery manufacturing; and attraction of support industries. The strategy is expected to boost revenues from diamond exports and add impetus to economic growth. Beneficiation of diamonds presents new challenges for skills development, since, as with the other industries, there is no existing local skills base.

2.10.4 Agriculture

Agriculture, driven by the livestock subsector and beef exports accounts for only 2% of GDP (rising to 3% in 2009) but contributes a substantial proportion of rural income and some 30% of total employment (24% in subsistence farming). Agriculture remains constrained by a number of factors, ranging from the semi-arid climate to socio-economic and technical factors.

In 2009 the largest number of work permits was issued in agriculture. Of these the vast majority were in elementary occupations.

The ISPAAD programme is an Agricultural Support Scheme which was established by the Government of Botswana in 2008 to address challenges of poor technology adoption by subsistence farmers and low productivity of the arable sub-sector. The objectives of the scheme are:

- Increase grain production
- Promote food security at household and national levels
- Commercialize agriculture through mechanisation
- Facilitate access to farm inputs and credit
- Improve extension outreach

The scheme proves benefits to registered farmers with proven access to agricultural land.

The NAMPAADD programme is a commercialization programme which includes the establishment of commercial blocks.

2.10.5 Tourism

Vision 2016 identifies tourism as a sector to be developed through a number of strategies including privatization of the management of some existing facilities; increasing the volume of tourism; and local ownership and capacity building. Tourism contributes significantly to the country's GDP (with overall growth trend over the last ten years to 4.9% in 2009) as a result of visitors' expenditure and indirect expenditure filtering through different economic sectors. It is the second-largest export sector after diamonds and is estimated to provide employment for about 10,000 people in Botswana. As noted in the ODI *Assessment of Botswana's Services Sector* (2007) 'tourism seems to have the potential for being one of the drivers of Botswana's economic development'.

Issues which are impacting negatively on the growth of the tourism industry are described (ODI, 2007) as weak international air access (state owned monopoly of Air Botswana); skills shortages (especially at managerial level); uncompetitive support services (back office operations for the tourism industry are largely located outside Botswana); and restrictions of ownership of some types of tourism service company to citizens only. The *Training Needs analysis of the Tourism Industry* (Botswana Tourism Board 2009) identified human resources capacity, skills and service limitations as critical impediments to the development of the industry.

2.10.6 Transport

Transport is identified in Vision 2016 as a crucial sector for expansion, especially since its development will facilitate the development of other sectors. High cost of transport is generally believed to be a limiting factor in the development of the manufacturing sector and export diversification. The Government of Botswana has established a Transport Hub to initiate and coordinate big infrastructure projects, linking Botswana with other countries.

Four privately funded projects currently in the planning stages are:

Kazungula Bridge	Design stage will be complete in October, implementation planned starting in 2011, expected to take 4 years (till 2015)
Trans Kgalagadi Railway	Gaborone to Walvisbay in Namibia, with possible additional lines: Mmamabula-Ellisras (SA) line and Moseitse - Kazungula line. These lines have coal as their anchor commodity, with other commodities supporting the use of the railway. A pre-feasibility study is being done to determine whether these railways should be dedicated lines or should link to existing railway lines.
Dry port in Walvisbay, Namibia	Plan to lease land in Namibia to receive and transfer cargo, dealing with import and export of bulk commodities. In Botswana dry port facilities would be constructed in Selebi Phikwe and Gaborone. A study was completed in July and the report submitted. Government is now to decide on the recommendations and choose one of the options.
Railway Gaborone – Mozambique	The project should start in 2011.

Expert skills related to these projects are in short supply. These include engineers, roads engineers, roads design, transport logistics (i.e. freight logistics), transport management (i.e. developing new systems), transport economics, transport policy. Others are: port management, containerization experts, maintenance management.

Vocational skills required are at semi-skilled and skilled levels. These include bricklayers, carpenters shunters, train drivers, crane drivers, drivers, heavy plant operators, equipment operators, mechanics, and skilled maintenance workers.

2.10.7 ICT

Vision 2016 identifies ICT as a key sector for development since, in order to move from being an importer to an exporter of information services, 'it is vital that there is increased investment in telephone connections and internet services' (Vision 2016). Liberalization of telecommunications has broken the monopoly of BTC to some extent, at least in terms of licenses to provide mobile and internet services. However, BTC still owns the telecommunications infrastructure and is still the sole provider of fixed lines.

In 2007, Maitlamo (ICT) Policy was approved with an aim of providing the country with a clear roadmap on effective use of ICT in social, economic, cultural and political transformation. Transformation of Botswana into a knowledge and information based society will require making the country a regional ICT hub and developing skilled personnel to manage the project.

A report for the Botswana Telecommunications Authority (Analysys Mason, 2009) found good penetration, effective competition and attractive pricing in the mobile telephone market. Fixed line penetration however is less than 10% and this is expected to decline with the further development of mobile and wireless technologies. The cost of wholesale and retail leased lines is high and lack of regulation reduces the potential for competition. Low penetration of internet and broadband is thought to be a direct result of low fixed line penetration, uncompetitive wholesale pricing by BTC and lack of local Botswana internet content. Analysys Mason (2009) found that the pricing of wholesale ADSL internet access, leased line and international data markets is unfair and out of line with costs. Computer access and ownership are low in Botswana relative to developed countries. Low computer usage is currently described as a 'key stumbling block in Botswana's aim to become a 'digital country' (Analysys Mason, 2009).

2.10.8 Financial and business services

Financial and business services contribute significantly to GDP (12.4% in 2009) and to employment (8.2% of the workforce in 2008). Vision 2016 promotes the establishment of Botswana as a banking and financial services centre.

Botswana has a well developed insurance sector with 14 insurers, 31 registered insurance brokers and 126 corporate agents in 2007. The majority of these are foreign owned (ODI, 2007). The Non Bank Financial Institutions Regulatory Authority (*NBFIRA*), a regulatory body of all non-banking financial entities registered in Botswana was recently established.

As a result of liberalization of the licensing policy for new banks in 1990, Botswana currently has seven commercial banks, all of which have a majority foreign ownership. The Botswana Stock Exchange was established in 1989 and in 2007 there were 23 listed companies and 44 traded securities.

Constraints on the development of the banking sub sector include lack of formal training and on-the-job experience of local workers, and relatively poor IT infrastructure which is described as insufficient to support centralized back office operations (ODI 2007). Barclays Bank's decision to relocate part of its back office services to Johannesburg is believed to have been largely a response to poor quality IT infrastructure and services, and also a result of failure to get the right caliber of staff in Botswana. Standard Chartered Bank also cites lack of skilled labour as the main reason for locating back office services in Kenya.

2.10.9 Education and training

In the 2005 LFS, Education and Training accounted for 8% of formal employment. This is higher than the share of education and training shown in other CSO data (3.1% in 2008), but there is a clear growth trend, irrespective of actual numbers in the different sources. Expansion of the sector in recent years has included expansion of the University of Botswana, expansion of Technical Colleges, development of the new University BIUST, development of the FCTVE in Francistown and a new Oodi College of Applied Arts and Technology. The number of private providers of post secondary education has also increased substantially over the last twenty years. Expansion and development of the sector will reduce imports of education since diminishing numbers of student study abroad, many of them supported by the Government of Botswana. Development also has potential to increase exports in key niche areas, such as health, and furthermore development of this sector is seen as crucial to the development of other sectors.

The GoB has established an education hub to co-ordinate the development of the sector to international standards, in order to reduce import and increase export of education. The new BIUST university is the flagship of this strategic development.

The BEDIA report (2008) forecasts the growth of internal enrolment in tertiary education (from 31 000 in 2007 to 56000 in 2016). Furthermore BEDIA points out significant opportunity to attract international students from the region.

Approximately 2.5 million students in Sub-Saharan Africa are currently studying outside their home countries, and this is expected to grow to 7 million by 2025. The primary motivations behind outbound mobility of regional students include: insufficient higher educational institutes in their home country; student exchange programs with partnering universities; and the lack of investment in science and technology courses in the region. The number of regional students studying outside their home countries in Southern Africa is expected to increase from an estimated 70,000 in 2005 to 110,000-130,000 students in 2021. The Education Hub proposes to capture a portion of this potential market.

2.10.10 Health

Training for health professionals is provided through the University of Botswana, public Institutes of Health Science and a few private providers. Both FCTVE and OCAAT have training in this area scheduled to commence in 2010 or 2011.

Emigration rates for health professionals are estimated at 7% with more than 600 qualified Batswana health professionals choosing to work in other countries. This emigrant workforce is sorely missed since, although the ratio of health workers to inhabitants is twice that of sub-Saharan Africa, it is low compared with the best performing SADC countries (ODI 2007). Training of health workers for export is considered to be a potential export strategy (Cali and te Velde 2007, cited in ODI 2007 p84).

The Health Hub aims to identify strategic initiatives and innovations to drive sustainable transformation and service delivery improvement throughout the health sector. The functional principles of the Health Hub establishment of centres of excellence in priority areas and the promotion of “Medical Tourism” to cater for local, regional and international health care needs in those areas. There is synergy with the tourism sector since through the combination of its hotels and rehabilitation services Botswana can attract tourists to relax and recuperate after hospitalization.

2.10.11 Construction

The construction sector is currently driven by Government projects. Due to the economic down turn, many projects planned under NDP 10 (mainly hospitals and schools) have been cancelled. The impact of this is likely to be felt in late 2010, early 2011. (ABCON Chair).

In the longer term the construction industry shows a declining annual growth rate in employment. Nevertheless it is currently an important sector which contributed 5.7% to GDP in 2009. Skills shortages may be indicated by the fact that in 2009 the second largest number of work permits was issued for the construction industry. DBES reports that most building contractors complain of skills shortages; however a contributing factor identified by DBES is low wages, which result in rapid staff turnover and delays in completion of projects. DBES reports that skills shortages and time slippage are not a problem for contractors who pay well.

3 Review of education and skills development systems

Sparreboom and Powell (2009) describe three policy models that can be used as a framework for describing the type of vocational education development that has occurred in a country. These three models describe an evolution of TVET systems which can take many years, especially because of the infrastructural and institutional changes required. The three policy models are not necessarily discrete stages of development, since the systems are complex, change is incremental, and there may be long time lags between the introduction of policies and changes in practice. Our analysis of factors influencing the supply of skills in Botswana discusses developments using these models.

The first policy model, the **Education model**, which was typical in African countries at independence, is characterized by government financing of education and training, which is predominantly public and pre-employment. In this model there is no government funding for private education and training. This model is described as supply driven and limited attention is given to development of skills in the workplace. Two key areas of reform under this model are curriculum reform in response to the demand from employer and controlling the number of graduates in particular subject areas, by incentivizing enrolment in some areas.

The second model is the **Employment model** is characterized by training levies to support education and training in both public and private sectors. Under this model education and training is more demand driven, especially if strong links between industry and training can be forged. Skills levies and training funds provide incentives for skills development in the workforce, and immigration quotas can be used to respond to skills shortages and oversupply.

The third model, the **integrated or economic development approach**, is characterized by formula based funding of education and training, cost sharing, and management through autonomous training authorities. The key driver is the direction of the economy. This approach is characterized by more ‘joined up’ policies, co-ordination of policies for economic and skills development and synergy of decision making. Employment strategies include pre-employment and work based skills development, especially in high-skilled occupations, as well as measures to support those unable to enter the workforce due to lack of skills.

Education model	<ul style="list-style-type: none"> governments respond to skills demands through pre-employment education and training using the formal school and tertiary education systems little attention is given to workplace training and linkages between demand and supply are weak this approach is associated with manpower planning approach to education and training development
Employment model	<ul style="list-style-type: none"> uses a variety of strategies to meet skills needs based on information from the workplace obtained through the Ministry of Labour/Employment includes provision of skills in the workplace, apprenticeship type formal training as well as pre-employment education in formal schools/colleges.
Integrated or economic development model	<ul style="list-style-type: none"> emphasizes holistic policies for identifying and responding to skills shortages based on the direction of the country’s economy. uses a variety of strategies for provision of vocational skills based on a collective effort at skills forecasting and skills development.

Over the last two decades Botswana’s TVET policy landscape can be described as having three distinct phases, corresponding in broad terms to these three models: these are the pre-RNPE/NAPVET period, the NAPVET period and the NHRDS phase, which is just beginning.

3.1 Pre RNPE/NAPVET

When Botswana gained independence in 1966, only 20 percent of school age children were enrolled in primary schools, and there were only nine secondary schools, two primary teacher training colleges and one trade school in the country. The Botswana Training Centre had been established just prior to Independence to train artisans and administrative staff for the new civil service. As noted in the first National Development Plan, in 1967 there were 'forty seven young men undergoing training as carpenters, bricklayers, electricians and mechanics' (cited in UNESCO 2002). The Botswana Training Centre gave rise to the Botswana Institute of Administration and Commerce (BIAC) and the Botswana Polytechnic. The Botswana Agriculture College opened in 1970.

In the late 60s a national movement called the Botswana Brigades started in Serowe. The context for this development was the extremely limited opportunities for primary school graduates for further education or employment, especially in rural areas, which were home to 96% of the population. The concept of the Brigade (based on Paulo Freire's 'education with production' pedagogy) was to enable students to learn while producing and in this way, finance their own education. While the Brigades started as education with production (secondary school) they moved to training with production, in proper vocational training centres with production for income and work experience for trainees. Before long the concept was replicated throughout Botswana with every major village moving quickly to have their own Brigade to train their school leaving children and give them a skill. The Brigades became the backbone of Botswana's vocational education and training. The Brigades flourished in the 1970s, attracting considerable donor support as well as Government of Botswana subsidies from 1975; from 1976 funding was administered by the Brigades Development Centre under the MoE. By 2005 there were 39 Brigades throughout the country with an enrolment of 27% of the total of about 28,000 learners enrolled in the system in 2005 (Modise et al, BOTA 2006).

In 1983 the Apprenticeship and Industrial Training Act was passed to institutionalize employer based training. The system was developed with the support of the GTZ and modeled on the German apprenticeship system. Two years of institution based education and training was followed by two more years which consisted of nine months on-the-job training and 13 week blocks of institution-based education and training. Institutions which were called Vocational Training Centres (later renamed Technical Colleges) were established in 1987 under the Department of Vocational Training in the Ministry of Education to offer the institution based components of the programme. Apprenticeships were offered through the Directorate of Apprenticeship and Industrial Training (under MLHA). The Madirelo Training and Testing Centre (MTTC) was established to assess trainees skills. MTTC offered three levels of Certification which served both the Brigades and the Apprenticeship scheme. These qualifications, which are still predominant in Botswana today, are Trade Test C, Trade Test B, and National Craft Certificate. The holder of the National Craft Certificate is certified as a fully qualified artisan.

For the two decades following Independence the goals of universal basic education were vigorously pursued. Primary school fees were abolished in 1978 in the first major step towards the achievement of Universal Basic Education. Free access to the first ten years of schooling was

established in 1989. From this point the profile of applicants for vocational education and training changed, as all applicants could now be expected to have 10 years of schooling with Junior Secondary Certificate.

The pre-RNPE/NAPVET period was characterized by ineffective co-ordination between different training organisations and lack of standardised vocational qualifications, curricula and quality of trainers. There was no unified policy for TVET and the system was fragmented and of uneven quality. The policy instruments governing provision of vocational education were the Apprenticeship and Industrial Training Act under the Ministry of Labour and various administrative policies and the Education Act in the Ministry of Education.

Enrolment numbers in the Brigades were modest and the Vocational Training Centers (VTCs) were underutilized due to problems with uptake of the apprenticeship scheme by industry. There is limited information on enrolments, curriculum and demographics for the vocational system in this period. There were some private providers but little information was gathered on them. A model of the education provision arrangements and relationships in this period is shown in Figure 10 below. The pre-RNPE/NAPVET period can be characterised as a mixture of the Education model and the Employment Model.

Figure 10 Structure of Vocational Provision before NPVET

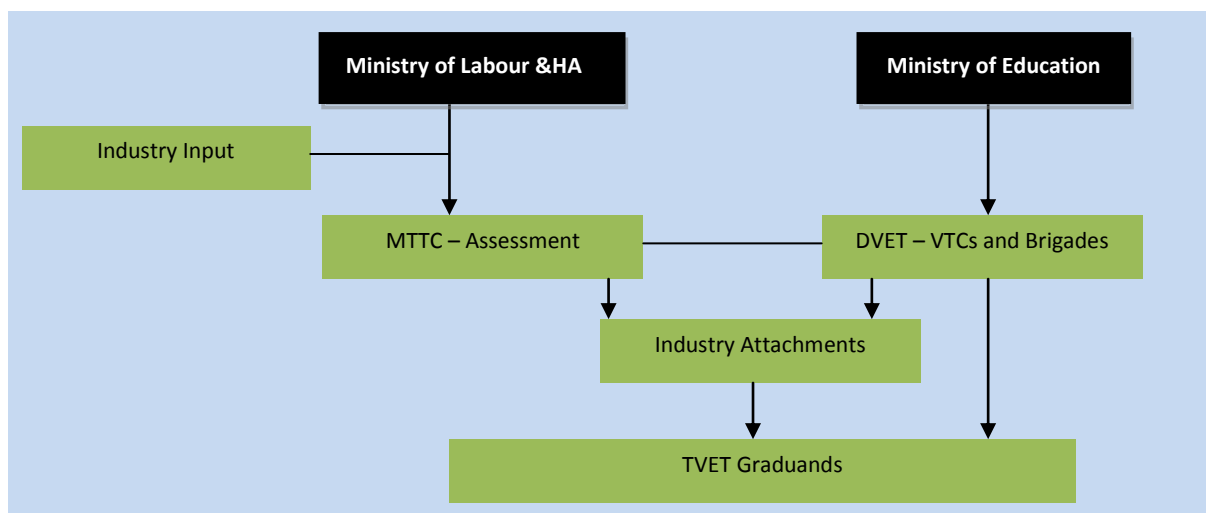


Table 12: Timeline of education and training legislation and policy development

	1960-1970	1970-1980	1980-1990	1990-2000	2000-2010
All Education and Training		<div style="display: flex; justify-content: space-between;"> <div style="border: 1px solid black; padding: 5px; width: 45%;"> 1976 First National Commission on Education for Kagisano </div> <div style="border: 1px solid black; padding: 5px; width: 45%;"> 1977 National Policy on Education </div> </div>		<div style="display: flex; justify-content: space-between;"> <div style="border: 1px solid black; padding: 5px; width: 45%;"> 1992 Second National Commission on Education </div> <div style="border: 1px solid black; padding: 5px; width: 45%;"> 1994 Revised National Policy on Education (includes BNVQF concept) </div> </div>	<div style="display: flex; justify-content: space-between;"> <div style="border: 1px solid black; padding: 5px; width: 30%;"> MoE renamed Ministry of Education and Skills Development DVET renamed DTVET </div> <div style="border: 1px solid black; padding: 5px; width: 30%;"> 2006 Study to Establish the National Qualifications Framework </div> <div style="border: 1px solid black; padding: 5px; width: 30%;"> 2008 National Human Resource Development Strategy </div> </div>
Technical and Vocational Education and Training	<div style="border: 1px solid black; padding: 5px; width: 100%;"> National Training Centre established under MoL Mid 60s Brigades established </div>	<div style="display: flex; justify-content: space-between;"> <div style="border: 1px solid black; padding: 5px; width: 45%;"> 1979 National Training Centre renamed Botswana Polytechnic </div> <div style="border: 1px solid black; padding: 5px; width: 45%;"> 1977 Brigades Development Centre established under MoE </div> </div>	<div style="display: flex; justify-content: space-between;"> <div style="border: 1px solid black; padding: 5px; width: 45%;"> 1983 Apprenticeship and Industrial Training Act under MoL and MoHA </div> <div style="border: 1px solid black; padding: 5px; width: 45%;"> Technical Colleges established </div> </div> <div style="border: 1px solid black; padding: 5px; width: 100%; margin-top: 10px;"> 1986 Madirelo Training and Testing Centre Established </div>	<div style="display: flex; justify-content: space-between;"> <div style="border: 1px solid black; padding: 5px; width: 30%;"> Department of Vocational Education (DVET) established under MoE </div> <div style="border: 1px solid black; padding: 5px; width: 30%;"> 1997 National Policy on Vocational Education and Training </div> <div style="border: 1px solid black; padding: 5px; width: 30%;"> 1998 Vocational Training Act </div> </div>	<div style="display: flex; justify-content: space-between;"> <div style="border: 1px solid black; padding: 5px; width: 45%;"> 2002 BOTA established under MoLHA, and taken over by MoESD in 2010 </div> <div style="border: 1px solid black; padding: 5px; width: 45%;"> 2006 Recommendation DVET to take over Brigades from MoLHA </div> </div>
Tertiary Education and Training				<div style="border: 1px solid black; padding: 5px; width: 100%;"> 1999 Tertiary Education Act </div>	<div style="border: 1px solid black; padding: 5px; width: 100%;"> 2004 Tertiary Education Council established under MoE </div>

The most reliable statistics on education and training attainment in the period are from the 2001 Census. We can see in Table 13 (CSO,2001) that 40% of the employed population had some form of post secondary training, and 20% of this trained employed population had either an apprentice certificate, Brigade certificate (Trade Test) or a 'vocational' certificate (not specified). However, 26% of all trained people were unemployed, and people with these three vocational qualifications had the lowest probability of getting a job. There was unemployment of trained graduates right across the various attainment levels although TVET leavers were more affected than others. Apparent over-supply indicated issues of the relevance, quality and transferability of the available training to the employment market.

Table 13 Employed persons by educational Attainment 2001

Training	Employed	%of employed	% of trained	Attainment	Probability of employment
No Training	222 774	60%			
Apprentice certificate	6 835	2%	5%	10 165	67%
Brigades certificate	9 287	3%	6%	16 083	58%
Vocational certificate	12 412	3%	9%	19 614	63%
Educ. college certificate	8 924	2%	6%	10 672	84%
University certificate	2 593	1%	2%	3 165	82%
Other certificate	58 192	16%	40%	80 000	73%
Vocational diploma	2 352	1%	2%	3 179	74%
Educ. college diploma	6 229	2%	4%	6 944	90%
University Diploma	6 530	2%	5%	7 685	85%
HIS Diploma	4 079	1%	3%	4 359	94%
Other diploma	9 169	2%	6%	12 151	75%
University degree	14 693	4%	10%	18 145	81%
Other degree	3 388	1%	2%	4 170	81%
Not Stated	1 495	0%			
Total	368 952				
Total trained	144 683			196 332	

3.2 The NAPVET Era

The NAPVET era (1994 – 2010) was characterised by definite actions by the Government of Botswana to mitigate the problems identified with the previous era. Two policy instruments are responsible for reforms that took place within TVET in Botswana in this period. These are the Revised National Policy on Education (RNPE) of 1994 and the subsequent National Policy on Vocational Education and Training (NAPVET) of 1997.

3.2.1 Establishment of BOTA

In the 90s considerable effort was made to increase the coherence and quality of TVET, which was perceived as 'fragmented' and 'of uneven quality' (RNPE, 1994). The Revised National Policy on Education (RNPE, 1994) proposed an 'integrated national training system whose goals, content and

organization are uniform'. Provision of vocational education and training was to be consolidated under the Department of Vocational Education and Training (DVET) in the Ministry of Education. The Botswana Training Authority (BOTA) was conceived in the RNPE as a 'coordinating authority' which would 'monitor the skills needs of the economy' and 'develop a more comprehensive system of vocational qualifications' (RNPE, 1994).

Recommendations of the RNPE led to the development in 1997 of the National Policy on Vocational Education and Training (NAPVET), which aimed to 'integrate the different types of vocational education and training into one comprehensive system' (NAPVET, 1997). It was expected to accord TVET sufficient status as an alternative education route and make it comparable to academic education in terms of providing opportunities for further education. It led to the promulgation in 1998 of the Vocational Training Act which replaced the Apprenticeship and Industrial Training Act of 1983 and established the Botswana Training Authority (BOTA) as the statutory body to co-ordinate and promote vocational training in Botswana. This included registration, accreditation, and monitoring of both public and private training institutions to ensure adherence to the required standard and quality of training and reduce variability between training institutions.

By April 2010, 284 training providers were registered, and 209 had been accredited to provide approved programmes. 53 providers had been closed down after failing to demonstrate that the required standards were met.

The Tertiary Education Act of 1999 established the Tertiary Education Council to 'be responsible for the promotion and co-ordination of tertiary education and the maintenance of standards of teaching, examination and research in tertiary institutions' (Tertiary Education Act, 1999). Overlap between the mandates of BOTA and TEC exist in the 'grey area' of higher level technical and vocational qualifications i.e. technician qualifications. 'Tertiary education' is not defined in the Act but in practice TEC regulates most programmes at Diploma level and above, including those with technical and vocational orientation.

3.2.2 Apprenticeship scheme

A review of the apprenticeship scheme in 1999 found that the system was proving inadequate for the huge task of providing education and training to school leavers. In 1997 only 10% of secondary school leavers had access to some form of TVET (rising to 12% in 2002, according to UNESCO) and the share of the apprenticeship scheme was still less than 2% of the total school leaver cohort in 2001 (UNESCO, 2002). The size of the industrial base in Botswana was found to be too small to support the apprenticeship model. Training in the VTCs was found to be too general and generic; too disconnected from the work of work; and characterized by outdated curricula and equipment, inflexibility and poor quality of staff. Furthermore there were other essential cultural differences between the German context (where TVET is a respected alternative to academic education) and the Botswana context (where TVET has been described as a 'last resort' for those who fail to get into academic programmes) which were impacting on the successful replication of the model in Botswana (ICON/MANSTRAT, 1999).

As part of the reforms the Vocational Training Centers were reconceived as Technical Colleges for the provision of pre-employment technical training in the form of the of the Botswana Technical Education Programme (BTEP, described below), as well as theoretical components of the National Trade Tests and National Craft Certificate. One of the reasons for broadening the mandate of the institutions was underutilization of the VTCs due to lack of uptake of apprenticeships. Curiously this identified underutilization seems to have existed in a context in which it is reported that the technical colleges ‘typically receive 100 applications for each training place’ (UNESCO, 2002). Underutilization appears to have existed concurrently with lack of access. Underutilization is still the case in 2010, as shown in Figure 12.

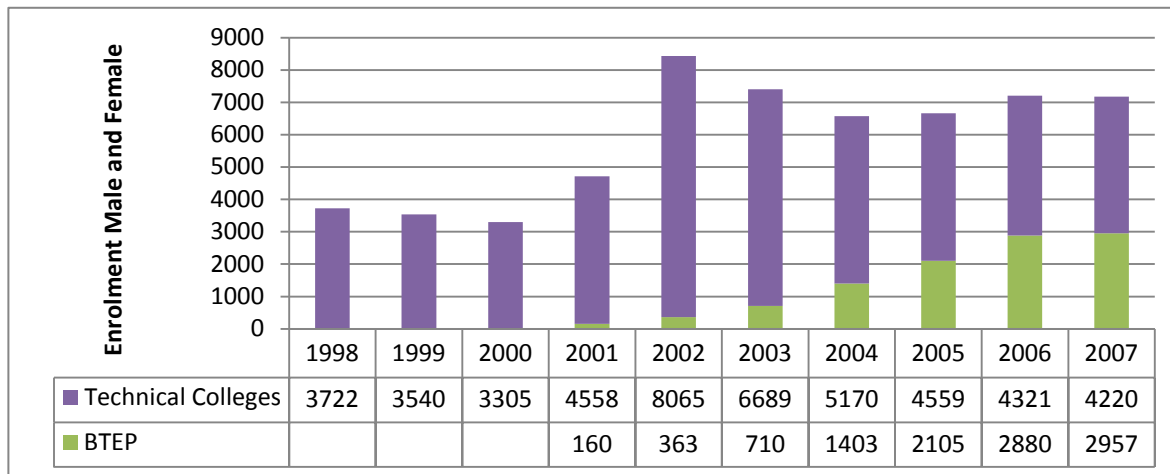
3.2.3 Botswana Technical Education Programme

The BTEP programme offered through the Department of Vocational Education and Training (DVET) commenced in 2001. The programme was developed with the assistance of the Scottish Qualifications Authority. The programme has four levels including Foundation, Intermediate, Advanced Certificate and Diploma, and it provides classroom based pre-employment training, with provision for work place attachment. Various reviews of TVET provision in Botswana have found considerable overlap between the courses offered through BTEP and the three tier system of trade tests and National Craft Certificate (e.g. Akoojee, 2005).

The structure of the BTEP allowed students to ‘graduate’ prior to practical industrial training, and so more students could potentially graduate in a shorter period than the 4 years required by the NCC apprenticeship programme. As a result of the introduction of the BTEP programme both enrolment rates and graduation rates increased. Incremental introduction of the programme has however been slow and Diploma level courses have yet to be introduced. Much of the training in the Technical Colleges and Brigades still followed the NCC and trade tests administered by MTTC. In fact, up to 2007, as shown in Figure 11, the majority of learners in the Government Technical Colleges were still following non-BTEP courses.

Total enrolment in post secondary education of all types has increased slowly but steadily until 2007, with a dramatic increase in that year and subsequent years as a result of Government decision to sponsor diploma students in private tertiary institutions. Enrolment in Technical Colleges showed a sudden decrease in 2007, due to student preference for the private colleges. BTEP students have since been added to those eligible for sponsorship, recently even including those enrolled for Foundation level.

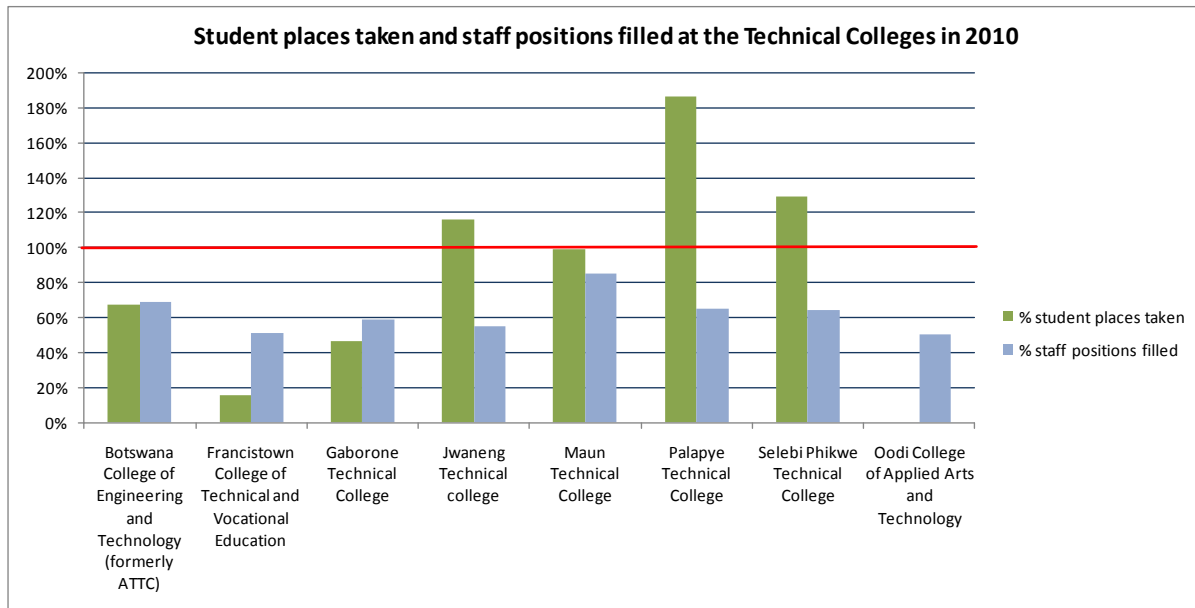
Figure 11 Enrolment in Technical Colleges 1998-2007



Source: DVET

In 2010, two closely related issues are impacting on the viability of the Technical Colleges. Four of the eight Colleges (including FCTVE and OCAAT) are operating well below capacity. Low numbers are widely understood to be a consequence of lack of staff. All colleges are considered to be understaffed, as shown in Figure 12, which is based on statistical information provided by DTVET in July 2010. No rationale for numbers of staff required was included. Based on actual staff and actual student numbers provided, staff student ratios vary from 1:3 in Francistown College and 1:20 in Palapye Technical College. This shows that even in a situation defined as 86% over capacity and 35% understaffed, the staff student ratio is not exceptionally high. Based on the figures provided for full capacity of students and staff, ratios would be 1:15 or below for all Colleges except OCAAT.

Figure 12: Utilization and staffing of the Technical colleges



	Students			Staff				Staff : Student ratio	
	Capacity	Actual intake	% student places taken	Actual Staff	Gap	Staff required	% staff positions filled	Actual Ratio	At Capacity ratio
Botswana College of Engineering and Technology	1500	1012	67%	108	49	157	69%	1:9	1:10
Francistown College of Technical and Vocational Education	1500	227	15%	68	65	133	51%	1:3	1:11
Gaborone Technical College	1500	701	47%	57	40	97	59%	1:12	1:15
Jwaneng Technical college	600	695	116%	59	49	108	55%	1:12	1:6
Maun Technical College	700	692	99%	57	10	67	85%	1:12	1:10
Palapye Technical College	500	933	187%	46	25	71	65%	1:20	1:7
Selebi Phikwe Technical College	650	838	129%	46	26	72	64%	1:18	1:9
Oodi College of Applied Arts and Technology	1500	0	0%	20	20	40	50%	-	1:38

Source: DTNET

3.2.4 Brigades

By 2001, when DVET commissioned a review of the Brigades, there were 41 Brigades in Botswana of which 39 were operational. The FAS review (McEnvoy, 2001) resulted in the recommendation that the Brigades should be discontinued in their current form, and instead pre employment training ('with Experience' rather than 'with Production') should be provided through Brigades becoming Technical Colleges under DVET. The report of the review found that the Brigades were poorly accommodated and equipped, with low staff morale and low public confidence.

By the beginning of the new millennium 80-90% of the Brigades costs were covered by government subsidy. The 'unresolved dichotomy' according to the FAS report on the Brigades (McEnvoy, 2001) was the tension between the reality of the Brigades' dependence on the government, and the attendant obligations of accountability for public funds; and their principles of community ownership and autonomy. The review also found that there is considerable duplication between what the Brigades are offering and what is offered through BTEP. Critics of the FAS report (McEnvoy 2001) felt that the option of reforming the Brigades, and providing increasing resources and support, was 'not reasonably considered', and the conclusion was biased by 'a long history of ideological tension between the MoE and the Brigades' (Akoojee, 2005).

The recommendation that DVET should take over the Brigades was endorsed by Cabinet in 2006, at which time 8039 students were enrolled in the Brigades. The original plan was to rationalize the Brigades into 25 Rural Technical Colleges, and to build six new Technical Colleges (CAB MEMO/166 SX10/5B - Brigades Rationalisation). The Brigades take-over has since gradually been implemented, with budgetary, organizational and human resources hurdles and re-thinking of decisions along the way.

3.2.5 MTTC and rapid skills development

The ICON/ MANSTAT review of the Apprenticeship scheme of 1999 made a number of recommendations which resonate with recommendations made in other areas of TVET, and are being followed up in current reform processes. MTTC is a training centre as well as a testing/ certification centre, and the review found this to be a conflict, since in effect teaching staff of the MTTC quality assure their own work. It was recommended that the testing/certification functions of MTTC should become an 'operational arm' of BOTA, and training in its current form should cease. A number of recommendations which inform current initiatives include recommendations for the development of functionally specialist centers (along the lines of ATTS, now renamed Botswana College of Engineering and Technology), starting with the development of a specialist college for construction trades at MTTC, incorporating CITF competency based courses. The current concept of rapid skills courses, focusing on 'the essential skills required to do the actual job', as opposed to 'long term, broad spectrum training' was initially proposed by ICON/ MANSTAT in 1999. Competency based training as recommended in 1999 is a current focus of BOTA.

More recently in 2010 there has been further discussion about the future of MTTC as part of an O&M review in the MoLHA, which builds on the 1999 recommendations but with key differences. The discussion includes the possible development of a Rapid Skills Development Centre to be located at the current site of MTTC and integrated with CITF. In the future the concept would be replicated to Regional Centers, which would include some revamped Brigades. The aim of Rapid Skills Development Centres would be to transfer specialist skills through short modular competency-based courses at all levels of education.

3.2.6 The BNVQF

Since 2002 BOTA has been developing the Botswana National Vocational Qualifications Framework (BNVQF) to rationalize existing provision of TVET. The scope of the sector to be harmonized under this initiative included qualifications offered through the Brigades and MTTC (Trade Certificates), through the Technical Colleges (Trade Certificates and BTEP), and through private providers (mostly City and Guilds and Pitman qualifications). The scope does not include technical and vocational qualifications above certificate level such as BTEP Diplomas, Diplomas in Engineering (offered at UB until 2009), Diplomas in Agriculture (BCA), or Associate Degrees (Limkokwing University from 2007).

In this decade BOTA has made excellent progress towards the achievement of the goal of 'providing an instrument of accountability'. However, in terms of its aim of rationalising and harmonizing existing provision BOTA has been less successful.

The BNVQF has three levels, corresponding in broad terms with the three levels of Trade Test Certification and the first three levels of the BTEP programme. The BNVQF Levels are:

- L1 Foundation Certificate
- L2 Intermediate Certificate
- L3 Certificate

By April 2010, 1421 unit standards and 111 qualifications had been developed and registered by 53 Standard Setting Task forces in 12 Fields of Learning. Uptake on the 111 National Qualifications BOTA has developed with industry stakeholders is minimal. Very few providers have sought accreditation for BNVQF qualifications and, of the approx 6000 registered learners, there are only a handful of records of unit standard achievements. The majority of TVET providers continue to offer BTEP and Trade qualifications, and programmes accredited overseas such as City and Guilds and Pitman. These non-BNVQF qualifications are approved by BOTA and BOTA registered providers are accredited to provide them.

The goal of promoting lifelong learning is unachievable in a sectoral framework which is not synchronized with a National Qualifications Framework, and commentators have noted that the BNVQF 'floats alone without clearly defined pathways' between general education, technical and vocational education and training and higher education (Tau, 2009).

3.2.7 The National Credit and Qualifications Framework

The Botswana NCQF is being developed within the context of the BNVQF and qualifications framework developments in the SADC region, and in particular within the context of the SADC Regional Qualifications Framework. Botswana has been involved in the slow but steady development of the SADC RQF concept since the SADC Technical Committee for Certification and Accreditation (TCCA) was first established after the signing of the SADC Education and Training Protocol in 1997. Botswana has

participated in a number of research and development activities commissioned by the TCCA including the *Report on Existing Qualifications in the SADC Region, 2001*; the *Conceptual Framework and Implementation Plan for the SADC RQF, 2005*; *Towards a Framework for the improvement of QA systems in Member States, 2007*; and most recently, *Information on Qualifications in the SADC Region and Discussion of a Mechanism and Criteria for Establishing Comparability and Equivalence of Qualification, 2009*.

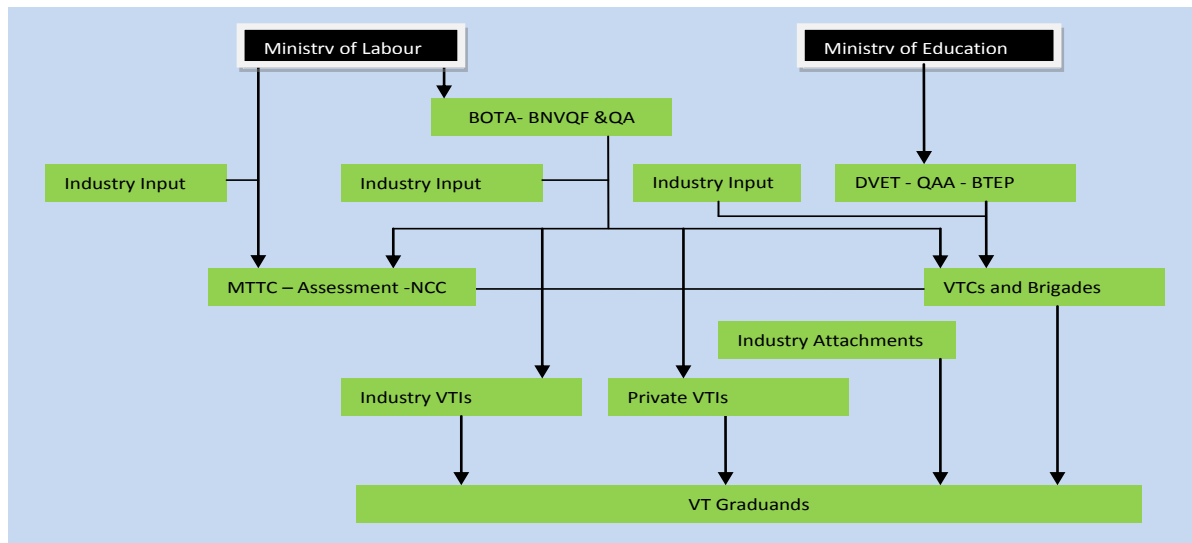
All the SADC member states have commenced the development of their NQFs. Some are still at an early conceptual stage of development; some have legislation and infrastructure in place; some, like Namibia and Mauritius, have operational NQFs; and South Africa is at the most advanced stage of reviewing and redesigning its framework and processes. Recent developments show clear convergence of thinking amongst SADC countries on key concepts such as regional quality standards, a regional information system, definition of 'a credit', and a ten level framework. Level descriptors for some of the ten levels and definitions of some qualification types are already agreed, and the way forward is clearly mapped out. The ten level system proposed for the SADC RQF embodies the common elements emerging in the developmental work of the Member States, and is also congruent with the ten level framework proposed for the Transnational Qualifications Framework for the Small States of the Commonwealth (including SADC countries Botswana, Namibia, Lesotho, Mauritius, Seychelles and Swaziland).

In Botswana, a series of steps over the last ten years have led to the current state of development of the NCQF. These steps include a review of TVET Qualifications in 2000, a Feasibility Study in 2003 and a Study to Establish the NQF in 2006. Recently, with the secondment in 2008 (and appointment in 2009) of an interim co-ordinator for the NCQF, the momentum has increased. At a series of recent meetings (Nov 2009-June 2010) of the NCQF Implementation Committee, the framework components originally proposed in 2006 have been reviewed and refined. Development has been influenced by membership of the TCCA and opportunities to participate in study tours (in February/March 2010) to the Namibian and Mauritian Qualification Authorities. Engagement with the SADC community has assisted the Implementation Committee to identify a number of issues of importance, such as the necessity for a clear mandate for the NCQF; stakeholder involvement in the process; the need for an incremental phasing in of the framework; decisions to be made about the prescriptiveness of regulations and standards; the need to train providers to implement the framework; simplification of the proposed credit (matrix) concept; rationale for pitching the ten levels; and recommendations for prioritising aspects of the development. It seems likely that the model for the NCQF will be closer to the models emerging in SADC countries, than the model originally proposed in 2006. In our view it is essential that the NCQF builds on the BNVQF, so that the national investment in the BNVQF is not wasted, but comes to fruition within the national framework.

The structure of Botswana skills development supply in this period is shown in Figure 13. Using our analysis model it is clear that this is still a considerably more complex mixture of the education approach and the employment approach. As can be seen all three major actors in vocational training were dealing with their own specific industry groups for the purpose of accessing demand-side labour market

information and analysis in order to enhance the relevance of skills development. Furthermore BOTA’s coordination role was complicated by the perceptions of stakeholders regarding the positions of MTTC and DVET. The involvement of two Ministries added a further complication.

Figure 13 Structure of VET Provision during the NAPVET era



3.3 The National Human Resource Development Strategy Era

Several developments occurred in the latter part of the decade that ushered in the current NHRDS era. The Public Enterprises Evaluation and Privatisation Agency (PEEPA) was commissioned in 2008 to undertake a study to determine whether parastatals could be merged to improve coordination and save resources. BOTA and TEC (as well as MTTC and CITF) were candidates for such a possible merger. At about the same time the TEC was completing a major study to produce the National Human Resource Development Strategy which also recommended the merging of BOTA and TEC and the relocation of vocational skills development to the Ministry of Education (renamed Ministry of Education and Skills Development). The overriding theme in this era is the need for further rationalisation and harmonization. A Human Resource Development Advisory Council has been formed and the implementation of the Strategy has started. Figure 14 is a schematic illustration of the reorganization of functions described in the NHRDS.

3.3.1 The National Human Resource Development Strategy

In 2009 Botswana adopted a National Human Resource Development Strategy through which the Vision 2016 goal ‘to provide an adequate supply of qualified, productive and competitive human resources’ is to be achieved. The NHRDS presents the current context of education and training as a complex and unconsolidated set of sub-systems which are insufficiently supported by system level information to be

able to identify and address the cause and effect relations which pertain across the parts of the whole. Lack of coherence, lack of policy breadth and diffusion of effort all impact on the successful implementation of strategic initiatives. In particular, the NHRDS points to a mismatch between the demand of the labour market and the supply of graduates. Evidence of this is the persistent high rate of unemployment (17.5%) in an environment characterised by an increasing supply of graduates.

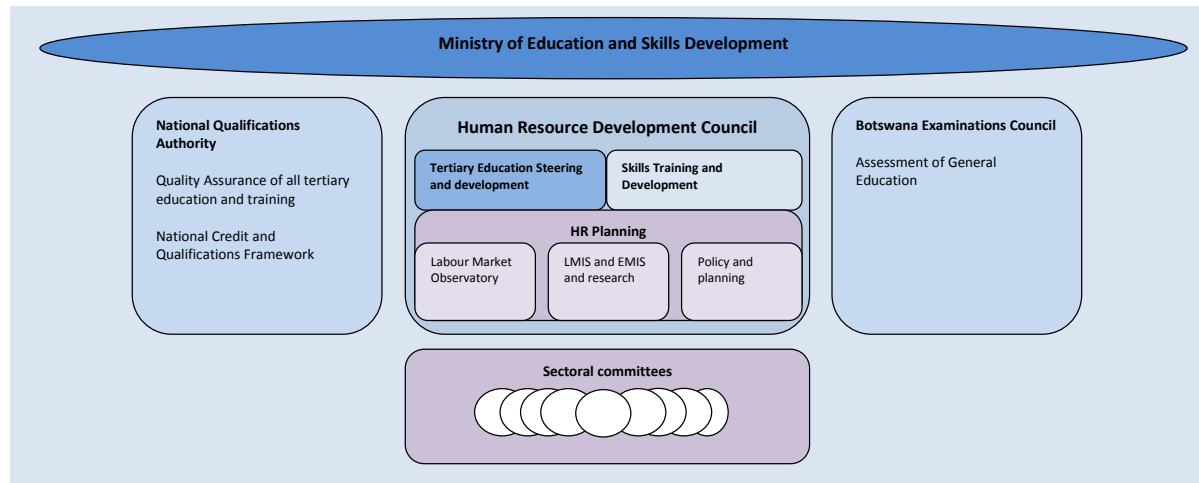
The Strategy articulates an overarching vision of an economy in which ‘the quality, productivity and motivation of its people will be Botswana’s single greatest and valuable resource’. This is to be achieved through enhancing the coherence and effectiveness of existing functions (e.g. those of TEC and BOTA); implementing a more systemic approach which refocuses efforts, creates synergies and builds on existing achievements and capacity.

The NHRDS defines tertiary education in Botswana as inclusive of all formal post secondary education. It describes a reformed education and training landscape in which the MoESD (now renamed to incorporate functions that were formerly under the Ministry of Labour and Home Affairs) is supported by three authorities with distinct mandates: the Human Resource Development Council (HRDC), with policy, planning, steering and development functions; the National Qualifications Authority as the regulatory body for all post-secondary education, with responsibility for the registration of providers, approval of courses and accreditation to deliver them; and the Botswana Examinations Council, for external assessment of General Education .

The reforms envisaged under the NHRDS have implications for the policy and legislation that govern the post secondary sector. The development of legislation to establish the NCQF has implications for the Tertiary Education Act (1999) and the Vocational Training Act (1998). The development of policy for quality assuring the NCQF has implications for the existing Tertiary Education Policy and the National Policy on Vocational Education and Training.

Under the HRDC labour market information will be provided by the Labour Market Observatory, supply side information will be provided by an integrated education information management system, and human resource planning will be informed by ten sectoral committees. Other functions of the HRDC will include steering and development of all post secondary education. The HRDS identifies the National Qualifications Authority as the body which manages the NCQF and quality assures of post secondary education and training. More recent proposals have offered variations on the proposal made in the HRDS, which is represented in Figure 14

Figure 14 Structure of Human Resource Development in the HRDC era



The envisaged supply structure falls within the definitions of the economic/integration development model. It is expected that this integrated approach to human resource development will not only increase the supply of qualified Batswana into the economy but will also ensure relevance of training through direct linkages with industry, as well as an efficient labour market information system that will cut across all functions in government and ensure a unified national approach.

3.4 Tracer studies

Table 14: Summary results of three tracer studies

	CITF (2009)	BTEP (2007)	BOTA (2005 & 2010)
Sample size	823	728	577
% employed in field of training	38.9	22.9	50.45
% employed in another field	4.2	9.8	
% self employed	2.7	2.6	
% unemployed	52.8	51.5	49.55
Main difficulty getting a job	<ul style="list-style-type: none"> No jobs Employers don't accept CITF Employers want work experience 	<ul style="list-style-type: none"> lack of jobs in their field of training salary too low Lack of practice, skills, attachment 	<ul style="list-style-type: none"> Limited employment opportunities in my area Takes too long to find one Lack of work experience

The discussion in this section draws on information provided in three tracer studies of technical and vocational education and training graduates: three studies commissioned by BOTA (2005 [2 studies] and 2010), a tracer studies of BTEP graduates (2007) and a study of CITF graduates(2009).

Areas of highest unemployment of graduates

The BTEP tracer study (2007) found the highest levels of unemployed graduates in the **Textile** industry (based on very small sample) and **Building and Construction** industry (62.75%). The BOTA tracer study (2010) lumps **Construction, Craft and Industry** into one category and confirms that this is the group of industries with highest rate of unemployment (56%). Both studies show that these industries are associated with low wages and high participation of migrant workers. The CITF tracer study found that 52.8% of construction training graduates were unemployed.

Electrical and Mechanical Engineering is another area of high unemployment of graduates which is identified separately in the BTEP report, but included in **Construction, Craft and Industry** in the BOTA study. The BTEP study found clear indications that employers seek more practical experience than these graduates have. Furthermore, a re-validation report (2003) on this BTEP qualification clearly showed that the Electrical and Mechanical Engineering programme content did not meet the needs of the Government's Central Transport Organisation or the Department of Electrical and Mechanical Services.

Business and **ICT** are areas of high unemployment of graduates signaled in both BTEP and BOTA tracer studies. In the BOTA study business is included in the group **Commercial, Clerical, Business and Public Administration**, and it is the second highest area of unemployment. The BTEP report indicates that in these areas employers are looking for higher level qualifications (i.e. Diplomas), and furthermore these areas, like Electrical and Mechanical Engineering, are subject to rapid technological change and reorganization of work, and labour market requirements change quickly.

Reasons given for unemployment

The BTEP study indicates that 12.8% of unemployed graduates give '**salary too low**' as the reason for their unemployment. The ILO (Siphambe, 2007) study on *Growth and Employment Dynamics in Botswana* discusses the high reservation wage (below which labour chooses not to participate) maintained in Botswana. One explanation for the high reservation wage is the family support system which enables people to survive long periods of unemployment while they seek work that is sufficiently well paid. The Botswana Tourism Board *Training Needs Analysis* (2009) describes a typical scenario in which graduates lack practical experience and so employers feel that new employees still need basic training, and are not prepared to remunerate at skilled rates. Graduates on the other hand feel that the basic training regime of the employer is demeaning and they resent the low wages. Altogether, including those that '**Did not apply**' (BTEP, 2010) nearly a quarter of BTEP graduates chose not to enter the workforce.

'Lack of practice, skills, attachment' is the reason for unemployment given by 18.1% in the BTEP study, corresponding with 20.76% of BOTA (2010) respondents who give '**lack of work experience**' as the reason for their unemployment. 20% of employers surveyed in the BOTA study on graduates of vocational training institutions in 2005 stated that graduates do not have relevant skills and/or lacked industry experience, and 33% felt that the training was not based on industry needs.

In the BTEP study 33.1% of graduates report a **'lack of jobs in their field of training'**. Similarly 32% of the BOTA (2010) study respondents stated that their unemployment is a result of 'limited employment opportunities in my area'.

Several studies of the labour market in Botswana comment on issues of motivation, productivity and work ethic of the local labour force. In this connection it is significant that BTEP researchers found that only a few employers are looking for specific qualifications when they hire staff. Half of the sample would take unqualified employees if they were 'willing to learn' and 'easily available'. Bennell and Siphambe (2005) also comment on employers' emphasis on experience over formal qualifications, especially when they can attract experienced production workers from neighbouring countries at low pay. Employers complain 'our workers know more about their rights than their duties' and they experience high levels of absenteeism.

3.5 Review of key educational issues relevant to fast tracking skills development

3.5.1 Generic skills

Key skills are defined as generic transferable skills that people can develop in a variety of situations (Kelly, 2001). Supporters of the concept of key skills claim that they are crucial to an individual's employability and thus to their standard of living, and that there are social benefits to be accrued from a well trained and adaptable workforce (Dearing, 1996). There is evidence that employers prefer employees who are multi-skilled and can carry out a range of functions and adapt to changing work circumstances. There is also evidence that a workforce which has been through more academically rigorous training programmes is more adaptable, more productive and needs less supervision and direct quality control than a workforce with less theoretical training (e.g. Prais, 1995). In the background report for the Botswana NPVET (Obok-Opok, 1997) it was 'found that all stakeholders, employers, the community and trainers agreed that training should be for 'social' purposes as well as the demands of the labour market. The social need ensures that skills go beyond the direct and real requirements of labour so that there is a skilled pool from which to draw for future needs' (Akoojee p21).

Critics of the concept of key skills argue that the so called key skills are not skills at all but attributes sought by employers; and furthermore that a skill is necessarily context dependent and the idea of a skill that can be transferred to any situation is an illusion (e.g. Hyland, 1997 and Breier 1998). If we take as examples some 'generic' skills such as critical thinking, problem solving or report writing we can see that there is merit in this criticism, since thinking, problem solving and report writing are meaningless outside a framework of knowledge, beliefs and values; in other words, thinking only has any recognizable value as a skill when it is 'about' something. For these critics the pursuit of transferable key skills is thought to be a wasteful and futile exercise.

In Botswana there has also been some criticism of key skills. While the essential merit of key or generic skills is not questioned, local players have questioned the amount and priority given to generic skills at the expense of the specific skills required of an artisan. For example, the 1999 review of the apprenticeship scheme found that a shortcoming of the system was 'lack of focused and specific and specialized training' to develop the skills really needed. The training being offered at the Vocational Training Centers was 'too general and generic', and not providing the specific practical skills that employers need. Local opinion on the value of investing in generic skills varies since, as discussed by Tau (2009) there is 'no evidence that those who acquire the skills are better able to use them to secure employment or reduce poverty' and feedback from BOCCIM (cited by Tau 2009) suggests that 'industry does not find generic skills crucial to economic development in the short term, although BOTA insists on them'.

Kano's 1984 model of customer service sheds light on the apparently contradictory demands of the employers. Kano's model describes three levels of requirement:

- Essential characteristics of service that must be there to meet the core basic requirements of the consumer. These are the requirements that the customer expects to be met and takes it for granted that they will be met e.g. power supply in a hotel
- Needs which are directly proportional to customer satisfaction i.e. the more they are met the better satisfied is the customer. These are the needs commonly stated by the customer e.g. comfortable bed and room service
- Delighters are things that the customer didn't know that they needed; they are the add-on extras that are exciting for the customer e.g. complementary fruit bowl and large flat screen TV.

Kano shows that nothing will please the customer if basic needs are not met. If there is no hot water in the hotel then the customer will not be satisfied, even if the fruit bowl is generous and the flat screen TV is huge. Although we call them 'generic' or basic skills, some of these skills might not be in the essential 'must be there' category for employers. The employer who hires an auto mechanic will only be pleased to find that the mechanic can operate a computer and interact well with customers if s/he can in fact fix cars. If not, no amount of IT literacy and customer service skills will offset the basic deficiency which makes the mechanic an unviable proposition for the employer.

In 2001, when the BTEP programme was set up in Botswana, six core or key skills were widely recognised in the UK. With key differences (especially the introduction of 'Entrepreneurship' as a key skill in Botswana) these UK key skills were adopted into the BTEP programmes. Another key difference is that while in UK three skills were mandatory, in BTEP all six key skills are included in all programmes regardless of vocational orientation. Standards for all these generic skills, and others, have been developed for the BNVQF. BNVQF qualifications also all include HIV/AIDS awareness standards. Key skills of the BTEP are:

- Communication skills
- Numeracy
- Information and communications technology
- Personal and interpersonal skills
- Entrepreneurship
- Problem solving

3.5.2 High skills/Low skills

There is a global convergence of thinking that a high skills strategy is imperative for higher productivity. The most productive economies are characterised by high qualification of the labour force. Low skills leads to lower quality (requiring more inspection) and less problem solving (requiring more supervision and technical support) so savings in cheap labour are offset by higher inspection and supervisor costs and a less competitive product (Finegold, 1991). A highly skilled workforce is more adaptable to change and shoulders more operational responsibility, leaving managers free for more strategic work. Thus a high skills/high value added workforce is more competitive in every way than low skills/low wage/low value added.

Many of the preconditions for developing a high skills workforce are met in the policies and strategies of the Government of Botswana. Policy areas which demonstrate strong commitment to development of high skills include:

- Promoting exports and international trade
- Supporting innovation and entrepreneurship and the growth of private enterprise
- Co-operation between competing businesses to create mutual market advantage
- Investing in good basic educational competence in science, language, maths and IT
- Establishing regulation and accountability for skills development in the workplace
- Generous scholarships for Botswana secondary school leavers

Even though the logic of high skills is compelling, and there is a policy framework in place which is conducive to high skills development, some players in the market might still choose to pursue low skills strategies for reasons which seem compelling to them:

- **Individuals** might rely on their current earnings and lack capital to invest in their education and training. For them the cost of education and training might appear to exceed the perceived future benefits, especially when unemployment is high.

- **Managers** might prefer a low skilled workforce which is no threat to their control, and besides, if they raise the skill level of employees then those skilled people might find it easy to get another job and so it will be a disruption and a waste of money. Sometimes the work is organised for low skills and the need for higher skills isn't recognised. Furthermore the performance of managers is often dependent on meeting short term financial targets, and any investment in education and training will depress short term financial gains
- **For the policy makers**, the cost of higher level training may be seen as greater than the benefits, especially if there are competing demands on a limited budget. Furthermore policy makers might prefer to let market forces prevail than to invest government funds in the expansion of state supported education and training.

Having the right policy instruments in place does not in itself cause high skills development. There are no simplistic linear relationships or quick fixes. The context for this study is characterised by a complex web of cause and effect relationships.

3.5.3 Duration of education and training

Duration of education and training is raised as an issue by some reviewers of education and training in Botswana, especially the perceived over-emphasis on 'long term, broad spectrum' and the need for 'specific market oriented short courses' (ICON/MANSTRAT, 1999). Recommendations of this report are coming to fruition in the current Rapids Skills Development concept. Respondents in this study have also commented on the low skill level of graduates of four year programmes and expressed support for shorter duration training which teaches people to 'do the job'.

In many ways duration is an irrelevant concept, since level of skill is essentially independent of duration of training. In the last 20 years there has been a shift in the focus of education and training systems from inputs to outcomes. What really matters is the learning achieved by the learner (the outcome), and not how much money was spent on resources or how much time learners spent in a formal education setting (the inputs). For this reason credit systems are somewhat controversial and not universally favored, particularly in the TVET sector. Nevertheless, in reality, much learning is achieved systematically over time in various types of learning environment, and one way of comparing learning achievement is the typical amount of time it takes for the learning outcomes to be achieved.

In terms of 'long term' or 'rapid' training, what really matters is the level of skill that the learner achieves and whether the graduates can be said to be 'qualified' to accomplish the tasks that are required for their destination occupation. Criticisms of 'rapid' skills expressed in interviews for this study, are really criticisms of low level training rather than short term training, since short term training can be at a very high level, and conversely a long programme does not necessarily result in high level skills.

3.5.4 Attachment/internship

One of the ubiquitous criticisms of training in Botswana, expressed in tracer studies, needs analyses, programme reviews and consultant reports is that graduates lack practical experience. This is despite a long history of multiple efforts to remedy this weakness. The Apprenticeship Scheme; ‘training with production’ in the Brigades; attachments in CITF and BTEP programmes; and the National Internship Programme (NIP) are all examples of efforts to ensure that graduates are ‘work ready’. The National Internship Programme, although it was initially established for degree graduates, is relevant to this project in two ways. Firstly it provides one of several examples of internship/attachment initiatives which seek to address the issue of lack of practical experience of graduates. Secondly the NIP is relevant because its scope has been expanded to include graduates of sub-degree programmes in skill areas deemed to be ‘critical’.

A number of problems include:

- Weak relationships between training providers and employers
- Small industry base: limited opportunity for attachments in relevant industries and geographical spread of employers.
- Lack of capacity in industry to supervise and mentor learners effectively
- Lack of clear learning outcomes to structure workplace experiences
- Importance of attachments is undermined if these are not credit bearing and compulsory
- Lack of supervision of attachments by training providers
- Lack of co-operation between government departments (NIP programme)

Some examples of ‘in-house’ alternatives to attachment are the training with production concept of the Brigades, the Limkokwing Entrepreneurship Accelerator Programme (LEAP) programme, and a similar project based ‘consultancy’ opportunity which is being trialed at Botho College.

3.5.5 Curriculum development

Curriculum development skills are clearly an area of weakness in Botswana. One of the given reasons for low uptake of BOTA registered unit standards is perceived difficulty in using Unit Standards to develop curricula and assessment instruments. Reviewers describe programmes which are not updated to keep up with the changing requirements of the modern workplace (e.g. McEnvoy, 2001). Some programme developments take years to come to fruition, for example competency based modules developed for MTTC several years ago are not yet being implemented. The planned introduction of BTEP Advanced Certificate and Diploma level programmes has been considerably delayed. Many programmes offered in Botswana are not local qualifications and TEC has noted that ‘localisation’ of curricula imported from other countries is generally poorly done. Low capacity for curriculum development may well be a factor in perceived low responsiveness to industry needs, and in perceived

oversupply in some areas where the same and similar training is offered year after year at multiple sites throughout the country.

Although BOTA has offered introductory training, this has not translated into actual curriculum development. BOTA does not currently provide expert support to institutions to incorporate unit standards into their curricula and design assessments to measure competence against the standards. TEC does not have the mandate to provide developmental support to institutions.

3.5.6 Lifelong learning

The concept of Lifelong Learning has developed over time and continues to evolve differently in different regions and communities (Preece, 2006). In the 60s and 70s the concept was popularised by UNESCO, as a way of promoting social development and economic growth by linking together the different stages of formal education, and non-formal and informal learning. Lifelong Learning is traditionally most closely associated with the Humanist school of thought, which emphasises the social, cultural and political development of individuals and society (Walters 1999).

The ideas of Lifelong Learning were taken up by OECD in the 70s and 80s with increased emphasis on economic growth and up-skilling the workforce. From the market perspective of the Human Capital School, investment in education yields economic returns through the development of the workforce and the competitive marketplace.

The term Lifelong Learning has been closely aligned with the concept of learning societies (Preece, 2006). Lifelong Learning is conceived as a mechanism through which we can achieve our collective notion of a learning society. In the 90s a series of studies on features of a learning society, show three basic models that can be related to the ideological stands of Lifelong Learning. These include:

- **Skills growth:** for a flexible, accredited, multi-skilled labour market and enhanced economic performance
- **Personal self fulfilment:** for individual developmental purposes
- **Social Learning:** for focus social cohesion and the common good

Regional policy documents show how responses to Lifelong Learning differ in emphasis between the North and the South. In the European Union, Lifelong Learning policy emphasises the skills growth/economic perspective. Interpretation of the concept of Lifelong learning in Southern Africa has not been limited to the UNESCO concept of promotion of social development and economic growth though access to seamless and flexible education systems. In Southern Africa the concept of democratic citizenship is at the forefront of Lifelong Learning policy.

Maruatona (2006), explains that poverty is not just a lack of material wealth, but also a condition of powerlessness, characterised by lack of ability to make free choices and act out of one's own

conscience. He describes how an uneven development agenda in post-colonial Africa has advantaged an elite group, and the traditions through which people came together to make collective decisions (such as *Kgotla*) have been ‘undermined by a political elite’.

Maruatona (2006) argues that a true democracy requires the active participation of all communities in democratic decision making. Democracy can be strengthened through a more inclusive approach to education, increased participation in formal, informal and non formal settings, and intentional development of knowledge and skills that enhance deliberative capacity, including critical thinking, constructive dialogue, active citizenship and social justice. Lifelong Learning for strengthening democracy includes a new pedagogy that inculcates a critical perspective. People need to be educated to become active, critical and responsible citizens in all settings where learning takes place, including formal education settings, community settings, workplaces, libraries, internet and homes.

Traditional ‘chalk and talk’ teaching methods do not encourage learners to be active participants in the learning process; to be enquiring, question assumptions, consider alternative points of view and ways of doing things. The identified failure of teachers to ‘integrate theory and practice’ is likely to be symptomatic of a limited view of the role of the teacher. ‘Covering the material’ is important, but facilitating the development of the skills for democratic citizenship is important too. If teachers are expected to develop critical thinking in their students they themselves need to be exposed in their teacher training to a whole new approach to education.

3.5.7 Relationship between industry and training providers

In the eighties in Botswana most learners were being prepared, at government expense, for roles in the civil service. Private industry was very small. In effect the Government, as the single major employer, fully subsidized both the public providers and the individual learners, and there was a seamless progression from training to employment, with clear expectations on both sides. A similar model exists today in the mining schools established by Debswana. Debswana subsidizes the training, provides practical experience during training, and hires graduates.

Debswana also indirectly sponsors training at the University of Botswana and Botswana College of Accounting through its subsidies to the institutions and practical placement opportunities (UB students only), albeit without any expectation of employment.

The current environment is characterized by rapid expansion of the tertiary education sector (more graduates), streamlining of government (fewer government jobs) and the growth of private industry. Although industries have participated in Standard Setting Taskforces no strong relationships exist between private sector employers and training providers. As a result employers have no incentive to offer attachments and, with limited knowledge of the training offered, they are often skeptical about adequacy of training and the quality of graduates. Unemployment of graduates is high, while at the same time thousands of work permits are issued to non-local workers each year.

3.5.8 Entrepreneurship training and support

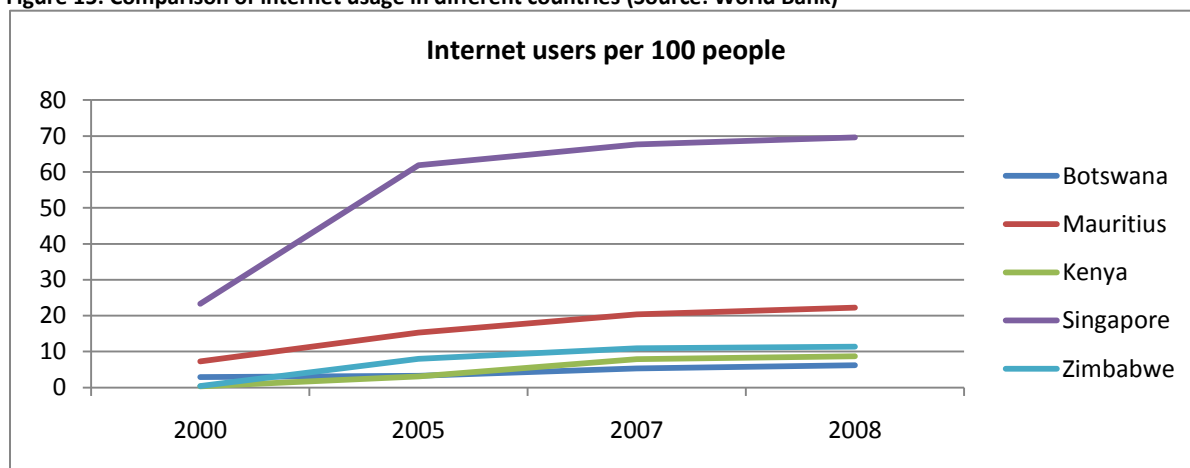
Immense effort has been channeled into preparing Batswana graduates to start their own businesses and create employment for themselves and others. This effort starts in the secondary curriculum with entrepreneurial outcomes integrated into the curriculum. It continues with entrepreneurial outcomes in the BTEP programme, business skills in the Trade Certificate programmes, and initiatives like the Limkokwing Entrepreneurship Accelerator Programme.

Over time a number of government initiatives to support entrepreneurial activity for the general population have included Financial Assistance Policy (FAP), which had been established in 1982 to promote business development, but was discontinued because it was found to be ‘too bureaucratic’ (Bennell and Siphambe) and not serving its intended purpose. The Citizen Entrepreneurial Development Agency (CEDA) and Local Enterprise Agency (LEA) replaced the FAP to promote business development and create employment through highly subsidized loans, training and mentoring. These agencies were established specifically to help skilled people to access the capital and advice they need to establish their own private companies. There were other special programmes focused on youth, and through NGOs government has stimulated entrepreneurship of women.

3.5.9 Lack of access to ICTs

Despite some liberalization of the market, wireless internet access remains prohibitively expensive, especially in relation to minimum and average wages, and computer ownership in Botswana is estimated to be low both in absolute terms and in relation to developed countries. As previously discussed, Analysys Mason concludes that ‘along with the closely related issue of internet access [] the level of computer access [is] a key stumbling block in Botswana’s aim to become a ‘digital country’. Figure 15 below shows that other African countries like Zimbabwe and Kenya had lower internet access in 2000 but have now exceeded Botswana. Singapore experienced massive growth in internet usage in 2000-2005 but usage now follows a growth pattern similar to the other countries.

Figure 15: Comparison of internet usage in different countries (Source: World Bank)



3.5.10 Funding of education and training

Public providers are fully subsidized by the government while private training providers do not receive any government funding, but rely entirely on fees. The government supports students studying at diploma level and above, (with some more recent exceptions in BTEP) at different rates, depending on the field of study. Skills considered to be critical are eligible for higher levels of government support. In 2007, when government decided to sponsor students in private colleges, enrolment in public colleges declined dramatically. Subsequently steps have been taken to limit the growth of private providers.

The construction industry and the tourism industry both collect levies which are to be reinvested in training. The Vocational Training Fund (VTF) is a non-specific levy-based source of funding, to which all VAT registered companies contribute. The purpose of the VTF is mainly to provide an incentive and support for employers to train their citizen employees by reimbursing them for the cost of training. The Training Fund can be accessed for training offered by accredited providers for training at levels 1-3 of the BNVQF, and more recently also for diploma programmes of a vocational nature. However it cannot be used for non-accredited courses, such as training provided by manufacturers on the use of their product, and it cannot be used for training offered by non-accredited trainers. Although there are more than 7000 levy payers, less than one thousand had claimed from the Training Fund by August 2010. Approximately 30 million pula had been disbursed, leaving more than 200 million still to be claimed. Information on the type of training funded through the system in its initial implementation period (as an indicator of skills needs) was not available within the timeframe of this study.

4. Methodology

We begin this section by reviewing the key terms *skill shortage* and a *skills gap*. Shah and Burke (2003) define a skill shortage or surplus as the difference between the demand for workers for a particular occupation and the supply of workers who are qualified, available and willing to work. If supply is greater than demand a surplus exists otherwise a shortage exists. A skills gap however occurs when employers are hiring workers whom they consider under-skilled or when their existing workforce is under-skilled relative to some desired level. A gap is thus difficult to measure quantitatively and relies on information from employers.

It is noteworthy that measured skills surpluses are not necessarily an indicator of success or an ideal situation, since employers may still find it difficult to find the skills they want in the face of such surpluses. Shah and Burke (2003) further define the concept of recruitment difficulties as “the situation when employers cannot fill vacancies in spite of an adequate supply of workers.” Some factors that may be responsible for this kind of situation occurring in an occupation are low pay, poor work conditions, poor image of the occupation in society, unconventional working hours or poor hiring practices by employers.

In order to be able to compare the supply and demand indicators successfully it was necessary to use a defined classification scheme for occupations and subject of training. The schemes we used are the current classification schemes used by the Central Statistics Office for Botswana. These classifications enabled us to disaggregate the data to the extent possible although the individual occupation descriptions are themselves still fairly general to the point of hiding the specific skill in some cases. However we had to balance the need to obtain more precise detail of an occupation and the limits of a survey exercise and we believe the balance we achieved is sufficient for our needs.

Some Indicators of skill imbalances

Vacancy rates: A skill shortage may be indicated where there are a large number of unfilled vacancies in an occupation (Shah and Burke 2003). This is particularly the case if the vacancies are hard to fill. We used the vacancy rate defined as a ratio of vacancies over the sum of employment and job vacancies.

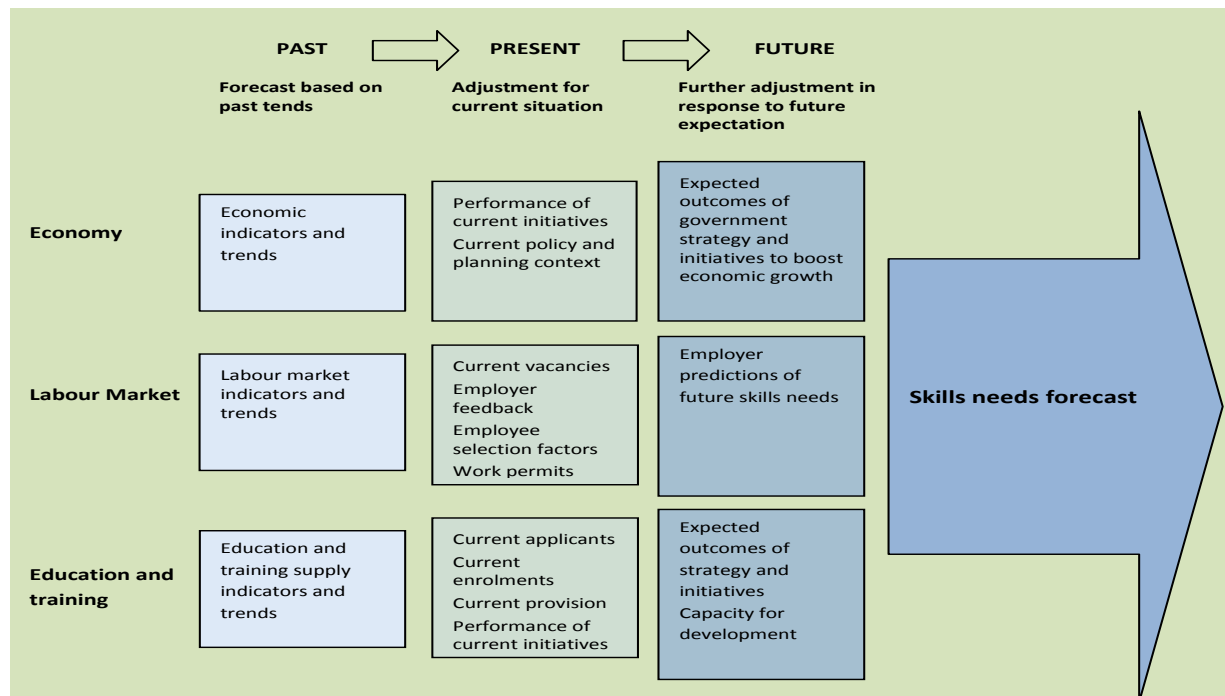
Unemployment rates : Unemployment rates in an occupation are another indicator of skill shortage (Shah and Burke 2003). A high unemployment rate can be an indicator of a surplus and a low one a shortage. This however is not always the case unless we know the normal or equilibrium unemployment rate for an occupation which is not always possible with data available.

Job Opportunity Index: According to Sparreboomm and Powell (2009) a job opportunity index gives an indication of how demand for skills is changing over time. Given the limited amount of data one can obtain from newspaper adverts the best way of comparing this demand is by using numbers of vacancies as a crude measure of demand. In order to see how the vacancies are changing over time the data gathered from newspapers over a 12 month period was analyzed using the standard deviation. A standard deviation is a measure of dispersion of data. Widely dispersed data (high standard deviation) implies a lack of normality with peaks and troughs that may signal sudden and out of character events whereas data with a tight or low standard deviation follows a more normal steady pattern that implies lack of distressful events that are out of the ordinary. Such a comparison helps us to better represent the characteristics of demand for a skill. Where vacancies were dramatically high in some months and flat in most others this indicated an unusual high demand. Conversely a skill that may have had the same magnitude of vacancies, but occurring in a uniform fashion over the year, showed normal recruiting cycles following normal attrition.

4.1 Approach to skills forecasting

As previously discussed, data about past performance were used to establish an indicative picture of imbalances between supply and demand, and a forecast based on projection of past trends. This was adjusted in response to current information about current plans and strategic initiatives, including how successfully these are being implemented right now. The implications of the current situation influence a final adjustment to reflect the likely impact of anticipated changes.

Figure 16: Approach to skills forecasting

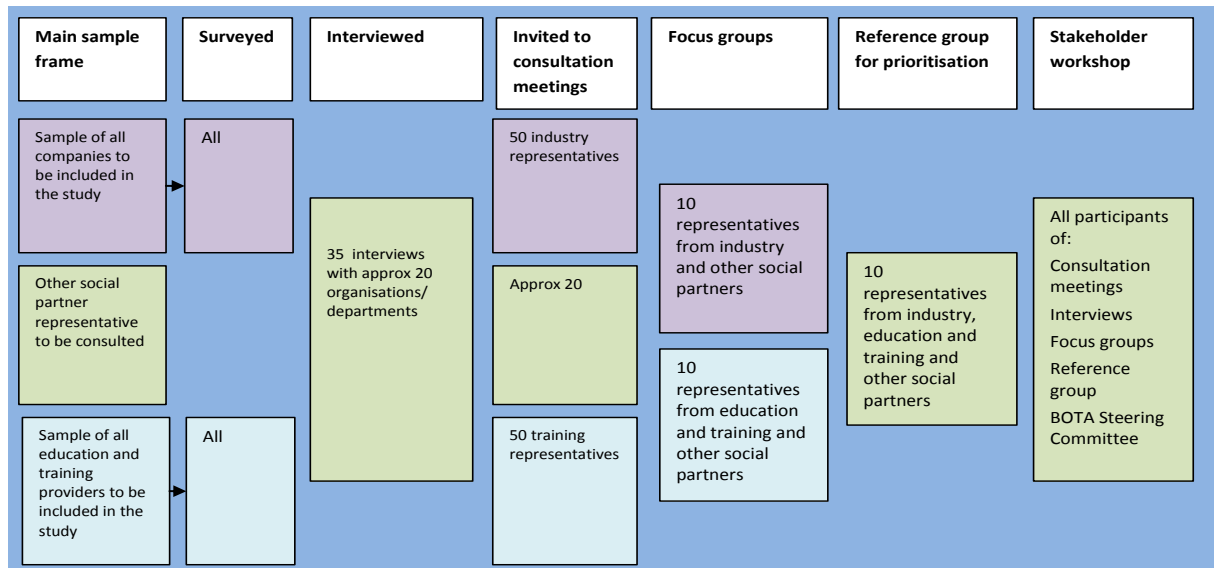


The project took as its starting point an econometric method to forecast information on future skill needs, using an industry occupation matrix and elasticities of output with respect to employment to develop projections based on expected economic growth rates by industry. Given the weaknesses inherent in the purely quantitative approach we made adjustments in consideration of the expected changes in labour market conditions and changes in the economy such as expected changes in growth rates due to new initiatives and mega projects.

4.2 Approach to consultation

Consultation included surveys of employers and education and training providers, interviews with key individuals, consultation meetings, focus groups, a reference group for prioritisation and a stakeholder workshop as shown in Figure 17. Consultation using these different methods was progressive, so that information obtained through one method was carried forward to the next. For example, the design of the focus group meeting was strongly influenced by the consultation meetings and interviews which had been conducted.

Figure 17: Approach to consultation



4.3 Approach to prioritisation

The forecasting method identified those skills that are in short supply right now, or forecast to be in short supply in the medium term. These skills were then prioritized to end up with a list of critical skills requiring fast tracking interventions by BOTA and the government.

This study used the Full Analytical Criteria Method to establish and apply the criteria for prioritizing the skills to be fast tracked. The methodology is based on Thomas S. Saaty’s Analytical Hierarchy Process and is one of the set of Seven Management and Planning Tools. The method is carried out in 5 steps that include the collaborative determination of criteria and weighting of the criteria through the consensus of expert opinion on what makes a skill critical. The five steps are:

- Step 1: Selecting the 5 criteria for deciding that a skill is critical from a pre selected list of 8
- Step 2: Selecting the 10 most critical skills from a preselected list of 15
- Step 3: Weighting the 5 criteria
- Step 4: Using the 5 criteria to rate the importance the 10 skills in relation to the other skills
- Final step: Automated calculation of the priority order of the ten skills

4.4 Overview of the data collected

	Data for forecasting and prioritizing key skills for fast track development			Data which influences the design of fast track strategies
	PAST	PRESENT	FUTURE	
Demand	Labour Force Surveys (LFS) 1995 and 2005	Profile of current job opportunities (JOI)	Projection data and timelines for mega projects and other major development initiatives i.e. CIC Energy, Innovation Hub, BPC Morupule B, Chamber of Mines, Ministry of Transport/Transport Hub (Kazungula Bridge; Trans Kgalagadi Railways), Strategy Implementation Office, ABCON, DBES	Interviews about mega projects and developments
	Household Income and Expenditure Surveys (HIES) 2002/3			
	Botswana Demographic Surveys (BDS) 2006	Current trends in issuance of work permits (CSO, 2009)	Interviews with: HRDAC LMO CIC Energy BPC DBES Chamber of Mines (1 interview) Ministry of Transport Ministry of Agriculture	Data on what influences employment decisions and employer satisfaction (SURVEY)
		Current skills needs of representative sample of employers (SURVEY)	Projected (to 2016) skills needs of representative sample of employers (SURVEY)	Data on how important generic skills are to employers (SURVEY)
		Current (2010 registered) Job Seekers by Occupation	Employer perceptions on business success factors (SURVEY)	Focus Group data on <i>What are the characteristics of a system that would encourage employers to participate in education and training to the benefit of Botswana?</i>
		Current 2010 economic data showing the impact of recent recession	NDP 10 Base Case Forecasts	
Supply	Labour Force Surveys (LFS) to 2005	Information on Internship and attachments	Interviews with: Director NIP BOTA DTVET MTTC TEC CITF Education Hub Limkokwing	Data on how important generic skills are in existing programmes (SURVEY)
	Graduate numbers from 1998 for NCC, Trade Tests and BTEP	Current enrolments (2010) in Brigades and Technical Colleges		Data on what education and training providers believe influences employment decisions (SURVEY)
	Student and staff numbers in private colleges in 2005 (BOTA Baseline Study)	Current 2010 enrolments and current graduates (SURVEY)	Projected student numbers of education and training providers (SURVEY)	Focus Group data on <i>What are the characteristics of education and training that will meet the social and economic needs of Botswana?</i>
	Graduate numbers for CITF 2000-2004	CITF current enrolments 2010 (SURVEY)	CITF current waiting lists	Uptake of BNVQF unit standards and qualifications
	Tracer study data: CITF 2006 BTEP 2007 BOTA 2005	Tracer study data: BOTA (2010)	Number of applicants vs. number of enrolments from the sample (SURVEY)	Reports on Rationalisation of the Technical Colleges 2010 Rationalisation of the Brigades 2005/6 and 2010 Plan to merge MTTC and CITF and create Rapid Skills Development Centre(s) 2010 Progress on HRDC 2010 Development of the NCQF

During the Data Gathering phase of the Consultancy, flexibility and creativity were needed to successfully overcome a number of obstacles. This account of data collected outlines some of the difficulties facing researchers in Botswana. These issues are reported because accounting for

approaches that didn't work well, as well as those that ultimately worked, may be helpful to future research projects.

4.5 Method of collecting economic and labour market data

The first point to recognize when forecasting skills in any economy is that labour demand is derived demand; derived from the output that is produced by labour. A necessary starting point for that forecast is therefore to forecast the change in output over the period. Secondly, there is need to establish the relationship between output and employment over time. The methodology usually used is an econometric method where labour demand is regressed against output, wages and price of capital. The simplest functional approach is a log-linear function, which allows for the coefficients of labour demand with respect to output to be elasticities. Past studies using this approach have yielded results that are not robust due to data paucity and therefore this approach is not taken.

We instead take a simple approach to estimating elasticities, which has been found to yield better results in the past.

- The first step in doing so is to look at the formal sector employment statistics and estimate the rates of growth by sector.
- The second step involves looking at the National Accounts and estimate GDP growth by sector. Employment growth, GDP growth are then used to calculate employment elasticities.
- The third step involves looking at projections for output growth for the next five years, 2010 to 2016 which is based on the Base Case for NDP 10.

Assuming employment elasticities do not change for the next five years, labour demand is then projected based on expected growth of output and calculated employment elasticities.

4.6 Method of collecting education and training supply data

Data on supply consisted of data on 'stock' of skills in the labour force; from the labour force survey; from graduate information from Technical Colleges and MTTC; and from estimates of private provider graduates based on BOTA Baseline study. To this we added current information about enrolments in different types of institution, based on actual numbers provided for some types of institution and estimated numbers based on our survey sample. These data enabled us to calculate a growth rate and project numbers of skilled graduates to 2016.

4.7 Method of collecting Job Opportunity Index Data

4.7.1 Design of the data collection instrument

The instrument of the Job Opportunity Index Survey aimed to measure demand for specific skills over a 12 month period. The number of vacancies in national newspapers over the period was the proxy for demand. The key measurement variables included the type of skill, the industry, number of personnel required and the qualifications required. The instrument also captured the location of the skill required.

A data capture application was developed in SurveyMonkey software and pilot tested on 10 newspaper editions. The questionnaire was slightly adjusted to take into account a few things learnt from the test. Other enhancements included adding the page number where the advert was found to enable the dataset to be verifiable after the study.

4.7.2 Method of JOI data collection

Two research assistants were trained in data capturing. They carried out the data capture exercise over a period of 7 days. The Information Resource Centre at BOTA was used as well as the National Archives Library. Coding into standard classifications was carried out according the table below:

Variable	Recoded into
Nature of Business	Botswana Standard Industrial Classification
Name of Occupation	International Standard Classification of Occupations
Name of Qualification	Botswana Classification of Subject of Training

4.7.3 JOI data collected

Response rate

The target sample for the Job Opportunity Index had been calculated as 75 newspapers. The actual number of newspapers sampled was 106, representing a response rate of 141%. The Job Opportunity Index is however not like a typical population survey, but a desktop survey based on information that is already stored and available so the significance of the response rate should be seen in this context. The newspapers were all available and the research assistants worked to the planned productivity levels.

Table 15: Number of Newspapers Sampled

Newspaper	2009							2010						Total
	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	
SUN		1	2	0	0	1	0	1	1	1	1	1	1	10
DAILY NEWS		3	4	1	1	1	1	0	2	0	0	1	2	16
ECHO		1	0	0	1	2	1	0	0	0	0	0	2	7
GAZETTE		0	1	1	0	1	1	1	1	1	1	1	1	10
GUARDIAN		3	1	0	2	1	1	1	2	2	1	1	0	15
MMEGI	1	8	2	3	2	1	2	1	0	2	0	1	1	24
SUNDAY STANDARD		1	1	2	1	1	1	1	1	1	1	1	1	13
THE VOICE		0	0	1	1	2	1	1	1	1	1	1	1	11
Total	1	17	11	8	8	10	8	6	8	8	5	7	0	106

The actual sampled newspapers yielded 480 adverts for occupations of relevance to this study. The distribution of the adverts is shown in Table 16 below.

Table 16: Number of adverts captured

Newspaper	2009							2010						Total
	Jun	Jul	Au	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	
SUN		9	10			7		9	4	4	2	3	18	66
DAILY NEWS		16	7	6	3	5	3		8			2	4	54
ECHO		1			4	2	3						3	13
GAZETTE			2	2		1	2	14	4	5	2	20	2	54
GUARDIAN		11	8		3	5	7	26	4	3	1	3		71
MMEGI	1	20	10	24	13	14	7	4		16		8	7	124
SUNDAY STANDARD		5	2	9	7	6	4	3	7	6	6	7	7	69
THE VOICE				2	3	11	1	1	2	1	2	3	3	29
Total	1	62	39	43	33	51	27	57	29	35	13	46	44	480

4.8 Method of collecting survey data

Two surveys were carried out to gather information that would measure the demand and the supply of skills, in order to enrich our understanding of the skills mismatch, or shortage in the country. The Employers' Survey was designed to measure the demand for vocational skills, while the Education and Training Providers' Survey would largely measure the supply of skills in the economy. Planning of the survey questions is shown in Appendix 2.

4.8.1 Main Sample frame

Employers Survey

The starting list for drawing of sample for the Employers Survey was the list of levy payers from the BOTA Vocational Training Fund database system from January 2010. At that point in time there were 7,962 enterprises registered in the levy database. A minimum returned sample size of 215 was calculated, which was targeting a response rate of 85%.

Education and Training Providers Survey

The starting list for drawing the sample for the Education and Training Providers' Survey was the list of all BOTA accredited institutions submitted to the research team by BOTA in June 2010. This list contained 159 institutions. A sample size of 59 was calculated for this survey.

4.8.2 Design of the Survey instruments

The key measurement variables for the Employers' Survey, which would capture the demand for skills, were: the type of occupations, numbers of currently employed persons in the occupation, number of vacancies in the occupation, number of future employees in the occupation and the scale of difficulty in hiring people for the occupation.

The key measurement variables for the Training Providers' Survey instrument, which would capture the supply of skills, were: the types of courses/modules being delivered, the numbers of enrollees in the course, the number of applicants for the course, the proportion of applicants accepted, the number of graduates for the course; and the estimate of future applicants.

A data entry application was created for each of the two surveys using the online software SurveyMonkey. The online data collection instrument served several purposes at once. Overall it would capture all data whether collected electronically or paper-based i.e. it could also be used by respondents to directly enter their responses to the questionnaires online.

Our estimation of the sample sizes was robust and based on statistical concepts. There was no need to prove the sample, which obviated any need to pilot the questionnaires extensively. We did however adjust a few of the questions to increase precision and improve layout after initial test responses were received.

The complexity of the measurement tools however meant that layout was quite the issue. The original layout had variables as rows and responses as columns. This presented a compact layout which utilised the paper more effectively to create a short, visually pleasing questionnaire. The layout however proved complex and difficult for respondents to cope with; there were a lot of reversals and excuses once potential respondents looked at the questionnaires. When we changed layout to a matrix, where the variables were columns and the responses were rows, the questionnaire looked visually shorter and less

complex and thus this version of the questionnaire looked as if it could garner more responses than the original layout. Both these layouts were administered throughout the data gathering period.

4.8.3 Method of survey data collection

The strategies for administering the surveys included the following techniques and methods.

An electronic survey link was sent out to some respondents with an email address.

This method was a trial, which resulted in no full questionnaires being completed online. There are various reasons for this. It has been found that since online questionnaires were introduced in 1985 with the advent of the internet, response rates from online surveys have been declining every year. Several reasons have been advanced for this, including fatigue with the number of survey requests respondents received, as well as a reflexive fear of divulging company information to a faceless questionnaire in a machine. The use of the internet in Botswana is still very much peripheral to the conduct of business and many managers do not yet take email correspondence as seriously as paper based correspondence. These factors, among others, explain the poor response to the online survey.

Survey questionnaires were administered at two Consultation Meetings in Gaborone

The administration of the questionnaires at the two Consultation Meetings in Gaborone was set back by the low attendance, as well as the fact that many of the respondents were reluctant to complete the questionnaire at the meetings, although they had been advised to bring the necessary information with them, and took it back to their offices. Subsequently the questionnaires had to be chased up and several of the respondents completed the questionnaire only after more than 2 or 3 reminders by enumerators.

Survey questionnaires were administered in Maun and Francistown through visits to enterprises and institutions

The administration of questionnaires in Maun was carried out over a period of 2 days by a consultant. The response was quite good

The administration of questionnaires in Francistown was carried out by one enumerator over a 4 day period. The response was characterised by reluctance, impatience with the enumerator and in some cases outright refusal to participate in the study by both employers and training institutions. There was quite a palpable air of hostility to the BOTA study, which was expressed as unhappiness with being constantly canvassed for information and some underlying anger with one or other issues concerning the respondents' relationship with BOTA. Some training institutions seemed to be unhappy about issues relating to their accreditation, while some employers seemed unhappy with issues relating to the Vocational Training Levy. Several of these respondents simply refused to participate in the survey.

Survey questionnaires were administered at meetings to which the consultants were invited

The administration of the questionnaire to a meeting of Association of Botswana Building and Civil Engineering Contractors (ABCON) was also not as successful as could have been expected, as many did not have the data at their finger tips and took the questionnaire away. Many of these participants eventually completed the questionnaires, but only after numerous reminders and visits by enumerators.

A handful of responses resulted from addressing a meeting of Principals of Technical Colleges and Brigades held in Palapye. Given the number of Principals who attended the meeting the response was quite disappointing. It was evident that many did not attach much importance to surveys. Some who took the questionnaire to complete could not thereafter make time available to complete the questionnaire.

Survey questionnaires administered through an email shot from the Botswana Confederation of Commerce Industry and Manpower (BOCCIM).

The mail shot was to 725 members of BOCCIM. Attached to the mail was a revised questionnaire with core measurement variables for completion and faxing back. These questionnaires had a different layout and were less intimidating to the respondents. A good number of responses were acquired this way although the mail shot was to all intents and purposes not an unmitigated success.

Survey questionnaires were administered in Gaborone, Tlokweng, Mogoditshane and Mochudi to employers and institutions by a team of 6 enumerators.

The administration of the questionnaire in the Gaborone area was the most intensive. All together enumerators worked through lists of over 1300 companies and institutions. They made over 460 phone calls and over 250 appointments. About 90 appointments were cancelled by the companies and institutions at the last minute. In these cases the enumerators were refused an interview even though an appointment had been agreed. Some appointments were not successful because the companies subsequently refused to complete the questionnaire with the enumerator and kept the form to complete later.

4.8.4 Survey data collected

Employer Survey responses

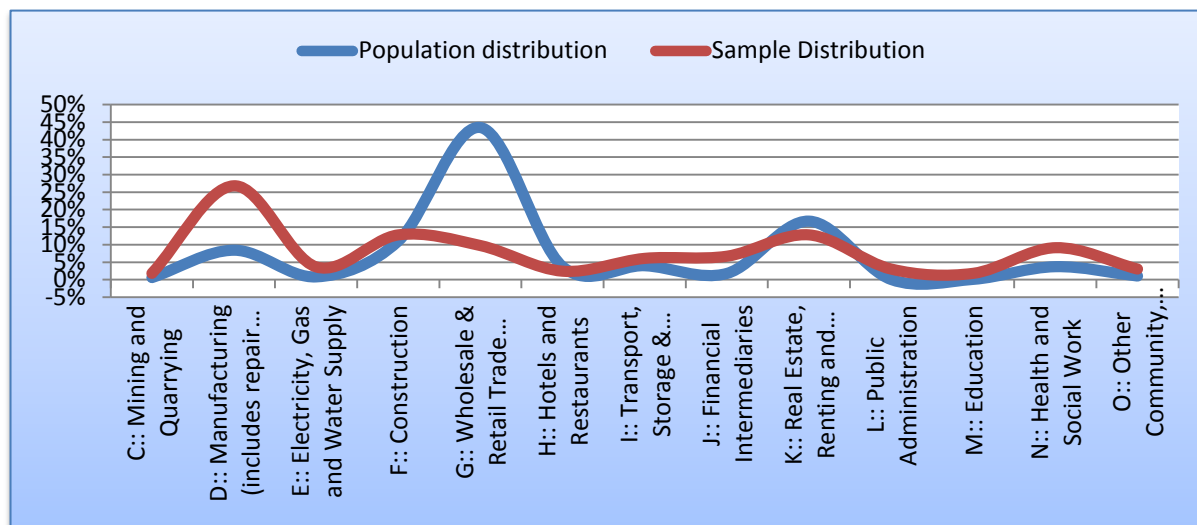
The administration of the Employer's Survey resulted in 166 responses (as shown in Table 17), which is a 77% response rate on our target sample. The returned sample distribution follows that of the population fairly well, as shown in Figure 18. Exceptions are Manufacturing and Wholesale and Retail sectors. There was over-sampling of the Manufacturing sector (more organised and homogeneous; good response to surveys thus not surprising). There was under-sampling of Wholesale and Retail sector (most un-homogeneous and fractious sector; response to formal surveys is typically below

average). The actual numbers returned are however big enough in relation to the sample to give a good indication of trends in these two sectors.

Table 17: Responses to the Employer Survey

INDUSTRY TYPE	Population	Population distribution	Returned Sample	Sample Distribution
C:: Mining and Quarrying	38	1%	3	2%
D:: Manufacturing (includes repair of machinery & equipment)	552	8%	44	27%
E:: Electricity, Gas and Water Supply	51	1%	6	4%
F:: Construction	725	11%	21	13%
G:: Wholesale & Retail Trade (includes repair of Motor Vehicles & Personal Household Goods)	2856	43%	18	11%
H:: Hotels and Restaurants	243	4%	4	2%
I:: Transport, Storage & Communications	260	4%	10	6%
J:: Financial Intermediaries	115	2%	11	7%
K:: Real Estate, Renting and Business Activities	1098	17%	21	13%
L:: Public Administration	2	0%	5	3%
M:: Education	4	0%	3	2%
N:: Health and Social Work	242	4%	15	9%
O:: Other Community, social and Personal Service Activities	67	1%	5	3%
Grand Total	6570	100%	166	100%

Figure 18 Distribution of Employer respondents



Employers Survey data entry and data cleaning

The 166 questionnaires collected were entered into the analysis application by 4 research assistants. Coding of the responses included classifying all variables into standard industrial classifications as follows:

Variable	Re-coded into
Nature of Business	Botswana Standard Industrial Classification
Name of Occupation	International Standard Classification of Occupations
Name of Course/Module	Botswana Classification of Subject of Training

Sampling weights

Weights were calculated for the returned sample in order to estimate the results for the entire population of enterprises. Table 18 below shows the weights obtained and these were applied accordingly to generate data for all enterprises in the country.

Table 18: Employer Sample weights

INDUSTRY TYPE	Population	Population distribution	Returned Sample	Sample Distribution	Weight	Correction factor	Column2
C:: Mining and Quarrying	38	1%	3	2%	12.7		12.7
D:: Manufacturing (includes repair of machinery & equipment)	552	8%	44	27%	12.5		12.5
E:: Electricity, Gas and Water Supply	51	1%	6	4%	8.5		8.5
F:: Construction	725	11%	21	13%	34.5		34.5
G:: Wholesale & Retail Trade (includes repair of Motor Vehicles & Personal Household Goods)	2856	43%	18	11%	158.7		158.7
H:: Hotels and Restaurants	243	4%	4	2%	60.8		60.8
I:: Transport, Storage & Communications	260	4%	10	6%	26.0		26.0
J:: Financial Intermediaries	115	2%	11	7%	10.5		10.5
K:: Real Estate, Renting and Business Activities	1098	17%	21	13%	52.3		52.3
L:: Public Administration	2	0%	5	3%	0.4	37.5	15
M:: Education	4	0%	3	2%	1.3		19.2
N:: Health and Social Work	242	4%	15	9%	16.1		16.1
O:: Other Community, social and Personal Service Activities	67	1%	5	3%	13.4		13.4
Grand Total	6570	100%	166	100%	39.6		

The following issues regarding treatment of the data are worthy of note:

1. Correction for government sector assumes there are 75 departments. With a returned sample of 5 the weight should be 15, giving us a correction factor of 37.5.

2. Many respondents did not give estimates of their 2016 predicted employment. This has not been corrected for and the estimate is thus only indicative. For example the low figure for construction labourers in 2016 is probably unrealistic, but does show the concern among employers that this sector will decline in the next five years as the government's building projects come to an end.
3. Estimated data on some occupations is too low and unrealistic, but the research team did not have the disaggregated population data by occupation that would enable us to correct for this. The data does however give a strong indication of relative employment between the sectors and the occupations.

Training Providers Survey Responses

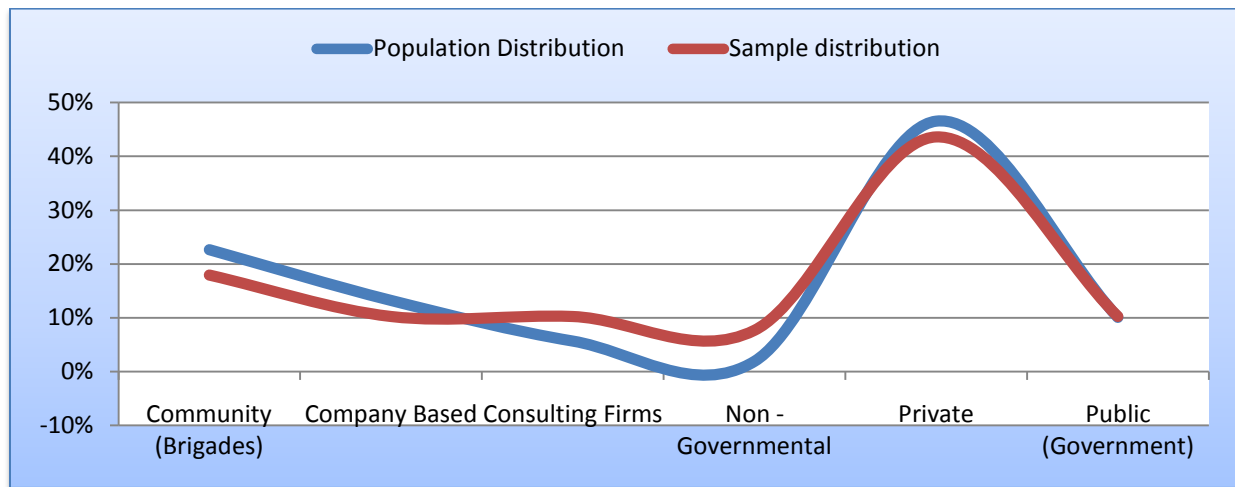
The administration of the Training Providers' Survey resulted in 39 responses, which is a 66% response rate on our target sample. The returned sample distribution follows the pattern of the population distribution well, within good margins of error as shown in the Table 19 and Figure 19 below.

Table 19: Responses to the Education and Training survey

Training Institute Type	Population	Population Distribution	Returned Sample	Sample distribution
Community (Brigades)	36	23%	7	18%
Company Based	21	13%	4	10%
Consulting Firms	9	6%	4	10%
Non - Governmental	3	2%	3	8%
Private	74	47%	17	44%
Public (Government)	16	10%	4	10%
TOTAL	159	100%	39	100%

This returned sample is a good representation of the population and could be used to give strong indications of the population's experience.

Figure 19: Distribution of Education and Training provider respondents



The 39 questionnaires were entered into the analysis application by 4 research assistants. Coding included classifying all variables into standard industrial classifications as follows:

Variable	Recoded into
Type of institution	BOTA classification of institutions by type
Name of Course/Module	Botswana Classification of Subject of Training

Table 20: Trainer Sample Weights

Training Institute Type	Population	Population Distribution	Returned Sample	Sample distribution	Weight	Correction factor	Adjusted weights
Community (Brigades)	36	23%	7	18%	5.14	0.75	3.86
Company Based	21	13%	4	10%	5.25	0.75	3.94
Consulting Firms	9	6%	4	10%	2.25	1	2.25
Non - Governmental	3	2%	3	8%	1.00	1	1.00
Private	74	47%	17	44%	4.35	0.7	2.90
Public (Government)	16	10%	4	10%	4.00	0.7	2.67
TOTAL	159	100%	39	100%	4.08		0

The estimation process uses the sampling weight of a unit, which indicates the number of units in the population (including the sampling weight) that are represented by this sampled unit. The sampling weight is the inverse of the unit's probability of selection which is defined by the following formula:

$$\text{Sample Weight} = \frac{1}{s/p}$$

- where S = number in the sample and P = number in the population

Correction factors were necessary for the public and private sector which had a preponderance of bigger institutions. About 2/3 of the private and public institutions in the sample were large and about 1/4 of the community and company based institutes were large. Therefore correction factors of 0.7 and 0.75 were applied respectively. Sample weights were then applied to the results to get estimates of the total numbers per type of institution.

4.9 Method of collecting consultation data

4.9.1 Consultation meetings

A series of six Consultation Meetings was scheduled in Maun, Francistown and Gaborone, for employers and training organisations respectively. The Meetings were planned with a dual purpose: a) consulting participants on factors contributing to or limiting relevant skills development, and b) getting data from participants through completed questionnaires.

Invitation strategy and attendance issues

Initially invitations to the Consultation Meetings were sent by email as planned. Emailing proved quite unsuccessful, as two thirds of the emails were returned undeliverable. Those returned were either no longer in use or out of order. Subsequently fax numbers were obtained for companies and institutions with dysfunctional emails and 99 faxes were sent.

Table 21: Record of Consultation Meeting invitation outcomes

		Number of invitations sent by email	Number of undelivered emails	Number of invitations faxed	Number of confirmations	Number attended
GABORONE	Employers	75	60	10	5	5
	Trainers	33	20	22	4	7
MAUN	Employers	51	32	21	2	Cancelled
	Trainers	9	7	12	3	Cancelled
FRANCISTOWN	Employers	62	33	20	2	Cancelled
	Trainers	10	8	14	1	Cancelled
TOTAL		240	160	99	17	13

A number of the sampled invitees could not be reached by phone or fax, for the following reasons: the contact details were wrong; telephone and/or fax were out of order; the company/ organisation no longer existed; the responsible person was not available.

The Gaborone Consultation Meetings went ahead as scheduled, with a relatively small number of confirmations received before the Meetings. Some of those who had confirmed did not attend, while

others attended without having confirmed. Only five people attended the Employers Meeting and seven people attended the Education and Training Meeting.

The invitations for Consultation Meetings in Maun and Francistown yielded a similar low confirmation response as the Gaborone Meetings. As a consequence we decided to cancel the scheduled Meetings and mitigate against the impact of this change in plans. Mitigation strategies for this cancellation are described below.

Consultation Meeting data collected

The participants in the Consultation Meeting for Employers, held in Maharaja Conference Centre in Gaborone on 27 July discussed the following questions:

- What are the factors limiting your ability to get the skills you need to succeed in your business?
(Limiting factors)
- What are the factors contributing to getting the skills you need to succeed in your business?
(Accelerating factors)

The participants of the Meeting for Education and Training providers held on the same discussed the following questions:

- What are the issues contributing to skills shortages **(Limiting factors)**
- What are the factors contributing to skills development **(Accelerating factors)**

In plenary sessions the responses of the individual participants were arranged under headings and further discussed. Examples of issues were added to draw out more qualitative insights. This stimulated animated discussion and a number of problem statements and possible solutions to these problems were articulated. The data thus obtained provided a foundation of qualitative data to be augmented by comments in the Surveys and Focus Group data.

To a great extent employers and trainers raised similar issues from their different perspectives, such as: relevance of training; issues on supply and demand; registration of trainers; training levy/financing of training; and issues concerning policy and the legislative and regulatory framework.

Contingency for low attendance at consultation meetings

As previously mentioned two opportunities to 'piggy back' on meetings that had already been organized were realised. These enabled the team to make presentations and administer the questionnaire to the Association of Building and Civil Engineering Contractors (ABCON) and the Principals of Technical Colleges and government owned Brigades, which enabled one of the consultants to interact for purposes of data gathering with a large number of public TVET institutions.

The Consultation Meetings for employers and training organisations in Maun and Francistown were replaced by several days of survey administration and interviews in the two centres. The interest of employers in the tourism and hospitality industry in skills development (i.e. through standards setting processes for structured competency based on-the-job training) was very obvious, and their cooperation with the survey was equally positive.

4.9.2 Interviews

Thirty five interviews were held with relevant government departments, companies and organisations to obtain qualitative and quantitative data, including primary and secondary data on supply and demand, as well as government national development goals and priorities, related research and consultancies indicative of policy trends. Appendix 3 provides a list of people interviewed.

4.9.3 Focus Groups

Two Focus Group meetings were held on 11 August 2010. Key sector representatives were selected based on appropriate role in the sector of importance and existing professional networks with specific individuals. Each invitee was contacted by phone, followed up with a customized email, to which the letter of invitation was attached. The representative spread of the invited guests is show below.

Employers/Social Partners		Education and Training Providers/Social Partners	
BOCCIM	Debswana	BTEP	Boitekanelo Training Institute
BOTA	Botswana Chamber of Mines	BOTA	MTTC
BPC	BTC	Limkokwing	BA ISAGO
Botswana Tourism Board	LOBATSE CLAY WORKS	BOCODOL	BOTHO College
DBES	Diamond Beneficiation	CITF	TAWU
BANKING	BFTU	MOESD	

Focus Groups are used to provide deeper insight into, and interpretation of, quantitative and qualitative data which have been gathered by other means. A Focus Group meeting is short and intensive semi structured discussion with a representative group of up to ten people; focused on a specific well defined topic; and developed through a set of open questions. Focus Group meetings are recorded, transcribed and analysed.

Design of the Focus Group meetings

Employers	Education and Training providers
MAIN TOPIC: What are the characteristics of a system that would encourage employers to participate in education and training to the benefit of Botswana?	MAIN TOPIC: What are the characteristics of education and training that will meet the social and economic needs of Botswana?
1. What are the specific aspects of training which employers expect and do not find in their local employees?	1. What is the importance of generic skills in qualifications for Botswana?
2. What would encourage Botswana employers to participate more actively in up-skilling the workforce?	2. What are the factors that limit more flexible delivery
3. How could the training levy system better meet the needs of Botswana employers?	3. What are the reasons for the low uptake of BNVQF standards?
4. What are the factors that limit the amount and effectiveness of attachment/work placement?	4. What are the factors that limit the amount and effectiveness of attachment/work placement?

Focus Group data

The Focus Groups were attended by 8 employer representatives and 12 education and training representatives. The data collected at the Focus Group meeting is amalgamated with qualitative data from the Consultation Meetings held in Gaborone. Analysis of qualitative data from the different sources is used to interpret, illustrate and augment quantitative data. These qualitative data from the focus groups influences the design and development of fast track strategies for priority skills.

4.9.4 Method of the Stakeholder workshop

The purpose of the workshop was to evaluate and improve the sixteen draft recommendations and six draft strategies. All those who had participated in the study as members of the steering committee, or through interviews, consultation meetings, and focus groups were invited; in addition we invited people from the sectors relevant to the six priority skills areas. Altogether 50 people attended the workshop. The workshop was divided into three parts. The first part was a presentation of the study and its findings. The second session consisted of seven working groups to evaluate the sixteen recommendations from seven different perspectives as follows:

- How do the recommendations meet the needs of **learners**?
- How do the recommendations meet the needs of **employers**?
- How do the recommendations meet the needs of **training providers**?
- What are the implications of the recommendations for **policy makers**?

- What are the **limiting factors** that are likely to slow down and prevent the implementation of the recommendations?
- How well do the recommendations promote **social and economic advancement** of Botswana?
- How could the concept of **learning communities** address issues of access, quality, relevance and efficiency? Develop some example scenarios showing how this could work in the modern Botswana context.

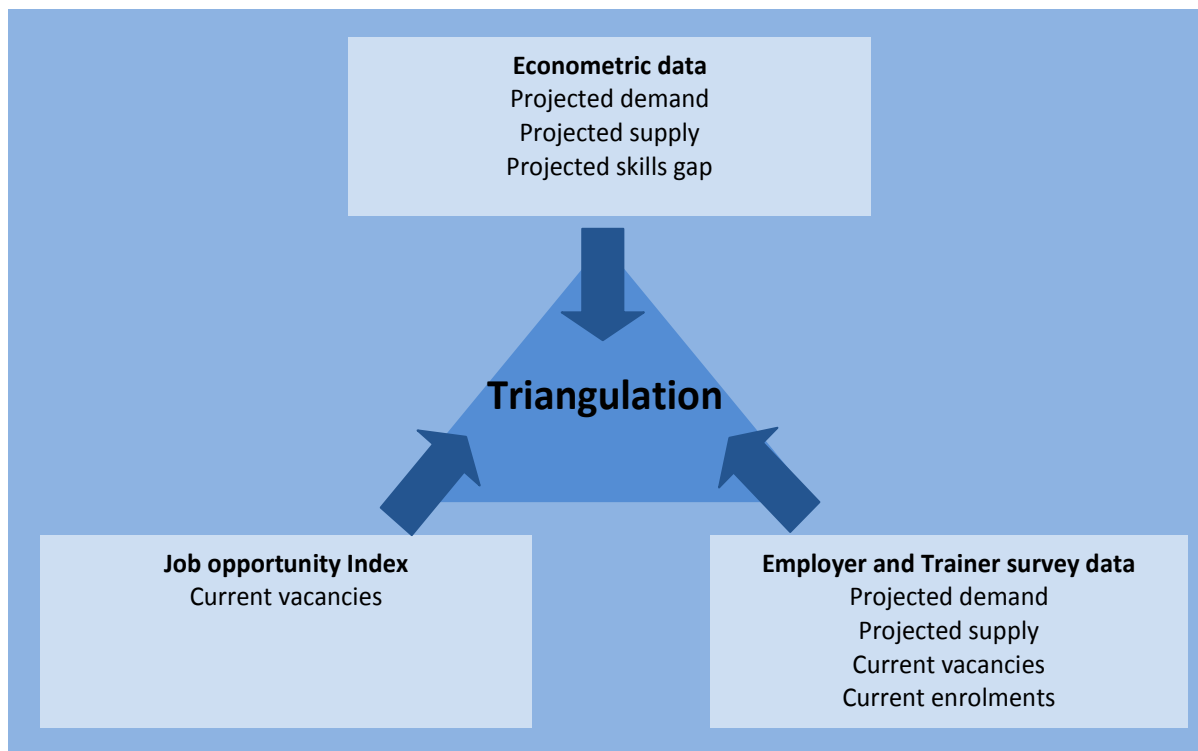
In the third session there were six working groups, one for each of the six strategies, and the groups were asked to evaluate the strategy from the perspective of:

- Learners and their families/community
- Institutions (public and private)
- Regulatory bodies and funders
- Employers and business community

4.10 Method of prioritisation

The first step was to merge the quantitative data sets as shown in Figure 20 to arrive at a rank order list of skills.

Figure 20: Amalgamating three sets of quantitative data



While a skill may be shown to be significant in terms of its score where demand/supply are concerned, it does not follow that the skill is a critical one for the government to prioritise. For example some skill shortages/mismatches may be short term based on peaks in economic activity, some may lack future sustainability or some may prove to be easy to produce which would quickly create a glut of the skill while critical shortages emerge where they were not previously forecast. The determination of what skills are a priority for the policy makers to focus on is thus a more complex exercise that requires the inclusion of other environmental factors that were not part of the forecasting methods used.

Through a process of further triangulation with other sources of quantitative data (e.g work permits, current job seekers) as well as qualitative data (e.g. comments from the surveys and consultations, current policy and strategy) we arrived at a list of the top 15 critical skills for Botswana.

To this list we applied the full analytical criteria method to determine the top 6 priority skills and rank the rest of the 15 skills according to their criticality.

A prioritization panel of 10 was convened, which consisted of senior level stakeholders from representative sectors and institutions. The key criteria for choosing panelists was an ability to have a birds eye view of skills needs and think strategically on a national scale. The researchers avoided a choice of specialized subject experts in TVET of tertiary education, as skills related to what they do may have biased their strategic analysis. The list of prioritization panelists is attached at Appendix 4.

The method consisted of 5 steps:

Step 1: Selecting the 5 criteria for deciding that a skill is critical from a pre selected list of 8

Each participant was presented with a pre-selected list of 8 criteria and asked to rank them in order of importance for Botswana. The rankings were then averaged to give the top 5 criteria to be used.

Step 2: Selecting the 10 most critical skills from a preselected list of 15

Participants had been briefed on the top 15 skills from the forecast, with an explanation of where the skills are used in various industries; notes on past and current data on each skill as well as on the relevance of each to future developments in Botswana. Each participant ranked the skills in order of strategic importance, and these were averaged to give a list of the top 10 skills.

Step 3: Weighting the 5 criteria

The participants were split into 2 groups and each group was given one card and an enumerator to guide them through this step. They were asked to compare the importance of each criterion with every other criterion using the following scale:

	1 = Equally important	
5 = Significantly More Important		1/5 = Significantly Less Important
10 = Extremely More Important		1/10 = Extremely Less Important

For each row they were asked to compare the criterion on the row against the criterion on the column and enter any one of the numbers on the scale depending on their decision. E.g. Is job creation and reduction of poverty more or less important than import substitution? Mirror cells were assigned the opposite score. E.g. If 5 was entered in the cell [B,C] then 1/5 was entered in the opposite cell [C,B].

Step 4: Using the 5 criteria to rate the importance of each of the 10 skills in relation to the other skills

For this step, panelists were divided into 2 groups and each group given 5 cards and an enumerator to pose the questions. Each card had the criteria for comparison at the top and a matrix of the 10 skills being compared. On each card panelists were asked to compare each skill to every other skill using the weighted criterion at the top of the card. E.g. Is *Hospitality* more or less important than *Diamond cutting and polishing* for supporting job creation and reduction of poverty?

Comparison was made between the skill on the row against the skill on the column using the scores on the scale to reflect the consensus decision of the group. The card for this step looked like Figure 21 below:

Figure 21: Skills prioritization matrix

	A Hospitality	B Jewellery making	C Beef Husbandry	D Accountancy	Score
A Hospitality		5	10	5	Score for Hospitality
B Jewellery making	1/5		5	5	Score for Jewellery
C Beef Husbandry	1/10	1/5		1/5	Score for Beef husbandry
D Accountancy	1/5	1/5	5		Score for Accountancy

Final step: Automated calculation of the priority order of the top 10 skills

In this step all the skills ranked by all the criteria gave an overall ranking. The outcome was computed automatically, using the application developed specifically for the method.

5. Findings

This chapter outlines the finding of all the various research methods. The individual findings are not conclusive, since conclusions were not drawn until the findings were triangulated. The integration of findings is discussed in Section 3.5.

5.1 The starting point: Skills needs forecast to 2016 based on past trends

Using the LFS data from CSO the researchers generated labour demand for 2005 which is disaggregated between those employed and those unemployed. We then adjusted the labour demand to 2009 using the actual growth rate between 2005 and 2009 (which was about 2.04 percent per annum) and the employment elasticity for the current period (1991-2002) of 0.34. This generated the labour demanded for 2009 labeled LD 2009 by training programme.

The supply data for the private providers was estimated from the findings of the 2005 Baseline Survey of Vocational Training Institutions (BOTA 2005). The estimation started with the total enrolment figure for 2005 and calculated the estimated number of graduates for 2005 for private providers. This number was then used to estimate the stock of graduates going back to 1996 by using a series formula which reduces the graduate number by 25 percent per annum going backwards:

$$S = G_1 + 0.75 \sum_{n=1}^{n=10} G_n$$

where S =the graduates stock from 1996 to 2005 , G= number of graduates for each year n

The stock up to 2005 was added to the estimated stock from the year 2009 from our Education and Training Providers Survey.

The stock of graduates from the Technical Colleges and the Brigades, which is quite significant, was obtained from data supplied by the Ministry of Education and Skills Development. These data were available for the years 2006 up to 2009. Estimation was done for the years from 1996 up to 2005 to get the total stock of these graduates.

The stock for all graduates was then obtained by adding all the estimations for the private providers, the Technical Colleges and the Brigades.

On the basis of that information and enrolment figures stock of graduate were estimated for 2009. Having estimated the demand and supply for 2009 the gap by training programme was then estimated.

On the basis of the projected growth of the economy under the current National Development Plan, projections for demand for skills are made to 2016, which marks the end of NDP 10. These are based on

the NDP 10 projected annual growth of the economy of 3.1 percent and an employment elasticity of 0.34.

On the supply side we assumed the same annual growth of graduates for each programme to 2016 based on past growth of enrolment. On that basis we are able to project the total expected supply to 2016.

Using both the projected demand and supply for skills to 2016, we then produced the skills gap as of 2016 and lastly produced the annual requirement for filling in the skills gap. These are all shown in Table 22 on the next page. In summary

Significant skills gaps are indicated in these areas:	Significant surplus is indicated in these areas:
<ul style="list-style-type: none"> Accounting/auditing courses Typing/ shorthand/ secretarial courses Tailoring/textile trades Masonry and bricklaying programmes Public admin courses Basic nursing Social welfare/Social Work Management- general courses Carpentry/joinery programmes Marketing/Sales managers 	<ul style="list-style-type: none"> Business/ Commercial administration Electrician programs Tourist trade programs Livestock management

Table 22: Labour Demand and Supply by training- 2005- 2016 and skills gap

Training Programme	Employed	Unemployed	Total Trained	LD 2009	LD 2016	Total stock to 2009	Gap 2009	Growth rate supply	Addition supply (2010-'16)	Total Supply 2016	Skills Gap 2016	Annual Supply
Business/Commercial Administration Courses	3951	2262	6213	6718	56285	12408	-5690	0.89	77302	89710	-33425	-4775
Tourist Trade Programs	602	810	1412	1024	8579	2582	-1558	0.93	16809	19391	-10812	-1545
Crop Breeding/Husbandry Programs	42	0	42	72	600	507	-435	0.18	639	1146	-546	-78
Livestock Management Programs	169	208	377	287	2404	1121	-834	0.19	1491	2612	-208	-30
Public Health/Sanitation Programs	88	47	135	149	1249	543	-394	0.12	456	999	250	36
Technical/Vocational Teacher Training	68	0	68	115	965	323	-208	0.15	339	662	303	43
Christian Religion and Culture courses	71	145	216	121	1010	91	30	0.12	76	167	842	120
Other Electronics Programs incl. Telecommunications	147	158	305	250	2094	202	48	0.21	297	499	1595	228
Forestry Programs	273	181	454	465	3895	500	-35	0.18	76	576	3318	474
Shoe making/Leather Trades training	243	144	387	413	3461	16	397	0.11	12	28	3433	490
Drafting, Surveying & Cartographic Course	293	168	461	498	4174	255	243	0.26	464	719	3455	494
Electrician Programs	1223	432	1655	2079	17416	4043	-1964	0.26	7358	11401	6014	859
Fitter/Turner training	668	238	905	1136	9513	428	708	0.49	1468	1896	7617	1088
Radio/Electronics/Computer Engineering	588	114	702	1000	8379	179	821	0.25	313	492	7886	1127
Horticulture Programs	650	420	1070	1105	9257	499	606	0.18	629	1128	8130	1161
Refrigeration and Air Conditioning training	688	0	688	1170	9801	211	959	0.24	354	565	9235	1319
Other Protection Service Programs, eg security guard	707	0	708	1203	10078	181	1022	0.22	279	460	9618	1374
Hotel and Catering Programs	1003	1494	2497	1705	14287	1302	403	0.18	1641	2943	11344	1621
Painting/Sign writing Programs	938	354	1292	1595	13367	754	841	0.17	897	1651	11715	1674
Other (Professional) Law Programs	1249	586	1835	2123	17790	1537	586	0.15	1614	3151	14639	2091

Training Programme	Employed	Unemployed	Total Trained	LD 2009	LD 2016	Total stock to 2009	Gap 2009	Growth rate supply	Addition supply (2010-'16)	Total Supply 2016	Skills Gap 2016	Annual Supply
Management, General Courses	1657	720	2377	2817	23601	3543	-726	0.19	4762	8305	15296	2185
Plumbing and Sheet metal Programs	1538	1272	2810	2615	21906	2222	393	0.21	3266	5488	16417	2345
Welding and Fabricating	2003	777	2781	3406	28539	2446	960	0.22	3767	6213	22326	3189
Social Welfare/Social Work Programs	1866	471	2337	3173	26586	505	2668	0.16	566	1071	25516	3645
Marketing/Sales courses	2509	794	3303	4267	35746	2333	1934	0.18	2940	5273	30474	4353
Public Administration Courses(Incl. Local Gvt., Social Security)	2481	598	3079	4218	35342	113	4105	0.13	103	216	35126	5018
Computer Science Programs	3419	1518	4936	5813	48704	5294	519	0.18	6670	11964	36739	5248
Basic Nursing Programs (e.g. MCHA, nursing assistants, Red Cross)	3177	686	3863	5402	45262	1537	3865	0.12	1291	2828	42433	6062
Motor Mechanics	4298	2347	6644	7308	61226	6675	633	0.22	10280	16955	44271	6324
Carpentry/Joinery Programs	4646	3298	7944	7900	66186	5640	2260	0.20	7896	13536	52650	7521
Tailoring/Textile Trades	4953	3385	8337	8421	70554	2437	5984	0.24	4094	6531	64023	9146
Masonry and Bricklaying Programs	6613	4231	10844	11244	94202	6027	5217	0.21	8860	14887	79316	11331
Typing/Shorthand/Secretarial Programs	8999	5884	14884	15303	128206	5923	9380	0.22	9121	15044	113162	16166
Accountancy/Auditing courses	11236	3264	14500	19106	160067	2688	16418	0.13	2446	5134	154933	22133

5.2 Findings of the Job Opportunity Index

The standard deviations were calculated for all skills and the data ordered according to the highest value. The following formula was used for the standard deviation:

$$STDV = \sqrt{\frac{1}{N} \sum_{i=1}^N (n_i - \bar{n})^2}$$

- where STDV = standard deviation, N = total data points, n_i = individual data point and \bar{n} = mean of the data points

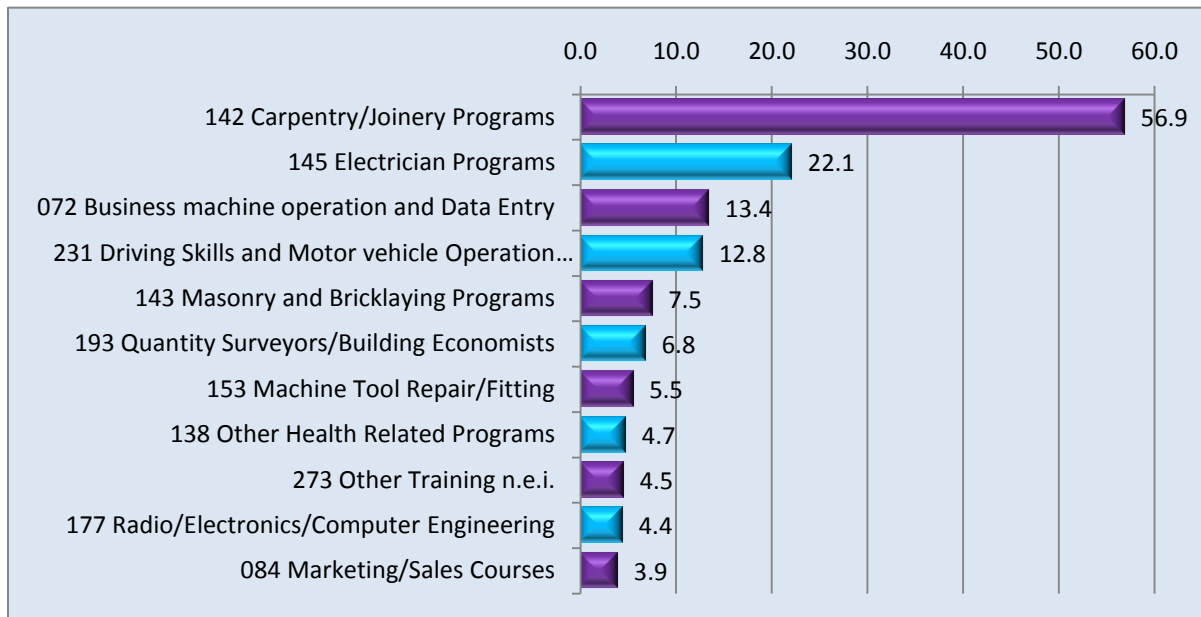
The top ten skills based on this measure are shown at Table 23 below and Figure 22.

Table 23: Skills by standard deviation of Vacancies 2010

Subject of Training	Jul 09	Aug 09	Sep 09	Oct 09	Nov 09	Dec 09	Jan 10	Feb 10	Mar 10	Apr 10	May 10	Jun 10	Total	STDV
142 Carpentry/Joinery Programs	1										100	2	103	56.9
145 Electrician Programs	18		2				7				54	1	82	22.1
072 Business machine operation and Data Entry									20		1		21	13.4
231 Driving Skills and Motor vehicle Operation Programs	8	1		21	2		4	7	4		12	41	100	12.8
143 Masonry and Bricklaying Programs	4	10					1	1			20	2	38	7.5
193 Quantity Surveyors/Building Economists	1	14		4									19	6.8
153 Machine Tool Repair/Fitting	4	2			1	2	16			1	10	1	38	5.5
138 Other Health Related Programs	1	12					2				2	1	18	4.7
273 Other Training n.e.i.				1	1				10		1		13	4.5
177 Radio/ Electronics/ Computer Engineering					3	1		1	12	1	1		19	4.4

The skills that come at the top are Building Carpenters, Electricians, Data Entry Clerks, Drivers/Heavy Duty and Bricklayers. Other skills in demand are Masonry and Bricklaying, Radio/Electronics/Computer Engineering and Marketing and Sales programmes.

Figure 22: Skills by Standard deviation of Vacancies 2010



5.3 Findings of the surveys

Some key definitions of concepts in skills development and analysis relevant to the analysis were discussed in Chapter 1. In brief, a skill can be defined as an ability to perform a productive task at certain level of competence (Shah and Burke 2003). A skill can be general (or generic) meaning that it is transferrable across occupations or it can be specific (or specialised to an occupation). An occupation is a description of a set of tasks done by a person, as well as the skills the person in the occupation should possess (Shah and Burke 2003).

5.3.1 Profile of current employment

Analysis of Skills by Vacancy rates

We proceeded to compute the vacancy rates for the employers' data and then ordered the results according to the rates to find the top skills in shortage. As discussed above, the vacancy rate is a proxy for skill shortage and is calculated by the formula:

$$V = \frac{N}{E + N} \times 100\%$$

where V = vacancy rate, N = number of vacancies and E = number of employed persons

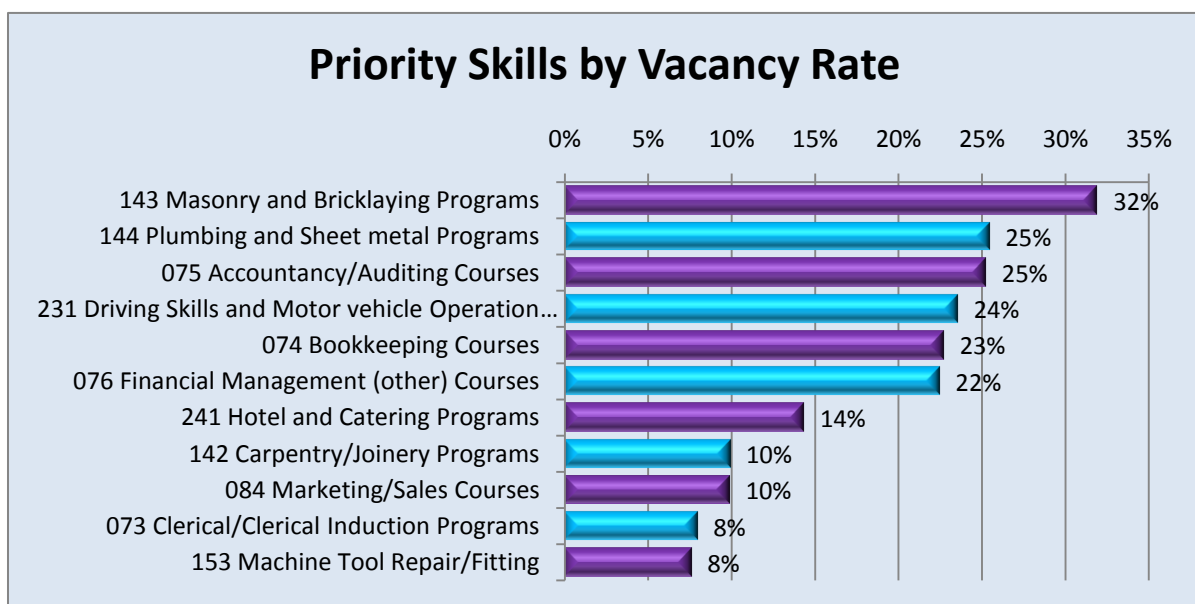
The data treatment led to the isolation of the following list of 18 skills as forecast from the employers' survey based on current skills shortage.

Figure 23: Analysis of skills by vacancy rate from the Employers' survey

Training program	Employed 2010	Vacancies 2010	Vacancy rate
143 Masonry and Bricklaying Programs	7700	3605	32%
144 Plumbing and Sheet metal Programs	3080	1050	25%
075 Accountancy/Auditing Courses	12884	4043	24%
076 Financial Management (other) Courses	1217	352	22%
241 Hotel and Catering Programs	8343	1394	14%
142 Carpentry/Joinery Programs	6378	700	10%
084 Marketing/Sales Courses	11544	1056	8%
073 Clerical/Clerical Induction Programs	3834	330	8%
153 Machine Tool Repair/Fitting	9602	787	8%
231 Driving Skills& Motor vehicle Operation Programs	11022	867	7%
085 Business/Commercial Administration Courses	1228	87	7%
071 Typing/Shorthand/Secretarial Programs	5539	321	5%
145 Electrician Programs	6278	266	4%
074 Bookkeeping Courses	2389	60	2%
079 Materials Management Courses	1617	15	1%
114 Computer Science Programs	2359	0	0%
157 Motor Mechanics	1318	0	0%
164 Food Processing Trades	2188	0	0%

Results show that three construction trades are in the top ten skills with a high vacancy rate. Accountancy and financial skills are quite high also in terms of vacancy rate. Hotel and catering and Driving and Motor vehicle operation skills also make the top ten of the list. Figure 24 shows the top skills ordered by vacancy rate:

Figure 24: Top ten skills by vacancy rate in the employers' survey



Employers were also asked to project the number of people they expected to employ for each occupation in 2016 and this measure was used to compute a projection of skills demand up to 2016.

Table 24 shows a projection of the growth of skills up to 2016:

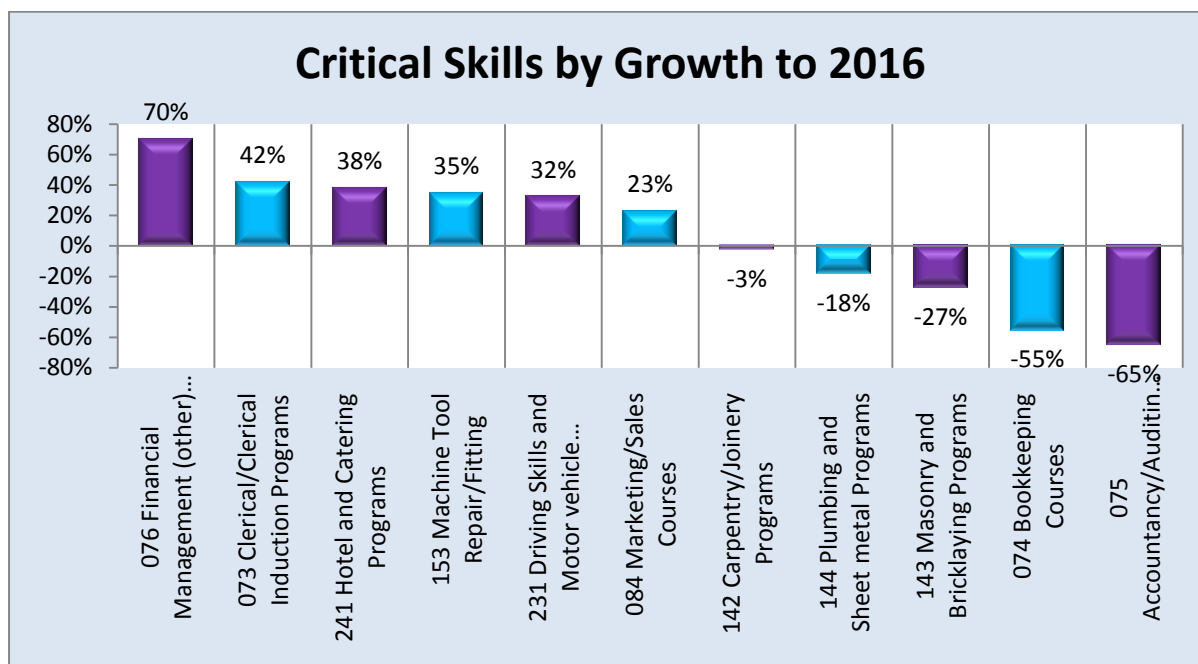
Table 24: Skills growth projection from the Employers' survey

Subject of Training	Emp 2010	Emp 2016	Vacancies 2010	Vacancy Rate	Growth to 2016
143 Masonry and Bricklaying Programs	7 700	5 600	3 605	32%	-27%
144 Plumbing and Sheet metal Programs	3 080	2 520	1 050	25%	-18%
075 Accountancy/Auditing Courses	6 035	2 112	2 034	25%	-65%
231 Driving Skills and Motor vehicle Operation Programs	1 597	2 110	491	24%	32%
074 Bookkeeping Courses	6 849	3 066	2 009	23%	-55%
076 Financial Management (other) Courses	1 217	2 070	352	22%	70%
241 Hotel and Catering Programs	8 343	11 522	1 394	14%	38%
142 Carpentry/Joinery Programs	6 378	6 216	700	10%	-3%
084 Marketing/Sales Courses	9 419	11 550	1 030	10%	23%
073 Clerical/Clerical Induction Programs	3 834	5 426	330	8%	42%
153 Machine Tool Repair/Fitting	9 602	12 921	787	8%	35%
	64055	65113	13782	2	2%

A somewhat different picture emerges when skills are projected to 2016. It becomes clear that some skills that are critical in the current period become less significant when projected to 2016 as their employment rate is expected to decline. Most of the occupations with declining employment towards 2016 are in the construction industry sector. The data reflects the current high demand for skills in this sector, but also shows that employers expect the sector to decline.

When estimated growth in employment to 2016 is factored in, the construction trades move down to the bottom of the top 18 skills. Emerging at the top are the occupations in the financial services and hotel and catering services industry. It becomes apparent that hotel and catering occupations and financial services occupations while currently important based on high vacancy rates, will remain in demand going towards 2016. This is shown in the Figure 25.

Figure 25: Critical Skills by growth



5.3.2 Profile of current skills development

The training providers survey revealed a system whose main characteristic is that it does not provide enough access to potential participants. All courses in all institutions are shown to be oversubscribed by over 100%. The types of institutions where courses are most oversubscribed or conversely most popular are the public (which include government Technical Colleges and other government run institutions) and the parastatal training providers (examples of which would be IDM (Institute of Development Management) and BAC (Botswana Accountancy College)). These two sectors have the most students applying to them and they only accept a quarter and a third of the applicants respectively. Part of the reason that these institutions have high oversubscription of courses is due to low cost and/or the availability of government sponsorship for students who get admitted to them. On the other hand the least oversubscribed institutions are in the private and NGO sector and again this is explained by higher costs and the absence of government sponsorship for vocational level training for school leavers in these institutions.

Table 25: Enrolment and graduate data by year and type of institution

Type of accredited college	Graduates 2009?	New enrolments 2010?	Applicants 2010	Graduates expected 2010	Over subscription
Community	987	1876	3379	1182	80%
NGO	66	75	109	87	45%
Parastatal	201	311	900	226	189%
Private	4399	3100	4620	3555	49%
Public	670	663	3383	637	410%
	6323	6025	12391	5687	106%

Figure 26 and 27 below show the course oversubscription rate for the different sectors.

Figure 26: 2010 applicants and enrolments

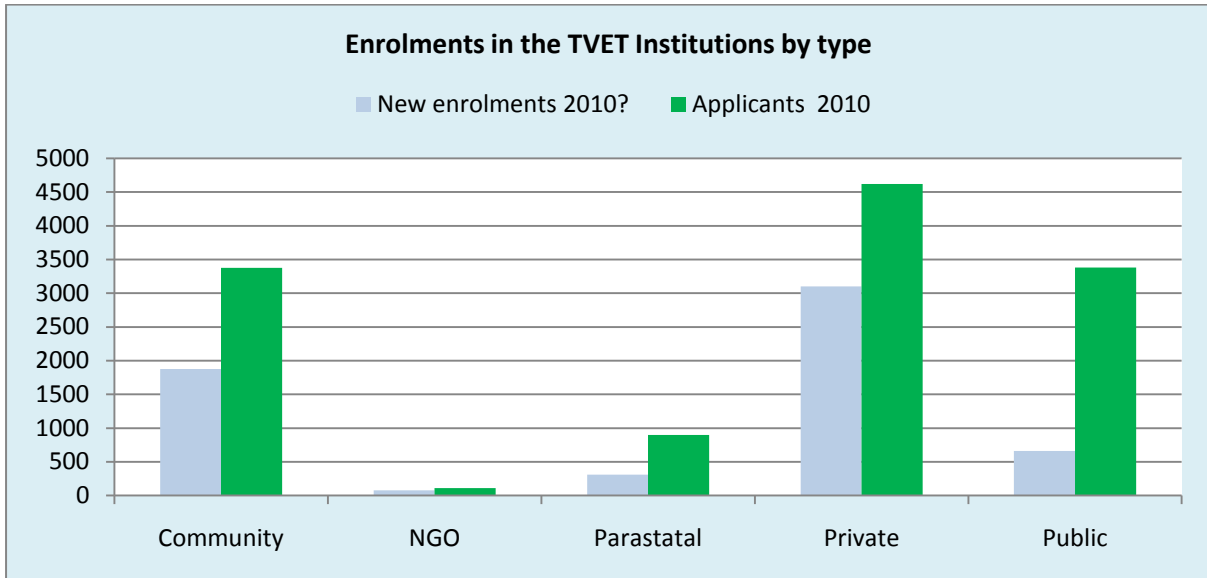
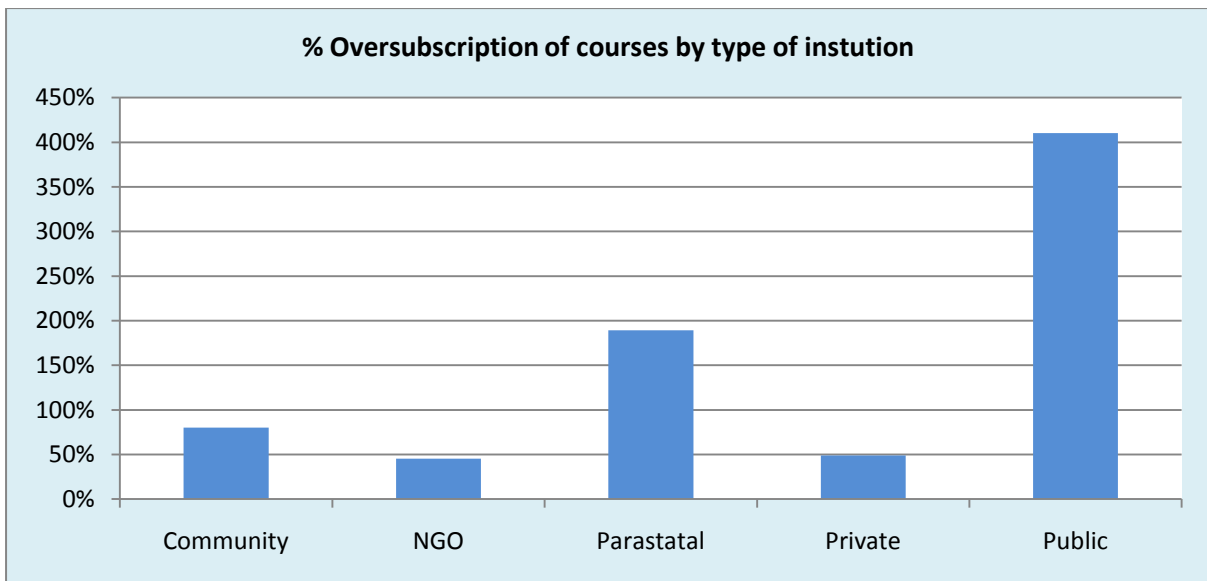


Figure 27: 2010 oversubscription of courses



The actual data from the Ministry of Education and Skills Development, as shown in Table 26 below, (which unfortunately has gaps in it) does show on average that enrolments are low compared to the capacity of the Technical Colleges.

The Government Technical Colleges are the most underutilized whereas the Brigades only have an 18% underutilization which is practically full utilization although there is room for improvement.

We calculated the popularity of each course based on the survey data and ordered the courses according to how popular they were. The popularity of courses follows a somewhat expected pattern, where the top 10 most popular courses include the typical industrial trades like welding,

electrician etc . Administration and business courses are also predominantly at the top in terms of learner choices. Other than painting and sign writing the building trades are not in the top 10 for popularity. Bricklaying is actually the least popular course choice with only a 2% popularity rate. It would appear that Bricklaying is suffering from lack of popularity from potential learners and this provides one explanation why it appears in all the findings in terms of vacancy rates and skill gaps. Information received from CITF confirmed that Bricklaying is the only course without a substantial waiting list.

Table 26: Top ten most popular training programmes

Training Programme	New Students 2010	Applicants 2010	Popularity
141 Painting/Sign Writing Programs	45	317	604%
145 Electrician Programs	163	883	442%
082 Insurance Programs	7	33	371%
081 Public Administration Courses (Incl. Local Government, Social Security etc)	23	100	335%
144 Plumbing and Sheet Metal Programs	112	473	322%
233 Telecommunications Operation Programs	75	300	300%
154 Welding and Fabricating	117	443	279%
066 Social Welfare/Social Work Programs	45	163	262%
157 Motor Mechanics	92	296	222%
071 Typing/Shorthand/Secretarial Programs	512	1630	218%
085 Business/Commercial Administration Courses	634	1584	150%
142 Carpentry/Joinery Programs	381	936	146%

Figure 28: Top ten most popular training programmes

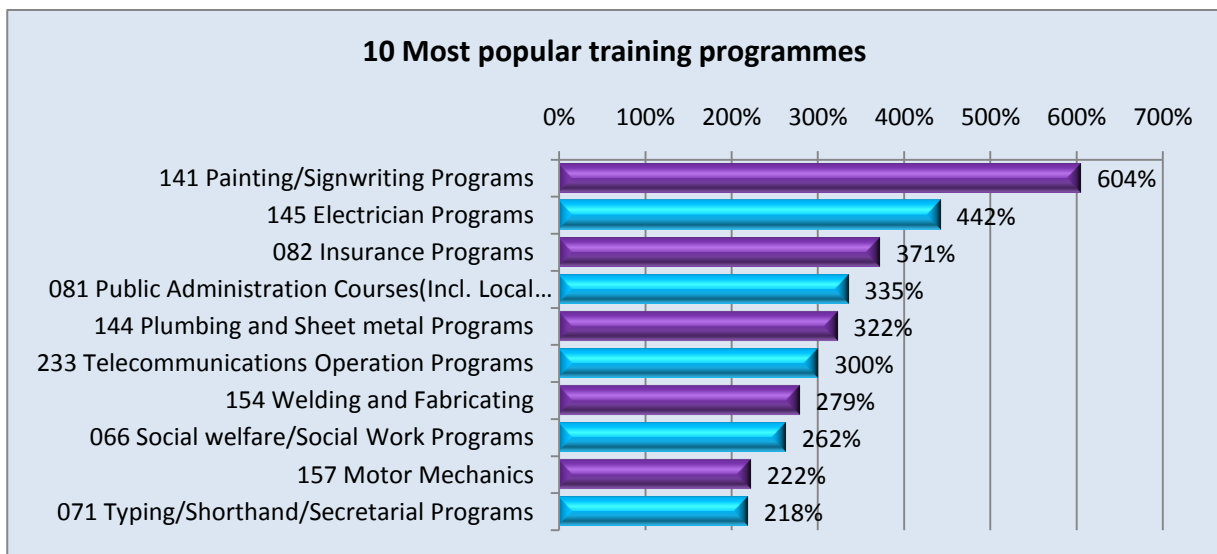


Table 27: Least popular training programmes

Training Programme	New Students 2010	Applicants 2010	Popularity
075 Accountancy/Auditing Courses	932	1188	27%
204 Horticulture Programs	32	40	25%
207 Livestock Management Programs	172	200	16%
164 Food Processing Trades	99	115	16%
143 Masonry and Bricklaying Programs	147	150	2%

5.3.3 Employer satisfaction

Satisfaction with occupations was rated on a five point scale where 1=not at all satisfied and 5= very satisfied. Therefore a rating of 3 is the midpoint. Ratings were given for four variables including specialist skills, specialist knowledge, personal attributes and productivity.

The findings show that these four variables are closely linked. In most cases where knowledge and skills are considered very satisfactory, personal attributes and productivity are similarly satisfactory, and where skills and knowledge are considered lacking, personal attributes and productivity are considered less satisfactory.

The least satisfactory occupational groups in terms of skills and knowledge are listed below. These are skills gaps within the current workforce.

Table 28: Occupations rated least satisfactory by employers

Occupational Group	Occupations rated least satisfactory by employers
1.Legislators, Administrators and Managers	-
2.Professionals	-
3.Technicians and associate professionals	335 Air Traffic Controllers
4.Clerks	415 Transportation Controllers & Dispatchers 412 Calculating Machine & Data Entry Operators
5.Service workers and sales workers	517 Family Welfare Educators & Related Health Assistants 524 Security Guards
6.Skilled agricultural	Field Crop & Vegetable Growers
7.Craft and related trades	752 Motor Vehicle Electricians 726 Plumbers & Pipe Fitters 745 Boiler smiths 765 Weavers, Spinners, & Knitters & Crocheters 721 Builders, Traditional Materials 751 Building Electricians
8.Plant and Machine Operators	812 Well Drillers & Borers 826 Textile, Fur & Leather Products Machine Operators 837 Lifting-Truck Operators 836 Crane & Hoist Operators
9.Elementary occupations	934 Building Caretakers & Window Cleaners

Figures 29-31 below show the ratings for each occupational group. Figure 29 shows the average of ratings for all four variables. Figure 30 shows average satisfaction with skills and knowledge and Figure 31 shows satisfaction with personal attributes and productivity.

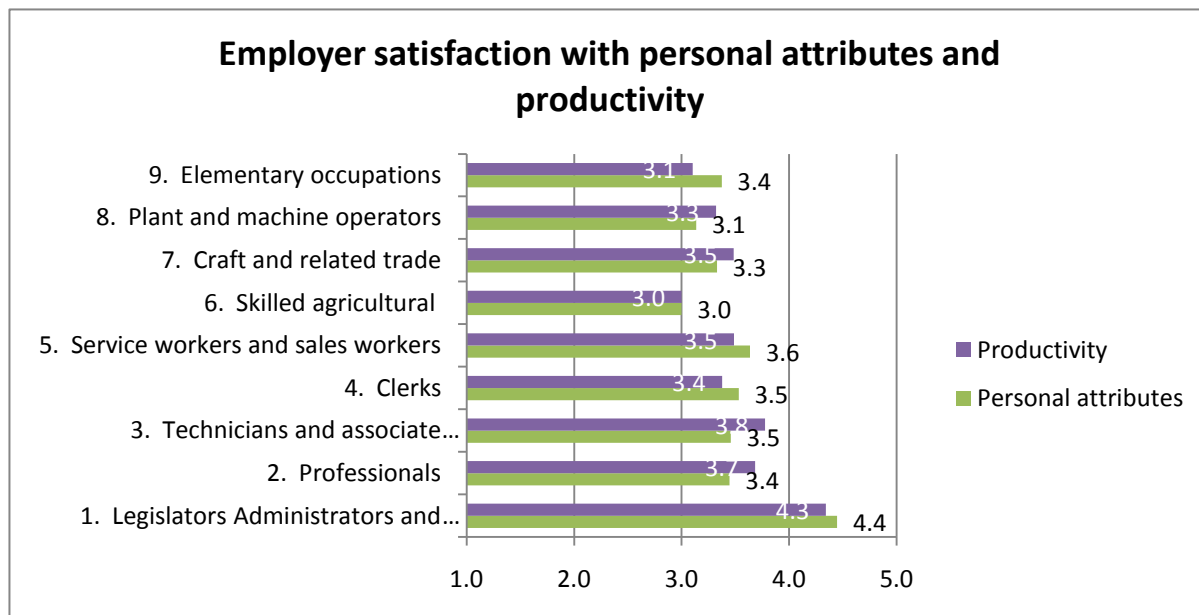
Figure 29: Average satisfaction with each occupational group



Figure 30: Satisfaction with skills and knowledge



Figure 31: Satisfaction with personal attributes and productivity



Legislators

This group of occupations was rated the most satisfactory in terms of skills, attributes and productivity. Within this group the least satisfactory performance is from Small Business Managers & Managing Supervisors (rating 3). One observation made about this group, which consists largely of managers, and is therefore largely out of scope, is *'There is need for training in sales and marketing as well as IT'*.

	Skills	Knowledge
Most satisfactory (5)	Company Directors, General Managers & Non-Government Chief Executives	Company Directors, General Managers & Non-Government Chief Executives
Least satisfactory (1 or 2)	-	-

Professionals

Responses showed satisfaction with the skill level and performance of professionals. Within this group the least satisfactory performance is from Electrical Engineers (rating 3) and Mining Engineers, Metallurgists & Related Professionals (rating 3). One comment about accountants is that *'Applicants lack the experience, in particular those from UB'*. All these professions are out of scope for this project

	Skills	Knowledge
Most satisfactory (5)	253 Vocational & Technical Education Teaching Professionals	253 Vocational & Technical Education Teaching Professionals
Least satisfactory (1 or 2)	-	-

Technicians and associate professionals

The least satisfactory within this group are Air Traffic Controllers (average rating 2). Highly rated occupations are shown below:

	Skills	Knowledge
Most satisfactory (5)	331 Photographers & Image & Sound Recording Equipment Operators 374 Statistical, Mathematical & Related Associate Professionals 349 Life Science Health Associate Professionals Not Elsewhere Classified	331 Photographers & Image & Sound Recording Equipment Operators 374 Statistical, Mathematical & Related Associate Professionals 349 Life Science Health Associate Professionals Not Elsewhere Classified 321 Computer Assistants
Least satisfactory (1 or 2)	335 Air Traffic Controllers	335 Air Traffic Controllers

Other occupations in this group which are not highly rated include the following with overall average ratings of 3:

- Civil Engineering Technicians, Quantity Surveyors & Clerks of Works
- Electrical Engineering Technicians
- Mechanical Engineering Technicians
- Modern Health Associate Professionals, except Nurses, Midwives & Veterinary Technicians
- Building, Fire, Safety, Health & Quality Inspectors
- Social Workers, Welfare Workers & Community Development Workers

A comment about Social Workers, Welfare Workers & Community Development Workers is that it is 'hard to find Batswana' for these occupations.

Clerks

In this group Transportation Controllers & Dispatchers are rated least satisfactory (average rating 2). Calculating Machine & Data Entry Operators are rated most unsatisfactory in terms of their knowledge. Tellers & Counter Clerks are rated most satisfactory in both knowledge and skills.

	Skills	Knowledge
Most satisfactory (5)	422 Tellers & Counter Clerks	422 Tellers & Counter Clerks
Least satisfactory (1 or 2)	415 Transportation Controllers & Dispatchers	415 Transportation Controllers & Dispatchers 412 Calculating Machine & Data Entry Operators

The following occupations in this group are all rated an overall average of 3:

- Calculating Machine & Data Entry Operators
- Accounting, Bookkeeping, Statistical & Finance Clerks
- Stock & Production Clerks
- Library & Filing Clerks
- Telephone Switchboard Operators

One comment suggests that Customer Services Clerks are often expatriates, since it *'takes long to find competent locals'*. Comments note that clerks are *'the people who meet the customers'* and therefore *'knowledge of public relations'* is important.

Service workers and sales workers

	Skills	Knowledge
Most satisfactory (5)	511 Flight Attendants & Transport Conductors 518 Hairdressers, Barbers Beauticians & Related Workers	511 Flight Attendants & Transport Conductors 518 Hairdressers, Barbers Beauticians & Related Workers
Least satisfactory (1 or 2)	517 Family Welfare Educators & Related Health Assistants	517 Family Welfare Educators & Related Health Assistants 524 Security Guards

Within this group Flight Attendants & Transport Conductors and Hairdressers, Barbers, Beauticians & Related Workers are rated very satisfactory (average rating 5). A comment made in relation to occupations in air transport is *'lack of math skills is one of the reasons that Batswana do not easily qualify to be pilots'*.

The lowest rated occupation is Family Welfare Educators & Related Health Assistants (average rating 2). Security Guards are rated unsatisfactory in knowledge but with a rating of 3 of skills. Occupations with an average rating of 3 include the following occupations relevant to tourism and hospitality:

- Game Guides & Other Travel Guides
- Waiters, Waitresses & Bartenders
- Security Guards

Two comments shed a little light on skills needed in the tourism industry; regarding cooks one comment made is *'Cooking is a skill. Product knowledge, presentation etc. Those skills are lacking'*. And regarding reservations *'Cannot find a local person to do reservations volumes and understanding complex requirements'*.

Comments on sales people show employer frustration, e.g. *'after training assistants they leave immediately'*. This is frustrating because salespeople *'are the heart of the organisation and relate well with clients'*.

Skilled agricultural workers

Field Crop & Vegetable Growers were rated unsatisfactory with a rating of 2.

Craft and related trades

Employers show low satisfaction with crafts related to **construction** especially Builders, Traditional Materials (average 1), Building Electricians (average 1) and Plumbers and Pipe Fitters (average 2). Bricklayers & Stonemasons and Construction Carpenters & Joiners are both rated 3. The highest average rated groups of craft workers in the field of construction are Painters, Building Structure Cleaners & Related Trade Workers (average 4). Comments on construction trades in general include *'Unskilled labourers have a general disinterest/very lazy'* and *'basic qualities are difficult to find'*.

	Skills	Knowledge
Most satisfactory (5)	753 Electrical Line Installers, Repairers & Cable Joiner 763 Glass Makers, Cutters, Grinders, Finishers, Engravers, Etchers, & Related Trades Workers	753 Electrical Line Installers, Repairers & Cable Joiner 763 Glass Makers, Cutters, Grinders, Finishers, Engravers, Etchers, & Related Trades Workers
Least satisfactory (1 or 2)	726 Plumbers & Pipe Fitters 745 Boiler smiths 765 Weavers, Spinners, Knitters & Crocheters 721 Builders, Traditional Materials 751 Building Electricians	752 Motor Vehicle Electricians 726 Plumbers & Pipe Fitters 745 Boiler smiths 765 Weavers, Spinners, Knitters & Crocheters 721 Builders, Traditional Materials 751 Building Electricians

In trades related to motor vehicles, Mechanics are highly rated (4) even though graduates are found to have *'Not much practical knowledge but more theory'*. Auto Electricians are unsatisfactory in terms of knowledge but with an average rating of 3. One comment suggests that for Panel Beating (average 3) is a skill which *'Takes two years for an unskilled to learn'*. In other trades related to metal work, Metal Moulders & Core Makers are highly rated (rating 4) and all the more valued since it is *'almost impossible to get a skilled brazer'*. Boiler Makers are rated unsatisfactory (rating 2), while Welders are rated 3.

The highest rated occupations within this group are Electrical Line Installers, Repairers & Cable Joiner and Glass Makers, Cutters, Grinders, Finishers, Engravers, Etchers, & Related Trades Workers (both rated 5).

Other occupations rated satisfactory are Electrical & Electronic Equipment Mechanics & Fitters (4), Diamond Cutters & Polishers & Jewellery & Precious Metal Workers (4) and Butchers (4). All the occupation related to Wood Treatment and Furniture Making are rated 4.

Plant and machine operators

	Skills	Knowledge
Most satisfactory (5)	828 Assemblers	-
Least satisfactory (1 or 2)	812 Well Drillers & Borers 826 Textile, Fur & Leather Products Machine Operators	812 Well Drillers & Borers 826 Textile, Fur & Leather Products Machine Operators 837 Lifting-Truck Operators 836 Crane & Hoist Operators

Several occupations within plant and industrial machine operators are rated 4 or above, but some exceptions are:

- Well Drillers & Borers (average rating 1)
- Textile, Fur & Leather Products Machine Operators (average rating 2)
- Crane & Hoist Operators (average rating 2)
- Heavy Truck & Lorry Drivers (average rating 3)
- Lifting-Truck Operators (average rating 3)

Heavy duty drivers and grader operators are difficult to source. Professionalism can be an issue as shown in this comment about Crane and Hoist Operators: *'Generally time keeping is important and people need to improve. People's personal attitudes and being more productive need improvement'*. Another comment suggests that communication is a problem: *'Most of the drivers fail to communicate especially in English.'* Another illustrative comment is that *'Drivers are often having old labour disputes. Adverts for drivers are placed to enable employers to hire Zimbabweans. Many Batswana [have] no licenses'*.

Elementary occupations

In this group, agricultural labourers are highly rated (average 5) and Domestic Maids & Related Helpers, Cleaners & Launderers are also rated satisfactory (average 4), but all other types of labourers are all rated an average of 3, except Building Caretakers & Window Cleaners (average 2). Of interest, mining labourers are more highly rated for specialist skills and knowledge (both 4) than for personal attributes and productivity (both 3). General comments about elementary occupations suggest that attitudinal issues are the main problem including *'absenteeism'* and *'work ethic'*.

	Skills	Knowledge
Most satisfactory (5)	-	-
Least satisfactory (1 or 2)	-	934 Building Caretakers & Window Cleaners

5.3.4 Employer and Trainer perspectives on the importance of generic skills

Education and training providers were asked to rate the importance of generic skills in their programmes and short courses on a scale of 1-5 where 1=not important at all and 5= absolutely essential. Programmes and courses were classified using the Botswana Standard Classification of Training.

Results show that in most cases generic skills are considered slightly more important in full programmes leading to qualifications than they are in short courses. The only notable exception is in HIV/AIDS awareness and prevention which is much more important in long programmes than in short courses.

Employers were asked how important they rate generic skills for each occupation in their staff on a scale of 1-5. Figure 32 shows that in every case trainers rate the generic skills more important for their training programmes than employers rate them in their staff. Interpersonal skills are considered most important by employers. This corresponds with the finding that when employers select new staff, attitude is the most important factor in their decision making.

Figure 32: Importance of generic skills

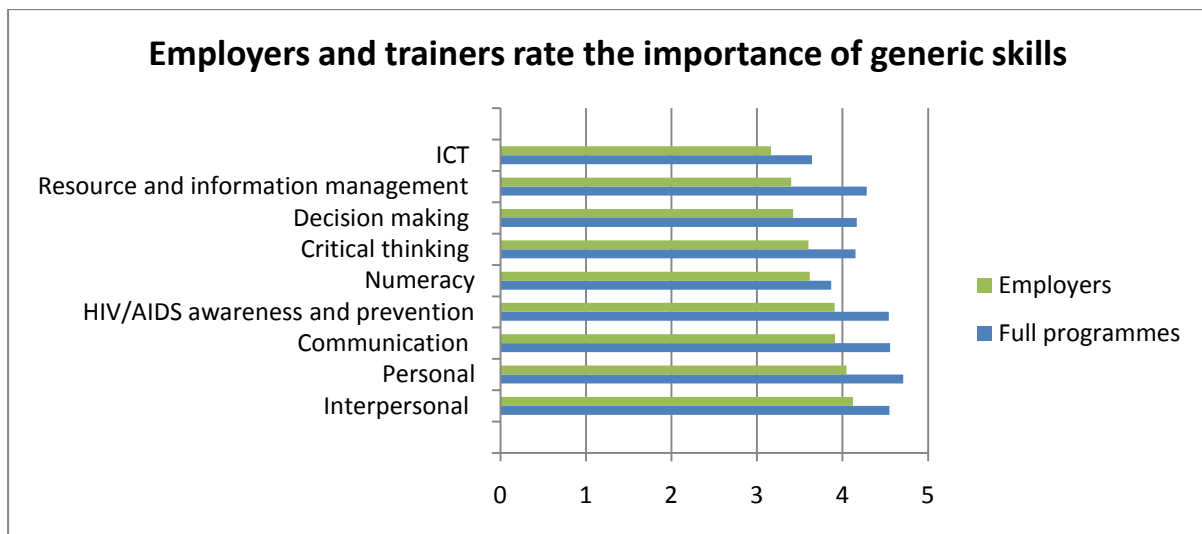


Table 29 shows employers ratings for each of the nine generic skills considered for comparison, in relation to the nine occupational groups of the Botswana Standard Classification of Occupations. The discussion which follows describes the findings for each occupational group. In consumer surveys the importance that a consumer attaches to a feature of a product or service is taken as an indication of their expectations as consumers of products and services. Employers rating of the importance of generic skills therefore shows their expectations. Low expectations of performance is associated with low performance, so this can become a self fulfilling prophesy. The discussion also includes some comparison with trainers' ratings relevant to some occupational groups. Trainers rated the importance of generic skills in programmes and courses, and these are not necessarily associated with particular occupational groups, but where there is a close relationship between a category of training and a category of occupation this is discussed.

Table 29: Employers ratings of the importance of generic skills in different occupations

	Communication	Numeracy	Critical thinking	Resource and information management	Decision making	ICT	HIV and AIDS awareness and prevention	Time management	Personal	Interpersonal	AVERAGE
1 LEGISLATORS, ADMINISTRATORS & MANAGERS	4.5	3.5	4.7	4.4	4.7	4.4	4.4	4.7	4.8	4.8	4.5
2 PROFESSIONALS	4.3	4.0	3.8	3.7	3.6	3.6	4.1	4.2	3.9	4.3	4.0
3 TECHNICIANS & ASSOCIATE PROFESSIONALS	4.2	4.2	4.0	3.7	3.7	4.1	4.1	4.1	4.2	4.2	4.0
4 CLERKS	3.9	3.8	3.3	3.2	2.9	3.5	4.0	4.1	3.8	4.1	3.7
5 SERVICE WORKERS and SHOP & MARKET SALES WORKERS	4.2	3.5	3.7	3.7	3.5	2.9	3.9	4.2	4.0	4.3	3.8
6 SKILLED AGRICULTURAL AND RELATED WORKERS	3.5	3.0	3.3	3.8	3.3	2.8	3.5	3.3	4.0	3.5	3.4
7 CRAFT AND RELATED TRADE WORKERS	3.6	3.3	3.4	3.1	3.2	2.4	3.8	4.1	4.1	4.0	3.5
8 PLANT AND MACHINE OPERATORS & ASSEMBLERS	3.7	3.2	3.4	2.8	3.3	2.6	4.0	4.2	3.8	4.0	3.5
9 ELEMENTARY OCCUPATIONS	3.8	3.4	3.2	3.2	3.3	2.7	3.4	4.2	4.4	4.1	3.6
AVERAGE	3.9	3.5	3.6	3.5	3.5	3.2	3.9	4.1	4.1	4.1	

Legislators, Administrators & Managers

All the generic skills are considered important (above 4) for Legislators, Administrators & Managers except numeracy. This group is thought not to have a great need for numeracy skills since the rating of 3.5 is the same as the average for all occupations. There is a big gap between managers and all other occupations in the importance of decision making. Clearly this group gets to make all the decisions and allocates the resources.

Professionals

Surprisingly **professionals** are thought to need less critical thinking, resource and information management, decision making and ICT skills than technicians. The relatively low importance rating for critical thinking and decision making contributes to the impression that all significant decision making is made at the top of the hierarchy and professionals are expected to implement decisions rather than exercising critical thinking and decision making of their own.

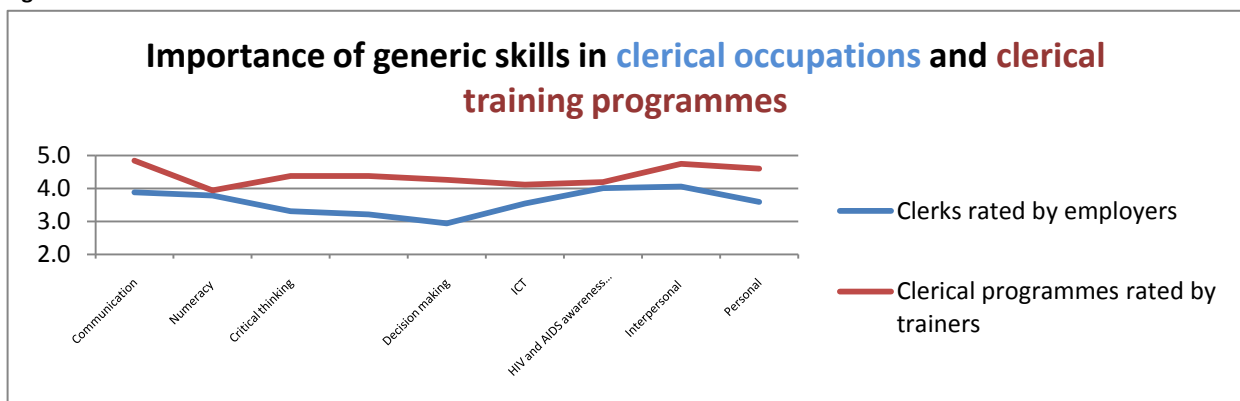
Technicians

Technicians are thought to need numeracy skills more than any other profession. All the generic skills are thought to be very important for technicians (above 4) except resource and information management and decision making (both 3.7).

Clerks

Employer ratings for Clerks shed light on the inflexible bureaucracy experienced in many offices in Botswana. This occupational group includes many customer facing occupations such as receptionists, cashiers, tellers and switchboard operators. Ratings show that employers do not expect clerks to make decisions. The rating for the importance of decision making for clerks is lower than for any other occupational group including elementary occupations (such as cleaner). The employers' rating for critical thinking is lower than for any group except elementary occupations. The low expectation for clerks to demonstrate critical thinking and decision making seems to account for much of the frustration expressed by customers in Botswana. The gap between the importance that trainers place on generic skills in the training of workers for clerical occupations and the importance ratings assigned to these skills by employers (Figure 33) shows that training programmes may not achieving their intended outcomes.

Figure 33: Generic skills of clerical staff

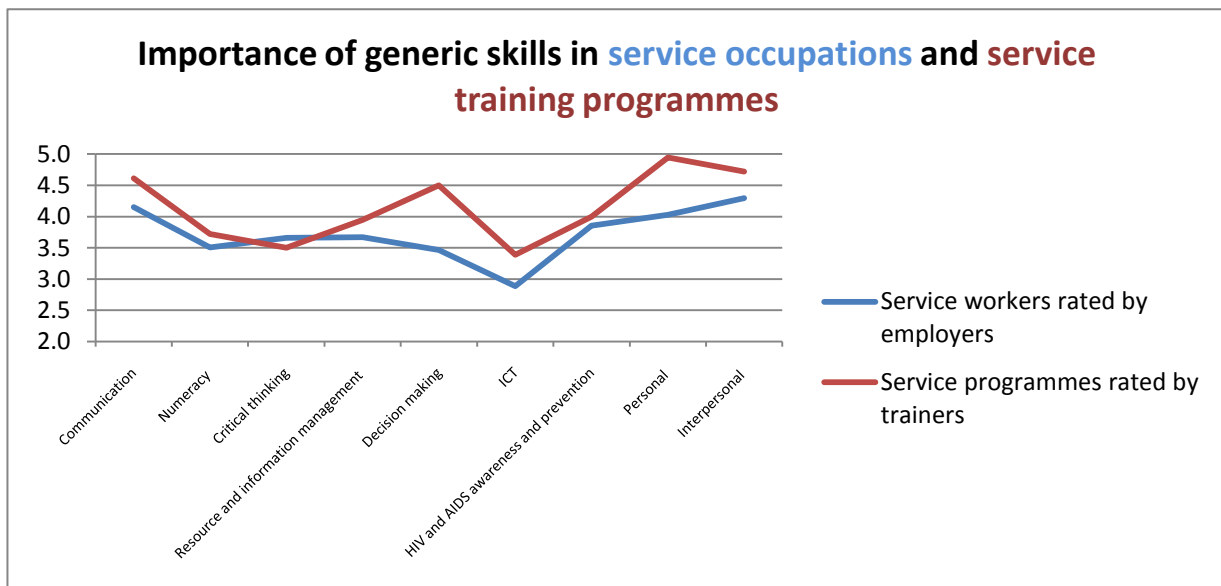


Service workers and sales workers

Ratings for service workers and sales workers are similarly illuminating. Ratings for communication and interpersonal skills are quite high, as you would expect, but decision making is relatively low rated, given the role of these service workers to interact with customers, determine what their needs are, and provide a service that meets their needs. Low decision making skills of customer service works means that they are unable to customize to meet individual requirements, and services would therefore be ‘one size fits all’ and can be expected to be perceived as inflexible and not customer friendly. This occupational group includes most of the occupations in the tourism and hospitality industry. Visitors from other countries are likely to have high expectations of customer service, especially since Botswana specializes in high-end tourism. Low ratings for ICTs is also a concern since in this electronic age effective systems for marketing services, communicating with customers and managing customer information depend on information and communication technologies. The ubiquitous excuse in Botswana is ‘the system is down’ and this may be partially explained by low ICT skills of service workers.

Interestingly while trainers do not consider critical thinking very important for the training of service workers, they rate decision making quite important (see Figure 34). This gap shows that training in decision making skills may not be achieving the desired outcome.

Figure 34: Generic skills of service staff



Skilled agricultural workers

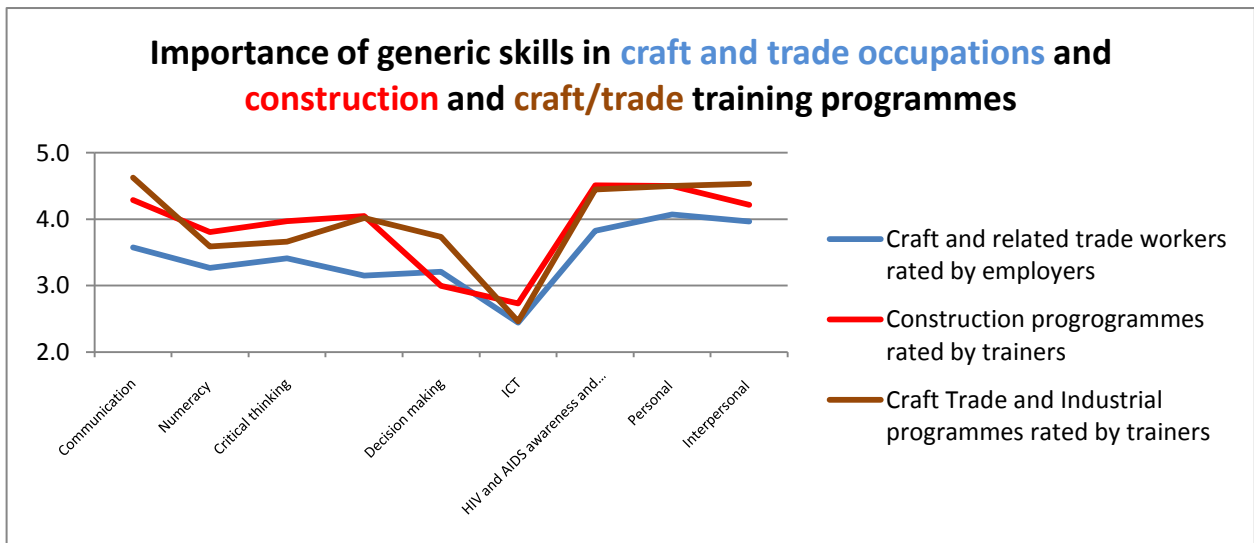
Agricultural workers get the lowest average rating for all skills. The skill rated highest in importance for these workers is resource management. They score lowest for interpersonal skills, time management and numeracy. Importance ratings reflect expectation, and low expectation is associated with poor performance. Therefore disappointing returns for agricultural input may be somehow explained by low expectations of agricultural workers.

Craft and related trade workers

Craft and related trades encompasses a wide range of occupations including construction workers, mechanics, metal workers, wood workers, printers and handicraft workers. Low employer importance ratings for generic skills of craft and related trade workers also reflect low expectations and an old fashioned perception of the work of this group. This group scores lowest of all occupations for ICTs even though increasingly our cars and machines and tools are digital and we rely on information and communication technologies to keep up with a fast moving world. This is the group of people best placed to spearhead the entrepreneurial transformation that the Government of Botswana is supporting through a number of agencies. However the relatively low importance rating for resource and information management, ICTs and decision making suggests that this group is not equipped to make the move from formal employment to self employment.

An explanation for low ICT skills of craft and trade workers can be found in Figure 35 below. ICT is not considered important in the training of craft and construction workers. With respect to other generic skills, trainers' higher importance ratings show that training is not necessarily achieving the desired outcome, since there is a significant gap between the importance attached to the skills in the programmes and the expectations of employers, based on their experience of graduates.

Figure 35: Generic skills of construction and craft/trade staff



Heavy plant and machine operators

Employers do not have high expectations of **plant and machine operators**. They score lowest for numeracy skills and second lowest for ICT skills. They are not expected to demonstrate much in the way of critical thinking.

Elementary occupations

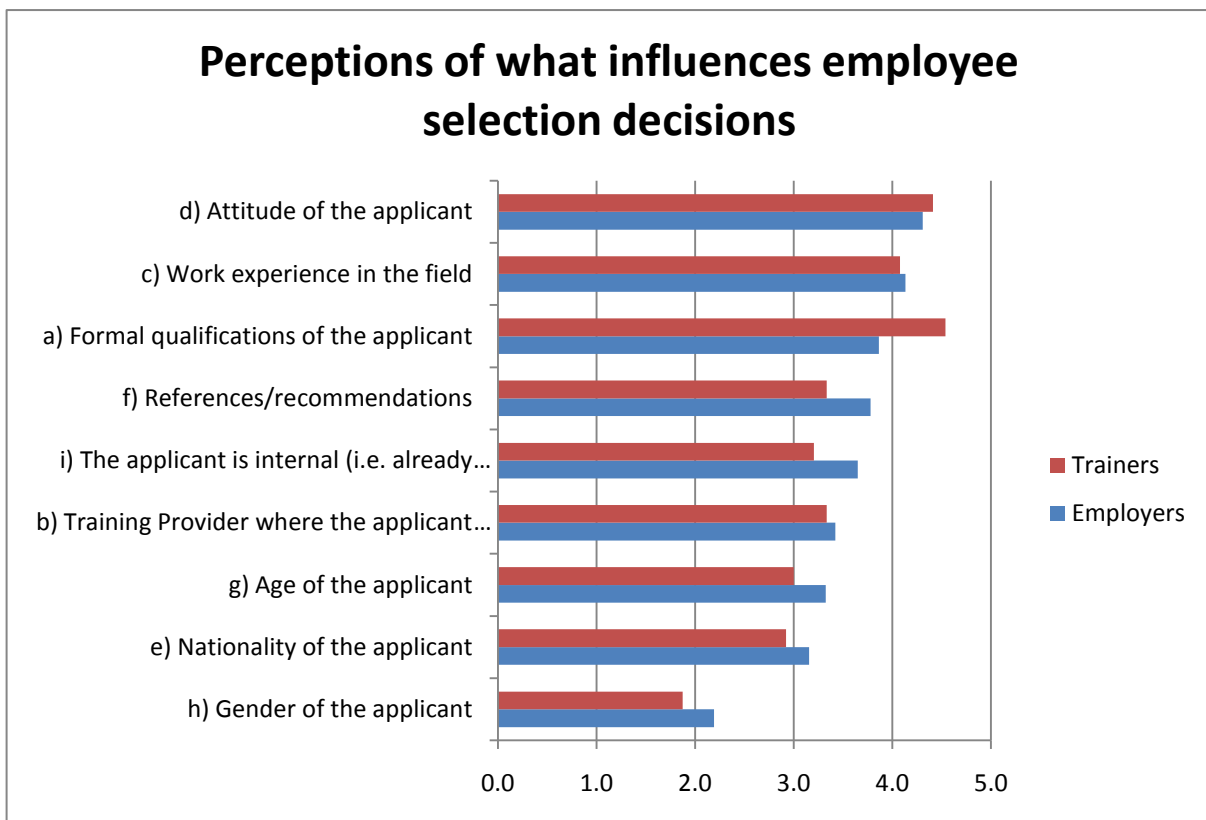
Curiously **elementary occupations** get a better overall score for generic skills than the semi skilled occupations. Elementary occupations gets the second highest score for personal skills, second to

legislators, administrators and managers; and time management skills are rated as important as the time management skills of a professional.

5.3.5 Employer and Trainer perspectives on employee selection

Each of the two surveys included a set of questions on what influences employer decision making. The aim was to establish whether there are any key differences in the perception of trainers and employers, which could contribute to a mismatch between the supply of graduates and the demand from employers. Figure 36 compares the responses of trainers and employers.

Figure 36: What influences employee selection decisions



Attitude of the Applicant

Attitude of the applicant is the most important factor in employer decision making. Comments from employers show why they think attitude is more important than qualifications or experience:

- *Ability without work ethic means nothing*
- *With the wrong attitude training leads to nothing*
- *So many people have qualifications but no common sense*
- *Hire for attitude, equip for skills*

Similar views are expressed by training institutions, for example 'Attainment of higher qualification does not automatically lead to productivity' (Brigade).

Attitudes that employers value, and what they are looking for in new recruits include:

- *Skilled personal who are dedicated and hardworking*
- *Professional behaviour and how to conduct oneself in business environment*
- *Customer service and telephone manners*
- *People who take pride in what they are doing*
- *Commitment to the job, work ethic*
- *Reliability, punctuality, take responsibility.*

One employer makes the observation, *'you can not teach people attitude, but they can learn attitude e.g. if the culture in a college is conducive to emulate such attitude'*. Two comments suggest that leadership in the training institutions and in business have a responsibility to demonstrate the attitudes that employers value but there are *'too few role models.'* The appeal from employers to trainers is *'Don't teach learners just to pass an exam, teach them to apply their acquired knowledge'*, including knowledge of attitudes which are appropriate in the workplace. Trainers also recognise the importance of attitude but they rate it below formal qualifications.

Work experience

The second most important factor that influences employer decision making is the experience of the applicant. Employers believe that new recruits with work experience will need *'less supervision'* and less on-the-job training because they are *'familiar with the environment'*. Work experience also enables the applicant to provide references, which are valued by employers. The importance of work experience is also recognised by trainers, who rate it the third most important factor.

Formal qualifications of the applicant

Formal qualifications are thought by trainers to be the factor that influences employer decision making the most, but in fact employers rate this third most important. The widest gap between employers and trainers is in how important they think formal qualifications are for the job seeker. Employers are however not unconcerned about qualifications, especially as qualifications ensure literacy, and a basic familiarity with the area of work. Importantly it was commented that qualifications *'will determine the salary'*.

References and recommendations

Our findings show that trainers underestimate the importance of references and recommendations. Even though *'references can not always be trusted'*, they can provide further information about the applicant and can be used to verify the evidence presented by the applicant. Some areas of work in Botswana constitute *'a small world'* and if the company/individual providing the reference has a good reputation then this influences the prospective employer.

The applicant is internal

Several of the response patterns regarding employer decision making suggest that selection is often based on considerations other than merit. Several responses show that some employers systematically prefer the internal applicant. This is partly because the person is already known to

the company, so there is no risk, and *'no training required'*; and it also provides a way of rewarding good performance, for example:

- *We prefer to take people to the next level*
- *For promotions or managerial posts, we consider internal first*

The training provider where the applicant trained

Various employer biases can be seen in comments on this factor, for example:

- *Some training establishments are just money making establishments*
- *I'm not comfortable with graduates from private schools*
- *The graduates from technical colleges are not well respected ("teachers not good, students are made to pass") so most employers hire people from the street and train them on the job, and they say training in school does not add value*
- *Brigades have more practical which is more important and they have more trouble shooting experiences compared to those from technical colleges and university*

Age, nationality and gender of the applicant

All these factors are considered more important by employers than trainers believe. Although it is acknowledged that *'age slows people down but also brings experience which gives a quality job'*, some employers explicitly prefer younger applicants because of their *'energy'* and *'flexibility'*, and because they are believed to be *'more productive'*, as shown in these comments:

- *We look at skills but like the energy of young people*
- *21-36 age group is more flexible*
- *Age is important. Younger people are more productive.*

Nationality is clearly very important. 17 respondents comments that they only hire citizens. Two comments indicate that this is because obtaining work permits is problematic:

- *We prefer to hire citizens as issues with permits are tedious*
- *The process of obtaining permits is expensive*

One comment explicitly indicates that the employer is obliged to hire locals:

- *We can't employ non citizens for basic occupations*

Only three comments indicate that merit is more influential than nationality, for example:

- *Consider the best person for the job*
- *Provided the applicant is suitable for the job*

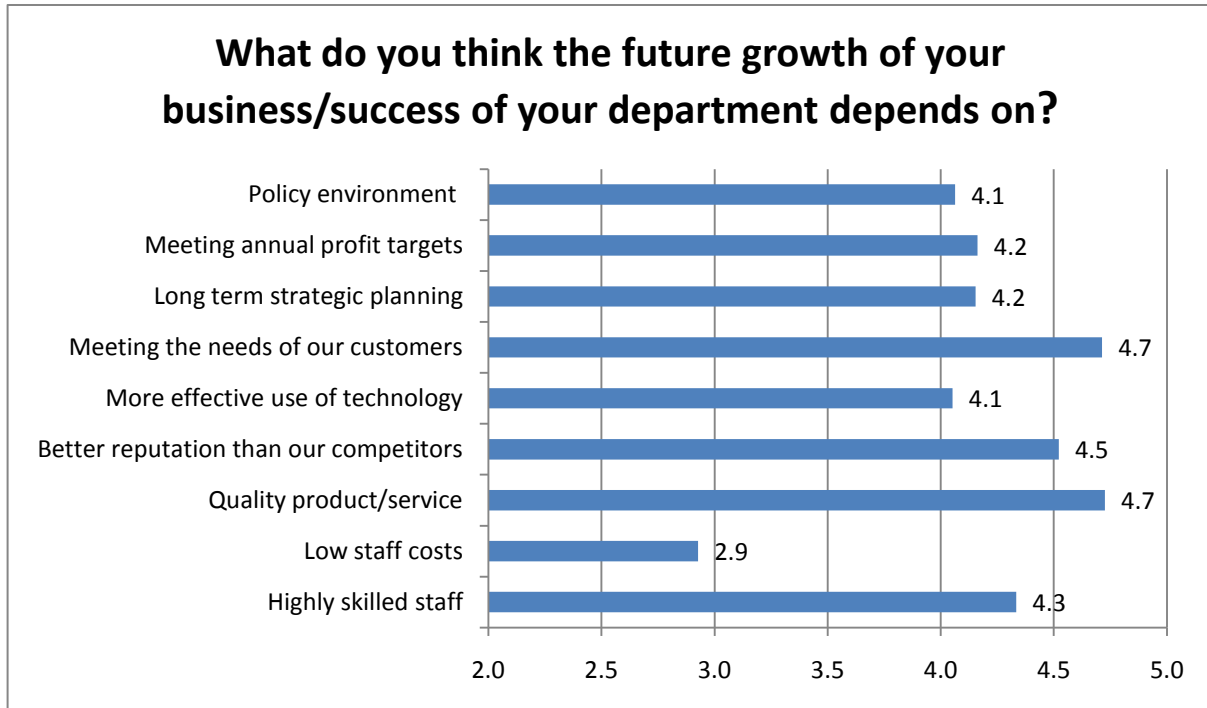
Responses to the question on gender show that gender-based discrimination is quite prevalent:

- *When we engage in care giving, a certain gender is important*
- *Females always given preference*
- *Field work is too hard for ladies*
- *We wouldn't take a woman to do hard work*

- *Most of the time we hire males because we are much into construction*
- *Workshop is for males and females do admin work*

5.3.6 Employer perceptions of factors influencing business success

Figure 37: What does the growth of your business depend on?



Responses in Figure 37 show that respondents believe that business success depends mostly on a **quality product/service** that meets **customers' needs**. There is recognition that a quality product or service generates demand, and that growth depends on increasing demand.

Likewise demand and growth depend on developing the product or service which is actually what customers want. Comments on this factor show that businesses recognise *timing* and *meeting deadlines* is a critical component of what customers want.

Reputation is the third most important factor. Comments show that the most significant competition comes from across the border in South Africa and that the survival of Botswana companies depend on their *good name*.

Highly skilled staff is rated fourth most important, even though many employers recognise in their comments that quality products and meeting customer needs are a direct consequence or effect of having highly skilled and well paid staff; for example *'Satisfied staff will be more productive in terms of outcome'*.

Meeting annual profit targets is not as highly rated as one might expect since anecdotal evidence suggests that the need to meet these targets is the reason why annual training budgets are regularly cut. The rating may be affected by the fact that some respondent organisations are public or not-for-profit.

Long term strategic planning is not as highly rated as one would expect given the challenges of the business environment in Botswana. One comment recognises the need to be strategic in an environment in which many contracts are awarded to foreign companies.

Policy environment is not very highly rated, suggesting that the environment is already conducive to business growth. In many respect this reflects evidence from other sources of a policy environment designed to promote business development, and is illustrated in comments like '*Botswana is a very good climate to operate in*'. However some complaints about red tape appear to be directed at bureaucratic accreditation processes, such as at BOTA e.g.:

- *It slows us down not having a proper training programme.*
- *A major contribution to our business growth lies in the time taken by BOTA, our biggest stakeholder, in processing various documentation (e.g. accrediting new programs).*
- *Red tape slows down civil aviation*
- *Time frame/turn round is too much*

The relatively low importance rating of **more effective use of technology** is puzzling since many employers recognise that *technology keeps improving, [and we] must move along at the same pace*. However two comments illustrate other prevalent attitudes; that we haven't needed technology in the past so *little technology [is] required now or in the future*; and related to this is the position that although the majority of businesses in the world rely on technology I've proved that it doesn't work for me, so I don't need it e.g. *ordering by using computer took time, so it's not important*

Low staff costs is the least highly rated factor as most employers recognise that low paid staff will not yield a good outcome for the company. Comments illustrating this position include:

- *We are looking to be the best, we believe in trainees and rewarding working conditions.*
- *[We] compete for skilled staff*
- *Low staff costs mean less skilled manpower*
- *Low pay of staff gives wrong calibre of staff*
- *The cost of staff is not as important as the quality of staff*

Comments made here and in other sources show that employers who pay the minimum wage also complain of high turn over: *If you pay less they leave which is not good for business*. Nevertheless for some companies the reality is that there is *not enough margin to pay high salaries*.

Respondents had the opportunity to name others factors that they perceive as critical to the growth of their businesses and a sample of their responses includes:

- *BOBS certification*
- *Productive work force*
- *Retention of key talent*
- *Team Work*
- *Future developments in the country*

5.3.7 Employer and Trainer perspectives on priorities for skills development

Entrepreneurship

Employers and education and training providers are of one accord with regard to the changing the 'mindset' of Batswana to become 'job creators rather than job seekers', as illustrated in these two comments:

- *Skills for self reliance are critical as Batswana are to be active creators of employment. There must be a paradigm shift from education for employment to education for self reliance (Education institution).*
- *training people to be more self sufficient in creation of jobs instead of always searching for formal employment (Employer)*

Both employers and education and training providers see construction management as a potential avenue for self employment, as shown in

- *Construction management is an effective way to address lack of entrepreneurship skill amongst many Batswana. (Trainer)*
- *In the area of construction, the critical area from a bird's eye viewpoint is entrepreneurship with a focus on planning, management and discipline.*

Business management skills including customer service are seen as key areas for entrepreneur development:

- *Entrepreneurship i.e. finance, marketing PR and Customer relations (Education institution)*
- *Training in business management and skills, so they can later run their own business (Employer)*
- *Botswana education and training providers should focus in the next 5 years on entrepreneurship development and customer satisfaction (Employer)*

Communication and customer service

Employers focus on the need for development of communication and customer service more than education and training providers. Comments include:

- *Communication is of the utmost importance and the majority of the workers lack the necessary levels needed. Focus therefore is to improve their level of communication (Employer)*
- *In a business customer relations is a must for all staff members (Employer)*
- *Better communication skills especially English to communicate well (Employer)*
- *Training on public relations should be considered (Employer)*
- *Training internal staff on customer relationship and business (Employer)*
- *Customer care is absolutely essential in this country and so there will be need to emphasize it. (Employer)*

Practical orientation/attachment

The value of on-the-job training in the form of attachments, apprenticeships and internships is extolled by both trainers and employers, for example:

- *Focus would be more on courses that are more into hands on. Apprenticeship should be promoted because it has proved to be working in our developing country. (Trainer).*
- *Internships really add value (Education institution)*
- *They should all be given internship to the relevant industries, companies etc (Employer)*
- *To focus on the job training more than theory so that people know what is expected of them at work places than having people who have knowledge but are not able to apply it. (Employer)*
- *Previous work experience is important because it is a practical hands on job. (Employer)*

Whereas education and training providers generally support the concept of increased practical application, the employers comment at length and specifically on the perceived over-emphasis on theoretical education at the expense of practical training:

- *More emphasis on practical skills as opposed to theoretical learning (Employer)*
- *They should focus more on the practical part than theory because here we do work [more] than writing (Employer)*
- *Too much theory in the education system rather than training students in the work place (Employer)*
- *Less certification and more practical work and experience (Employer)*
- *Theory and practice must be combined in all cases. Some courses are theoretical, but they don't understand work environment (Employer)*
- *When the graduates come they do not really have the skills, they have only the basic, not the speed, not the detailed [] skills (Employer)*

Technology and Science

Both education and training providers see increased training in technologies as a critical area for development. In this both groups show their recognition of the importance of a high skills strategy:

- *Produce a better technology trained workforce (Employer)*
- *Training of technicians in various fields is highly important (Employer)*
- *Focus more on science and technology, information technology (Employer)*
- *It should focus on technology and production sector (Employer)*
- *Focus on the area of high need or scarce skills area. Give priority on what markets needs e.g. fields that we have more expatriate in science fields (Training Institute).*

The foundation for increasing skills in the use of technologies starts with basic computer skills, which trainers believe should start earlier, for example:

- *More emphasis should be placed on developing computer based skills from an earlier age as instilling the ability to think and learn for oneself and not rely constantly on outside influence (Trainer)*

One major limitation to the development of a computer literate workforce is lack of access to computers and internet:

- *Technology-in most other countries there is enough wealth to buy computers, but in Botswana people don't have that automatic access to computers, cameras etc.*

One way of increasing access and familiarity with computer applications is increased use in work oriented training situations:

- *Technology phase needs to be emphasised. Computer based modular training (Trainer)*
- *Use of technology in teaching and learning and its application in work situation.*

Deficiencies in general education

Both trainers and employers recognise the need for a stronger foundation of basic education on which higher level technical skills can be built. Comments show that the perceived weakness exists especially in mathematics and English:

- *Employees need life skills, understanding basic needs of job. Maths levels at secondary school important (Employer)*
- *General life skills and employability skills -Maths proficiency (Employer)*
- *Basic primary and secondary education systems need real revamping to create true and meaningful literate people for programs comprehension (Education institution)*
- *Technical aspects of courses, and technical courses form a challenge-students lack math and science background for those courses. English language is another challenge. (Education institution)*

Design of the education and training system

A number of critical issues which are the subject of past recommendation and which inform current discussion on institutional arrangements are rationalisation of the colleges, competency based training, and coherence of the education and training system, which are all raised by respondents to the survey.

Duration of training

An observation made in the survey and in consultation meetings was that low level qualifications for low paid occupations take as long or longer to complete than high level qualifications for better pay i.e. it takes as long to become a certified bricklayer as it takes to become a qualified engineer. Shorter training would enable artisans to enter the paid workforce more quickly.

Articulation between levels of training

Currently TVET training is effectively a dead end pathway, since there is no clear articulation between the highest level of TVET and the lowest level of higher education. This situation, described by the respondents below, is to be addressed in the development of the NCQF.

- *There should be a profession path for articulation in vocational training. Currently, the whole vocational training program is deep rooted in the lowest training level (certificate). It offers little platform for further vocational development. The system needs to allow training providers to develop progressive curriculum that will enable the changing needs of industries, both locally and internationally. (Education institution)*
- *Better articulation from one level of training to the other (Training provider)*

Institutional arrangements

Furthermore, those qualifications currently 'falling between the cracks' because they are 'too high level' for BOTA and 'too vocational' for TEC will be addressed through the proposed integration of the functions of BOTA and TEC. This comment provides an example of frustration with the current situation:

- *Aircraft are not BOTA and TEC caught in between. BOTA and TEC should sort this artificial divide out. It needs also alignment with CAAB. This is a skill area for which there is a real need. One person a year is trained, partly in South Africa (Denel) partly in Maun (Employer)*

Quality assurance

There is support for increased rigour in quality assurance as illustrated by this comment:

- *There are too many industry players offering lower quality training. We feel that the success of skills development in Botswana will depend on adequate enforcement by BOTA and other governmental/parastatal organisations (Employer)*

Standards based training

And there is support for standards based training and the unit standards of the BNVQF:

- *The whole programme set up in the vocational training will be overhauled and be replaced with standard based type of training (Brigade)*
- *Include standards training in tertiary education (Employer)*
- *BOTA needs to sign off on standards/qualifications that were developed by the industry (Employer- Tourism)*
- *[Employers want] portfolio of evidence to ensure that learning took place (Employer)*
- *We have worked for 7 years on guide training with BOTA. Still not audited. Group of a tourism people in main task force.[] Present system of qualifying safari guides is outdated- BOTA SHOULD LAUNCH (Employer Tourism)*
- *Development of unit standards based programmes which makes sense. –*

Consistency of assessment

Comments include some scepticism that standards are being maintained in the current processes of accreditation of trainers to assess against standards. There is concern that assessment should be consistent and regulated to assure standards:

- *Develop trainers and assessors to teach and assess properly e.g. assess against unit standards (Employer)*
- *Enhance the quality of their assessment tools to ensure that learners are truly competent (Employer)*

Rationalisation and specialisation

Rationalising the provision of education and training offered through the Technical Colleges and the Brigades and developing specialist institutions is another current consideration for policy makers which is also on the minds of respondents to our surveys, as shown in these comments:

- *There is need for rationalization (full) of programs as there seem to be monotonous/duplication offer of programs within the TVET institutions. Institutions must be graded by level of courses offered. (Brigade)*
- *Specialised training per sector of the workforce as opposed to general training (Employer)*

Specific content areas recommended for focus by respondents

In addition to the comments discussed above respondents also suggested specific areas for focussing education and training as flows:

Content Area	No of comments	Example comment
Science	1	<ul style="list-style-type: none"> • <i>Focus on the area of high need or scarce skills area. Give priority on what markets needs e.g. fields that we have more expatriates in science fields (Training Institute).</i>
Manufacturing	1	<ul style="list-style-type: none"> • <i>Manufacturing skills Though we have Batswana, they are not ready to come on board</i> • <i>The education system must focus on other manufacturing and processing industries such as baking, meat processing, etc.</i>
Engineering & construction	3	<ul style="list-style-type: none"> • <i>Training providers should focus on engineering and mechanical skills</i>
Management skills	3	<ul style="list-style-type: none"> • <i>financial management - project management and appraisal - innovation and creative thinking</i>
Tourism/ hospitality	4	<ul style="list-style-type: none"> • <i>Training for tourism sector has lot of potential. (Education institution)</i>
Mining	1	<ul style="list-style-type: none"> • <i>Training of Artisans. The country will be opening a lot of mines and this will force us to look across the borders. (Employer)</i>
Agriculture	3	<ul style="list-style-type: none"> • <i>Botswana should try introduce more agriculture courses even if it means through e-learning (Training Institute)</i> • <i>Training in skills needed in neighbouring countries. Skills connected to agriculture (Brigade)</i>
Arts and crafts	1	<ul style="list-style-type: none"> • <i>I think that arts and crafts should be given more attention as not everyone qualifies and is able to work behind a desk. (Employer)</i>
Sport	1	<ul style="list-style-type: none"> • <i>Sports too should be given more support (Employer)</i>

5.4 Findings of the focus group interviews and consultation meetings

The two focus group interviews and two consultation meetings covered many of the same themes and topics. They are analyzed and discussed concurrently in the following account, showing how employers and trainers have similar and different perspectives on issues of mutual concern. Training providers are also employers of staff, and employers can be training providers, so the distinction between the two groups is sometimes blurred. Furthermore many of the participants are graduates of Botswana education and training systems and speak as former students as well as current trainers and employers.

The participants in the focus group activity warmed to the discussion and were extraordinarily frank and forthcoming. Even though they had all consented to the recording of the interview and verbatim quotes from the transcript, in the analysis it was felt that some participants might have made statements that, on reflection, they would regret. Furthermore, Botswana is a small society and the participants are all well known leaders in the fields of business and education and training. It was decided that a consistent system for ascribing quotations to participants would not have protected the confidentiality of individuals sufficiently; therefore a variety of labels is used to obscure the identity of participants as considered necessary. Comments made by the consultation meeting participants were not recorded, and therefore not quoted in this analysis. Nevertheless the views expressed in those meetings are interwoven into this analysis.

In summary, analysis shows that following key issues appear to be contributing to skills gaps:

- Failure to integrate theory and practice in the delivery of training
- Lack of capacity for curriculum development
- Low uptake of the BNVQF unit standards and qualifications
- Lack of political will to implement a national qualifications framework
- Mismatch of vocational teachers' specialist areas and skills needs of Botswana
- Lack of flexible delivery options to enable people to train while they are working
- Narrow scope of Vocational Training Fund
- Lack of strong linkages between specific industries and specialised training providers
- Lack of capacity in industry and in colleges to implement attachment and internship satisfactorily
- Limited access to computer technology for the majority of the population
- Policy environment which limits the viability of private education and training

5.4.1 Work readiness of graduates

Lack of work readiness of new recruits is the ubiquitous complaint of Botswana employers:

the people you get can't "hit the ground running". The employers are very impatient business people, they are looking for the kind of worker who will be put at their workstation and in a short space of time start showing results (BOCCIM)

This issue has several component parts which are discussed below. Analysis of the problem includes examination of issues of curriculum design and development, the relationship between training providers and the industry that they are training graduates for, the facilities and equipment available for training, and delivery methods.

Over emphasis on theory at the expense of practical training is a common complaint from employers. In the context of this study 'theory' is understood to include classroom based training in fields of knowledge including generic fields such as communication and numeracy, and 'practical training' is understood to consist of development of technical skills through their application under supervision in practical situations. The perception that employers have is illustrated in this typical comment:

our institutions are more theoretical and leave the practical aspect behind. We need to see that alignment between the training [] and what the employers are looking for (Mining)

5.4.1.1 Generic skills

Lack of generic skills is a frequent complaint made by employers about Botswana graduates. Generic or key skills such as problem solving, critical thinking, IT skills, interpersonal skills, numeracy and communication skills are described by trainers as the skills for lifelong learning, employability, adaptability to a changing world, upward mobility to managerial positions, and entrepreneurship.

This comment shows that for employers generic skills make the difference between someone who can perform specific tasks and someone who can really engage in the broader issues of the business:

they know the machine from A to Z but in terms of how they interact in the business for this machine to produce money there is a different matter (Employer)

The perspective of trainers is similar:

Employers say if there is someone who has technical skills and can't communicate with customers then [] that is not good for business (DTVET)

Generic skills are understood to be *soft skills* which are essential for *survival* in the workplace i.e *skills that make you move on a day to day basis*. One respondent explained how these tend to be ignored because the employer's top priority is the critical technical skill that gets the specific technical tasks done:

We tend to focus on technical skills [] as opposed to generic skills so much that when we look at a training programme and [] I have to make a decision between a programme that is heavily loaded with technical content versus generic skills I will opt for a programme that is heavily loaded with technical skills because I need that person to come back to the ground and be able to handle the technology on the ground and as a result the generic skills suffer (Telecommunications)

Likewise some training providers, while acknowledging the importance of generic skills, also place most emphasis on technical skills:

Our focus is on the practical doing the job not the chalk and talk in class where probably the generic skills come in. The focus is to produce someone who goes to the job and can perform immediately so we are focusing on those people with particular trades in the building construction. But we are also mindful about the fact we do also need to have generic skills. (CITF)

5.4.1.2 Specialist skills

A related problem, which might seem to contradict the perceived lack of generic skills, is that training programmes are too generic and not specialized enough. This can be stated as a problem of lack of specialist skills. The effect described by employers is that they have to 'retrain' the new recruit in the specialist area that is required for the job. In the course of these interviews several respondents refer to past practices which have been discontinued, but which they feel would better meet the needs of Botswana employers and graduates. For example:

we have been stuck with general training [] we have been stuck to a broad way training . You come with a general knowledge to a workplace and it is the duty of the employer to take you further for training specializing in what you are doing. [] In the past we had PESC, that was good because it was giving you the basics (Pre Entry Science Course) then you specialize in your particular field. 2 years basic then 2 years specializing. But unfortunately [now] you are generalizing for all the 4 years. It now comes to the employer to give you training on what you are supposed to specialize on (Employer)

Practical training to meet the expectations of employers needs to include either simulation of work situations in training institutes or some form of workplace based training, so that graduates are 'work ready'. Simulation has implications for facilities and equipment since it is only with the right equipment that trainers can simulate workplace situations and familiarize students with tasks and equipment that is used in the workplaces. The following comment encapsulates the need for alternatives to address the issue of lack of practical training:

A guy that come from University [should] be aware of equipment that is actually used at the operations rather than meeting that equipment the first time when he gets to site. [] Attachment can help but it's not that everybody gets the opportunity to go to a mine for attachment for 3 months or so (Debswana)

5.4.1.3 Integration of theory and practice in delivery

While attachments, internships, and simulations are all relevant to integration of theory and practice this section focuses on the role of teaching methods in the integration of generic and specialist skills. An issue of concern to employers and trainers is the amount of classroom time spent on generic skills. Two articulate responses show that the key issue may not be too much emphasis on generic skills in the curriculum, but rather that teachers are not able to integrate training in generic and specialist skills in their delivery:

I don't think we should take 40 hours of our curriculum time to teach interpersonal skills that is something that [] should be built in through mentoring [] integrating these skills as part of your delivery. I think the problem comes from our teachers who have been trained in a particular way and now we need them to have new skills as facilitators to integrate these skills into the teaching and they are not doing that. We need the theory and knowledge but there is no reason to stand up and write notes when [] when we can talk about it. We can do verbal analysis as we are teaching. While we are laying bricks we can do a diagnostic test: why are you doing it this way, how much does it cost, how much water are you using, why are you using this? The theory is embedded in the practical. I think it is from the teaching aspect and I don't think we should sacrifice the quality of our qualifications .I think it lies in the delivery (BTEP)

Similarly another comment suggests that while, for example, there may be little evidence that Botswana school leavers have vocational skills, this is not because there are no vocational outcomes in the school curriculum. For this respondent the problem (both in general education and TVET) lies not in the curriculum but in the teaching skills:

What can we do to curriculum development so generic skills come in? I am not so sure there is something new that we need to do. We [already] have generic skills, language and all those social skills imbedded within the curriculum which can translate into desired work place soft skills that are required []The difference is to what extent do teachers make sure that learners really gain this (BOTA)

This comment was confirmed in the discussion and summed up by the observation *what happens is that there is a gap between the curriculum and the actual delivery.*

The consultation meetings also reviewed issues affecting the quality of TVET teaching. These included too many untrained teachers; the need to improve TVET teacher training; and the related issues of low pay and high mobility of staff.

5.4.2 Relationships between businesses and training providers

Relevant to the problem of lack of work readiness is the issue of the relationship between businesses and training providers. This issue has a number of different aspects, including involvement of industry representatives in curriculum development, involvement of businesses in the funding of colleges and the training of learners, and the relationship between professional associations and other regulatory bodies.

5.4.2.1 Curriculum development

Despite the fact that trainers maintain that they do consult with local industries in the development of programmes, and that both TEC and BOTA accreditation criteria include this as a requirement, employers commonly deny any meaningful involvement in the development of programmes, as illustrated in this comment:

It's very rare to find a situation where industry is involved in the development of the training programmes and as a result we continue to get graduates that are completely misaligned to the demands of the workplace (BTC)

The employers in the focus group were of one accord regarding the lack of meaningful industry involvement in the development of programmes. However the trainers provided examples of their efforts to work with industry. For example:

We do what the industry tells us to do. Monthly we have a meeting with industry where they tell us these are the key factors (CITF)

Our BTEP programme [] is market driven so when we began the first stage was to go to industry to identify -to tell us -what was needed (BTEP)

The BNVQF unit standards and qualifications are examples of curriculum components developed with extensive industry input. Uptake of these has been very slow, despite the apparent willingness and readiness of trainers to adopt them. The excerpts below show that conversion to unit standards based programmes is anticipated for BTEP and CITF, and some private providers also foresee future alignment with a national qualifications framework.

Everything about the architecture of the BTEP programme we can put on the BNVQF. It will be modularized, there are modes for articulation, we have quality assurance [] both nationally and internationally (BTEP)

We have started with BOTA to [develop] the standards for the building construction and once we have the standards in place we are going to align with the BNVQF. (CITF)

I think the attempt has been to try and get [] public intuitional programmes on to [the national framework] first before they come on to the private institutions The truth is once the frame work is there everyone has to [bench]mark their programme to it [and] the quality issues in the sector will disappear (Private provider)

The BNVQF is a three level vocational qualifications framework with over 1400 registered unit standards and more than 110 qualifications. This represents a huge national investment and contribution from industry. A factor which is seen as limiting the uptake of BNVQF unit standards and qualifications is general uncertainty about its future in the context of sweeping rationalisation of public sector provision and institutional arrangements, and the development of the National Credit and Qualifications Framework.

a typical national qualification frame work is the best arrangement you can have [] the thing is to what extent are people convinced this is the right way to go and therefore willing to take it up. [In some cases] they are waiting for it since yesterday. They are willing to put in their own resources to see to the development of the programme because they trust in the quality assurance (BOTA)

Respondents expressed the view that there is a lack of high level commitment to the BNVQF, and lack of political will to implement it. The process of designing a national system that will work for the whole of Botswana seems to be dominated by the power agenda of relevant ministries and agencies, for example:

I agree that it is very fragmented but I don't agree that the heads of the organizations are not aware. I think they are very territorial [] we don't have the political will to make it happen[] they are kind of sitting and [] holding back (Trainer)

Three respondents expressed some doubt about the continued existence of the BNVQF in the light of development of the NCQF. For example:

Right now we are doing the National Credit Qualification Framework [] One wonders what will happen after the BNVQF (MOESD)

Two respondents who have been involved in the development of the NCQF are of the opinion that the development is not building on, or even well aligned to the BNVQF:

as you said they are constructing [a framework] that can't be benchmarked against anything else in the world (Trainer)

The effect of low uptake of BNVQF unit standards for the employers is that they do not see their input making a difference to training, since trainers ignore the standards and carry on offering what they were offering before:

those standards that are already in place are not necessarily being used by the training providers to align their curriculum to the need of the industry (Telecommunications)

One of the issues of the development of standards and curricula is that in all industries there is continuous development, and in some industries development is very rapid indeed. Registration and accreditation processes in Botswana are slow, and by the time standards and qualifications are registered they may already be out of date.

Most of our industries changes rapidly, so rapidly that we set up standards today for training [and] tomorrow it has changed completely because the needs have changed (BTC)

Long time frames for curriculum development and accreditation of programmes indicate a lack of capacity for curriculum development and for accreditation. This deficit was made explicit in the consultation meetings. Specific points made include:

- Need to establish curriculum specialists in TVET

- No local specialist curriculum developers in Botswana
- Curriculum development and review takes too long
- Syllabus needs to be updated – trainees are not learning to use modern digital technology

Lack of local curriculum development expertise is contributing to the perceived failure of education and training to be responsive to the rapidly changing world of work, and to supply businesses with the skills they need:

the speed [of] changes especially with technologies making it very difficult for employers to keep pace, even the trainers themselves. To develop that training programme takes time that we [employers] don't have, we have to make money on the other hand. And by the time you have finished that programme [the needs have] changed (BTC)

Participants noted a key difference between locally developed qualifications and programmes such as those offered by the BCA, which are international professional qualifications whose currency is rigorously maintained:

I wonder what the [BAC] have done because they have been successful in structuring their training. If you take an AAT person for example he is more accurate and knows what industry expects rather than, if you take [one] from a Diploma in Accounting [or] Business student from UB. Those are two different people. And I don't know what [BAC] did. They are always up to date on standards -something that we are not doing in our industries (Employer)

Involvement of employers in the curriculum development stage in the development of a qualification is thought likely to improve the willingness of employers to take learners on attachment and graduates on internship:

[Employers] involvement can go a long way to ensure that they get the right kind of human capital []. The University is [] looking for internships and they are having a difficult time finding places and why, because the employers don't know why they should play a part in that. Whereas if the employers were part of the planning of the curricula through to the final product I am sure we would achieve what we are trying to address here (BOCCIM)

Another participant explained how employers are unwilling to take interns, when they know nothing of their background:

there should be a proper engagement of all the employers [by the government] to say we have got so many people who have been sent for training and the probability is at the end of this training in 2011 [there will be] so much engineers, doctors in these particular areas. [] you as employers, can you tell us how many of these people can be absorbed within your system? It's not happening so it is left again back to the government [] they only keep the register and whoever comes back [from being trained in another country] and is not employed [] then it's a phone call to us here 'Can you take this intern here?' Then I say NO there is no willingness on my side but had I been involved in the planning process then we could be able to absorb these interns with a particular purpose in mind (Employer)

5.4.2.2 Models of partnership

Several models of partnership between businesses and training providers were discussed. In the Japanese model the business is the training institution:

The Japanese [] have got a model [] where learners are taught the trade, they are being trained at the same time as working for large corporates e.g. Toyota [] They take the worker at an earlier age and they go through their training curricula working at the same time. They come to know the culture and the expectations (Employer)

Another model is the model established for the Botswana College of Accounting, which is jointly funded by Debswana and the Government of Botswana:

If the employers would be more engaged [] they would feel that they were more a part of the whole development as much as Debswana has. They felt they had to do it to help the country move forward. All the institutions need to involve the private sector and the employers more than ever before (BOCCIM)

A model described as having been promoted by the Swedish embassy in Botswana was a partnership in which businesses sponsored a school:

We visited Soweto where they started this project. Companies contribute equipment, plus developing people. They have such a school in SA. Last year the Swedish Embassy was going to start such a school in Botswana (Employer)

Models of partnership which pertained in the past in Botswana, and which still pertain to some extent in Debswana are upheld by participants as useful models. A system that once operated in Botswana, 'in the early 80s', included a relationship between the individual learner and a company/department which started during training and led, after attachments, to employment:

that we used to have ...I mean when I was doing my third year I was shadowed under the District Commissioner and I could know this is The Job and [], before I went to complete my studies, I could know there was a dissertation that I had to write about my experiences, OK and then come up with solutions and send it back to them. This is not happening today.

According to a Debswana representative the current Debswana model includes attachments but does not include the expectation of employment:

We have developed a partnership with the college and also we have a partnership with the University of Botswana. We have signed a memorandum of understanding in that there is commitment from our side and there is commitment from the colleges and the UB. It is working perfectly. And we do attach students at second year up to final year, those who have finished last studies we do not attach, we only attach from 2nd to final year (Debswana)

5.4.2.3 Attachments and Internships

Employers complain that attachment is not serving learners or companies well because the training providers do not provide learning outcomes or monitor learner's progress and achievements during the workplace based components of the programmes. This means that the companies that take learners on attachment do not know what the learners are supposed to be learning, and so they just try to keep them busy. These three excerpts from three different employers show that the involvement of teaching staff in attachments is limited if not non-existent:

[] There is no board that is looking after students in the workplace. They are ignored. When they have finished their theory training, when it comes to critical training nobody is interested (Employer)

we ask the institutions to articulate the outcomes of the internship for us [but] it never comes. You are just told, this person has to gain work experience within the certain period and you say, what exactly is it that you want this learner to have achieved by the end of the 10 week internship. []We never get anything! [] So as a result we have these learners coming in sitting there, posting mail, helping us to sort files and then they go back to school (Employer)

You never see a lecturer come and check and see how a student is doing and trying to find out what they are getting out or what is lacking in their curriculum. We parted with one student last week[] From March to last week nobody came. And surprisingly we get forms from HR that we need to sign [to say] that this person came to work. In the end we are not interested because you have to supervise somebody who is not getting anything from the job. You are wasting your time on this person. This person is only interested in getting a certificate. And the University is also interested in the issue of this certificate (Employer)

A comment from a trainer, speaking out of experience as both trainer and employer supports the impression that many attachments do not provide satisfactory experiences for the learners or for the employers:

people really struggle to find meaningful placements. When graduates from our institutions go for placement [] they are very useful but they are not getting the experience they are meant to get for the graduate level. [] perhaps if they are lucky they might write one line of code. Otherwise they sit around shadowing someone not really doing because the employers are also working on very thin margins. [As an employer] I had to take UB attachment students and sincerely the employer doesn't know what to do with them. They don't have the time and the resources; your HR department is not big enough or doesn't have enough money to do internship development. It's a very immature industry (Private Provider)

Although the employers were very persuasive on the subject of lack of learning outcomes for attachment and trainers' complete lack of interest in their students placed in industry, the interview with trainers shows that this is not always the case:

when it's done properly it can be very effective [] we have a logbook [for] every trainee going on attachment [and] there are facilitators , they follow them up weekly and they also check comments from supervisors as a sort of mentor [] there are learning outcomes in the book [] it is not only what we say they must do, supervisors can pin point and say they have a weakness I want to put them in this particular area for them to learn this skill, so we follow up with the logbooks and once they complete we also have meetings where we sit and look at the log books comments that are coming from the industry. But of course we might not do it 100%, I accept that sometimes there are shortcuts (CITF)

The system for **internship** of graduates is also not meeting employers' needs for a number of reasons including time lag between requesting an intern (for a specific task) and getting one assigned (after the deadline for the task) and the risk that interns will leave as soon as they get an alternative job offer. This issue is particularly problematic in some areas of work, for example:

When we get them they are with us a month or two. They get a job, they go. We have to send a request for another intern. In areas we consider sensitive and confidential it raises concern because you can't have people coming and going every month (Employer)

There is also an issue of the limited capacity of employers to absorb the number of interns and students on attachment who are looking for placement:

Botswana industry is very small so if you get a learner in the area of telecommunications, access net work you probably have BTC being the only company that can attach that particular learner. And how many learners do you have studying that particular area. A huge number, 250 stretching through to 6.-700 sometimes. And we can not absorb all of them. [] therefore they end up going for placement in different areas that are not necessarily relevant to what they are training in (BTC)

With regard to internships an issue of concern is the unrealistic expectations of employers, some of whom are more influenced by the concept of 'free employees' than a realistic understanding of the supervision and training needs of interns. This story from BOCCIM illustrates an employer's willingness to take on interns without any job descriptions or supervisory arrangements in place:

Just recently one of our members asked for [] this person is looking for about 8 people, it's quite a big company [] And I am saying if you are going to take 8 people into your company and there is no job description, even their supervisors are not ready they don't know what they are going to do with them what do you think is going to happen? Telephone bills shoot through the roof, there will be wars in the corridors and there will be gossiping and there will be chaos in their company [] so the question is : to what extent are we preparing employers or to what extent are employers prepared to take interns and get them through the paces so that they attain the skills and experiences that the programme purports to set (BOCCIM)

5.4.2.4 Alternatives to attachment

An alternative to attachment has been developed at Limkokwing in response to an anticipated gap between the number of students needing attachments (for a credit bearing work placement course

in the final semester of their programmes) and the number of external attachment opportunities available. Although students have been increasingly successful in finding attachments, the LEAP programme has provided approximately 500 students per year with an alternative to external work placement. In the LEAP programme multidisciplinary groups of about ten students are mentored through the processes of forming companies, getting clients and executing projects for the client. Student 'companies' work on campus and have access to the facilities they need to run their 'business'. Limkokwing staff and students find the LEAP an excellent alternative to external placement for several reasons including:

- Difficulty in keeping in touch with students on placement in other parts of Botswana:

how do you do it when you have got students in Maun and so on? [] it becomes very, very expensive to send a mentor more than twice (Limkokwing)

- Internal placements are more closely supervised and more focused on the student's learning:

If we had the space we would like to have [all] students in house because we can focus the education. When students are outside some students get good experience and some don't. Whereas internally we know exactly, we can monitor the students. It is a model that is well worth looking at for anybody that might be interested (Limkokwing)

- LEAP gives students a taste of running their own business:

I think most of the students prefer the LEAP because they are their own bosses, they are their own managers (Limkokwing)

- LEAP experience also helps graduates to get offers of employment:

I think many of the students who opt to go outside do so partly because they hope they will get employment in the place where they do their internship[] otherwise most students would opt to do the LEAP. We had 10 students doing LEAP projects in Debswana and they all got employed (Limkokwing)

A similar initiative is underway at Botho College, which is a response to the fact that *the IT industry is so small and we are unable to give our students meaningful internships*. In the model currently being tested students are involved through a project office in not-for-profit consulting projects:

It's like project consulting so we do seek work and we get hold of small projects, students work on these projects and they do so at school and we make sure they make excellent work[]. It's a big cost and we don't have money because we don't make money on these projects. You need to have full time senior staff. Consultants, the academic staff don't necessarily make the best consultants. You need consulting staff there and they come with a price tag. There are issues but it is a model that we are testing now. Up to now we have had

about 60 students who have successfully been able to get [] employment contracts and they need to book clients and [the clients] can fire them if they don't do the job (Botho)

5.4.3 Incentives for employers to train their staff

While the Government of Botswana has put in place two major incentives to encourage employers to up-skill their staff, these incentives are not having the desired effect. Several reasons for this include business insecurity; lack of knowledge of the incentive schemes; lack of flexibility of the incentives to meet employers' needs; and lack of a national qualifications context within which the benefit of training are clear.

5.4.3.1 Cost of training

Employers reported that while a big company like Debswana may be able to afford to train its employees, small companies without guaranteed income, especially those that rely on securing government business, are too vulnerable to invest in training:

it's a question of our economy and our economy is small. Most of the businesses depend on the government. On the other hand, we are not guaranteed business from government. [] If I go and invest my money for training for four years, I don't get income for that. [] When am I going to realise the return on my investment? If government can't guarantee support [of small businesses] we are doomed (Employer)

Apparently big companies like BTC also weigh up the cost of training against the option of employing someone who is already trained:

We are even at a point where we have to decide whether we are going to educate the person we have or lose them and get somebody who is already trained (Telecommunications)

Another issue that concerns employers is that they do not get a 'return on investment' from the money they invest in training because they are not able to retain people on the uncompetitive salaries that they are able to pay:

the same person is paid 48000 pula at Debswana and I can only give him 15000. And we are becoming training grounds for big companies [] bonding does not work people can just resign and quit whether you have bonded them or not [] when he wants to resign he just resigns [] the moment he gets experience and gets the training that we give him Debswana says "come to us". [] I keep on re-employing the inexperienced and after he is experienced and he goes after 2 years I get another one. So I don't bother training this qualified guy because he is going to Debswana anyway (Employer)

5.4.3.2 Government initiatives to encourage employer participation in training

The Government of Botswana intends to reduce reliance on expatriate workers through its requirement for manpower and training plans, and simultaneously provides incentives to train local people. Neither the disincentive in place to discourage ongoing reliance on expatriates nor the

incentives to train locals seem to be having the desired effect. Employers report that it is easy to get around the requirement for manpower planning to localize positions, as illustrated in this excerpt:

the foreign skills market they have so much been in abundance and getting employment has been quite easy here []. If it is easier for me to get somebody who is ready I will do it because I need the money now. The requirement of the Commissioner of Labour is to develop a training plan, I can give excuses for the next 10 years while I am not localising the position. We have to restructure our way of alternatives (Employer)

However the excerpt below (from a trainer speaking as an employer) offers an alternative perspective, which is that it makes better business sense to enhance the local workforce than to import skills:

what do [business people] want? They want the best input at the lowest cost so, that they can put out the best output at a good value to their customers. It is a simple universal rule of business. And the more Batswana that get employed the lower cost to the business and to the country so there will always be employers who want more and more Batswana to upgrade themselves and to be involved in business because it is completely untrue that people [prefer to] employ expatriates [who] have got no cultural link [and] take for ever to settle down. They are a temporary resource because they move and they are very, very expensive. And that is one reason why Botswana businesses do not survive because the margins are very thin because the skilled labour is more with the expatriates. The transfer to Botswana has to happen. And any serious employer understands this (Private provider)

Two incentives for training include the Vocational Training Fund, to which VAT registered companies contribute, and the 200% tax rebate which is described by BOTA as an alternative for those who cannot benefit from the Levy system. With regard to both of these schemes it appears that employers may not be sufficiently aware of how they work. The BOTA representative reported that although there are more than 7000 levy payers, less than one thousand have claimed from the Training Fund by August 2010. Employers' comments illustrate lack of awareness of the options available to them, for example:

it is more about awareness [] some people don't know how the levy works. [] The 200% tax rebate. Very few people have used it and [it] has been there for quite some time. Very few have used it WHY? Are people aware that if you do 1,2,3,4 you are qualified for it [] but the custodians of the [] benefit are not even bothering to engage the private sector. There are some factors that come in to play (Employer)

The Vocational Training Fund can be accessed for training offered by accredited providers for training at levels 1-3 of the BNVQF, and more recently also for diploma programmes of a vocational nature. However it cannot routinely be used for non-BOTA accredited courses, such as training provided by manufacturers on the use of their product, or training which is accredited by TEC such as accounting training offered by BAC; and it cannot normally be used for training offered by non-accredited trainers, including highly experienced professionals in fields where formal qualifications are less important than experience.

This is the story of a frustrated employer:

You buy a system from a certain system developer [] they are the only people who carry the know how of that particular system. Nobody else knows that particular equipment and [the developers] are not even interested in being accredited for training in their country of origin because their primary business is to develop the equipment. They are giving you training because you have bought the equipment and therefore they have to show you how their gadgets are used. So they are not interested in going through the accreditation [] BOTA says no they should be accredited where they come from (Employer)

Other issues which limits access to the fund include the time required to process applications and the paperwork and multiple requirements which BOTA is at pains to point out are the requirements that the industry itself proposed:

some applications come in incomplete and that's where the snag is [] The industry has set the condition, the criteria, they say that someone to be eligible for this must fulfil A, B, C - not BOTA but the industry. []. We have a number of applications that have been lying on our table they are very incomplete. The employers have [now] said this doesn't work (BOTA)

One example of the impact of delays in processing applications for registration of trainers provided in the consultation meeting concerned a case where experienced trainers, considered essential to the industry, had to leave the country having failed to get registration within the timeframe for obtaining a work permit.

A BOTA representative provided an example of how employers are trying to use the fund for training which is not based on skills needs analysis:

if you look at the alignment it's not there [] a company dealing in gas [wants to] have the driver to go and embark on an IT programme. [] Why? because the employer says we have paid this amount of levy I want to have my money back it doesn't matter what skills I train in as long as I have my money back [] The needs are on your side the expectation is that you should have had some training needs analysis (BOTA)

Another issue is employers' reluctance to release employees for training. This comment shows that employers do not conceive of flexible modes of training which would allow people to work and train simultaneously.

levy payers are saying this is just a tax as any other tax I pay and I don't bother to claim back reasons being that if I release my employees for being up skilled I am going to lose on time on who is now going to execute so I rather have my employees at work rather than releasing them for training (BOTA)

the majority of the 7000 [levy payers] are those who are willing to let people go [rather than train them] and then it brings the question how committed are we as employers to train in Botswana ? [] If there is no commitment then that explains why BOTA is settled with a couple of hundreds of millions pula on training levy because [employers] don't care, you know , why

should I train... if they don't come to work for a day or two I fire him and I get another one. I don't need to train them. And you may also find that it is the kind of sectors which believe there is no training required for their staff (BOCCIM)

One issue raised in relation to the Levy system is the perceived lack of a qualification structure behind it, and lack of accountability. Levy payers would like assurance that their contribution is raising the skill level of the country:

*what [is] the training levy [] meant to achieve at a national strategic level in terms of skills development? BOTA must at the end of the day have managed to take [training] from this level to this level. [and show that] the measurable [] benefits from the training levy are so much in terms of skills development, that's why we are here[] **we are talking more about throwing money at a problem than addressing the real problem** (Employer)*

It's got monetary benefits but no training benefits. This was meant to induce people to train but there is no structure behind it.[] claiming [] is only part of it, a benefit over and above the competency you are achieving from the training.[] Most of the [companies] are complying that's why people are paying, 7000 are paying and not claiming because we are just complying. The bigger picture of training is not there (Employer)

5.4.4 Accessibility of vocational education and training

The trainers' focus group explored aspects of delivery that would make education and training more accessible to learners. Flexibility was considered in terms of evening classes, distance modes, IT issues, and mobile training.

The group came up with a number of factors which limit 'after hours' delivery of programmes, such as gaps in staff expertise, salary structures, and security concerns, as shown in these excerpts:

Sometimes we are limited by the qualifications of our staff. Because many times many people will be trained on certain skills which are not relevant to the needs of the country or the needs of the industry and at times you will have maybe [a deficit of] certain skills and that means those people will be delivering the whole day, and when it comes to the evening they will be overloaded. (Technical College)

Also there are restrictions in salaries, overtime, because many teachers are willing to come to teach in the evenings but there isn't any incentive. They may get time off but there is no allowance for adjusting the pay structures and I think that is one of the major issues we have to be more flexible about that. (Technical College)

When we looked at going past 5-5 30pm there were two issues One was safety because I was told that there was no transport for students to get back to where they needed to go to . Secondly there was the staff issue, what am I going to be paid extra? (Limkokwing)

A model of delivery which has several features of flexibility is provided by BA ISAGO:

At Boston college we use pre recorded lecturers and lessons on DVD or video tape. That covers all the 20 or so programmes that we have and this allows us to register students right through the year because they don't rely on starting times. So this also helps us with students who are working who can't afford to come during the day. They come in the evening so we use the DVDs and tapes and at the same time we have qualified facilitators who give them support or help them when they have problems with the contents (BA ISAGO)

The development of distance modes of delivery seems to be hampered by lack of political will and lack of materials development capacity:

[Some time ago] we proposed marriage with DTVET. Let us do the theory part. Let us help each other to deliver the theory part of the courses and then they could carry on with the practical. But marriage [was] never realised. [] One thing [which was a hurdle] regarding DTVET in terms of developing materials was to put the material in distance mode which would have taken some time (BOCODOL)

New developments in the delivery of distance based education include a partnership between an *Indian University* and BOCODOL using *tele-education* which includes live interactions i.e. teleconferences and has the advantage *that learners who miss the classes can always go into the internet and access the lectures.*

Limited access to information technologies impacts on the ability of learners and teachers to take advantage of distance based education and other flexible modes:

Botswana has got a problem with IT access [which] is limiting a lot of flexible delivery. We have a lot of internet cafés around but for some reason our training institutions delivery through internet or delivery through computers seems to be limited and I know Botswana is praised for its fibre optic connections and stuff like that but when you come to the population that actually has access [] it becomes very thin and when you look at the number of people who hold mobile phones is very high. When you try to put training through the IT mode it's almost not workable in Botswana so I think we have to address this issue. How do individual students and teachers have access to laptops? It's a very critical issue (TAWU)

Lack of access to computers results in a low IT skills base even where internet access is good, for example:

Even if [internet access] is good you still find that the teachers in the school are unable to utilise those so called fast and flexible modes of delivery (BOTA)

Cost is considered a major factor in low access to computers. Taxes and duties add to the cost, making laptop ownership unaffordable for the majority of people. Some countries have succeeded in increasing mass access to technology by removing taxes on electronic goods, for example:

Because I was in Kenya the other time and asked why purchases seem reasonable, and I was told that the government took a deliberate stand to remove VAT and taxes from all

purchases of computer related material. []. So people have a lot of access to IT equipment (TAWU)

The high cost of computer equipment is significant for private providers since they are exempt from paying VAT and cannot therefore claim VAT. This means that they pay VAT on all educational equipment. Discussion about this showed that the cost of VAT is a direct cause of high private school fees and also a factor in less than adequate provision of computer equipment in private colleges. It is a disincentive for private providers since *the income and the expenditure has to end up in a model that is viable.*

The consultation meetings also raised issues felt to be impacting negatively on private providers. The perception of one local private training provider is that government overlooks local registered trainers when seeking training for its staff, preferring non local training providers and foreign trainers both in and outside Botswana. Another issue raised was the difficulty in getting training approved in new occupational areas, not reflected in government cadre. Participants felt that these and other issues need to be addressed through the development of a coherent skills development policy. Such a policy should also address the issue that government sponsorship is offered for diploma courses only and that this does not support the development of essential technical and vocational skills.

6 List of critical skills and priority skills

Each of the three data sets (econometric, survey and job opportunity index) presented a picture of skills needs in the form of a list of skills in rank order. There were overlaps and differences between the lists as shown in Table 30. Overlaps are highlighted.

Table 30: Three sets of quantitative data to be integrated

From Manpower Forecast	From Employers Survey	From Job Opportunity Index
Training program	Training program	Subject of Training
075 Accountancy/Auditing Courses	143 Masonry and Bricklaying Programs	142 Carpentry/Joinery Programs
071 Typing/Shorthand/Secretarial Programs	144 Plumbing and Sheet metal Programs	145 Electrician Programs
Tailoring/Textile Trades	075 Accountancy/Auditing Courses	072 Business machine operation and Data Entry
143 Masonry and Bricklaying Programs	076 Financial Management (other) Courses	231 Driving Skills and Motor vehicle Operation Programs
081 Public Administration Courses(Incl. Local Gvt., Social Security,Tax)	241 Hotel and Catering Programs	143 Masonry and Bricklaying Programs
Basic Nursing Programs (e.g. MCHA, nursing assistants, Red C	142 Carpentry/Joinery Programs	193 Quantity Surveyors/Building Economists
142 Carpentry/Joinery Programs	084 Marketing/Sales Courses	153 Machine Tool Repair/Fitting
Social Welfare/Social Work Programs	073 Clerical/Clerical Induction Programs	138 Other Health Related Programs
Management, General Courses	153 Machine Tool Repair/Fitting	273 Other Training n.e.i.
084 Marketing/Sales Courses	231 Driving Skills and Motor vehicle Operation Programs	177 Radio/Electronics/Computer Engineering

From Manpower Forecast	From Employers Survey	From Job Opportunity Index
157 Motor Mechanics	085 Business/Commercial Administration Courses	084 Marketing/Sales Courses
Welding and Fabricating	071 Typing/Shorthand/Secretarial Programs	154 Welding and Fabricating
Other Protection Service Programs, eg security guard	145 Electrician Programs	081 Public Administration Courses(Incl. Local Gvt., Social Security,Tax)
114 Computer Science Programs	074 Bookkeeping Courses	075 Accountancy/Auditing Courses
Refrigeration and Air Conditioning training	079 Materials Management Courses	076 Financial Management (other) Courses
Radio/Electronics/Computer Engineering	114 Computer Science Programs	082 Insurance Programs
Painting/Signwriting Programs	157 Motor Mechanics	144 Plumbing and Sheet metal Programs
Fitter/Turner training	164 Food Processing Trades	071 Typing/Shorthand/Secretarial Programs
Horticulture Programs		023 Secondary Teachers Training
144 Plumbing and Sheet metal Programs		157 Motor Mechanics
241 Hotel and Catering Programs		

We integrated the three data sets by assigning a score of 1-20 to the top twenty skills on each list, and using the average to create a single integrated list in rank order. By this means the significance of skills which appeared on all three lists was enhanced, and those that come from one source only (not triangulated) were shown to be less important. We excluded a few skills at the bottom of the integrated list which scored an average of less than 2 and were not skills that were indicated in any of our qualitative analysis. We added two skills which had not been represented on any of the three top twenty lists, and therefore did not make the integrated list, but which were indicated through our literature review and interviews. At this point we did not add agriculture although we noted the omission from all data sets as an anomaly, since agriculture is an important area for development. The resulting list was a list of twenty nine skills which were reviewed one by one in relation to:

- Factors likely to be distorting the statistical outcome; in particular the absence of data on supply of higher education graduates in skills areas which span levels from certificate to degree level. Some occupational classifications include roles for artisans and for higher education graduates, and our supply data included artisans only. In such cases the gap we had calculated between supply and demand was likely to be inflated.
- Limitations of the Botswana Classification of Occupations system, which is out of date and not a meaningful list of modern occupations. Some occupations on the list are effectively obsolete and some occupations which have emerged in the modern world of work are not specified, and therefore not captured in the LFS.
- Limitations of the Botswana Classification of Training system, which does not disaggregate types of training sufficiently to capture different skills (e.g. Computer Science Courses covers software developers and network engineers as well as computer driving licenses).

- Relevance of the listed skills to the sectors of interest; in particular to the six Hubs of the National Strategy for Excellence; the driving and enabling sectors of the NHRDS, and the overall vision of a transformation to a knowledge economy.
- Information obtained through analysis of employer satisfaction and employer expectations of the different occupational groups.
- Information on expected imminent developments (megaprojects and other new initiatives requiring skills) obtained through interviews and internal documents of the various Ministries and agencies.
- Other relevant information e.g. waiting lists for enrolment, time to recruit, and work permits issued by sector and occupation.

Figure 38: Processing three data sets and integrating information from other sources

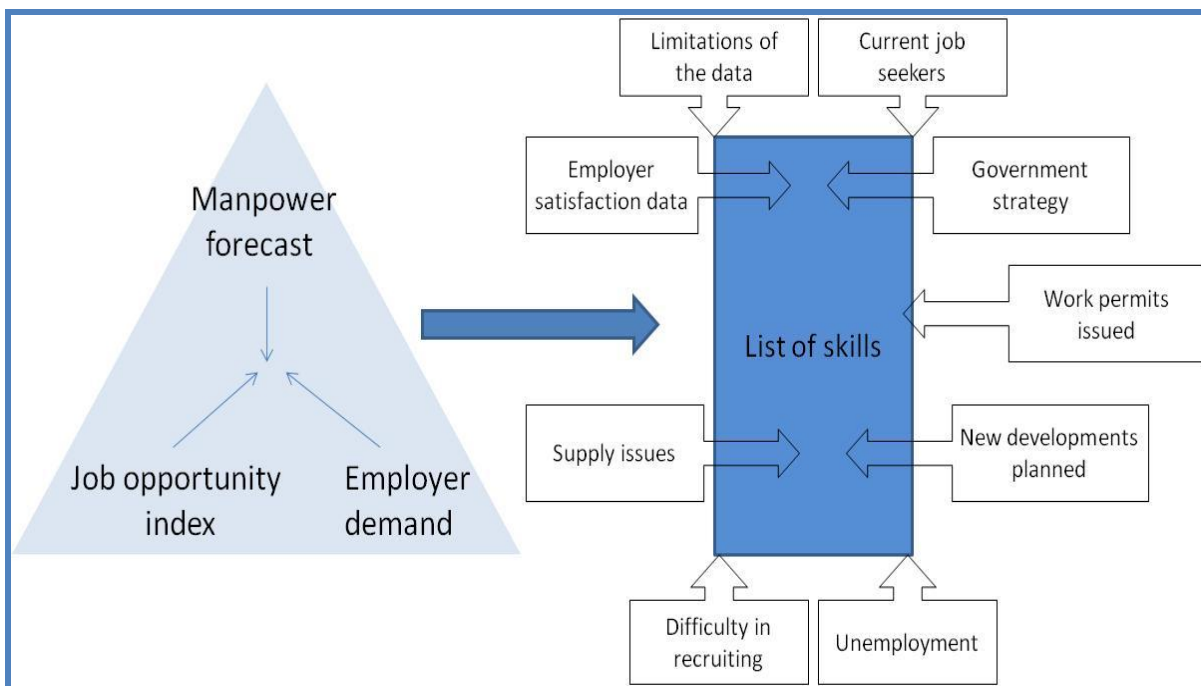


Figure 38 shows the two step triangulation process. The first step provided a list of 29 skills. After a range of other data was considered in the second step, the list was reduced to 15 critical skills. Table 31 below shows the twenty nine skills considered in the first ‘elimination round’, and indicates which fifteen skills were subsequently included in the next prioritisation round.

Table 31: First elimination round

	Rank order	To be included in the next stage of prioritisation
1. Masonry and Bricklaying Programs	1	yes
2. Carpentry/Joinery Programs	2	yes
<i>Accountancy/Auditing Courses</i>	3	no
3. Marketing/Sales Courses	4	yes
<i>Typing/Shorthand/Secretarial Programs</i>	5	no
4. Transport operations and Communication	6	yes
<i>Public Administration Courses</i>	7	no
5. Electrician Programs	7	yes
6. Machine Tool Repair/Fitting	8	yes
7. Plumbing and Sheet metal Programs	9	yes
<i>Financial Management Courses</i>	10	no
8. Welding and Fabricating	11	yes
<i>Tailoring/Textile Trades</i>	11	no
<i>Business machine operation and Data Entry</i>	12	no
9. Basic Nursing and other Health Related Programs	13	yes
<i>Quantity Surveyors/Building Economists</i>	14	no
10. Hotel and Catering Programs	14	yes
11. Motor Mechanics	15	yes
<i>Social Welfare/Social Work Programs</i>	15	no
<i>Management, General Courses</i>	16	no
<i>Other Training n.e.i.</i>	17	no
<i>Clerical/Clerical Induction Programs</i>	18	no
<i>Computer Science Programs</i>	18	no
12. Radio/Electronics/ Computer Engineering	18	yes
<i>Other Protection Service Programs, e.g. security guard</i>	19	no
<i>Business/Commercial Administration Courses</i>	20	no
13. Refrigeration and Air Conditioning training	21	yes
14. Technical/Vocational Teachers Training	Not ranked	yes
15. Diamond Cutting/Polishing/Valuing and Jewellery Making Courses	Not ranked	yes

Justification for each of the skills excluded in the first elimination round is provided below:

Out of scope:

The stock of these skills resides partly in degree graduates. The ranking is considered to be inflated due to data on degree graduates not included in supply data. In our view, most skills gap in these areas should be filled by degree graduates.

- Accountancy/Auditing Courses
- Public Administration Courses
- Financial Management Courses
- Quantity Surveyors/Building Economists
- Social Welfare/Social Work Programs
- Management, General Courses
- Computer Science Programs

Our decision to exclude accounting, administration and business related skills is largely based on our interpretation of high unemployment at lower levels of training in business subjects (especially as evidenced in tracer studies). An implication is that low level business and accounting courses offered in the vocational training institutions, both public and private, may not be sufficient for employment as a specialist, but rather that basic level business and accounting should be part of a suite of general skills that support entrepreneurship

High turn over:

Evidence of significant vacancies in these skills is thought to be the result of high turn over rather than shortage since degree of difficulty in recruiting is low. While high turn over is probably related to skills gap (i.e. employees do not have the skills employers seek) it does not indicate skills shortage. Furthermore shortage is not indicated by high unemployment and low numbers of work permits in these areas. Large numbers of graduates in these areas are inevitably produced by the private institutions and they are not considered strategic areas for priority development:

- Typing/Shorthand/Secretarial Programs
- Clerical/Clerical Induction Programs
- Business/Commercial Administration Courses

There is evidence of skills gaps in these areas and while these skills will not be part of a fast track strategy for developing skill which are strategically important, it is appropriate to make recommendations to the private vocational training institutions regarding the integration of generic skills and customer service skills.

Other not strategically important:

- Tailoring/Textile Trades

Only one of the three data sources (i.e. LFS based on past and including informal sector) shows demand in this area. Training for commercial tailoring is mainly 'on the job'. Textile industries have declined and there is no evidence that textile manufacture is an industry of future strategic importance

- Business machine operation and Data Entry

While these skills are important, especially because there is a widespread deficit in information management, they do not require substantial training programmes, but are fairly easy to train on demand in the workplace in relation to specific software/ machines and specific data

- Other Protection Service Programs, e.g. security guard

A relatively high number of vacancies is likely to be the result of high turn over. Low technology security is not considered a strategic area. Security technologies are covered under Radio/Electronics which is included in the list for further prioritisation

These are the fifteen vocational skills which were included in the prioritization exercise:

1) Masonry and Bricklaying

Rank order: 1

Key Elements of the skill:

- Bricklaying:- construction and repair of walls, partitions, floors, arches, fireplaces, chimneys etc from brick, concrete block, etc
- Plastering: finishing of walls, partitions with concrete mortar
- Tiling: finishing of walls, floors etc with ceramic, concrete or clay tiles
- Stonemasonry: building of stone walls, floors, and other structures, setting the decorative stone exteriors of structures, e.g. churches, hotels, and public buildings.

Industry or sectors needing skill:

- Construction of Buildings and Houses, Civil Engineering works e.g. roads and dams.
- Mining and Quarrying (large scale)

The rank order of this skill is due to a high number of current vacancies (JOI and employers survey) and a big gap between demand and supply (econometric forecast). A high number of vacancies can suggest:

- **Skills gap:** employers are looking for higher level or different skills from those of job seekers
- **Skills shortage:** there are not enough people with the skill (so employment rates of these workers is high)
- **Rapid turn over:** The workforce is mobile and there are always a lot of vacancies but also high employment

There is evidence of skills gap or skills shortage in the fact that a large proportion of work permits is issued for vacancies in the construction industry (not disaggregated into different occupations within the industry). There is also anecdotal evidence of high turn over.

Skills shortage is contra-indicated by high unemployment of construction workers shown in BTEP, CITF and BOTA tracer studies and in the Labour Force Survey 2005. High unemployment in relation to large number of work permits suggests skills gap rather than shortage. It could also indicate that wages are so low that they are only attractive to migrant workers.

On the other hand future skills shortage is strongly indicated by low interest in training in bricklaying and masonry. Bricklaying is the only skill offered at CITF which has no significant waiting list. Brigades reported having to do repeated recruitment rounds to fill places in bricklaying courses, while welding or electrician courses attract many applicants. This is thought to be because the occupation is not popular with Batswana.

Although the construction industry predicts a dramatic decline within 3 years as a result of the current deferment or cancellation of significant government building projects (especially hospitals and schools), the decline may not be as dramatic as forecast, especially in the light of most recent economic outcomes showing swift recovery from recession, largely as a result of continued government spending through the period of significantly reduced revenues. Furthermore, even if construction companies go out of business, demand for bricklayers and masons will remain high, as these skills are needed for new mining and transport sector developments.

2) Carpentry/Joinery

Rank order 2

Key Elements of the skill:

- Building construction carpentry: wooden roof trusses, gables and flashings etc formwork and wooden scaffolding
- Shop fitting: onsite creation of cabinets, shelves, counters etc
- Bench Joinery: use of woodworking machinery to create office, household and other furniture

Industry or sectors needing skill:

- Construction of buildings and houses, civil engineering works e.g. roads and dams
- Woodworking and joinery manufacturers, shop fitting companies or cabinet makers.
- Self Employment

Construction carpentry is also affected by the contradiction of high unemployment at the same time as high current vacancy rate and high number of work permits. Significant waiting lists for training suggest that there is strong social demand for training in carpentry skills as well as industry demand. Carpentry is important for mining, energy and transport as well as construction. New mines, power stations, and bridges will all require carpentry skills. Skills development on this area could include cabinet making which has potential for entrepreneurial activity and is also important.

3) Marketing/Sales Courses

Rank order 4

Key Elements of the skill:

- Sales representation: advertising sales agents, cashiers, tellers, insurance sales agents, travel agents, product demonstrators etc.
- Merchandising: setting displays of products on shelves and store fronts; pricing and tagging of products; inventory taking and reordering ; monitoring of customer satisfaction with product displays
- Marketing: promotion of products and services

Industry or sectors needing skill:

- Wholesale and retail
- Hotels, restaurants, cafes, hire car rental and other tourism services
- Banking, financial services, Insurance & pension funds
- Real estate
- Advertising
- Central and Local Government administration
- Medical Tourism

Skills in marketing and sales are relevant to many growth areas for Botswana. Growth areas like tourism and other exports depend on effective marketing. Strategies to enhance skills for the development of world class products and services will not yield returns unless they go hand in hand with the development of skills in marketing, and customer service skills that meet international expectations. Marketing and sales are also important for self employment.

Our research shows low employer satisfaction with marketing and customer service skills, poor dissemination of information about services available and low Botswana content on the internet. All of these point to the need for skills in product and service promotion, customer communication, and more aggressive marketing. In the tourism industry the room occupancy in Botswana’s hotels is less than optimal, and almost as many visitors pass through Botswana in transit as stop to visit our attractions.

4) Transport operations and Communications

Rank order 6

Key Elements of the skill:

- Heavy duty driving: horse and trailers, articulated trucks, buses
- Plant operation: cranes, forklift trucks, earth moving plant etc
- Train driving and signal operation
- Dispatching and radio operation: public transport dispatchers, two-way radio operation
- Air craft communications: radar operation and air traffic controlling, piloting and air cabin stewarding
- Reservations, tour and safari operation
- Cargo and warehousing operation

Industry or sectors needing skill:

- Rail, freight and passenger transport
- Postal, courier services and telecommunications
- Construction/civil engineering
- Diamond mining (open cast)

There is a large number of vacancies for heavy vehicle drivers, including construction vehicles. Driving skills as such are not considered a priority area requiring skills development strategies, since such skills can be developed relatively easily in short courses; however we note that currently driving schools are not required to register with BOTA and their programmes are not quality assured.

Plans to expand air, road and railway transport services to encourage tourism and import/export depend on skilled operators of those services. The planned developments include the need for transport planning and logistics, including railways operations.

There is low satisfaction with air traffic controllers, and lack of local training for pilots, despite Botswana being a destination of choice for foreign pilots to log the hours they need for commercial licences.

5) Electrician

Rank order 7

Key Elements of the skill:

- Installation and maintenance of electrical wiring of buildings and civil structures
- Installation and maintenance of electrical wiring of stationary plant and equipment e.g. generators and uninterruptable power supply plant (UPS)

Industry or sectors needing skill:

- Construction of buildings and houses, civil engineering works e.g. roads and dams
- Mining of all kinds
- Electricity generation and distribution
- Manufacture of electrical machinery and plant

The current vacancy rate is not significantly high, but employers predict a high growth rate. Given the plans to develop new power stations, ambitious targets for solar power generation and plans to establish new mines, there are strong indications that these skills will be increasingly in demand.

High unemployment of graduates of low level programmes (e.g. LFS and MoL registered job seekers) suggests that employers seek skills at higher level than certificate. CITF trains 36 students in electrical trades each year but has a waiting list of 451 potential students, showing very high social demand for electrical training.

6) Machine Tool Repair/Fitting

Rank order 8

Key Elements of the skill:

- Machining: use of machine tools like lathes, drilling, milling machines etc to make or modify metal parts to be used in fitting
- Fitting: Dismantling machines and fitting parts back together e.g. gearbox overhaul and re-fit etc.

Industry or sectors needing skill:

- Manufacture of products that require large installed processing plant and equipment e.g. big abattoirs, breweries and meat processing plants, grain milling factories etc
- Large scale mining e.g. diamond and copper mining

Employers predict high growth of demand in this area. Development of these skills will support a number of key sectors for development including mining, energy and manufacture. Rapid technological development means that these skills have a short shelf life and need to be updated frequently. Orientation to digital machines and tools is essential.

7) Plumbing and Sheet metal

Rank order 9

Key Elements of the skill:

- Plumbing: installation and repair of piping systems, fixtures for clean water or sewage systems; installation and repair of equipment like water heaters etc.

Industry or sectors needing skill:

- Construction of buildings and houses, civil Engineering works e.g. roads and dams
- Mining of all kinds
- Electricity generation and distribution
- Manufacture of products that require large installed processing plant and equipment e.g. big abattoirs, breweries and meat processing plants, grain milling factories etc

Relatively high unemployment (LFS and current registered job seekers) contradicts current high vacancy rate. This area, along with other construction skills, is predicted by employers to decline as a result of anticipated reduction in government building projects. However, development of solar power (15.3% of national energy by 2030) and establishment of new mines and irrigation schemes for commercial agriculture all indicate potential demand for plumbing related skills.

8) Welding and Fabricating

Rank order 11

Key Elements of the skill:

- Metal cutting: use of saws, shears or flame to cut metal of all types
- Forming of metal: use of heat or machines to change raw metal into desired shapes, can also be called blacksmithing
- Boiler making: production of articles from sheet metal, plates and sections; involves flame cutting, soldering and welding
- Welding: fusion of metal parts for form components using heat. Heat can be applied using electric arcs or flames from gas torches

Industry or sectors needing skill:

- Construction of buildings and houses, civil engineering works e.g. roads and dams
- Mining of all kinds
- Electricity generation and distribution
- Manufacture of products that require large installed processing plant and equipment e.g. big abattoirs, breweries and meat processing plants, grain milling factories etc
- Small fabrication workshops and self employment

Relatively low unemployment and positive skills gap indicated in the econometric forecast and high current rate of vacancies suggests skills shortage in this area. Employers do not predict high growth due to anticipated downturn in construction, however developments in other sectors like mining and transport indicate growing need for skilled welders and fabricators.

9) Basic Nursing and other Health Related skills

Rank order 13

Key Elements of the skill:

- Basic nursing assistance: basic patient safety and care, patient monitoring and documentation,
- First aid and para medical assistance for emergency services
- Basic health care assistance: dental therapy assistance, lab/clinical technicians /assistance including blood collections and specimen collection,
- Other medical/hospital assistant programs e.g. Pharmacy technician or assistant

Industry or sectors needing skill:

- Central and Local Government administration
- Hospitals and clinics
- Medical tourism

The econometric forecast shows a potential shortage of the skills by 2016 based on past trends and existing supply. Furthermore Botswana has established a Health Hub which aims to develop Botswana as a clinical and research centre of excellence, and as a medical tourism destination. There are plans to build a number of new hospitals (32 primary health care hospitals in total), although many of these are currently deferred. The new training hospital under construction at UB will be the largest training hospital in Southern Africa.

10) Hotel and Catering

Rank order 14

Key Elements of the skill:

- Front of house
- Professional chef and patisserie
- Barista (coffee maker)
- Cocktail service
- Front office skills: customer service, reservations and telephone skills, reception and problem solving
- Housekeeping: room decorations and set up, linen services

Industry or sectors needing skill:

- Hotels and other short stay accommodation e.g. lodges, camp sites
- Restaurants, cafes and canteens
- Hospitals

Although tourism skills are forecast in the econometric forecast to be in oversupply by 2016, there is an apparent shortage of cooking and hospitality skills. The employers' survey also shows a high number of current vacancies and strong potential growth in this area. High skills in cooking and other hospitality services are required to support the planned promotion of the tourism and health industries. A recent skills needs analysis by the Tourism Board also finds skills gaps in the current workforce, and makes recommendations in skills enhancement in many areas especially customer service, service ethics and customer communications.

11) Motor Mechanics

Rank order 15

Key Elements of the skill:

- Auto mechanic: diagnosis and repair of motor vehicles and stationary petrol engines
- Diesel mechanic: diagnosis and repair of heavy duty motor vehicles and diesel engines
- Auto electrician: diagnosis and repair of electrical circuitry of motor vehicles of all kinds, operation of electronic diagnostic equipment and repairs of auto computers

Industry or sectors needing skill:

- Sale of motor vehicles
- Maintenance and repair of motor vehicles
- Sale of motor vehicle parts and accessories
- Sale, maintenance and repair of motorcycles

Current and future skills shortage of motor mechanics is indicated in all three data sets. However, relatively high unemployment of motor mechanics (as shown in LFS and BTEP tracer study) may suggest skills gap rather than shortage. Qualitative data suggests curriculum is not keeping pace with changes in the automotive industry. Economic growth (number of car owners) and development of transport sector (including plans to improve public transport) will increase need for skilled motor mechanics.

12) Radio/Electronics/ Computer Engineering

Rank order 18

Key Elements of the skill:

- Computer electronics technology: manufacture, diagnosis and repair of integrated circuit boards, microprocessors and computer power systems
- Radio and electronic technology: manufacture, diagnosis and repair of radios and other electronic wireless/visual machines e.g. cell phones, televisions, stereos etc.
- Instrument mechanics: diagnosis and repair of electronic instrumentation e.g. measurement and monitoring instruments for power, process control etc.

Industry or sectors needing skill:

- Repair of personal and household goods e.g. TVs, videos, and watches etc.
- Telecommunications
- Electricity generation and supply (not household\building electricity)
- Motion picture, radio, television, other entertainment
- Computing and related activities incl. data entry/processing & software consultancy orgs.
- Mining of all kinds

The econometric forecast indicates that this is a growth area (and also other electronics programmes including Telecommunications). The employers' survey also indicates many current vacancies and significant potential growth. Skills in radio, electronic and computer engineering support high technology development in a number of sectors including security, broadcasting, mining, telecommunications, transport and power.

13) Refrigeration and Air Conditioning training

Rank order 21

Key Elements of the skill:

- Refrigeration: maintenance and repair of portable and installed refrigeration plant; mobile refrigeration plant, household refrigerators and cold rooms
- Air conditioning: maintenance and repair of basic and split system room air conditioners and industrial cooling plant
- Automotive air conditioning: maintenance and repair of automotive air conditioners

Industry or sectors needing skill:

- Electricity generation and supply
- Mining of all kinds
- Manufacture of food products and beverages e.g. abattoirs, breweries and meat processing plants, etc
- Maintenance and repair of motor vehicles
- Repair of personal and household goods e.g. TVs, Videos, and fridges etc.
- Construction of buildings, houses and hospitals - Complete incl. repair/maintenance
- Manufacturing of machinery and equipment including refrigerators and other domestic equipment (e.g. air conditioners and cooling machines)

Although our JOI and survey data do not indicate strong current demand, the econometric forecast shows that employment is exceptionally high (0% unemployment) and that this is a growth area. These skills are important, among others, for hospitals, mining, agriculture, horticulture and transport. Botswana, like other countries that experience extreme temperatures, is well placed to develop high skills and innovation in these areas. This area has potential for entrepreneurship.

14) Technical and Vocational Teaching

Rank order Not ranked

Key Elements of the skill:

- Teaching skills: pedagogical and counselling skills
- Vocational subject specific skills

Industry or sectors needing skill:

- Technical & vocational education and training
- All

This skill appeared as an oversupply based on LFS. However, other data show evidence of a skills gap. It is widely believed that the technical colleges are underutilised due to staff shortage. Our analysis does not conclusively support the perceived shortage, but it does show that a factor in underutilisation could be skills gap (i.e. mismatch of the specialist areas of staff and the specialisations offered by the college). Our data also show large numbers of TVET staff do not have teaching qualifications. Our focus group interview data shows that poor pedagogical skills of TVET teachers (i.e. failure to integrate theory and practice) may be a factor in generalised dissatisfaction with TVET graduates who are found to be lacking in both generic and specialist skills and in practical experience. The fast track strategies to be developed for the priority skills will necessarily depend on sufficient quantity and quality of TVET teachers, so development of this skill area is critical to the development of all other areas.

15) Diamond Cutting/Polishing/Valuing and Jewellery Making

Rank order	Not ranked
Key Elements of the skill:	
<ul style="list-style-type: none"> • Diamond cutting: use of specialised tools, machines, knowledge and techniques to transform a rough diamond into a faceted gem. • Diamond polishing: process of faceting, polishing, cleaning and inspection of diamonds • Jewellery making: design and creation of articles for personal adornment such as necklaces, rings etc using all kinds of materials including metals, gems or beads etc. 	
Industry or sectors needing skill:	
<ul style="list-style-type: none"> • Manufacturing of jewellery • Manufacturing of non-metallic mineral products including glass, ceramic & diamond cutting and polishing 	

Skills for downstream value adding diamond processing is absent from our data, since currently no providers offer training, and relevant occupations are not reflected in the current occupational classification system. Botswana produces 25% of the world’s rough diamonds. The value of rough diamonds is a fraction of the value of cut and polished diamonds, and that in turn is a fraction of the value of retail in diamond jewellery. The Diamond Hub aims to develop a new industry in manufacture and retail of diamond jewellery. A point to note is that an incentive is in place for diamond cutting/ polishing companies, which is exemption from VAT, which also means that these companies cannot claim from the Vocational Training Fund.

6.1 Findings of the prioritisation reference group

The criteria selected by the prioritisation reference group, and the weightings attached to each criterion are shown below

Criteria	Average	Weighting
It supports specific strategic growth initiatives of the GOB	7.45	56%
It supports job creation and reduction of poverty	6.45	19%
It is relevant to the development of a knowledge economy	5.64	11%
It fits within a high technology paradigm	4.27	4%
It supports more than one key sector	3.82	9%
It is relevant to the export market	3.55	Excluded
It supports import substitution	3.00	Excluded
It is a specialist skill not widely available	2.45	Excluded

The list of 15 skills was shortlisted after discussion of the criteria, but before systematically applying them, to give a list of ten skills to be used in the application of the method.

Skill	Average
Transport operations and Communication	10.0
Technical/ Vocational Teaching	10.0
Hotel and Catering	9.5
Electrician	9.0
Radio/ Electronics/ Computer Engineering	9.0
Diamond Cutting/ Polishing and Jewellery Making	8.9
Masonry and Bricklaying	8.1
Refrigeration and Air Conditioning	7.5
Carpentry/ Joinery	7.4
Basic Nursing and other Health Related	7.4
Marketing/ Sales	Excluded
Plumbing and Sheet metal	Excluded
Machine Tool Repair/Fitting	Excluded
Motor Mechanics	Excluded
Welding and Fabricating	Excluded

After comparing the importance of each skill against the other nine skills, in relation to each of the selected criteria, the following list of six priority skills was obtained:

	It supports specific strategic growth initiatives of the GOB	It supports job creation and reduction of poverty	It is relevant to the development of a knowledge economy	It fits within a high technology paradigm	It supports more than one key sector	Row Total	% of Grand Total
Technical/ Vocational Teaching	0.12	0.01	0.13	0.09	0.13	0.49	17%
Transport operations and Communication	0.09	0.08	0.10	0.10	0.09	0.46	16%
Radio/ Electronics/ Computer Engineering	0.02	0.04	0.10	0.11	0.09	0.35	12%
Electrician	0.04	0.04	0.07	0.07	0.07	0.29	10%
Hotel and Catering	0.09	0.11	0.03	0.02	0.02	0.26	9%
Diamond Cutting/ Polishing and Jewellery Making	0.09	0.07	0.02	0.04	0.00	0.22	8%
Masonry and Bricklaying	0.04	0.08	0.01	0.01	0.06	0.20	7%
Basic Nursing and other Health Related	0.05	0.05	0.05	0.04	0.01	0.20	7%
Refrigeration and Air Conditioning	0.01	0.01	0.04	0.07	0.05	0.18	6%
Carpentry/ Joinery	0.02	0.07	0.01	0.01	0.05	0.17	6%

6.2 Findings of the stakeholder workshop

Feedback from the stakeholder workshop is divided into general observations, feedback on the draft recommendations, and feedback on the draft strategies.

6.2.1 General observations

It was noted that the study does not draw firm conclusions on some of the issues it raises, such as conclusions on the work permit situation, recruitment decisions and attitudinal issues impacting on employment. Since the ToR for this project do not include in-depth analysis of these broad labour market issues, recommendations could include the identification of significant areas for further research.

The implementation plan implies a project management approach and implementation groups may need training in project management skills. The concept of providing project management training to implementation groups has significant merit, since it would be an advantage for overall co-ordination of the implementation programme if implementation groups are using the same approach.

The need for (i) more frequent collection of labour market data is already identified through the LMO development project, but needs to be included in the recommendations of this project as well. Other general recommendations for data collection could include (ii) the need for feasibility studies and business plans for major new initiatives to include human resource needs analysis (currently included in one of the strategies) and (iii) the need to systematize education information management to improve the richness, reliability and accuracy of skills supply data.

The draft timeframe presented at the workshop for implementation is a 'catch-all' scenario which accommodates areas requiring the longest lead in times, for example, where new providers need to be established and new programmes need to be developed. It was felt that the draft did not convey the sense of urgency needed, nor admit the possibility that some areas will be able to implement relatively quickly, because essential elements are already under development or in place.

There are no recommendations for curriculum under the draft general recommendations. However it is important that (i) curricula are developed to meet the standards of professional associations and professional registration/certification, so that when learners graduate they are fully prepared for work, and do not lack essential elements required for full entry into the profession. In this connection it is essential that (ii) trainers use software programmes and equipment that is very similar to/the same as software and equipment used by the majority of employers in the field. Finally, a recommendation for curriculum development needs to address weaknesses in existing systems to ensure that training is relevant i.e. approval and accreditation requirements for programmes should include quantitative and qualitative market research that establishes a strong social and/or economic demand for the programme.

Regarding the controversial issue of support for private providers, the researchers note that while the government cannot be expected to bear the full cost of education and training; and that any kind

of profiteering from government funding is an anathema; there is a need to re-conceive the role of the private sector. The number of Batswana seeking tertiary education, which already considerably exceeds actual current capacity, is expected to increase steadily; and furthermore the plans of the Education Hub to attract international students from the region anticipates expanded provision of education and training. The goal of raising the skill level of Batswana and transforming Botswana into a knowledge economy also implies expanded provision of education and training. If it is viable for investors to establish private training establishments, this sector has the potential to relieve the government of the unsustainable burden of the education and training of a growing number of learners. If sufficiently supported and well regulated private education and training can provide a critical avenue through which to achieve the goals of Vision 2016 and the NHRDS.

Participants expressed surprise that the study did not identify agriculture as a critical skill. This was because agriculture did not feature in any of our key data sets, including LFS, JOI and enterprise survey. Where there were notable omissions for two other skills that were clearly important, we were able to introduce them because we had substantial other evidence of what was needed. While there appears to be a lack of clear direction for the development of agricultural skills to meet the objectives of government initiatives, agriculture should nevertheless be included in the critical skills and a recommendation should be developed under 'Critical skills not prioritised'.

6.2.2 Observations on the draft general recommendations

There were 16 draft general recommendations. After this feedback was received, many recommendations were modified and some new ones were added. The final number of general recommendations is 20.

1. Develop mechanisms (based on Full Time Equivalent (FTE) students) for sponsoring TVET students from certificate to diploma level in public and private accredited training institutions

Some respondents felt that government sponsorship at certificate level should be limited to priority areas only, on a cost sharing basis. While acknowledging the justification for this position, we feel that the uptake of training in all of the critical skills identified (16) should be enabled through government sponsorship.

In relation to government sponsorship it was felt that learners need more guidance in managing student allowances.

2. Devise a grant system to support the establishment of high quality private training in priority skills areas

This recommendation was only partially supported, since some respondents felt that there should be no support for the private sector. Others felt that grants should be awarded judiciously to meet specific establishment needs, and that such a system should be rigorously audited to guard against abuses.

3. Consider the case for waiving VAT and duty on educational equipment and materials for accredited private providers

Participants felt that this was narrow in scope and that ideally all VAT and duty on educational books and educational equipment should be waived.

4. Expand the scope of the VTF to reimburse employers for a range of investments in training including supervision of attachment, external assessor duties, demonstrations and guest lectures, industry certification, and professional development of staff including on-the-job training at levels 1-5.

While in some cases reimbursement after the service is provided is appropriate (see Recommendation 13), in some cases, i.e. when staff are to attend fee paying training courses, it may be appropriate for the tuition fee to be paid up front. This will assist small businesses with narrow profit margins to participate in training the nation.

5. Expand the scope of the VTF to support trainer providers with competitive grants for improvement initiatives such as upgrading equipment and curriculum development or promotional events such as trainee competitions and to incentivise the establishment of learning communities

This recommendation was generally supported with some reservations about equipment for private providers. The recommendation can be adapted to exclude equipment but retain its essential purpose.

6. Develop flexible delivery modes (e.g. distance learning with block courses, evening courses) and consider offering theoretical components in dual mode

There is strong support for flexible delivery to enable employees to work and study concurrently. The need to release employees for full time face to face training is a major barrier for employers. Furthermore if training was held in the evenings and at weekends, employers could also participate more actively in the training and assessment of trainees.

Priority development of open and distance modes of learning is considered essential for addressing access issues which are barriers to many potential learners. Assistance is available through the support of the Commonwealth of Learning, and it was suggested that this assistance should be sought urgently, to facilitate the fast track conversion/development of courses for distance delivery.

7. Ensure that proposals for the NCQF build on the BNQF and provide clear learning pathways for TVET graduates and one coherent system for quality assurance of technical and vocational qualifications

This recommendation is uncontroversial and unanimously supported.

8. Develop expanded and more coherent and effective processes for streamlined development of approved unit standards, assessment tools, and curricula.

This recommendation is uncontroversial and unanimously supported

9. Build capacity for curriculum development by either (i) providing centralized curriculum development services to all providers or (ii) developing a pool of curriculum development specialists to be used as a common specialist resource to work with institutions to develop programmes and simultaneously developing capacity within the institutions and (iii) funding from VTF to support such efforts.

The concept of a pool of experts available as a resource to public and private providers was preferred to the concept of centralized curriculum development. The notion of VTF grants for curriculum development is also uncontroversial.

10. Promote quality culture in institutions by recognising and rewarding excellence and in teaching and learning, excellence in student services and excellence and innovation in industry engagement

This was unanimous supported and it provides another way in which the VTF could be used to motivate improved outcomes for technical and vocational training

11. Develop the supply, professionalism and pedagogy of TVET teachers by

- Providing incentives for experts to train as teachers in 'gap areas'
- Providing wage related incentives for training and professional development
- Ensure that all teachers are working towards teaching qualification at Level 5
- Focus on pedagogical approaches to suit outcomes based learning; integrating theory and practice and developing critical thinking
- Offer online courses with blocks of teaching practice and provide students with laptops

While respondents noted that it is the role of employers to provide incentives for staff to upgrade their qualifications, the government is a major employer of teachers; and all learners, whether in public or private institutions, are beneficiaries of a well qualified and adequately remunerated workforce of TVET teachers. Therefore we believe there is a need for regulation to ensure that the occupation is attractive, and that upgrading one's qualifications is seen as a worthwhile endeavor.

An omission in this recommendation, which is included in the strategy for TVET teacher training is the express need for trainers to have, and maintain, industrial experience.

12. Pilot the concept of Learning Communities with selected specialist providers and relevant companies, with formal agreements about the benefits to be provided by each party, and incentives for evidence of implementation of the agreement (such as equipment grant from the VTF to training providers, and reimbursement to employers for the services they provide, including supervision of attachments)

This recommendation is unanimously supported

13. Attachments should be preceded by orientation of supervisors, and implemented with log books of learning outcomes and frequent monitoring and liaison between supervisors and

teaching staff. Wherever possible, strong entrepreneurial alternatives to attachment (such as business simulation, LEAP, project based 'consultancy') should be considered.

An important limiting factor for attachments in remote rural areas e.g. at safari lodges, is the lack of accommodation for trainees. An expectation that employers will participate in the skills development of the nation by ensuring that there are no barriers to the provision of attachments and internships, needs to be built into the process of registering a company. VTF grants could possibly be used for dedicated trainee accommodation, with repayment required if the company ceases to offer a minimum amount of training, or if quality of attachment internship provision does not meet minimum standards.

Payment for supervision of attachment/mentoring business simulation projects should be dependent on evidence of active supervision and mentorship, a report against learning outcomes and letter of reference for the learner/graduate

Respondents emphasized the need for rigorous implementation of best practice attachment supervision by teaching staff, since employers complain widely and vigorously that there is little or no involvement of the trainer in the attachment.

There is strong support for the formation of enduring formal partnerships between specific trainers and specific companies for the joint management of attachments (as in the Learning Community)

14. Reduce duplication and increase differentiation between providers

Respondents felt that this is a foregone conclusion and may not need to be recommended in this report. Since the Learning Community recommendation emphasises specialist providers, there is a case for omitting this recommendation. On the other hand, the implications of addressing the duplication of provision and increasing specialisation are perceived as very threatening by individuals who will inevitably resist change, and so it may be necessary to keep on reinforcing the same message.

15. Include laptop in the fee for qualifications with components reliant on computer/internet access (e.g. dual mode/distance based or technical qualifications)

16. Provide wireless internet access at all public and private training institutions

Many respondents were strongly in favour of this, believing that the development of the ICT skills, which are fundamental to full participation in a digital age, and ultimately to the development of a knowledge economy, depends on individual adoption of computers as essential tools for life and work. ITC skills increase through regular and sustained access to computers, and the integration of computers into different aspects of life. Occasional access for specific tasks in a computer laboratory does not facilitate real competence or transferable skills development.

Some respondents felt that such a laptop initiative is not sustainable, even though many institutions, in New Zealand for example, have adopted this practice, and find it cost effective. As Botswana achieves its goals for reduction of poverty and the development of a highly skilled workforce, more

families will be able to purchase computers, and there will be reduced need for national steering interventions. In the meantime only 6% of the population has computer access. This means that a large number of graduates are entering the workforce without the essential skills needed for modern workplaces.

Although some respondents believe it is the 'role of parents to provide internet', the fact is that only a tiny minority of parents provide this. Equipping the current generation of learners with knowledge of the World Wide Web and the skills to use it is a necessary step to ensure the diffusion of technology in Botswana. Some technologies have reinforcing 'network effects', especially communication technologies such as phone and internet, where the value of the technology is proportional to the number of people that use it. The more that people use a communication technology, the more valuable it becomes, and the more its use becomes essential for full participation in modern society.

There are a number of options for ensuring learners have computers. One, preferred by the researchers, is to include the cost of a laptop in the tuition fee, so that funders and parents cover the cost through a cost sharing arrangement, and the institution is the agent which issues a laptop that meets specifications for the course.

Another option is to include an allowance for a laptop computer in the sponsorship of students, along with the current allowance for books. The drawbacks of this are (i) possible lack of ability of the average learner to manage the allowance judiciously for the purpose for which it was intended and (ii) students who are not sponsored may be disadvantaged.

6.2.3 Observations on the draft strategies

In general, observations made about the objectives of the strategies reflect issues discussed under the general recommendations and all the strategies will be aligned with revisions to be made to the general recommendation as a result of the feedback summarised above.

Strategy for the development of Technical and Vocational Teaching skills

The strategy was found to meet the needs of all stakeholder groups. In particular participants noted the benefits of modeling a fully developed RPL process in the certificate programme.

Strategy for the development of Transport Operations

Participants noted the importance of including basic maintenance skills in the training of heavy plant and vehicle operators, including aircraft. They also noted the need to include CAAB in all strategic skills development initiatives. They emphasized that regulatory bodies should focus especially on outcomes of investment in training,

Strategy for the development of Radio/ Electronics/ Computer Engineering (including telecommunications)

The strategy was found to meet the needs of all stakeholder groups. Participants noted that this skills group has excellent potential for entrepreneurial development.

Strategy for the development of Electrician skills

Participants noted a financial burden for training providers in the need to attract and retain highly skilled and well qualified staff. This cost will necessarily be passed on to learners in the fees.

Strategy for the development of Hospitality and Catering skills

The strategy was found to meet the needs of all stakeholder groups and was strongly supported.

Strategy the development of Diamond Cutting/Polishing/ Jewellery making skills

Unfortunately there was no representative of the sector remaining at the workshop by the time this strategy was discussed. Feedback included the need to collaborate with diamond manufacturers to refine the strategy.

6.3 Final list of critical skills and priority skills

The sixteen skills areas identified as critical are:	The six skills areas to be prioritised are:
<p>Transport Operations Technical/ Vocational Teaching Hospitality and Catering Electrician Radio/ Electronics/ Computer Engineering (including telecommunications) Diamond Cutting/ Polishing and Jewellery Making Masonry and Bricklaying Refrigeration and Air Conditioning Carpentry/ Joinery Basic Nursing and other Health Related Welding and Fabricating Marketing/ Sales Plumbing and Sheet metal Machine Tool Repair/Fitting Motor Mechanics Agriculture</p>	<p>Transport Operations Technical/ Vocational Teaching Hospitality and Catering Electrician Radio/ Electronics/ Computer Engineering (including telecommunications) Diamond Cutting/ Polishing and Jewellery Making</p>

The matrix below shows the relationship between the critical and priority skills and the sectors which will benefit from their development. The matrix is a simplified graphic representation of 'significant impact' which excludes the finer tuned recognition of 'any effect'. For example, although basic nursing and other health related skills will benefit many sectors, the key impact is in the health sector, and this is what is shown:

Vocational Skills	Significant impact									
	Mining	Transport	Energy	Construction	Tourism	Telecommunications/ ICT	Manufacture/ Diamonds	Agriculture	Health	Education
1.Masonry and Bricklaying Programs										
2.Carpentry/Joinery Programs										
3.Marketing/Sales Courses										
4.Transport operations										
5.Electrician Programs										
6. Machine Tool Repair/Fitting										
7.Plumbing and Sheet metal Programs										
8.Welding and Fabricating										
9.Basic Nursing & other Health Related										
10.Hotel and Catering Programs										
11.Motor Mechanics										
12.Radio/Electronics/ Computer Engineering										
13.Refrigeration& Air Conditioning training										
14.Technical/ Vocational Teaching										
15.Diamond Cutting/Polishing/ Valuing and Jewellery Making Courses										
16.Agriculture skills										

7. General Recommendations

These are the recommendations after feedback from the stakeholder workshop was considered. The recommendations made in this section are general recommendations, which are relevant to data management, further research and improvements to be made in all areas of TVET training. Section 8 consists of six specific strategies for the six prioritised skills. The six strategies are all influenced by these recommendations.

The most general recommendations are relevant to the research and data needs of the labour market and education and training sector:

1. Improve the collection and management of data relating to labour market demand and skills supply by (i) increasing the frequency of the Labour Force Survey (ii) require feasibility studies for new developments to include human resource planning and (iii) require all training institutions to implement enrolment management systems which are aligned to a central MIS
2. Commission a research project to investigate attitudinal issues impacting on the productivity of the labour market including (i) reasons why employers claim that attitude is the greatest impediment to doing business in Botswana (ii) factors impacting on the attitudes of employees towards their work (iii) the relationship between attitude, skill level and productivity and (iv) interventions which have been shown to improve attitude and productivity.

One recommendation pertains to the skills needs of implementers of the six priority skills development strategies:

3. Implementation groups for priority skills development strategies should be inducted into a method of project management, and led by someone with successful project management experience.

Training related problem issues and issues of concern raised in our focus groups, survey and consultation meetings can be classified into four categories as follows:

<p>Access including issues of funding, sponsorship, duties and taxes and delivery modes</p>	<p>Quality including quality culture, quality of teachers, curriculum development, registration and accreditations processes, learning pathways, level of qualifications</p>
<p>Relevance including relationships between industry and training, practical work components of programmes,</p>	<p>Technology including lack of computer and internet access</p>

There is of course some overlap between these areas, but they provide a framework for discussion. The problem areas listed in Appendix 5 are matched with recommendations in this section.

7.1 Access

The cost of TVET training is a barrier to some students. Most TVET students are not eligible for government sponsorship, since government bursaries are primarily for programmes which have a BGCSE entry requirement. This contributes to a strong preference for higher education programmes and can leave some young people who do not have this entry requirement with no option but to seek work in the elementary occupations.

Private providers do not receive any direct funding from the Government of Botswana, but rely on fees to cover their costs. Furthermore, since private providers are exempt from VAT, it means that they pay VAT on equipment and materials, and these costs are passed on to learners and their families in the fee structure. This means that private education is not affordable for many potential TVET students. In some countries, like New Zealand, where participation in TVET training is high, public and private providers are equally subsidized by the government, using a formula based on the number of full time equivalent students, and a system of differentiated funding for different categories of training. In some countries, like Kenya, there is no VAT or import duty for educational equipment such as books and computers.

The Vocational Training Fund (VTF) is currently quite limited in scope, and some frustration has been expressed by employers who feel that the current scope doesn't meet their needs. Although the scope has now been adjusted to include some training up to diploma level, it does not routinely cover training by suppliers of new technologies; it does not cover training by non-accredited experts who may be willing to share their experience in the occasional workshop; and it does not cover industries which do not contribute to the training levy such as diamond cutting and polishing. The scope of the VTF does not currently include several areas where incentives are needed to encourage employers to engage with training providers and learners e.g. the supervision of internships, mentoring of business simulation projects (e.g. LEAP).

The VTF reimburses employers for training purchased, but there is no dispersal of funds directly to the colleges. It is recommended that the scope of the fund could include direct benefits to institutions, to incentivize behaviours that promote close collaboration between training providers and industry. The concept of 'Learning Communities' is explained under *Relevance* below.

Predominantly traditional delivery modes are also inhibiting access to training; especially because where distance mode and evening classes are not available, employers have to be ready to 'release' their employees for full time, face to face training, and many small businesses are not willing to do this. Modular training with theoretical components offered in distance mode will make training more accessible to people working in areas where there is no institution. Theoretical components in distance mode will also enable people to enter the workforce while still working towards their full qualification.

Recommendations for improving access therefore include:

4. Develop mechanisms (based on Full Time Equivalent (FTE) students) for sponsoring TVET students from certificate to diploma level in public and private accredited training institutions, in all (16) identified critical skills areas.

5. Devise a grant system or targeted incentive system to support the specific establishment needs of high quality private training in priority skills areas
6. Evaluate the cost /benefit of waiving VAT and duty on educational equipment and materials so that all Batswana have improved access to books and learning equipment
7. Expand the scope of the VTF to subsidize employers for a range of investments in training including but not limited to reimbursement for supervision of attachment, external assessor duties, demonstrations and guest lectures; and up-front contribution to tuition and assessment fees for industry certification, and relevant professional development training for staff including on-the-job training at levels 1-5.
8. Expand the scope of the VTF to support training providers with competitive grants for improvement initiatives such as upgrading equipment and curriculum development; promotional events such as trainee competitions; excellence awards (see 14 below) and to incentivise the establishment of learning communities (Figure 39)
9. Develop flexible delivery modes (e.g. distance learning with block courses, evening courses) and consider offering theoretical components in dual mode. If possible access the expert advice of the Commonwealth of Learning and benefit from their experience in developing courses for distance delivery in developing countries, especially small states of the Commonwealth.

7.2 Quality

Low uptake of the BNVQF unit standards and qualifications means that the effort made by industry standard setting task forces is not impacting on the standard of training. A number of contributing issues seem to include:

- Uncertainty over the future of the BNVQF in the context of the new National Credit and Qualifications Framework
- Perceived difficulty in developing assessment tools to assess against the standards
- Unwieldy processes, duplication of effort, unnecessary complexity and long timeframes for developing and finalizing unit standards
- Lack of curriculum development expertise to use the standards to develop curricula; and the cost in time and effort for training providers to develop curricula and have them approved.

A National Credit and Qualifications Framework is likely to address many of the issues currently impacting on education and training in Botswana. In particular, implementing a framework that builds on the BNVQF will provide pathways for TVET graduates into higher level programmes. Distillation of the lessons to be learnt from international experience in NQF development shows that a national qualifications framework should build on what exists. Investment in the BNVQF needs to be protected so that Botswana can still get a return on this investment in the new 'integration era'.

Although BOTA has offered many workshops on how to use unit standards, this kind of training is introductory and real expertise is needed to integrate the learning outcomes of unit standards into curricula, programme design, learning materials and assessment tools. Options to address this could include developing a pool of curriculum development resource people to provide developmental

support for curriculum development and capacity building in the public and private institutions and providing funding from VTF to support such efforts.

Identified areas of weakness in curriculum development include amongst others failure to complete rigorous needs analysis; failure to incorporate essential professional registration requirements and certifications into programmes; and misalignment with industry requirements by using equipment and software for training that is not aligned with that in the industry.

An issue currently being addressed through plans to merge the functions of TEC and BOTA is the issue that technical and vocational qualifications above Level 3 are currently subject to the requirements and processes of TEC, which are different from BOTA requirements. This is problematic for providers who are registered with both BOTA and TEC, and it has meant that some types of training have 'fallen between the cracks'. Furthermore this research identifies long delays in making unit standards available and in accreditation procedures are affecting the ability of training providers to be responsive to employers' express needs.

Previous review reports (e.g. of the Brigades and the Apprenticeship Scheme), as well as findings of this project, all suggest that there is not a strong culture of quality in many of the institutions. Evidence includes unkempt buildings and grounds (e.g. McEnvoy, 2001), unmaintained equipment and facilities, low enrolments despite high demand, poor customer service and poor teaching. As with any intervention to change behaviour, a combination of disincentives for failure to meet minimum standards (such as loss of accreditation) and incentives for exceeding minimum standards is necessary. Recognition and reward processes are needed to inspire talented teachers and administrators to believe that it is worth 'going the extra mile'. In particular teachers with heavy workloads are unlikely to experiment and innovate with new approaches if there is no recognition or incentive to do so.

Our research shows that while in some areas there is no shortage of TVET teachers, in other areas programmes with top quality purpose-built facilities are not running because of staff shortages in those areas. Furthermore, a large proportion of TVET teachers (e.g. in Brigades and in private institutions) has minimal or no teaching qualification. Excellence in teaching and learning is fundamental to producing skilled artisans and technicians with the attributes which employers are looking for. Our research shows that while training programmes are designed (i.e. in the curriculum) to address many of the areas that are important for employers (e.g. communication and customer service); graduates do not exhibit the characteristics of people who have internalized learning in these areas. This suggests that the weakness is in the way that the curriculum is delivered, i.e. in the practices of teachers.

Recommendations for improving quality of TVET training therefore include:

10. Ensure that proposals for the NCQF build on the BNVQF and provide clear learning pathways for TVET graduates and one coherent system for quality assurance of technical and vocational qualifications
11. Develop expanded and more coherent and effective processes for streamlined development of unit standards, assessment tools, and curricula.
12. Build capacity for co-ordinated curriculum development by developing a pool of curriculum development specialists to be used as a common specialist resource to work with public and

private institutions to develop programmes; and providing funding from the VTF to support such efforts.

13. Ensure approval and accreditation requirements for new programmes include (i) evidence of rigorous market research to establish a need for the programme (ii) evidence that the equipment and software used for training meets industry requirements and (iii) evidence that the programme incorporates essential professional registration requirements and relevant professional certifications
14. Promote quality culture in institutions by for example, using the VTF for recognising and rewarding excellence in teaching and learning; excellence in student services; and excellence and innovation in industry engagement. In addition develop an awards system for recognizing learner improvement and achievement.
15. Develop the supply, professionalism and pedagogy of TVET teachers by
 - Providing incentives for experts to train as teachers in priority areas and other areas of shortage
 - Providing wage related incentives for achieving higher level qualifications
 - Ensure that all teachers are working towards teaching qualifications at Level 5
 - Ensure that at all teacher trainers complete a term of industry work experience at least every five years, with local companies who may be employers of their graduates. Where industry requirements change rapidly the frequency should be increased, for example to every three years.
 - Ensure that accreditation criteria for trainers and assessors include evidence of active engagement with industry including rigorous management of attachment and effective mentoring of attached learners
 - Focus on pedagogical approaches to suit outcomes based learning; integrating theory and practice and developing critical thinking
 - Offer online courses with blocks of teaching practice and build laptops into the fee for teaching qualifications

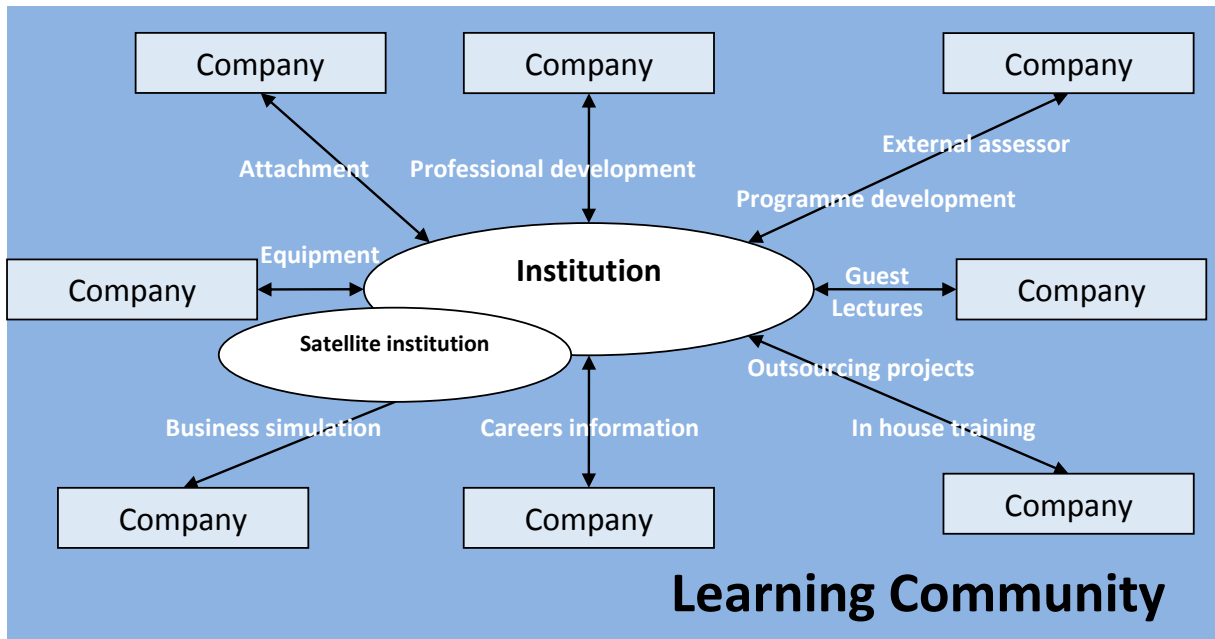
7.3 Relevance

Lack of strong linkages between providers and prospective employers is problematic in many respects including low input into development of programmes, low interest in attachment and internship, and high number of work permits issues in areas where local graduates are unemployed. One of the recommendations of this project is the development of a concept of Learning Communities, which includes both institutions and companies conceiving of themselves as learning organizations. Learning organizations nurture and celebrate learning; they encourage interaction across boundaries (e.g. between departments and with other organization); they use tools and techniques for problem solving; and they motivate their staff to adapt to changes.

The concept of a Learning Community, illustrated in Figure 39, envisages constellations or communities of specialist institutions and relevant employers formally linked in multiple mutually beneficial ways. Learning Communities are operational professional networks informed by the overall vision of integration and coherence of the NHRDS. This is not a new idea since variations have been implemented successfully in many countries. The concept also exists in embryonic form in Botswana already, for example in the relationship between Debswana and BCA, and between

construction companies and CITF. Figure 39 shows how the relationship can include a variety of services that companies can provide to training institutions, and which training institutions can provide to companies.

Figure 39: Learning Community Concept



As previously stated, implementing change often works best when there are incentives for changing and disincentives for not changing. Therefore the recommendations include incentives for institutions and employers to adopt the Learning Community approach.

Specialisation of the public institutions, to reduce duplication and provide focus for specialist expertise and resources has been suggested in many forums and seems likely to be implemented. Specialisation will help in the formation of Learning Communities, since companies will be able to identify the likely sources of the skills they need, and training providers will be able to identify a few critical companies to work with..

Attachments should be preceded by orientation of supervisors and students should have electronic or paper based log books with learning outcomes to be achieved. An alternative to attachment whereby students are mentored to form ‘companies’ and seek work from ‘client’ companies may be appropriate for some types of training. Either way learners should get detailed references from companies and clients that they worked for, since letters of reference are an important criterion for employment decision making.

Recommendations for improving the relevance and efficiency of TVET training therefore include:

16. Pilot the concept of Learning Communities with selected specialist providers and relevant companies, with formal agreements about the benefits to be provided by each party, and incentives for evidence of implementation of the agreement (such as funding for collaborative curriculum development and reimbursement to employers for the services they provide, including supervision of attachments)

17. Attachments should be preceded by detailed orientation of supervisors, and implemented with log books of learning outcomes and frequent monitoring and liaison between supervisors and teaching staff. Any payment from the VTF for supervision should be dependent on evidence of active supervision and mentorship, a report against learning outcomes and letter of reference for the learner/graduate. Accreditation criteria should include evidence of active involvement of teaching staff in securing attachments, orienting industry supervisors, mentoring trainees, and assessing the achievement of learning outcomes during work experience.
18. Wherever possible, strong **entrepreneurial alternatives** to attachment (such as business simulation, LEAP, project based 'consultancy') should be considered.

7.4 Technology

Increasing computer usage has already been mentioned as an aspect of improving access. The larger problem to be addressed is lack of access to computers and to the internet for the majority of the population. Symptomatic of this is a generalized lack of skill in using computers as tools for work (e.g. skills in searching, use of software, familiarity with functions, fixing problems, circumventing limitations, communications with customers) and lack of such ICT skills in the workplace. Low expectation of ICT skills by employers and low ratings for the importance of technology to business success show the pervasiveness of low technology approaches in an age where technology is essential for competitiveness in most fields.

This project recommends that all learners enrolled in teacher training programmes, programmes with distance components, and programmes with technical components should acquire a laptop, as a mandatory part of a cost sharing arrangement. If learners own their own laptops there will be reduced need for the institution to equip and maintain computer laboratories. Learners are much more likely to care for, maintain and learn to use their own equipment than equipment that belongs to the institution. Further we recommend that, as a requirement for accreditation, all training institutions should have wireless internet access, so that teachers and learners have unrestricted access to the internet.

Recommendations for improving use of technology of TVET training therefore include:

19. Ensure that learners working towards qualifications reliant on computer/internet access (e.g. dual mode/distance based or technical qualifications) are provided with a laptop, either by including the cost in the fee;; or by listing it as a resource required for the programme; or other means that obliges parents and sponsors to consider a laptop as an essential learning tool.
20. Require wireless **internet** access at all public and private training institutions as a condition of ongoing accreditation

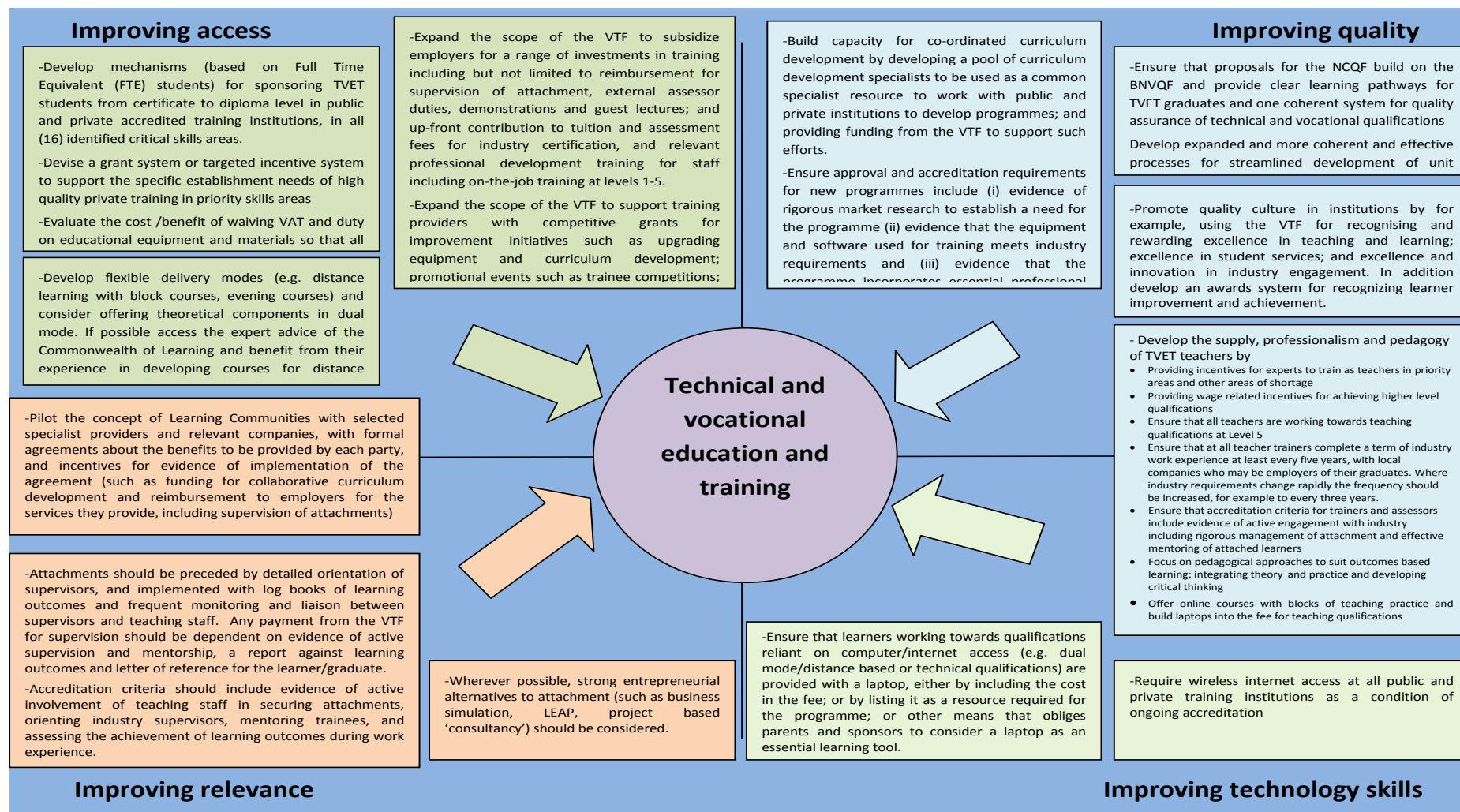
Figure 40 presents the twenty recommendations in graphic form.

Comparison between the NDP 10 objectives for TVET and the recommendations of this study shows close correspondence, with every NDP 10 objective addressed in one or more of the recommendations and the strategies. This correspondence is shown in Table 32 below:

Table 32: Correspondence between NDP 10 objectives and recommendations of this study

NDP10 objectives for TVET	Recommendations and Strategies of this study
Invest in infrastructure for technician/diploma level training, thus reducing the cost and reliance on training provided out side of Botswana	All fast track strategies include increased graduates at Diploma level
Expand the curriculum to accommodate key economic activities of the national economy	Identification of 16 critical skills and 6 priority skills All fast track strategies include curriculum development objectives Recommendations 14 and 15
Increase training opportunities for out-of school youth and people in employment through the development of distance education and e-learning programmes in partnership with BOCODOL	Recommendations 4 and 9 All fast track strategies include distance components
Increase links with industry in particular with regard to work placement and attachment for both teachers and students	Recommendations 7, 16, 17 and 18
Continue staff development to ensure quality delivery of learning programmes in line with the scheme of service	Strategy for fast tracking Technical and Vocational teaching skills
Enhance access to information and communications technology and the use of “state of the art” technology to improve both the quality and management of learning delivery through improved networks, internet access and e-learning solutions	Recommendations 6, 19 and 20 All fast track strategies include distance components
Put in place attraction and retention mechanisms for TVET professionals and lecturers	All fast track strategies
Implementation of the Technical Teacher Training programme to provide all lecturers with professional teaching skills, using both full-time courses and distance/e-learning delivery	Strategy for fast tracking Technical and Vocational teaching skills.

Figure 40: Summary of general recommendations



7.5 Recommendations for critical skills not prioritised for fast tracking

Masonry and Bricklaying

21. Address the issue of low popularity of masonry and bricklaying training, since this appears to be a main cause of skills shortage in this area.

Refrigeration/ Air Conditioning and Carpentry/ Joinery:

22. Review existing programmes (i.e. Trade Certificates and NCC) in this area as a matter of priority and ensure that programmes are accessible, relevant for Botswana (through standards setting processes) and internationally comparable in terms of resources and the competence of graduates.

23. Concentrate training provision in specialised institutions so that synergies and learning communities can be created around concentrations of specialist staff and specialist facilities.

Basic Nursing and other Health Related

24. Support the establishment, recognition and expansion of both private and public providers of existing and new basic health related skills, including skills in care and rehabilitation for people with disabilities.

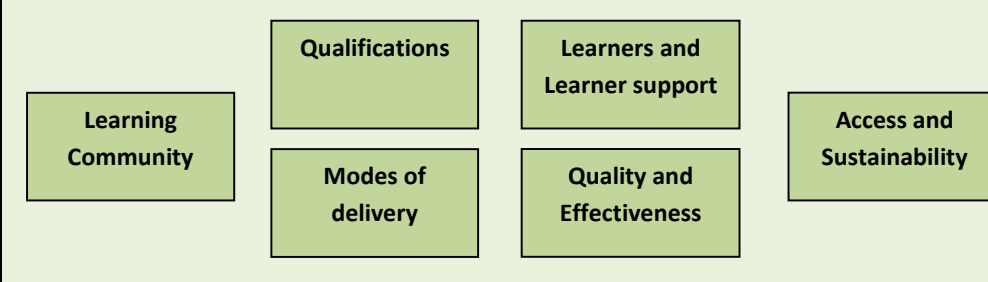
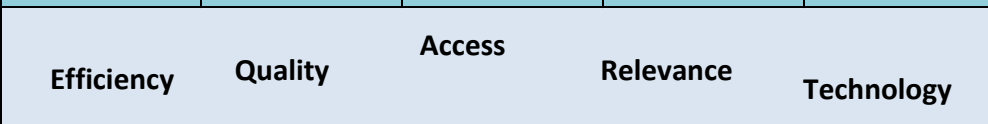
Agriculture

25. Integrate agriculture into the TVET system, with accredited providers and modularized outcomes-based programmes leading to qualifications on the National Qualifications Framework, and aligned with government initiatives for the development of the sector.

8 Strategies to fast track priority skills

The strategies are developed using a model of strategic planning shown in Figure 41. The strategies are multipronged to ensure policy breadth and their implementation requires the agreement and co-operation of a number of key players.

Figure 41: Template strategy map

Vision	By 2016 Botswana will be delivering internationally comparable training to meet the current and future priority skills needs of Botswana				
Purpose	To establish training that addresses skills gaps and skills shortages in priority areas				
Stakeholders and Partners	Employers	Professional Bodies	Community	Learners	Funders and Regulatory Authority
Key themes					
Strategic enablers	Funding	Facilities	Staff	Processes	Policy
Values					

8.1 Strategy for the development of Technical and Vocational teaching skills

This strategy is for expanded and improved training of trainers, also referred to as TVET teachers, lecturers, instructors. The fast track strategies to be developed for the priority skills will necessarily depend on sufficient quantity and quality of TVET teachers, so development of this skill area is critical to the development of all other areas. In order to improve the quality, relevance and accessibility of pre-employment training, work based learning and development of occupational competencies, the training of trainers is a crucial element.

Our data reveal a mismatch of vocational teachers' specialist areas and skills needs of Botswana; too many untrained teachers; the need to improve TVET teacher training; and the related issues of low pay and high mobility of training staff.

While there has been much emphasis on TVET reforms at national level, the delivery of training in workshops and classrooms determines whether those reforms translate into more competent graduates entering the labour market. Against this background this skill area is a priority.

8.1.1 Current situation

The current situation presents a combination of skills gaps and skills shortages.

Skills gap

Data indicate that around 73 % of BOTA registered trainers have no teaching or training qualification (BOTA, 2009). This skills gap is widest in Brigades and private training providers. Of the 2012 trainers registered with Botswana Training Authority on the 2nd of November 2009, a total of 85.53% (1721) was provisionally registered, pending required qualifications. Many of these trainers, however, have developed relevant competences on the job, but are not recognized as qualified trainers since they have not undergone formal teacher training.

Institutions	Distribution by Highest Vocational Qualification					Total	Without Training or Teaching Qualification.
	Doctorate	Masters	Degree	Diploma	Certificate		
Brigades (All)	0	5	78	347	469	899	756 (84.09%) of the 899 trainers)
Technical Colleges	1	41	164	157	49	412	210 (50.97%) of the 412 trainers
Total	1	46	242	504	518	1311	966 (73.68%)

A further indicator of a skills gap is that trainers are reportedly not able to deliver flexible and outcomes based training (Mead Richardson,2009; Education Consultants, 2006) and not aware of industry requirements. Over half of the employers that sent workers for training at CITF were of the view that not all CITF facilitators were well equipped to train using the CBMT approach. They were perceived to be products of the traditional approach to training with no grasp of the CBMT methodology. Few trainers seem fully familiar with industry 'culture', procedures and standards. Our focus group interview data show that poor pedagogical skills of TVET teachers (i.e. failure to integrate theory and practice, hanging on to old, rigid ways of teaching) may be a factor in generalised dissatisfaction with TVET graduates who are found to be lacking in both generic and specialist skills and in practical experience.

Skills Shortage

Just under 40% of BOTA registered trainers are non-citizens (BOTA, April 2010), which means that there is a skills shortage filled by non-citizens. A further indication of skills shortage is the under-utilisation in certain areas of Technical Colleges. Related to this is the current staff complement of 461 staff in contrast with the reported total staff requirement of 745 teaching staff, as shown on the next page:

<i>College</i>	<i>Capacity</i>	<i>Actual intake</i>	<i>Actual staff</i>	<i>Gap</i>	<i>Staff required</i>	<i>% staff positions filled</i>
<i>BCET</i>	1500	1012	108	49	157	61%
<i>FCTVE</i>	1500	227	68	65	133	51%
<i>GTC</i>	1500	701	57	40	97	59%
<i>JTC</i>	600	695	59	49	108	55%
<i>MTC</i>	700	692	57	10	67	85%
<i>PTC</i>	500	933	46	25	71	65%
<i>SPTC</i>	650	838	46	26	72	64%
<i>OCAAT</i>	1500	0	20	20	40	50%
Total			461	284	745	

Source DTNET June 2010 for HRDAC TVET Group

This shortage may be reduced as result of a recruitment drive for TVET teachers by MoESD in mid 2010 to Germany and South Korea, necessitated by unfilled vacancies, in particular in FCTVE and OCAAT.

Few trainers are said to be entering the profession from industry. By 2016 this shortage will need to be reduced by putting in place strategies as proposed below.

TVET teacher training (education) is offered by FCTVE (Diploma in Technical and Vocational Education) and through short courses at IDM. The Diploma was first offered in 2001, after a gap caused by termination of courses for Brigades instructors in 1995 and for VTC lecturers a few years later.

The Diploma in Technical and Vocational Education (DTVE) is the responsibility of the Department of Technical and Vocational Education and Training (DTNET) and the management of the Francistown College of Technical and Vocational Education (FCTVE). The DTVE is an 18 month, full-time teacher training programme, which is also offered through block release. The entry requirement is normally a diploma or first degree in a vocational field. The programme is modularised (consisting of 10 modules), credit and outcomes-based. The DTVE full-time programme commenced in 2001 and is offered in affiliation with the University of Botswana (UB), with UB doing external verification of assessment and being the awarding body. Teaching Placement (TP) at a vocational institution i.e. attachment to a Brigade or TC offering BTEP, forms an important, integral part of the programme. 60% is college based and 40% is teaching practice. Module activities and tasks are related the vocational area of specialisation of each student-teacher where possible. It is intended to model the approach specified by the BTEP i.e. learner centred, based on a constructivist view of learning, supported by appropriate use of Information and Communication Technology (ICT). Delivery of the programme in open and distance learning modes was prescribed by policy, but has after initial efforts come to a halt (Mead Richardson, 2009).

FCTVE and other public and private providers are expected, in the near future, to be able to offer a one year National Certificate in Vocational Education and Training. This is a unit standards-based

teacher training programme designed to facilitate implementation of RPL/RCC assessment. The certificate programme seeks to equip trainers in vocational training institutes, in government training departments, and in private and parastatal organizations, with the skills required of a trainer. This programme has been designed to be flexible to accommodate the disparity in experience, education and competence of trainers across the economy. The programme comprises 10 units. Candidates with relevant prior knowledge and experience may be considered for exemption from some units, in which case they shall undergo RPL/RCC assessments to be awarded credits for such units.

This certificate course and the continued offering of the diploma course will significantly reduce the skills gap of teaching skills, provided flexibility and RPL are realised. Articulation between this planned certificate level qualification and the diploma qualification still needs to be worked out. Further qualifications in TVET to degree, masters and PhD level are desirable.

Between 2001 and 2008 a total of **174 students** attended the diploma course, first in CVET in Gaborone, later in FCTVE. 23 students withdrew and 31 students failed (Nare et al, 2008) which indicates issues with learner support. Enrolment Projections for training under the Department of Education for the period 2009 to 2012 (FCTVE) are as follows:

Mode	2009		2010		2011		2012	
	Admission	Completing	Adm	Compl.	Adm	Compl.	Adm	Compl.
Full Time (Diploma)	0	56	80	0	80	80	80	80
Part-time or Distance Learning	0	0	0	0	0	0	0	0

The suggested adjustment of Enrolment Projections, accommodating training for certificate in vocational training for the period 2009 to 2012 is as follows

Mode	2009		2010		2011		2012	
	Admission	Completing	Adm	Compl.	Adm	Compl.	Adm	Compl.
Full Time (Diploma)	0	56	60	56	60	60	80	60
Full Time (Certificate Level)	0	0	20	0	20	20	20	20

With close to a thousand teachers without teaching qualification, it is clear that full time training will not provide sufficient places, hence the need for transitional arrangements, flexible delivery and RPL.

8.1.2 Strategic themes and objectives

Learning Community	1. Form a learning community that includes public and private training providers (inclusive of work based providers) and industries to facilitate attachments of student teachers and attachment of serving TVET teachers.
	2. Foster partnerships between FCTVE and other potential providers of TVET teacher training (IDM, consultant, private colleges)
Qualifications	3. Implement the CVET programme and ensure that all TVET teachers are completing CVET and are working towards teaching qualification at Level 5
	4. Develop modular programmes to improve access and progression
	5. Ensure existing certificate, advanced certificate and diploma level qualifications are aligned with the BNVQF/NCQF
	6. Ensure work based training forms an integral part of certificate and diploma courses to avoid bias towards classroom and college based learning
	7. Create a pathway from Certificate through DTVE to degree and masters
	8. resources and systems and operate a model RPL system, primarily for applicants to the CTVE and DTVE, and secondarily to provide RPL services and capacity building services to other TVET institutions. Support could be sought from the COL for this development
Quality and Effectiveness	9. Review the conditions, remuneration, and career paths of teachers and trainers in TVET to ensure that TVET teaching is an attractive alternative to working in industry
	10. Benchmark existing and future courses and levels with international best practice in TVET teacher training
	11. Develop quality systems for managing the quality of education and training and evaluating effectiveness
Delivery	12. Develop with vigour flexible delivery modes for TVET teacher training (e.g. distance with block courses, evening courses), including through revival of the proposed cooperation with BOCODOL
Learners and learner support	13. Increase pool of qualified trainers by actively marketing the Certificate programme and RPL services and facilitating delivery by variety of providers
	14. Provide laptops to teacher training staff and student teachers to aid and incentivise flexible and ODL based modes of delivery and learning
	15. Investigate reasons for low learning success rate of block release candidates in DTVE 2005-2008 and strengthen student support through internationally benchmarked support systems e.g. mentoring
Sustainability	16. Provide incentives (scholarships, and the VTF) to prospective trainers for technical teacher training in priority skills areas and other areas of established staff scarcity
	17. Devise a grant system to support the specific establishment needs of high quality private training in priority skills areas

8.2 Strategy for the development of Transport operations

This strategy is developed to support plans under the Transport Hub to expand air, road and railway transport services to encourage tourism and import/export, by supplying skilled operators of those services. The planned expansion of transport services is strategically important for development of other sectors including mining, manufacture, and agriculture as well as tourism.

Our research shows low satisfaction with air traffic controllers, and lack of local training for pilots, despite Botswana being a destination of choice for foreign pilots to log the hours they need for commercial licences. It also revealed a large number of vacancies for heavy vehicle drivers, including construction vehicles. Employer satisfaction with transportation controllers and dispatchers and heavy vehicle operators was very low. Driving skills as such are not considered a priority area requiring skills development strategies, since such skills can be developed relatively easily in short courses; however we note that currently driving schools are not required to register with BOTA and their programmes are not quality assured.

8.2.1 Current situation:

This group of skills is expected to become highly significant going towards 2016 as various developments within the Transport Hub are in the pipeline.

The passenger rail service project that was suspended last year is to be revived in the near future. Other projects on rail transportation with completed pre –feasibility studies are the regional rail links from Mmamabula to Ellisrus, Trans-Kgalagadi to Namibia, and Moseitse – Kazungula. All these projects are expected to take off in the next few years as there is strong private sector interest in them from investors in India and China. There is also strong interest from private investors in a regional rail workshop to be built in Botswana to service the rolling stock. The need for staff for the railways including technicians, mechanics and drivers will be heightened as the projects take off in the next five years. Unfortunately the staff needs for these projects have not been researched and quantified.

The developments in air transport should also see the Air Botswana increasing its flights and aircraft and Gaborone becoming a second regional hub. The Transport Hub is busy attracting long haul airlines to operate from Gaborone. They have had talks with Singapore airlines, Egypt air and Ethiopian airlines. Negotiations have been concluded with Ethiopian airlines. If these efforts bear fruit there will be a need for more local pilots, ground crew and other skilled staff.

Regarding road haulage operations these are expected to increase as Botswana becomes a regional gateway from South Africa to the hinterland. The need for cross-country heavy duty drivers will only increase. Although the skill is not in shortage the vacancy rates indicate a skills gap i.e. that long haul heavy duty drivers need generic skills like customer relations, communication in English, numeracy skills and attitudinal skills. The freight they carry is usually of high value and accidents or failure to observe off-loading properly often cause industry a lot of money. Local drivers are particularly deficient in terms of maturity and customer relations skills hence the preponderance of foreign drivers in the sector.

Large scale open cast mining and construction will continue to need heavy plant operators.

A lot of the skills in this area are offered on the job by large companies who use these skills. Debswana trains its own heavy plant mechanics in their apprenticeship scheme, while haulage companies give heavy duty training to their employees usually by importing trainers from South Africa. In the past, train drivers and shunters have been put through training by Botswana Railways

through an arrangement with Malawi Railways. Pilot training is carried out in Botswana through one BOTA accredited pilot training college and in the BDF. Many pilots are also trained through the government bursary scheme in South Africa. Most air traffic controllers are trained abroad through government sponsorship.

8.2.2 Strategic themes and objectives

Learning community	1. Create a collaboration framework between industry, licensing authorities, driving and flying schools and BOTA to provide training for transport operators
	2. Foster partnerships between accredited flying schools, CAAB and Air Botswana to encourage more local training in both piloting and air traffic control
	3. Support the establishment of good private schools for transport operations that adhere to a code of excellence and can be grown into larger operations
Qualifications	4. Develop unit standards, qualifications and curricula in the areas of heavy duty driving, transport logistics, heavy plant operation, pilot training, air traffic control, train operations, and in the basic maintenance of vehicles and equipment in these areas
	5. Develop modular programmes to improve access and progression
	6. Ensure qualifications development is aligned with the BNQF/NCQF
	7. Integrate key generic skills in the training of transport operators including numeracy, communication, problem solving and customer care
Quality and Effectiveness	8. Develop recognition of prior learning processes and entry with credit regulations so that workers with no or low qualifications can enter higher level programmes with credit.
	9. Offer incentives to attract highly qualified staff, with extensive industry experience.
	10. Accredite more employers who carry out significant on-the-job training especially for heavy duty drivers and operators.
	11. Accredite all driving schools and encourage the accreditation of Air Botswana training wing and Botswana Railways training wing.
Delivery	12. Develop quality systems for managing the quality of education and training and evaluating effectiveness
	13. Offer modules in the evenings/weekends so that full time employees can attend
Learners and Learner support	14. Develop inclusive enrolment strategies that encourage mature learners to gain qualifications
	15. Improve quality of training by providing modern technical training aids, including laptops to aid and incentivise flexible and ODL based modes of delivery and learning
	16. Measure student retention and success and implement systems to support learners to succeed
Sustainability	17. Offer career counselling, support learners to find meaningful attachments and internships, and ensure graduates have letters of reference
	18. Expand the scope of the VTF to support training providers with competitive grants for improvement initiatives such as upgrading equipment and curriculum development; promotional events such as trainee competitions; excellence awards; and to incentivise the establishment of learning communities

	19. Expand the scope of the VTF to subsidize employers for a range of investments in training including but not limited to reimbursement for supervision of attachment, external assessor duties, demonstrations and guest lectures; and up-front contribution to tuition and assessment fees for industry certification, and relevant professional development training for staff including on-the-job training at levels 1-5
	20. Develop mechanisms for sponsoring students from certificate level in public and private accredited training institutions for training in priority skills
	21. Devise a grant system to support the specific establishment needs of high quality private training in priority skills areas
	22. Require all major development projects to develop a training needs assessment for all upcoming projects

8.3 Strategy for the development of Radio/ Electronics/ Computer Engineering skills

The econometric forecast indicates that these are growth areas (including Telecommunications). The employers' survey also indicates many current vacancies and significant potential growth. Skills in radio, electronic and computer engineering support high technology development in a number of sectors including security, broadcasting, mining, telecommunications, transport and power.

8.3.1 Current situation

This skill is currently in shortage by a significant margin. The unemployment rate of people with the skill is also lower than average (at 16%) according to the econometric estimates. The skills gap going into 2016 will become even more pronounced as the sectors requiring the skills are expected to expand. To keep up, the vocational training system will need to produce about 1200 graduates per annum.

Training for this skill is widespread in the private and government technical colleges and brigades. There are gaps however in that most of the training courses in private colleges and the government institutions do not cover some critical components like telecommunications. The new Botswana College of Engineering and Technology has recently taken over a number of programmes from the Faculty of Engineering and Technology at UB, and is now the only institution in the country providing telecommunications technician training.

Until recently the Botswana Telecommunications Corporations hired most of its technicians from the University and only a few artisans and technicians from the rest of the vocational training system. In the past the BTC Academy used to provide in-house on the job training using their skilled technicians to train the others. Currently this facility is not accredited. BTC would find it useful if BOTA accredited modules rather than full programmes.

Provision of industry certification courses like CCNA or N+ (which are critical for fast changing technology areas like ICT and electronics) in Botswana is limited. Employees have to be sent to South Africa or abroad at great expense. Only UB offers some of the relevant courses part-time in the evenings, but this is by arrangement with the BTC and it is not clear whether other employers are

aware of this offering. Government vocational training institutes are currently not providing any evening technical certification courses although there is a clear social demand for them.

Complaints about local private vocational institutes are that the training is unreliable as lecturers are sometimes not qualified and the performance of technicians after the training does not improve although the courses are BOTA accredited.

Although qualified employees need further industry certifications to perform well and keep up with the fast changing technology. many of them do not want to pursue it even where employers are willing to pay for it. It is apparent that the failure rate is high and many Batswana do not seem to want to put in the extra hours and effort required to pass these certifications especially when they are already employed. This however has reflected in the failure of companies like BTC to keep their technicians fully up-to-date with changing technology, resulting in significant outages and down times.

8.3.2 Strategic themes and objectives

Learning community	1. Form a pilot Learning Community including radio/electronic/computer training providers and employers to develop industry/training relationships (like that of the UB and BTC) to meet the needs of employers
	2. Explore partnerships with international key certification organisations like Microsoft, CISCO, COMPTIA and ORACLE
Qualifications	3. Increase the number of Diploma places in radio/electronic/ computer engineering in both public and private accredited institutions
	4. Develop modular programmes to improve access and progression
	5. Ensure existing certificate, advanced certificate and diploma level qualifications are aligned with the BNVQF/NCQF
	6. Include telecommunications courses in the curriculum for Certificate and Diploma programmes in all radio/electronic/computer engineering programmes
	7. Perform detailed gap analysis of existing qualifications and establish learning pathways to enable graduates of low level qualifications to enter higher level training with credit
	8. Develop recognition of prior learning processes and entry with credit regulations so that workers with no or low qualifications can enter higher level programmes with credit.
Quality and Effectiveness	9. Offer incentives to attract highly qualified staff, with extensive industry experience.
	10. Accredite more employers who carry out significant on-the-job training
	11. Implement streamlined processes for registration of units and accreditation of modules
	12. Develop quality systems for managing the quality of education and training and evaluating effectiveness
Delivery	13. Deliver distance modules for theory components and block courses for practical to increase access
	14. Offer modules in the evenings/weekends so that full time employees can attend
Learners and learner support	15. Develop inclusive enrolment strategies to ensure diverse learner cohorts including school leavers and mature learners, national and international, male and female learners and learners with disabilities

	16. Improve quality of training by providing modern technical training aids, including laptops to aid and incentivise flexible and ODL based modes of delivery and learning
	17. Measure student retention and success and implement systems to support learners to succeed
	18. Promote industry certification in collaboration with accredited certified training centres for Microsoft, CISCO and ORACLE
Sustainability	19. Expand the scope of the VTF to support training providers with competitive grants for improvement initiatives such as upgrading equipment and curriculum development; promotional events such as trainee competitions; excellence awards; and to incentivise the establishment of learning communities
	20. Expand the scope of the VTF to subsidize employers for a range of investments in training including but not limited to reimbursement for supervision of attachment, external assessor duties, demonstrations and guest lectures; and up-front contribution to tuition and assessment fees for industry certification, and relevant professional development training for staff including on-the-job training at levels 1-5
	21. Develop mechanisms for sponsoring students from certificate level in public and private accredited training institutions for training in priority skills
	22. Devise a grant system to support the specific establishment needs of high quality private training in priority skills areas

8.4 Strategy for the development of Electrician skills

This strategy addresses the shortage of electricians and the need for higher levels of specialist skills and knowledge in this area. Skilled electricians are required for the construction industry, mining, and manufacture; and for new developments in the health and energy sectors, including ambitious targets for the production of solar power.

8.4.1 Current situation

The current vacancy rate is not significantly high but employers predict a high growth rate. This is corroborated by the Econometric forecast which shows an oversupply of electricians in 2009 but a significant gap by 2016. To keep up with the projected growth of the skill the vocational training system needs to be producing not less than 860 skilled electricians per annum to 2016. Currently the vocational training system is producing about 760 electricians which mean the graduation rate should be increased by 100 per annum, and the level of these graduates should increase.

Training of electricians is available broadly in the Brigades and the Technical Colleges but the quality of training is an issue with some employers. The Brigades and Technical Colleges graduates are at mixed levels with Trade Test C, B and NCC and BTEP Certificate. The BTEP Diploma is not yet offered. CITF trains 36 students in electrical trades each year but has a waiting list of 451 potential students, showing very high social demand for electrical training. High unemployment of graduates of low level programmes (e.g. LFS and MoL registered job seekers) suggests that employers seek skills at higher level than certificate. Diploma level training which was offered at UB is now offered at Botswana College of Engineering and Technology. There is no articulation between these various qualification streams.

A lot of the electrician curriculum seems to be generic content that prepares graduates for jobs in the traditional construction sector and household sector although demand in the future will be in photovoltaic (solar power), manufacturing and electrical power distribution and generation. BOTA and BOTEK have commenced working on a programme for developing unit standards and qualifications for photovoltaic electricians and a project to train people in these skills in anticipation of the roll out of the photovoltaic projects in the villages.

8.4.2 Strategic themes and objectives

Learning community	1. Form a pilot Learning Community including Electrician training providers, and employers of electricians
	2. Form mutually beneficial partnerships with other providers e.g. other electrician schools including in neighbouring countries (for moderation of assessment, staff/student exchange)
Qualifications	3. Phase out exit levels that do not qualify graduates to work as electricians
	4. Develop modular programmes to improve access and progression
	5. Ensure existing certificate, advanced certificate and diploma level qualifications are aligned with the BNVQF/NCQF
	6. Develop and introduce modules on renewable energy technologies into the curriculum including solar power and new battery technologies for electric cars.
	7. Perform detailed gap analysis of existing qualifications and establish learning pathways to enable graduates of low level qualifications to enter higher level training with credit
	8. Develop recognition of prior learning processes and entry with credit regulations so that electricians trained on-the-job can gain qualifications, and those with low qualifications, can enter the programme with credit
Quality and Effectiveness	9. Offer incentives to attract highly qualified staff, with extensive industry experience
	10. Accredite more employers who carry out significant on-the-job training
	11. Benchmark new and existing qualifications against international standards for Electrician training
	12. Develop quality systems for managing the quality of education and training and evaluating effectiveness
Delivery	13. Deliver distance modules for theory components and block courses for practical to increase access
	14. Offer modules in the evenings/weekends so that full time employees can attend
Learners and learner support	15. Develop inclusive enrolment strategies to ensure diverse learner cohorts including school leavers and mature learners, national and international, male and female learners and learners with disabilities
	16. Improve quality of training interventions for Electricians by making available more modern technical training aids, including laptops to aid and incentivise flexible and ODL based modes of delivery and learning
	17. Measure student retention and success and implement systems to support learners to succeed
	18. Offer career counselling, support learners to find meaningful attachments and internships, and ensure graduates have letters of reference

Sustainability	19. Expand the scope of the VTF to support training providers with competitive grants for improvement initiatives such as upgrading equipment and curriculum development; promotional events such as trainee competitions; excellence awards; and to incentivise the establishment of learning communities
	20. Expand the scope of the VTF to subsidize employers for a range of investments in training including but not limited to reimbursement for supervision of attachment, external assessor duties, demonstrations and guest lectures; and up-front contribution to tuition and assessment fees for industry certification, and relevant professional development training for staff including on-the-job training at levels 1-5
	21. Develop mechanisms for sponsoring students from certificate level in public and private accredited training institutions for training in priority skills
	22. Devise a grant system to support the specific establishment needs of high quality private training in priority skills areas

8.5 Strategy for the development of Hospitality and Catering skills

The focus of this strategy is chef training, since this is the area of skills shortage, requiring the development of additional higher level programmes and expanded facilities. In contrast there is little evidence of current shortage of hospitality workers (e.g. front of house, housekeeping), or the need for higher levels. There is however evidence of generalized skills gap in areas like communication and customer service and work ethic of hospitality staff.

8.5.1 Current situation

Hospitality training for lodges, restaurants and hotels is offered by FCTVT, MTC, GTC, MTTC and the Botswana National Productivity Centre (BNPC). This is mostly low level training for front of house staff, bar staff, accommodation service staff, receptionists and waiting staff. In addition higher level Hospitality business administration and management programmes are offered at UB, BNPC, GIPS, ABM and Limkokwing.

Chef training is offered at FCTVT and MTC; and will be offered at GTC and MTTC upon the completion of renovations/construction. For the most part this training is all low level, with modest plans to introduce higher level training at GTC and FCTVT colleges (BTEP Advanced Certificate and Diploma). One private provider in Maun also offers low level training (L1 and L2). Career Dream's plan to expand as a training hotel in Kesmo Lodge this year was short lived due to complaints that students were being used as cheap labour, and the Lodge is now no longer used primarily as a training facility, but only as an employer for attachments. A summary of chef training provision is provided below:

Location	Provider	Status	Level	Facilities	Capacity
Gaborone	GTC Public	Under construction	Foundation and Certificate (Advanced Certificate and Diploma to be introduced from January)	Production kitchen, restaurant and six hotel rooms	16 per group – up to about 64 per year
	MTTC Public	Under construction	Apprenticeship Trade Test C and B NCC	Production kitchen and restaurant	Up to 20 at the same time

Francistown	FTTVE Public		Foundation and Certificate (Advanced Certificate and Diploma to be introduced from January)	Production kitchen restaurant and six hotel rooms	16 per group – up to about 64 per year
Maun	MTC Public		Foundation and Certificate	Production kitchen restaurant and six hotel rooms	up to about 32 per year
	Career Dream Private	Lack of funding to build facilities	Level 2 (higher level when facilities built)	Relationship with Kesmo Lodge	800 trained since 2006 –Ave 160 per year?

It appears that even with the current expansion of facilities, the existing training providers will produce fewer than 400 graduates per year, and the number of higher level graduates (i.e. NCC and Diploma level) is unlikely to exceed 50 per year.

Our information suggests that there may be as many as 1300 vacancies in 2010 and an annual demand for 1600 trained hospitality and catering workers to 2016. Concurrent with high rate of vacancies is evidence of high unemployment of graduates. While this may be related to poor conditions of work; it probably also suggests that the level of graduates training is too low, especially since there is currently no Diploma level chef training.

The information provided in this report shows that hospitality and chef training is a key area for enhancing the Tourism industry, which in turn is a key strategic growth area for Botswana. The importance of tourism and hospitality is widely recognised by strategy and policy makers, and development of the tourism industry is a pillar in the conceptual frameworks for export development, foreign investment, and transport as well as the medical tourism concept of the Health Hub. Currently an Education Hub consultancy has developed a case for foreign investment in a privately owned lodge school in Maun and a hotel school; and profiles are being developed to attract investors. Key points made in these profiles include current low skills of workers in these fields, the very high service expectation of visitors, and strong demand for highly skilled workers now and in the future.

8.5.2 Strategic themes and objectives

Learning community	1. Form a pilot Learning Community including Hospitality and catering training providers, restaurants, lodges and hotels, catering companies, Hospitality and Tourism Association of Botswana.
	2. Form mutually beneficial partnerships with other providers e.g. other hospitality schools including in South Africa (for moderation of assessment, staff/student exchange) and providers of other relevant skills (e.g. marketing, performing arts, beauty therapy i.e. relevant to guest services)
	3. Support the establishment of additional facilities especially operational lodge/hotel /restaurant schools
Qualifications	4. Offer Diploma level qualifications, including international qualifications, with pathways to higher level qualifications
	5. Develop modular programmes to improve access and progression

	6. Ensure existing certificate, advanced certificate and diploma level qualifications are aligned with the BNVQF/NCQF
	7. Develop modules to offer as short courses for industry and the public e.g. cocktails, confectionary, food and wine matching, international cuisine, camp cooking, junior chefs
	8. Perform detailed gap analysis of existing qualifications and establish learning pathways to enable graduates of low level qualifications to enter higher level training with credit
	9. Develop recognition of prior learning processes and entry with credit regulations so that cooks with no or low qualifications can enter higher level programmes with credit.
Quality and Effectiveness	10. Offer incentives to attract highly qualified staff, with extensive industry experience.
	11. Accredite more employers who carry out significant on-the-job training
	12. Investigate implications of offering optional City and Guilds (or other internationally recognised) external assessment for chefs so that graduates can exit with internationally recognised chef qualifications
	13. Develop quality systems for managing the quality of education and training and evaluating effectiveness
Delivery	14. Deliver distance modules for research and theory components and block courses for practical to increase access
	15. Offer modules in the evenings/weekends so that full time employees can attend
Learners and learner support	16. Develop inclusive enrolment strategies to ensure diverse learner cohorts including school leavers and mature learners, national and international, male and female learners and learners with disabilities
	17. Improve quality of training by providing modern technical training aids, including laptops to aid and incentivise flexible and ODL based modes of delivery and learning
	18. Measure student retention and success and implement systems to support learners to succeed
	19. Offer career counselling, support learners to find meaningful attachments and internships, and ensure graduates have letters of reference
Sustainability	20. Expand the scope of the VTF to support training providers with competitive grants for improvement initiatives such as upgrading equipment and curriculum development; promotional events such as trainee competitions; excellence awards; and to incentivise the establishment of learning communities
	21. Expand the scope of the VTF to subsidize employers for a range of investments in training including but not limited to reimbursement for supervision of attachment, external assessor duties, demonstrations and guest lectures; and up-front contribution to tuition and assessment fees for industry certification, and relevant professional development training for staff including on-the-job training at levels 1-5
	22. Develop mechanisms for sponsoring students from certificate level in public and private accredited training institutions for training in priority skills
	23. Devise a grant system to support the specific establishment needs of high quality private training in priority skills areas
	24. Recover costs by running training schools as fully operational well marketed tourist facilities, and develop retail outlets to sell food produced by students in training
	25. Raise money and promote training by offering catering at events e.g. careers expo, cultural and sporting events

8.6 Strategy the development of Diamond Cutting/Polishing/ Jewellery making skills

This strategy supports the introduction of institution based diamond cutting polishing training in Botswana. Support for the development of diamond beneficiation and related processing activities is provided by the Diamond Hub, Diamond Office and Diamond Manufacturing Association.

Diamond cutting/polishing and jewellery is a fast growing industry of great strategic importance to Botswana. Employment (i.e. skills demand) has tripled in the last four years, and is expected to double again to around 6000 employees by 2016.

8.6.1 Current situation

There are 16 diamond manufacturers currently operating in Botswana, and currently these companies employ about 3000 people. All training is currently provided on-the-job by employers. This training is not covered by the VTF since the diamond cutting/polishing industry does not pay the training Levy.

There are currently no diamond cutting/polishing/jewellery manufacture training schools in Botswana, although there are several in South Africa. A number of private investors have expressed interest in establishing diamond manufacture schools in Botswana. Currently there is some delay in the issuing of licenses to prospective training providers.

The Diamond Manufacturing Association envisages an ideal scenario in which there would be a very close working relationship between employers and an institution that provides training in basic skills, as well as in specialist areas, as indicated by the industry. In this scenario individual students would be 'groomed' in response to specific company demand; attached to that company during training; and 'offered' as an employee to the company after graduation. Furthermore there is a desire to form win/win arrangements between companies, which facilitate the secondment of employees between companies, in order to provide employees with broad knowledge of the industry, and to share knowledge and skills between companies.

8.6.2 Strategic themes and objectives

Learning community	1. Form a pilot Learning Community including diamond cutting/polishing/ jewellery manufacture training providers, manufacturers and the Diamond Manufacturing Association
	2. Form mutually beneficial partnerships with other providers e.g. other diamond schools including in South Africa (for moderation of assessment, staff/student exchange)
	3. Support the establishment of private diamond cutting/polishing/ jewellery manufacture training providers
Qualifications	4. Develop qualifications for technicians which are internationally comparable, with pathways to higher level qualifications
	5. Develop modular programmes to improve access and progression
	6. Ensure qualifications development is aligned with the BNVQF/NCQF
	7. Develop competency based training modules for basic and specialist skills in diamond cutting/polishing and jewellery manufacture
	8. Develop recognition of prior learning processes and entry with credit regulations so that workers trained on-the-job can gain qualifications
Quality and Effectiveness	9. Offer incentives to attract highly qualified trainers, with extensive industry experience.
	10. Accredite more employers who carry out significant on-the-job training
	11. Accredite new providers for diamond cutting/polishing and jewellery manufacture

	12. Develop quality systems for managing the quality of education and training and evaluating effectiveness
Delivery	13. Deliver distance modules for theory components and block courses for practical to increase access
	14. Offer specialist modules in the evenings/weekends so that full time employees can attend
Learners and learner support	15. Develop inclusive enrolment strategies to ensure diverse learner cohorts including school leavers and mature learners, national and international, male and female learners and learners with disabilities
	16. Improve quality of training by providing modern technical training aids, including laptops to aid and incentivise flexible and ODL based modes of delivery and learning
	17. Measure student retention and success and implement systems to support learners to succeed
	18. Offer career counselling, support learners to find meaningful attachments and internships, and ensure graduates have letters of reference
Sustainability	19. Expand the scope of the VTF to support training providers with competitive grants for improvement initiatives such as upgrading equipment and curriculum development; promotional events such as trainee competitions; excellence awards; and to incentivise the establishment of learning communities
	20. Expand the scope of the VTF to subsidize employers for a range of investments in training including but not limited to reimbursement for supervision of attachment, external assessor duties, demonstrations and guest lectures; and up-front contribution to tuition and assessment fees for industry certification, and relevant professional development training for staff including on-the-job training at levels 1-5
	21. Develop mechanisms for sponsoring students from certificate level in public and private accredited training institutions for training in priority skills
	22. Devise a grant system to support the specific establishment needs of high quality private training in priority skills areas

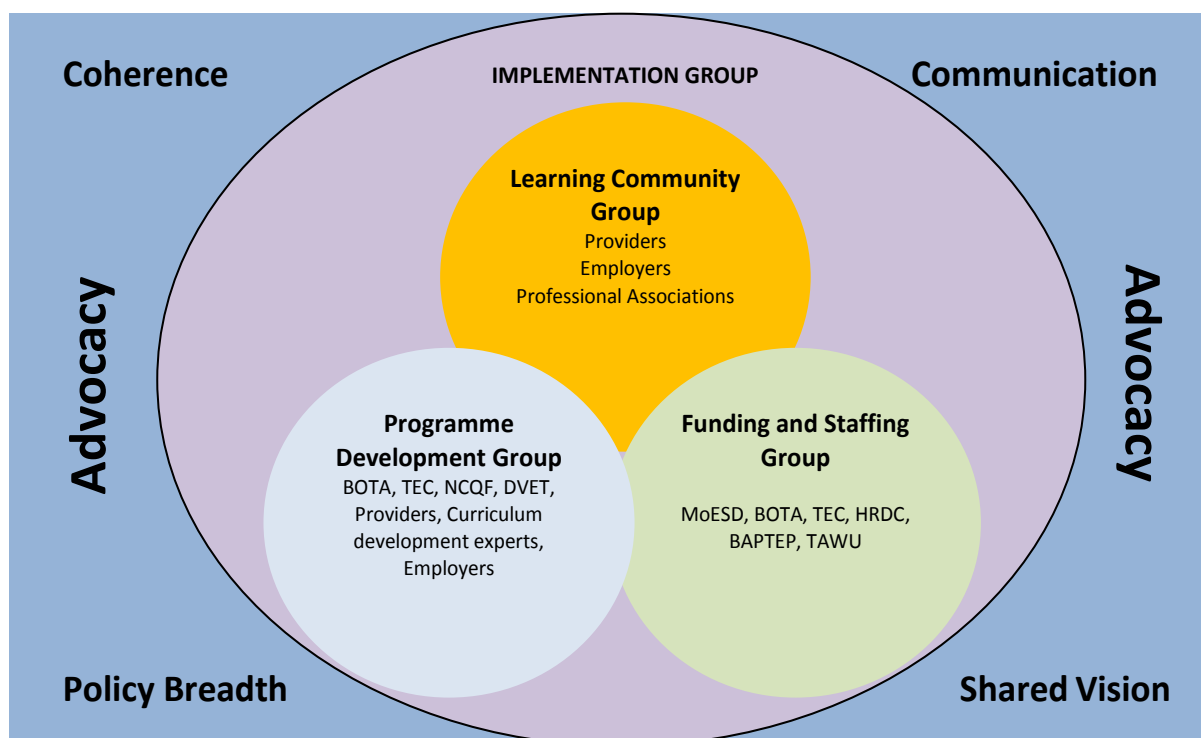
9 Implementation guidelines

An implementation plan includes key elements, such as WHO is going to do WHAT; how it will be RESOURCED, HOW and WHEN it will be done; and how achievement of the objectives will be MEASURED. Detailed implementation planning is required for each of the six strategies. This report provides very high level implementation guidelines only, since at this stage, prior to any commitment to implement the strategies, a detailed implementation plan would be too speculative to have any credibility. Nevertheless we recommend an approach (HOW), an implementation group (WHO), a broad timing proposal (WHEN) and indicative costs (RESOURCES).

9.1 Implementation group

The approach to implementation is informed by the integration theme of the NHRDS. Increasingly there is international recognition that skills development requires ‘joined up’ thinking across departmental boundaries, shared vision and policy breadth. The approach to implementation recognises that fragmentation and lack of coherence can only be overcome through the common efforts and political will of a group with representation from all stakeholders, funders and regulatory bodies. We identify that this group will work in at least three policy areas as shown in Figure 42.

Figure 42: Implementation Group

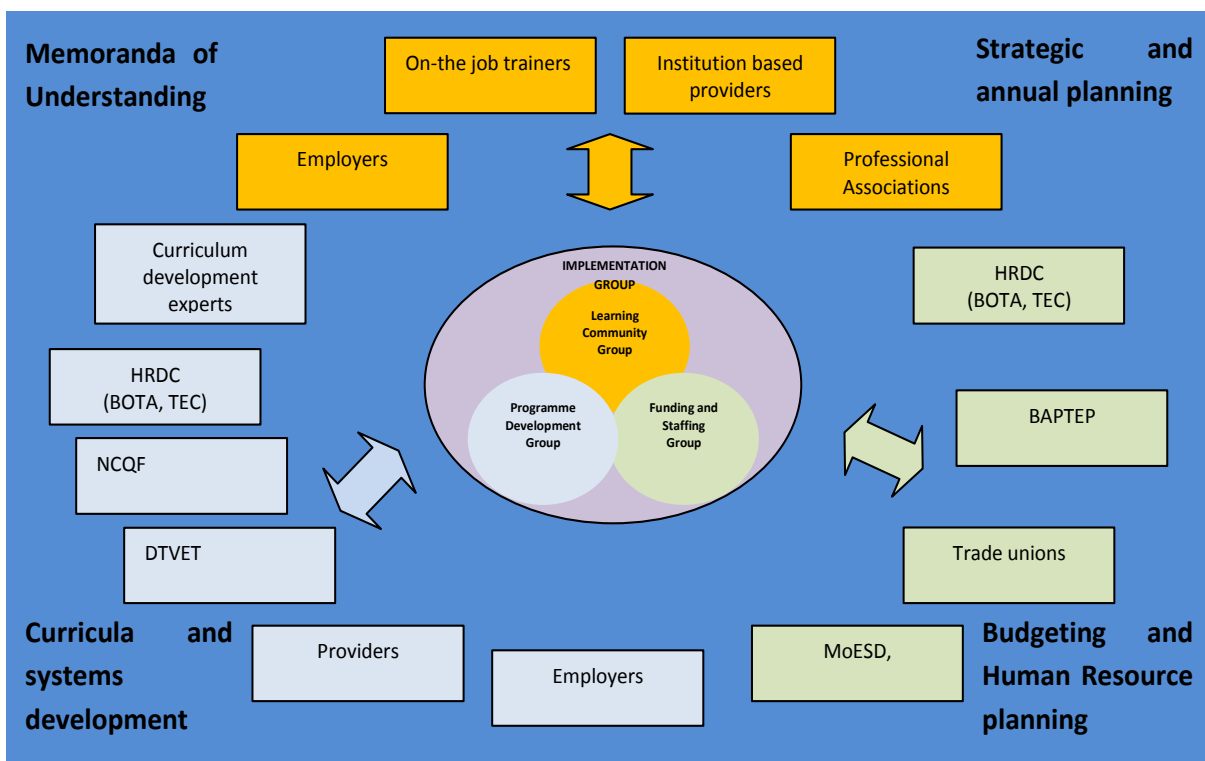


Our investigations show that national initiatives need to be widely communicated, agreed and supported in a coherent way across all relevant departments in order to achieve their objectives.

Attempts by single entities to implement 'national' initiatives in isolation cannot achieve the impact that is possible through the common concerted efforts of the full range of key players.

The working groups proposed for implementation of the strategies consist of individuals who report to a wide range of different departments and institutions. In order for implementation to be effective all these different organisation should be equally committed to the success of the strategy and take ownership of specific objectives. Individuals will be the conduits of information between their organisations and the wider group (as shown in Figure 43), and they will advocate for objectives to be incorporated into strategic and annual planning; budgeting and human resource planning; curriculum and training systems developments in their various institutions; and actualised through formal agreements such as memoranda of understanding.

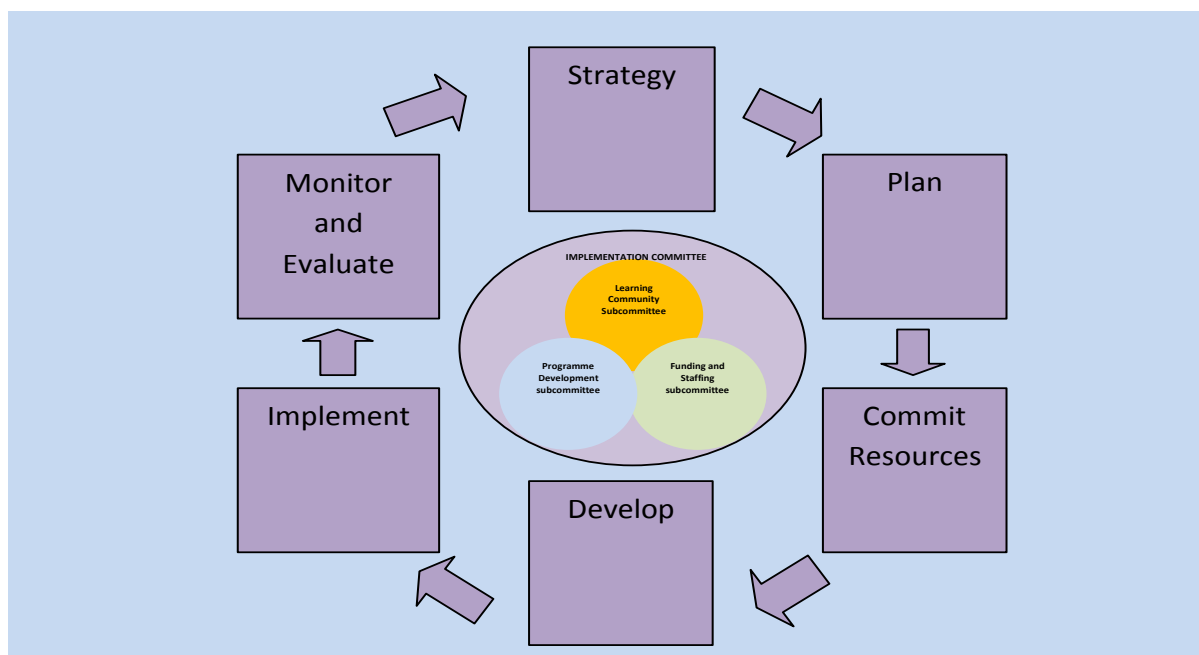
Figure 43: Advocating 'joined up' implementation



9.2 Quality Improvement cycle for implementation

Implementation depends on coherence of planning, resourcing the plan, implementing the plan, monitoring and evaluation, and adjustments to improve outcomes. Figure 44 shows a sequence of steps reflected in the time plan on the next page.

Figure 44: Planning, resource allocation and quality management



9.3 Timing of implementation

New initiatives in education and training generally require lead in times of at least one year, and it takes time to produce work ready graduates. In this context ‘fast track’ implementation means that the implementation agenda is strongly supported; the achievement of objectives is pursued steadily, single-mindedly and efficiently; and skilled graduates are produced in the shortest possible timeframe.

Timing to full implementation of prioritised training which meets (or at least addresses) strategic objectives depends largely on current preparedness of training providers and the relevant sector to implement training that meets the objectives. Figure 45 below suggests three levels of preparedness based on the indicators of preparedness that we selected.

Figure 45: Preparedness to meet priority skills development objectives

Time to first year of prioritised delivery	A suitable training programme exists (i.e. at the right level)	Distance based/flexible delivery exists	Specialist providers exist	Institution based training providers are accredited	On the job training providers are accredited	Training facilities are adequate	Training equipment is adequate	Number of existing qualified training staff is adequate	Quality of staff is adequate	Learning Communities exist
Technical/ Vocational Teaching	✓	Limited	✓	✓	N/A	✓	✓	x	x	x
Hotel and Catering	✓	x	✓	✓	x	Limited	Limited	x	x	x
Radio/ Electronics/ Computer Engineering	Needs modification	Limited	Limited	Limited	x	✓	x	x	x	Limited
Electrician	Needs modification	x	Limited	✓	x	✓	x	x	x	x
Transport operations	x	x	x	Limited	x	x	x	x	x	Limited
Diamond Cutting/ Polishing and Jewellery Making	x	x	x	x	Limited	x	x	x	x	x

Where there is political will and an enabling environment, and especially where there is foreign investment and business imperative, unhampered by the slower pace of broad reformation of public

sector provision, implementation could move faster than anticipated below. However, without strong commitment to prioritise development in these areas, implementation could lack leadership and momentum; become bogged down in the politics of rationalisation; and take so long to implement that it is overtaken by new imperatives.

<p>Two areas are ready to begin implementing initiatives to meet the objectives almost immediately</p>	<p>Technical and vocational teaching is the skills area most ready to begin, since many of the elements of the strategy are already in place, ready to be implemented.</p> <p>Expanded and higher level Hotel and Catering training is already planned for, although the capacity (facilities currently under development) is insufficient and needs to be augmented by private training.</p>
<p>Two areas need at least a year for programme development and identification and preparation of specialist providers</p>	<p>Radio/ Electronics/ Computer Engineering (including telecommunications) requires programme development and increased number of specialist providers.</p> <p>Electrician training requires programme development, increased higher level training and rationalisation of current provision.</p>
<p>Two areas are relatively new and providers still need to be identified; programmes need to be developed /acquired. A lot of consultation is required and options need to be reviewed. It may be two years before delivery can begin</p>	<p>Transport operations and Diamond Cutting/ Polishing and Jewellery Making are areas where there is need for new programmes and new providers, and accreditation of existing providers</p>

The time plan in Figure 46 below represents the slowest case scenario for areas least prepared for prioritization. In the two scenarios likely to move faster, the steps to be taken are the same (unless these steps have already been taken) but implementation could happen faster.

Figure 46 proposes a period of one year for commitment to the priorities to be demonstrated in decisions about funding, incorporation of these into relevant departmental budgets, and allocation of resources to support providers of skills training in the priority areas. One year is proposed for the development of programmes, learning materials and associated administrative systems (e.g. processes and templates for attachment, RPL), and the recruitment of staff. Delivery of training, which is aligned to the objectives set for priority skills, commences in 2013, with rigorous evaluation in the fourth quarter to identify and rectify teething problems prior to the commencement of the second year of delivery. Even this slowest case scenario allows for graduates of the programmes to be entering the labour market by 2016.

Figure 46: Indicative time plan for skills areas least prepared for prioritisation

Steps to be taken	2011				2012				2013			
	1	2	3	4	1	2	3	4	1	2	3	4
Agree on resourcing and funding for priority skills												
Identify providers of priority skills												
Prepare facilities and source equipment												
Recruit staff, accredit trainers and institutions												
Develop programmes and systems for delivering priority skills												
Develop recruitment and enrolment plans												
Commence delivery												
Commence evaluation of first year of delivery												

9.4 Costing of implementation

Implementation of the strategies for the six priority skills has been costed, since this was stipulated in the Terms of Reference. However these costings are not included in this report, but available as an Annex. The reason for exclusion is that the achievement of each objective can be approached in a variety of ways; and some approaches are more expensive than others. In order to provide costings it is necessary to select an initiative and cost that. We felt that providing a list of initiatives to achieve the objectives, within this report, may be counter productive for several reasons.

Pre-selecting a specific initiative may appear to be prescriptive, excluding the possibility that there are other ways of achieving the objective, which are equally appropriate. Further there is a risk that specifying a particular initiative, which may be expensive, provides a disincentive to achieving the objective, whereas other equally valid approaches may be less expensive. In order to gain commitment and ownership of the objectives, it is appropriate that initiatives to achieve the objectives are selected by those responsible for achieving the objective. If presented with a series of costed initiatives, and especially if budget is already allocated on the basis of costings provided with this report, then responsible parties may be obliged to implement the costed initiatives as stated, even if, in their particular implementation context, they have reservations about the potential effectiveness of the ‘prescribed’ initiatives to achieve the desired outcomes.

Therefore detailed budgetary costing should be done early in the implementation process, by those responsible for implementation, as part of a process of refining the strategies at operational levels with performance measures and detailed planning of initiatives. The costings available as an Annex to this report are rough estimations and should be used only as an indicative guide to the potential scale of possible activities to achieve the objectives.

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Appendix 1: Sectoral Distribution of Botswana's GDP

Table33: Sectoral Distribution of Botswana's Gross Domestic Product, 1980 to 2008/09 (in 1993/94 prices, million Pula)

Economic Activity	80/81	85/86	90/91	91/92	92/93	93/94	94/95	95/96	96/97	97/98	98/99	99/00	00/01	01/02	02/03	03/04	04/05	05/06	06/7	07/8	08/9	
Primary Sector																						
Agriculture	385	322	481	492	488	467	459	490	453	480	443	405	445	433	441	454	404	389	433	434	547	
Mining	1,333	2,819	3,957	3,946	3,766	3,956	3,899	4,076	4,305	5,537	5,874	6,620	7,753	7,489	8,285	8,308	9,812	9,385	9662	9309	6788	
Secondary Sector																						
Manufacturing	166	227	471	519	499	430	532	573	594	626	661	684	681	682	703	709	763	738	953	972	926	
Water and Electricity	56	114	168	179	209	240	256	257	269	295	333	371	391	406	444	472	489	507	544	574	578	
Construction	319	263	764	791	666	710	723	747	788	822	917	939	955	1,000	1,005	1,027	1,036	1,002	1183	1208	1367	
Tertiary Sector																						
Trade, Hotels & Restaurants	160	365	591	536	541	882	1,086	1,193	1,359	1,423	1,502	1,596	1,700	1,840	1,990	2,201	2,052	2,172	2488	2642	2728	
Transport & communications	58	143	324	365	390	407	436	438	456	498	579	596	605	625	631	610	606	716	881	1011	1132	
Banks, Insurance & Business	183	371	885	920	1,049	1,144	1,232	1,352	1,368	1,501	1,636	1,707	1,795	1,922	1,973	2,015	2,115	2,151	2606	2997	3112	
General Government	466	738	1,355	1,556	1,621	1,707	1,762	1,855	2,009	2,196	2,333	2,474	2,641	2,861	3,267	3,434	3,591	3,736	3848	4147	4299	
Social and Personal Services	77	147	421	443	456	470	504	531	558	575	618	645	663	705	724	775	855	922	974	1040	1166	
Total Value Added, Gross	3,203	5,510	9,417	9,748	9,687	10,414	10,889	11,511	12,160	13,952	14,898	16,038	17,629	17,963	19,465	20,005	21,722	21,718	23573	24344	22644	
Adjustment items	417	256	634	913	919	627	509	519	539	592	684	681	614	580	852	936	1,143	954	1175	1168	1346	
Total GDP at constant prices	3,584	5,708	10,010	10,634	10,612	11,041	11,398	12,029	12,699	14,544	15,582	16,719	18,242	18,544	20,316	20,941	22,866	22,672	24748	25521	23990	
Total GDP excluding Mining	2,251	2,889	6,053	6,688	6,846	7,085	7,498	7,953	8,394	9,007	9,707	10,098	10,489	11,054	12,031	12,633	13,054	13,287	15087	16212	17202	
GDP per capita	3,917	5,175	7,584	7,858	7,658	7,781	7,844	8,073	8,314	9,290	9,710	10,165	10,812	10,807	11,674	11,894	12,868	12,673	14084	14425	13468	
GDP per capita, excl. mining	2,460	2,619	4,586	4,942	4,940	4,993	5,160	5,337	5,495	5,753	6,049	6,140	6,217	6,442	6,913	7,175	7,346	7,427	8586	9164	9658	
Growth (%)	10.1	7.7	8.8	6.2	-0.2	4.0	3.2	5.5	5.6	14.5	7.1	7.3	9.1	1.7	9.6	3.1	9.2	-0.8	4.8	3.1	-6.0	
Growth, excl. Mining	-0.8	12.4	8.5	10.5	2.4	3.5	5.8	6.1	5.5	7.3	7.8	4.0	3.9	5.4	8.8	5.0	3.3	1.8	9.7	7.5	6.1	

Note: (a) Adjustment items include FISIM (financial intermediation services indirectly measured), taxes on imports, taxes on products/production and subsidies on products/production. (b) The base year for constant prices has been changed from 1985/86 to 1993/94 by the Central Statistics Office. The re-basing makes the series 'non-additive' in some years prior to 1993/94, such that the estimate of total GDP does not equal the sum of its components. (c) Data for 1996/97, 1997/98 and 1998/99 are subject to change. (d) Botswana financial years are from 1 April to 31 March of the following calendar year.

Sources: (i) Bank of Botswana, GDP data-set as of January 2010. (ii) Ministry of Finance and Development Planning, National Development Plan (NDP) 9, 2003-04/2008-09.

Table34: Sectoral distribution of Botswana's Gross Domestic Product, 1966 to 2008/09 (in % of total value added, based on 1993/94 prices)

Economic Activity	1966	1975/76	80/81	85/86	90/91	91/92	92/93	93/94	94/95	95/96	96/97	97/98	98/99	99/00	00/01	01/02	02/03	03/04	04/05	05/06	06/07	07/08	08/09
Primary sector																							
Agriculture	42.7	22.3	12.0	5.8	5.1	5.1	5.0	4.5	4.2	4.3	3.7	3.4	3.0	2.5	2.5	2.4	2.3	2.3	1.9	1.8	1.7	1.7	2.3
Mining	0.0	18.9	41.6	51.2	42.0	40.5	38.9	38.0	35.8	35.4	35.4	39.7	39.4	41.3	44.0	41.7	42.6	41.5	45.2	43.2	39	36.5	28.3
Total, primary sector	42.7	41.2	53.7	57.0	47.1	45.5	43.9	42.5	40.0	39.7	39.1	43.1	42.4	43.8	46.5	44.1	44.8	43.8	47.0	45.0	40.7	38.2	30.6
Secondary sector																							
Manufacturing	5.6	8.2	5.2	4.1	5.0	5.3	5.2	4.1	4.9	5.0	4.9	4.5	4.4	4.3	3.9	3.8	3.6	3.5	3.5	3.4	3.8	3.8	3.9
Water and Electricity	0.6	2.5	1.8	2.1	1.8	1.8	2.2	2.3	2.4	2.2	2.2	2.1	2.2	2.3	2.2	2.3	2.3	2.4	2.3	2.3	2.2	2.2	2.4
Construction	7.8	13.8	10.0	4.8	8.1	8.1	6.9	6.8	6.6	6.5	6.5	5.9	6.2	5.9	5.4	5.6	5.2	5.1	4.8	4.6	4.8	4.7	5.7
Total, secondary sector	14.0	24.5	16.9	11.0	14.9	15.3	14.2	13.3	13.9	13.7	13.6	12.5	12.8	12.4	11.5	11.6	11.1	11.0	10.5	10.3	10.8	10.7	12
Tertiary Sector																							
Trade, Hotels & Restaurants	8.9	9.3	5.0	6.6	6.3	5.5	5.6	8.5	10.0	10.4	11.2	10.2	10.1	9.9	9.6	10.2	10.2	11.0	9.4	10.0	10.1	10.4	11.4
Transport & communications	4.3	1.2	1.8	2.6	3.4	3.7	4.0	3.9	4.0	3.8	3.8	3.6	3.9	3.7	3.4	3.5	3.2	3.0	2.8	3.3	3.6	4.0	4.7
Banks, Insurance & Bus. Serv.	20.2	5.0	5.7	6.7	9.4	9.4	10.8	11.0	11.3	11.7	11.2	10.8	11.0	10.6	10.2	10.7	10.1	10.1	9.7	9.9	10.5	11.7	13.0
General Government	9.8	15.8	14.5	13.4	14.4	16.0	16.7	16.4	16.2	16.1	16.5	15.7	15.7	15.4	15.0	15.9	16.8	17.2	16.5	17.2	15.5	16.5	17.9
Social and Personal Services	0.0	3.0	2.4	2.7	4.5	4.5	4.7	4.5	4.6	4.6	4.6	4.1	4.1	4.0	3.8	3.9	3.7	3.9	3.9	4.2	3.9	4.1	4.9
Total, tertiary sector	43.2	34.3	29.5	32.0	38.0	39.2	41.9	44.3	46.1	46.6	47.3	44.4	44.8	43.8	42.0	44.3	44.1	45.2	42.4	44.7	43.6	46.4	52.2
Total Value Added	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100	100	100
Total Value Added, excl. Mining	100.0	81.1	58.4	48.8	58.0	59.5	61.1	62.0	64.2	64.6	64.6	60.3	60.6	58.7	56.0	58.3	57.4	58.5	54.8	56.8	61	63.5	71.7
Growth (%)			10.1	7.7	8.8	6.2	-0.2	4.0	3.2	5.5	5.6	14.5	7.1	7.3	9.1	1.7	9.6	3.1	9.2	-0.8	4.8	3.1	-6.0
Growth(excluding mining) %			-0.8	12.4	8.5	10.5	2.4	3.5	5.8	6.1	5.5	7.3	7.8	4.0	3.9	5.4	8.8	5.0	3.3	1.8	9.7	7.5	6.1

Note: (a) The base year for constant prices has been changed from 1985/86 to 1993/94 by the Central Statistics Office. The re-basing makes the series 'non-additive' in some years prior to 1993/94, such that the estimate of total GDP does not equal the sum of its components. (b) Data for 1996/97, 1997/98 and 1998/99 are subject to change. (c) Botswana financial years are from 1 April to 31 March of the following calendar year.

Sources: (i) Bank of Botswana, GDP data-set as of January 2010. (ii) Ministry of Finance and Development Planning, National Development Plan (NDP) 9, 2003-04/2008-09.

Appendix 2: Survey questions

Survey for Botswana Employers

This survey is implemented to gather information for a consultancy to forecast and identify a list of priority vocational skills and develop strategies to fast track priority skills development. The consultancy is part of a group of related projects which all contribute to the common aim of enhancing human resource development in Botswana.

The survey is a key component in a set of research tools that will provide qualitative and quantitative data needed to forecast skills needs for Botswana in the short and medium term.

Your company/department has been **carefully selected** to complete this survey and your thoughtful responses are highly appreciated. In the reporting of this data your identity and the identity of your company will be **confidential**.

Firstly, please fill in the box below:

Your name:	
Your designation:	
Your telephone number:	
Your email address:	
Name of the company/Govt department:	
Core business of the company/ Govt department:	
Total number of employees:	

Now proceed to the next page to answer questions on each occupation in your company or government department.

This section of the survey consists of a set of questions for each occupation in your company. Each column is for a different occupation.

Section 1: Numbers for this occupation	Type of answer	Occupation 1	Occupation 2	Occupation 3	Occupation 4	Occupation 5 etc
Write the names of each occupation in your company/government department in this row						
1 How many people in this occupational group do you employ right now ?	Number					
2 How many people in this occupational group do you hope to employ by 2016? (Think about technological change and company development plans)	Number					
3 How many vacancies do you have in this occupational group right now	Number					
4 How long (on average) does it take to fill vacancies in this occupational group?	0-3 months 4-6 months 7-12 months 12+ months					
5 How many interns/trainees/ apprentices do you have in this occupational group?	Number					
Section 2: Satisfaction with specialist skills and knowledge and attributes of this occupation						
6 How satisfied are you with the specialist skill level (i.e. competence in required tasks) of this occupational group in your staff?	Scale of 1-5 where 1 is not satisfied at all and 5 =very satisfied					
7 How satisfied are you with the specialist knowledge level (i.e. theoretical understanding) of this occupational group in your staff?						
8 How satisfied are you with the personal attributes (e.g. hard working, efficient, interested, good customer orientation) of this occupational group in your staff?						
9 How productive is this group in your staff (i.e. achieve output efficiently)?	1 = hardly achieves anything 5=extremely productive					
Section 3: Importance of generic skills for this occupation						
10. Communication (i.e. reading, writing, speaking, listening, English)	On a scale of 1-5 where 1=not important at all and 5= absolutely					
11. Numeracy – (i.e. basic mathematical operations.)						

Section 1: Numbers for this occupation	Type of answer	Occupation 1	Occupation 2	Occupation 3	Occupation 4	Occupation 5 etc
12. Critical thinking (i.e. thinks creatively, solves problems, knows how to learn)	essential:					
13. Resource and information management (i.e. able to identify, access, organise, plan, allocate resources and information for the task)						
14. Decision making (i.e. ability to make informed decisions, take responsibility for decisions, show initiative)						
15. ICT (i.e. uses technologies effectively)						
16. Time management i.e. is punctual, meets deadlines, is productive)						
17. Interpersonal (i.e. works with other people)						
18. Personal (i.e. displays responsibility, confidence, self management, integrity, work ethic)						
19. Briefly give any explanation for your ratings for this occupation, or make a general comment on issues of concern	Comment					

Survey for Education and Training providers

This survey is implemented to gather information for a consultancy to forecast and identify a list of priority vocational skills and develop strategies to fast track priority skills development. The consultancy is part of a group of related projects which all contribute to the common aim of enhancing human resource development in Botswana.

The survey is a key component in a set of research tools that will provide qualitative and quantitative data needed to forecast skills needs for Botswana in the short and medium term.

Your company/institution has been **carefully selected** to complete this survey and your thoughtful responses are highly appreciated. In the reporting of this data your identity and the identity of your company/institution will be **confidential**.

Firstly, please fill in the box below:

Your name:	
Your designation:	
Your telephone number:	
Your email address:	
Name of the accredited college/ enterprise:	
Type of accredited college/ enterprise:	Circle one Community, Consulting, Workplace, NGO, Public, Private, Parastatal
Total number of students/trainees in 2010:	
Total number of teaching staff in 2010:	
Total number of employees in 2010s:	

Now proceed to the next pages to answer questions on each programme/course that you offer.

This section of the survey is for WHOLE QUALIFICATIONS. If you offer more than ten qualifications please ask for another copy of the questionnaire. If you only offer short courses or part qualifications please skip to SECTION 3

Section 1: Numbers for this programme leading to a qualification	Type of answer	Programme 1	Programme 2	Programme 3	Programme 4 etc
Name of the programme:					
1. What is the credit value of the whole qualification? <i>If you do use credits write your definition of one credit here</i>	N/A OR Number of credits				
2. What is the usual duration of the programme for full time students?	Number of teaching weeks				
3a. Is there an internship/ workplace-based component of the programme?	Yes or No				
3b. If yes, is the internship mandatory for the award of the qualification?	Yes or No				
3c. If yes, what is the duration of the internship/workplace based component in full time weeks	Number of weeks				
4. What is the ratio of theory to practice in this qualification as a whole?	100% theory 90% theory/10% practice 80/20 etc				
5. Total number of students in 2010 (all levels/years of this programme)	Number				
6. Number of new students enrolled in this programme in 2010	Number				
7. Number of applicants for this programme in 2010	Number				
8. What proportion of applicants have you been able to accept over the last three years?	All or Fraction				
9. What are the main reasons for not accepting applicants	Don't meet the entry criteria Lack of capacity No sponsorship				
10. Have you noticed any changes in application and enrolment patterns over the last three years?	Increasing/ decreasing number of eligible applicants				
11. Number of graduates of this programme expected in 2010	Number				
12. Number of graduates of this programme in 2009	Number				

Section 2: Importance of generic skill development in this programme						
13. Communication (i.e. reading, writing, speaking, listening, English)	On a scale of 1-5 where 1=not important at all and 5= absolutely essential:					
14. Numeracy – (i.e. basic mathematical operations.)						
15. Critical thinking (i.e. thinks creatively, solves problems, knows how to learn)						
16. Resource and information management (i.e. able to identify, access, organise, plan, allocate resources and information for the task)						
17. Decision making (i.e. ability to make informed decisions, take responsibility for decisions, show initiative)						
18. ICT (i.e. uses communication technologies effectively)						
19. HIV/AIDS awareness and prevention						
20. Entrepreneurial skills (i.e. business management, marketing, responsive to opportunity)						
21. Interpersonal (i.e. works with other people)						
22. Personal (i.e. displays responsibility, time management, confidence, self management, integrity, work ethic)						
23. Briefly give any explanations for your ratings for this qualifications, or make a general comment on issues of concern		Comment				

If you also offer short courses and part qualifications please go on to Section 3. If not please skip to Section 5

This section of the survey is for SHORT COURSES (OR ACCREDITED GROUPS OF SHORT COURSES) AND PART QUALIFICATIONS. If you offer more than ten courses/units/modules please ask for another copy of the questionnaire.

Section 3: Numbers for this Course/Unit	Type of answer	Course 1	Course 2	Course 3	Course 4 etc
Name of the course/accredited group/unit/module:					
24. What is the credit value of the whole course/unit? <i>If you do use credits write your definition of one credit here:</i> <input type="text"/>	N/A OR Number of credits				
25. What is the usual duration of the course/unit for full time students?	Number of teaching weeks				
26a Is there any internship/ workplace-based component of the course/unit	Yes or no				
26b If yes, is the internship a mandatory for achieving the qualification?	Yes or no				
26c If yes, what is the duration of the internship/workplace based component in full time weeks?	Number of weeks				
27. What is the ratio of theory to practice in this course/unit?	100% theory 90% theory/10% practice 80/20 etc				
28. Total number of students in 2010 (all offerings of the course/unit)	Number				
29. Number of applicants for the course/unit in 2010	Number				
30. What proportion of applicants for the course/unit have you been able to accept over the last three years?	All or Fraction				
31. What are the main reasons for not accepting applicants for the course/unit?	Don't meet the entry criteria Lack of capacity				
32. Have you noticed any changes in application and enrolment patterns for the course/unit over the last three years?	Increasing/ decreasing number of eligible applicants				
33. Number of students who passed the course/unit in 2010	Number or not assessed				
34. Number of students who passed the course/unit in 2009	Number or not assessed				

Section 4: Importance of generic skill development in this course/unit						
35. Communication (i.e. reading, writing, speaking, listening, English)	On a scale of 1-5 where 1=not important at all and 5= absolutely essential:					
36. Numeracy – (i.e. basic mathematical operations.)						
37. Critical thinking (i.e. thinks creatively, solves problems, knows how to learn)						
38. Resource and information management (i.e. able to identify, access, organise, plan, allocate resources and information for the task)						
39. Decision making (i.e. ability to make informed decisions, take responsibility for decisions, show initiative)						
40. ICT (i.e. uses communication technologies effectively)						
41. HIV/AIDS awareness and prevention						
42. Entrepreneurial skills (i.e. business management, marketing, responsive to opportunity)						
43. Interpersonal (i.e. works with other people)						
44. Personal (i.e. displays responsibility, time management, confidence, self management, integrity, work ethic)						
45. Briefly give any explanations for your ratings for this course, or make a general comment on issues of concern		Comment				

SECTION 5

46. When employers are selecting a new staff member which factors do you think influence their decision making the most:	
	On a scale of 1-5 where 1=not important at all and 5= absolutely critical
a) Formal qualifications of the applicant	
b) Training Provider where the applicant trained	
c) Work experience in the field	
d) Attitude of the applicant	
e) Nationality of the applicant	
f) References/ recommendations	
g) Gender of the applicant	
h) Age of the applicant	
i) The applicant is internal (i.e. already works for the company)	

SECTION 6

47. In general terms, where do you think Botswana education and training g providers should be focussing in the next 5 years? (I.e. what are the priorities for skills development)
<p>Comment:</p>

Appendix 3: Interviews held June-August 2010:

Organisation	Individuals interviewed
BOTA	Mr Richard Sengalo, Manager Training Standards Mr Brian Mooketsi, Manager Curriculum Mr Cornelius Motsisi, Manager Accreditation Ms Gilian Mmlolotsa, Standards Specialist Ms Kerebotswe Makhulela, Moderation of Assessment Senior Specialist Mr Ofentse Disang, Curriculum Specialist Mrs M Motswagole Director Finance Ms Lebogang Mpinang Manager VTF Finance
DTVET	Mr Bashi Raleru, Project Coordinator Brigades Takeover Mr Dick Chitema, Senior Policy Officer Mr Mike Gwebu, Deputy Principal BCET Mr Tshome, Principal Technical Education Officer Programme Development and Delivery Ms Mildred Boduwe, Principal OCAAT
MTTC	Mr Kelaote, Director Mr Patrick Moatlhodi, HOD Examinations Ms Bontle Moipone, HOD ABC
TEC	Ms Margaret Baiketsi, Senior Policy Analyst Mr Felix Rex O'mara, Director Quality Assurance and Regulation
CITF	Mr B Moepi, Executive Director
Limkokwing	Ms Agnes Moyo, Internship Coordinator
NIP	Mr Ditso Anneleng, Chief Internship Officer
HRDAC	Mr J Lisindi, Chairman HRDAC
LMO	Mr Hans Bekkers, Technical Assistant
Education Hub	Ms Bridget P. John, Coordinator
Innovation Hub	Mr Ari Kalmari Project Advisor
ABCON	Mr Nic van Rensburg, Chairman
CIC Energy	Mr Dale Ter Haar, Managing Director
BPC	Mrs Selato, Public Relations Officer Mr Glen Black, Project Manager Morupule B
DBES BIUST	Mr. M T Madisa, Project Officer BIUST Mr Kentshitlwe, Acting Head of Division
Ministry of Transport	Dr Ambo, Acting Co-ordinator Transport Hub and Mrs Avis Joina, and Senior Planning Officer

Organisation	Individuals interviewed
Chamber of Mines	Mr Charles Siwawa, CEO
Ministry of Labour and Home Affairs	Ms Lesego Pule, Principal Industrial Relations Officer
BOCODOL	Mr Stanley Modesto, Head Business Studies
Ministry of Minerals, Energy and Water Resources, Dept of Energy	Mr Aaron Somolekae, Senior Engineer
Ministry of Agriculture	Mr Neil Fitt, Coordinator Agriculture Hub Mr Kgetse, Principal Scientific Office Small Stock Mr Chris Manthe, Principal Scientific Officer NAMPAAD Mrs Morapedi, Coordinator Rural Training Centres

Appendix 4: Prioritisation and Stakeholder Workshop participants

Prioritisation reference group

Organisation	Name
BOTA	Mr Motsisi
BEDIA	Mr Lisenda
Macro Economic Unit MFDP, LMO	Mrs Mpofu
DTVET	Mr Chitema
ABM University	Mrs Molefi
Tertiary Education Council, LMO	Mrs Baiketsi
Department of National Internship MLHA	Mr Maakwe
SefCash	Mr Hlabana
MTTC	Mr Mogope
MFDP	Mr Woditshwene

Stakeholder Workshop participants

ORGANISATION	Name
Thuso Rehabilitation	Mr Remigio Kadzviti
Limkokwing University	Mr Mlombo
ABCON	Mr Nic van Rensburg
Agriculture Hub	Mr Neil Fitt
Balsago	Ms Neo Tlhaselo
Barolong Vocational Training	Ms Margaret Letshelo
BOCODOL	Ms Tebogo Moagi
Boitekanelo Training Institute	Mr R T Madisa
BOTA	Mrs Selwana Koppenhaver
BPC	Mr Mothupi
BPC Morupule B Project	Mr Glen Black
Career Dream	Mr Kenneth Karanja
Cathedral Commercial School	Ms Lilian Chishimba
CIC Energy	Mr Dale Ter Haar
CITF	Mr George Maiketswane
BDMA	Mr Kim Lanny
Damelin Botswana	Mr D'souza

Damelin Botswana	Ms Aastha
Dep. of Labour & Social Security	Mr Eric Ditau
DTVET	Mr Radipotsane
	Mr Dick Chitema
	Mrs Joanna Collymore
	Ms Cando Senwelo
DTVET Brigades Takeover Project	M. M. Marumo
Hospitality & Tourism Ass. of Bots	Ms B Bhuma
HRDAC	Mr Joseph Lisindi
IDM	Mrs E Mokalake
LOBATSE CLAY WORKS	Mr Pako Tsimanyana
MFDP	Mr K. Waditshwene
Min of Agriculture, Dept of Animal Production	Mr Setshwane Kgetse
Ministry of Education and Skills Development	Dr Theophilus Mooko
MTTC	Mr A. Pilane
	Ms Permlar Morolong
	Ms Sophia Diphoko
National Internship Programme MLHA	Ms S Khumo
NCQF	Dr Teresa Davies
	Dr. Andrew B. Molwane
Northern Air	Mr J Muhwati
Oodi College of Applied Arts	Ms Mildred Boduwe
SefCash	Mr Moreri Hlabana
TAWU	Mr S E Ntsuke
	Ms Dorothy Kolobe
Tertiary Education Council, LMO	Mrs Margaret Baiketsi
Educational Consultant	Mr Jan Deurwaarder
BOTA Steering Committee	Ms Chanda Mogobe
	Mr Brian Mooketsi
	Ms Gillian Mmolotsa
	Mr Abel Modungwa
	Ms Sannah Bathai
	Mr Matthews Phiri

Appendix 5: Summary of problems identified in qualitative data

Summary of problems identified in focus groups, consultation meetings and surveys	
Access	<ul style="list-style-type: none"> • TVET students are not sponsored by government • Policy environment which limits the viability of private education and training -VAT • Narrow scope of Vocational Training Fund L1-3 only, accredited training providers only • Lack of flexible delivery options to enable people to train while they are working • Small businesses are reluctant to release staff for training • Training and employment can be geographically remote
Quality	<ul style="list-style-type: none"> • Low uptake of the BNQF unit standards and qualifications • Lack of political will to implement a national qualifications framework • Lack of one coherent system to register and assure all qualifications • Lack of articulation between levels • Lack of capacity for curriculum development • Long lead in times for registration of new standards • Focus areas should include Entrepreneurship and customer service skills • Mismatch of vocational teachers' specialist areas and skills needs of Botswana • Failure to integrate theory and practice in the delivery of training • Low satisfaction with knowledge, skills and attributes of vocational graduates • Graduates don't demonstrate critical thinking and decision making skills • Employers think their business success depends mostly on meeting customer needs, quality products and services and highly skilled staff
Relevance and Efficiency	<ul style="list-style-type: none"> • Lack of strong linkages between specific industries and specialised training providers • Lack of capacity in industry and in colleges to implement attachment and internship satisfactorily • Attitude and work experience are considered more important than formal qualifications and references are more important than trainers think • Duplication of effort and specialist resources spread too thin
Technology skills	<ul style="list-style-type: none"> • Limited access to computer technology for the majority of the population • Lack of ICT training provision, low expectation of ICT skills by employers and low rating of the importance of technology for business success.