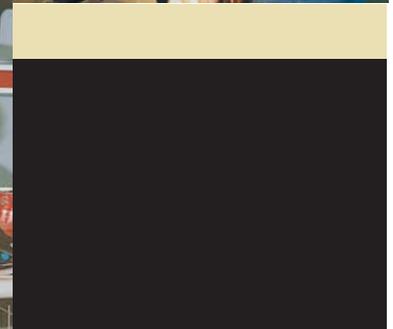
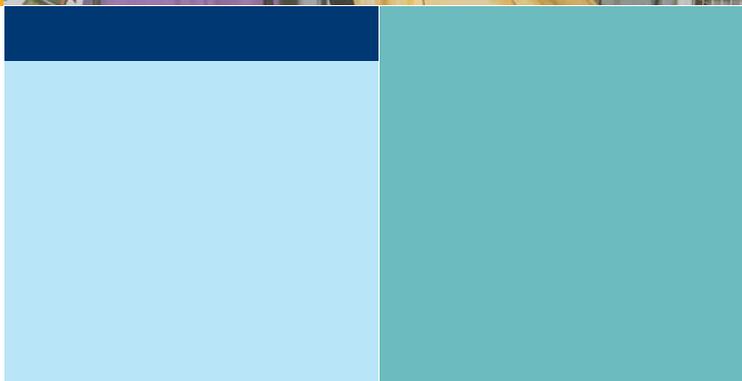
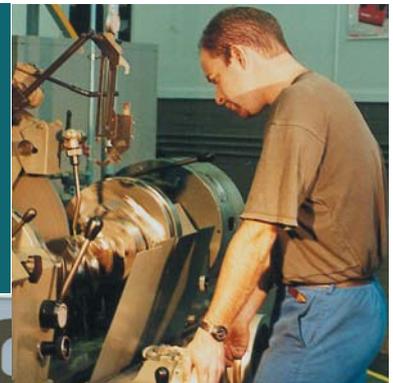




Department of Labour

State of skills in South Africa





Department of Labour

State of Skills in South Africa 2003

Text

Skills Development Planning Unit

The Skills Development Planning Unit (SDPU) was formed in 1999 and is located within the Department of Labour. The SDPU was established in terms of the Skills Development Act, 1998 to perform the following functions:

To research and analyse the labour market in order to determine skills development needs for:

- South Africa as a whole
- Each sector of the economy
- Organs of State

To assist in the formulation of:

- The National Skills Development Strategy
- Sector skills development plans

To provide information on skills to:

- The Minister
- The National Skills Authority
- Sector Education and Training Authorities (SETAs)
- Education and training providers
- Organs of State.

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1. Introduction

A persistent theme over the past year in public discussion has been the state of skills in the South African economy and society. This issue has been approached in a number of ways but three important points emerge as markers in the debate around skills development.

Firstly, that the South African economy continues to experience a shortage of skills in key economic sectors. Such a shortage is not a new phenomenon. A shortage of skills has long been a feature of South Africa's economic and social landscape. The principal, but not the only, cause of persistent skills shortages has been the effects of pre-1994 apartheid government policies and the structural shifts that have occurred in the economy, from being an inwardly focused economy concentrated on minerals and manufacturing to becoming a more diversified and globally oriented economy.

A second marker in discussions about skills shortages is that there is no quick fix solution to the skills problems that have developed over a substantial period of time. Improving and developing South Africa's stock of skills will not be fully resolved through short-term measures, such as increasing the flow of immigrants to the South African labour market.

Thirdly, there has been much reference to skills development as one way of supporting economic growth. This is an important and complex issue. It is not one that can be approached



The unemployed represent an important target group for the National Skills Development Strategy. It is vital that their skills be upgraded in order to facilitate their transition into active employment and life-long learning and to grow the skills pool from which employers can recruit.

Definition of skill

The 1997 Green Paper, Skills Development Strategy for Economic and Employment Growth in South Africa, defined skill as the necessary competencies that can be expertly applied in a particular context for a defined purpose. The Green Paper went further to outline a number of competencies that denote what is meant by a 'skill'. These include:

- Practical competence – the ability to perform a set of tasks
- Foundational competence - the ability to understand what we or others are doing and why
- Reflexive competence – the ability to integrate or connect our performance with an understanding of the performance of others, so that we can learn from our actions and are able to adapt to changes and unforeseen circumstances.

in terms of simple relationships between skills and growth. There are numerous factors that impact on a country's economic performance. Availability of skills in the labour force is one of these. However, other equally important factors are the level of inequality and access to markets. What is clear is that the availability of skills is an increasingly important factor affecting the level of investment in any economy.

The South African government has committed itself to taking concrete steps to raise the skills profile of the labour market. This will be achieved through short-term measures to address immediate shortages, and longer-term solutions to address structural imbalances in the labour market. Key decisions taken by government in this regard include:

- Facilitating the placement of new entrants in the labour market through learnerships and internships
- Facilitating the recruitment of skilled foreign workers in areas of critical skills shortages, while ensuring the concurrent development of South Africans in those fields
- Providing career guidance, and counselling to school leavers to assist them to pursue further studies in fields that are relevant to the needs of the economy
- Fast tracking the implementation of the HRD Strategy by all government departments.

In this context, the Skills Development Planning Unit is presenting the second report on the State of Skills in South Africa. It aims to serve as a barometer of short-term changes in the labour market, the demand for skills, and the supply of skills. It also aims to provide information to the public relating to the skills that are in short supply in South Africa. This list of scarce skills is drawn from a variety of sources and is intended to guide possible future investments in skills. However, it must be remembered that we are only in the early stages of our research and care must be taken in interpreting this data.

This report begins in Section 2 by discussing the shift in approach to identifying skills needs – from manpower planning to labour market signalling. Section 3, entitled *Key Features of the South African Labour Market*, gives a broad overview of key labour market indicators with a view to identifying current trends and developments. Section 4 on the demand for skills presents an overview of the factors driving the demand for skills in South Africa and how these have changed over time. Then, Section 5 investigates the supply of skills coming onto the labour market and whether provision is responding to the demands identified in the previous section and redressing the inequalities associated with apartheid. Finally, Section 6 presents an initial indication of skills shortages or scarce skills in South Africa.

It is hoped that this report will serve as an information resource to all concerned with skills development. The State of Skills in SA is intended as an annual report, one that will hopefully grow in usefulness over time.

Technique of manpower forecasting

Forecasting can be undertaken in four stages:

1. A country's overall economic output is estimated for a given period into the future
2. The output is calculated across industry sectors and the labour requirements to produce this output are estimated
3. Labour requirements are translated into educational requirements (assuming each job corresponds with a specific occupational level and type of education)
4. The forecast of educational requirements is compared with the stock of educated labour and the need to expand or contract the output of the education system is estimated.

(Van Adams, Middleton & Ziderman, 1992, p.263-4)



Table 1 illustrates the ongoing legacy of apartheid in that Africans are nearly seven times more likely to be unemployed than any other population group.

2. From manpower planning to labour market signalling

In the last five decades, there has been a growing interest, particularly amongst planners in developing and transitional economics, in the relationship between investment in skills and economic growth. Initially, it was assumed that policy makers could use complex econometric models in an attempt to identify the precise nature of their manpower requirements. Underlying these models was an assumption that a causal relationship exists between investments in education, training and economic growth. However, after decades of experience it is generally recognised that labour markets are more complicated and unpredictable than these models assume.

The major drawback of these models is that they assume a fixed relationship between labour and the quantity of goods produced, as well as between labour productivity and education or skill levels. In reality the relationship between labour and the quantity of goods produced is more dynamic, affected by changes in technology, by innovation and new forms of work organisation. The time, effort and resources required for implementing a manpower forecasting model, not to mention its past failures, has resulted in the demand for a system that is more sensitive to fluctuations in the labour market and which is more efficient. This has resulted in a general shift towards labour market analysis or labour market signalling as a means of informing policy makers, as well as HR practitioners, the youth, education and training providers, and other stakeholders.

Labour market analysis is based on the best available information regarding the state of the labour market and the economy. Through regular analysis of such information, planners and decision makers are able to remain alert to economic and labour market changes and to make interpretations about the demand for different types of skills. This requires an approach that 'reads off' signals about economic and labour market trends, rather than extract data from econometric or statistical models. Some of the labour market and economic indicators that have most relevance to skills development are:

- employment and changes to employment (usually analysed by occupation and sector and geographic region)
- educational levels of the labour force (usually analysed over a longer time period)
- wage trends as an indication of demand for skills
- contributions to gross domestic product of economic sectors (as an indication of the volume of economic activity that could have implications for employment and skills needs).

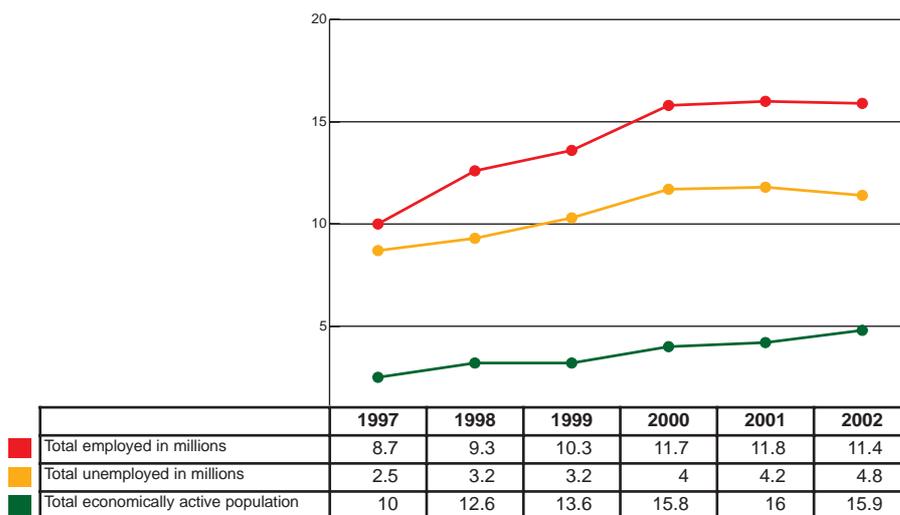
In the past, the manpower planner guided public sector expenditure on training, but in a market economy the planner should focus on providing the information required to guide local level decisions on skills development, with regard to skills that are in high demand and with regard to training or re-training decisions by local level actors.

Through using accurate and up-to-date information, SETAs, provincial bodies, and other stakeholders could improve the management of their learnerships and skills programmes. For example, information on the demand and supply of skills can be used to single out where demands for certain types of skills are growing and where it may be declining. Similarly, information about labour market trends can enable the planner and stakeholders, or local decision makers, to identify where skills shortages may be occurring. However, it is important not to respond only to current or existing demands, but also to act pro-actively and to anticipate what skills will be required in the future to support strategic and social development initiatives.

3. Key features of the South African labour market

The past five years have seen growth in the size of the country’s **economically active population** – from 10 million in 1997 to 15.9 million in 2002. This represents a growth rate of over 50%. During the same period the number of employed people has increased, from 8.7 million to 11.4 million. The most striking feature over this period has been the increase in the number of unemployed – from 2.5 million in 1997 to 4.8 million in 2002 (see **Figure 1**).

Figure 1: Economically active, employed and unemployed in South Africa 1997 – 2002



Source: Various October Household Surveys and Labour Force Surveys.

The **unemployed** represent an important target group for the National Skills Development Strategy. It is vital that their skills be upgraded in order to facilitate their transition into active employment and life-long learning and to grow the skills pool from which employers can recruit.

Figures on the characteristics of the unemployed by educational level and population group are shown in **Table 1**. The table illustrates the ongoing legacy of apartheid in that Africans are nearly seven times more likely to be unemployed than any other population group.¹ Africans also constitute the largest number of those who have less than a Grade 12 or matric qualification, with African women exceeding men slightly in this category. But there are over 1 million people who are unemployed and who do have a Grade 12/matric or equivalent qualification. This represents an under-utilised human potential and is likely to be associated with high social costs that go with this exclusion.

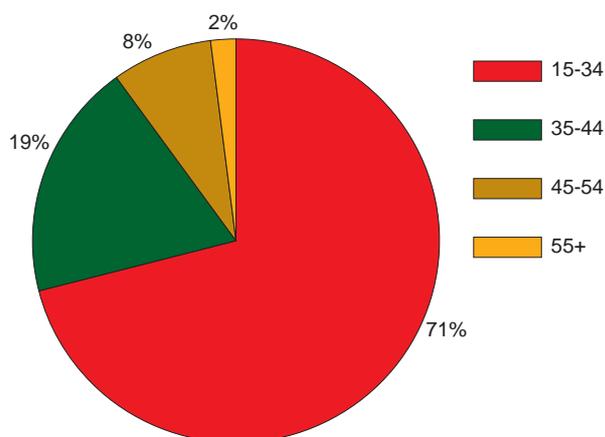
Table 1: Educational profile of the unemployed by population group and gender (000s)

	African			Other			Total male	Total female	Total
	Male	Female	Total	Male	Female	Total			
Total*	1 965	2 248	4 213	294	329	623	2 259	2 577	4 836
None	80	88	168	-	-	-	83	94	77
< Grade 12/matric	1 312	1 417	2 729	165	177	342	1 490	1 618	3 108
Grade 12/matric or equivalent	494	608	1 102	93	104	197	591	715	1 306
> Grade 12/matric	70	122	192	-	-	-	81	136	217

* Figures may not add up to total due to rounding and other statistical manipulations.
Source: Labour Force Survey, September 2002.

It is important to note that **youth unemployment** continues to be a striking feature of the South African labour market. Those in the 15 to 34 year age group make up the vast majority of the unemployed – the chances of being unemployed are three times higher for this age group, as reflected in **Figure 2**. Moreover, most unemployed youth are African, with over 3 million in the 15 to 34 year age group compared to 411 000 for White, Indian and Coloured youth.

Figure 2: Unemployment by age group



Source: Statistics SA, Labour Force Survey September 2002.

The **employed** are an equally important target group for skills development, particularly through the work of the Sector Education and Training Authorities (SETAs). A significant labour

¹ The “Other” population group includes Coloureds, Indians and Whites.

market indicator for skills development is the current and changing skill levels of those in employment. Of the 11.03 million workers employed in the South African economy:

- 6.7% had no educational qualifications
- 51.9% had an educational attainment below Grade 12/matric
- 25.1% had a Grade 12/ matric
- the remaining 15.2% had achieved a qualification level above Grade 12/matric.

If these figures are examined by gender, they reveal that qualification differences between men and women are small (see **Table 2**):

- 7% of employed women have no qualifications, compared to a figure of 6% for men
- employed men with Grade 12/matric make up 26% of the total employed men, compared with 24% for women
- there are slightly more women in employment with a qualification higher than a Grade 12/matric, a 17% share, compared to 14% for men.

Table 2: Educational qualifications of the workforce by population group and gender (000s)

	African			Other			Total male	Total female	Total
	Male	Female	Total	Male	Female	Total			
Total*	4 028	3 208	7 236	2 156	1 632	3 788	6 184	4 840	11 024
None	343	337	680	41	20	61	384	357	741
< Grade 12/matric	2 521	1 932	4 453	745	528	1 273	3 266	2 460	5 726
Grade 12/matric or equivalent	785	512	1 297	808	657	1 465	1 593	1 169	2 762
> Grade 12/matric	326	404	730	539	412	951	865	816	1 681

* Figures may not add up to total due to rounding and other statistical manipulations.

Source: Statistics SA, Labour Force Survey, September 2002.

When examined by population group, some important issues emerge from **Table 2**:

- 9% of employed Africans have no qualification compared with 1% of Whites, Indians and Coloureds
- 29% of African workers have achieved a Grade 12/matric level qualification or higher compared with 64% for White, Indian and Coloured workers.

These differences in the qualification level for Africans compared to other workers pose an important challenge for linking of skills development to equity considerations in the workplace. It is encouraging to note, however, that the number of Africans with Grade 12/matric and higher qualifications has been growing between 1997 and 2002 (see **Table 3**).

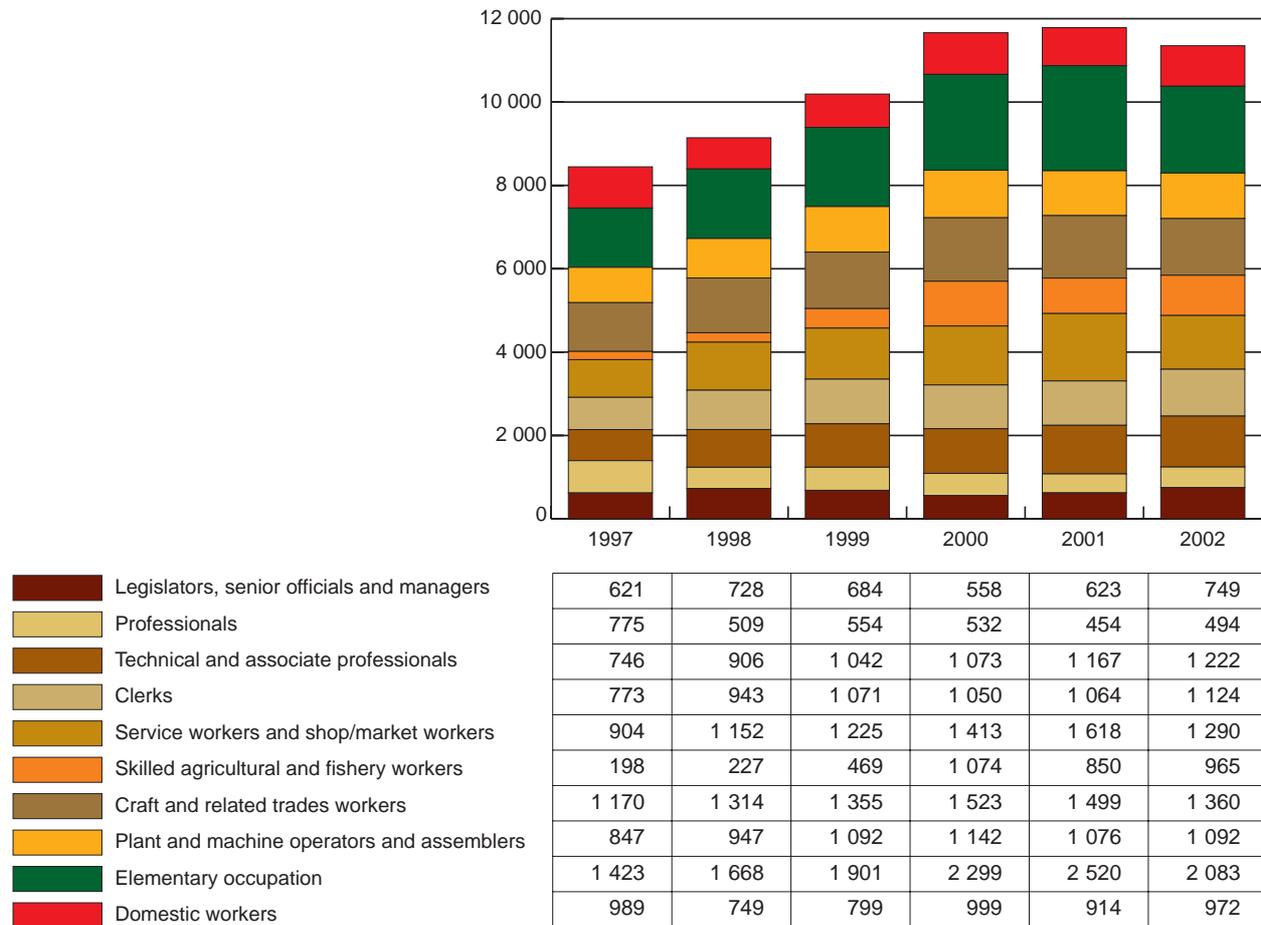
Table 3: Changes in the qualification of the workforce by population group (000s)

	None		Less than Matric		Matric		Post Matric	
	African	Other	African	Other	African	Other	African	Other
1997	642	66	3 310	1 195	880	1 121	536	828
1998	762	66	3 683	1 127	887	1 251	578	952
1999	667	75	4 105	1 299	1 061	1 274	667	1 008
2000	803	55	5 172	1 288	1 184	1 052	729	1 233
2001	801	52	5 120	1 240	1 260	1 240	763	2 394
2002	680	61	4 394	1 194	1 250	1 368	837	2 493

Source: Statistics SA, various October Household Surveys and Labour Force Surveys.

Clearly, past historical imbalances are being addressed through education and training, although significantly more progress needs to be made before parity of qualification levels is achieved between the different population groups in the workforce.

Figure 3: Employment by occupation, 1997-2002 (000s)



Source: October Household Survey and Statistics SA, Labour Force Survey.

Change in **employment by occupation**, is also an important labour market indicator. These changes are shown in **Figure 3**. Researchers often use occupations as a proxy for measuring the demand for skills. By tracing shifts over time, it is possible to identify which occupations are growing in their share of employment and, therefore, where demand exists for certain occupational groupings. Overall, in South Africa there has been a significant shift in occupational patterns, especially with regard to the growth in employment in middle level occupations, such as technical and associate professionals, clerical workers and craft workers. An unexpected change has been the apparent decline in the number of professionals employed between 1997 and 2001. Employment of professionals increased slightly in the early part of 2002. Given the evidence of shortages of many categories of professionals in the labour market, this decline may be affected by the number of people emigrating and retiring, or it may be due to survey or statistical changes or errors. The increase in elementary occupations is also worth noting, although the trend is unlikely to suggest a reversion to the dominance of this occupational group in the labour market. What is clear is that skilled and semi-skilled occupations have come to dominate in the make-up of the South African workforce, as has been the case in many other countries.

Table 4 shows the equity profile of the workforce, based on submissions of Employment Equity Reports by 1 782 employers with more than 150 workers². The companies that submitted reports to the Department employ approximately 2.2 million workers or 30% of formal sector employment. It is clear that Africans remain significantly underrepresented in the senior management positions in the economy and also in the category of technician and associate professional. In the professional and middle management position, Africans are quite well represented at 50% of that category. Over time, the trend is fairly positive, with a 2.7% increase in African representation at the middle occupations between the year 2000 and 2001, and smaller but positive increases at the senior management levels. The table also makes it clear that there are very few workers with disabilities at all levels in the formal sector employment. Those that are in employment are primarily at the more junior levels.

Table 4: Equity profile of the labour force

	African %	Coloured %	Indian %	White %	Female %	Male %	People with disabilities ³ %
Total	60	13	4	23	36	64	0.9
Top management	8	13	4	75	12	88	n.a.
Senior management	10	5	5	80	18	82	n.a.
Professionally qualified	40	6	4	50	38	62	n.a.
Skilled technical, junior management and supervisor	38	13	8	41	46	54	1
Semi-skilled and discretionary decision-making	62	15	5	18	36	64	0.7

Source: Department of Labour, *Employment Equity Report 2002*.

² As at 15 July 2002, a total of 2 369 employers with 150 workers reported to the Department of Labour. Out of these reports, 1 782 were analysed.

³ From the total sample, 1 142 employers reported 20 147 workers with disabilities.



Minister Membathisi Mdladlana, MP, Minister of Labour (left), takes a keen interest in the training and development of unemployed people.

Summary of key features of the SA labour market

The key labour market indicators presented above indicate that:

- Unemployment remains the key challenge for transformation of the South African labour market. Providing training, especially to African unemployed youth, could enhance their prospects of accessing the labour market. Such an intervention can also promote social cohesion and build the skills base from which accelerated growth and development can be launched
- The proportion of African workers with relatively low educational levels (up to and including Grade 12/matric) remains large and should form a focal point in attempts to link skills development and equity
- African workers remain underrepresented in certain high skill occupations and this should also form a focal point in linking skills and equity where training can assist chances for promotion and mobility in the workforce
- Workers with disabilities, by and large, remain excluded from the South African labour market.

4. Demand for skills in South Africa

As indicated in Section 2, the demand for skills can be analysed in relation to a number of labour market and economic indicators. Typically, these would be indicators relating to employment, education levels of the workforce, wages, labour turnover or vacancies and economic indicators such as, gross domestic product, fixed capital formation and even export/import data. On their own, none of these variables are likely to provide a clear picture of the demand that may exist for skills in an economy, a sector or an enterprise.

An informed understanding of demand for skills will require a combined analysis of as many relevant factors as possible over a period of time. Analysing the demand for skills will also require scrutinising information that best approximates the behaviour of firms when trying to

meet their requirements for labour with various types of skill. So, the identification and analysis of demand will be strongly affected by what information is available and the techniques applied to obtain relevant information. Typically, the demand for skills is influenced by, but not limited to, the following factors:

- Changes in the main economic sectors in which people are employed
- Employment trends by occupational group at the sector level
- Trends in the geographic location of employment of people in different sectors and occupations
- The formal qualifications of workers, across sectors and occupations
- The types and levels of skills that are utilised by firms (e.g. basic, intermediate, specialist, managerial, etc.).

Indicators relevant to skills shortages

- Very strong employment growth – a rapid growth in employment in a sector or sub-sector will necessitate a larger human resource base with the required levels of skill
- Strong vacancy growth – when employers cannot find workers with the skills they require and have to advertise vacancies over long periods of time
- Upward pressure on earnings – a strong upward trend in earnings of people with specific skills may indicate a situation of high demand or shortage
- Special recruitment strategies – employers may resort to special advertising, head hunting and/or recruitment on international markets for workers with specialised skills.

Being able to indicate areas of demand for certain skills is also different to identifying a situation of **skills shortage**. A skills shortage can be defined as a situation in which employers are unable to fill, or experience difficulty in filling, vacancies in a specific occupation or specialisation due to an insufficient number of workers with the required qualifications and experience. Shortages typically apply to higher-level skills and are identified by determining the size of the supply of skills relative to the overall demand for workers with such skills.

The following provides a profile of the main economic sectors in South Africa, classified as the primary, secondary, and services sectors. The aim of this section is to highlight key features of these sectors and their relation to the economy as a whole, before going on to analyse employment and wage trends on a sector basis. Finally, a short analysis of the skills intensity of sectors is provided. Skills intensity refers to the share of skilled, semi-skilled, and low skilled workers in a sector and serves to indicate how sectors concentrate workers according to skills levels.

Taking a selection of the above variables, a picture emerges of the state of demand for skills in South Africa over the recent past.

4.1 Profile of main economic sectors in South Africa

Between 1990 and 1998, formal employment of semi-skilled and low skilled workers fell by 19% or approximately 700 000 jobs. Conversely, employment of skilled and highly skilled workers rose by 12% or 80 000 jobs. Important changes have occurred in the economic environment over this period, including a liberalisation of the economy, not to mention a rapid uptake of technology in all sectors, all of which favour skilled labour. South Africa has also had to compete with higher volumes of imports, especially from low cost producers such as India and China. At the same time new markets have opened up in the United States, the European Union, Asia and the rest of the African continent, leading to export opportunities in a wide variety of industries.

The following is a snapshot of the main economic sectors in the South African economy.

4.1.1 Primary sector

Agriculture and mining have traditionally formed the backbone of the SA economy. Although they remain important contributors to the national output, they have been experiencing rapid decline in recent years. They are both particularly sensitive to changes in the value of the domestic currency. On the input side, both industries are directly impacted by the price of fuel, as well as imported equipment, which are denominated in dollar terms. Conversely, commodities in both primary sectors are sold on the world market also at dollar prices. In agriculture demand for low skilled and semi-skilled workers has declined, while the demand for skilled and highly skilled workers has been increasing significantly.⁴ Mining has also been losing jobs for the low skilled and semi-skilled, particularly in response to the fluctuations in the world price of commodities, combined with the volatile value of the Rand. Technology is taking an increasingly important role in both sectors for productive processes as well as value adding, with an attendant increase in the level of skills required in the sectors.

4.1.2 Secondary sector

The secondary sector comprises manufacturing, construction, transport, utilities, and other secondary industries. Although manufacturing exports have grown overall, economic output in the sector has been stagnant or declining. According to the South African Reserve Bank, the sector was growing at 5% in the year 2000, but declined in subsequent years, although it shows signs of recovery by 2002.⁵ Furthermore, any growth within the sector has tended to be capital and skills intensive. In response, government has introduced the Integrated Manufacturing Strategy (IMS) in an effort to re-invigorate the sector. The focus of the IMS focuses on re-defining the competitive advantage of SA by nurturing specific components of the value chain within key industries, and to ensure sufficient investment in them to promote growth and job creation. It aims to place greater emphasis on Information and Communications Technology (ICT) and on beneficiation of the primary commodities that remain the principal products of the SA economy and take advantage of export opportunities. Public and private initiatives are also being introduced to improve the road and rail infrastructure of the country in order to improve the haulage capacity, and thus take better advantage of trade opportunities. Such improvements are critical to the development of the economy, as this sector has the greatest potential to employ semi-skilled to skilled workers across a variety of industries.

4.1.3 Services sector

The services sector is principally made up of social and community services. The biggest employer by far in this sector is government, delivering social and municipal services at local level. The needs of this sector have changed significantly in post apartheid South Africa. Government has had to deliver services to a much larger client base. Furthermore, transformation of the public sector has entailed changing not only the equity profile of the civil servants, but also the culture of service delivery within the public service. This has resulted in a demand for a higher calibre of staff, and a more flexible approach to management and service delivery. At the same time, international demand for key professionals (especially teachers, doctors, and nurses) is placing greater pressure on the local labour market. Thus, government is competing with both domestic and international employers for skilled labour.

Outside government, internationally, the service sector has proved the most versatile and flexible means of generating employment, particularly through the establishment of SMMEs. In SA, the sector is taking on an increasingly important role, as more and more public and private institutions restructure and outsource some of their non-core functions. Business services, in

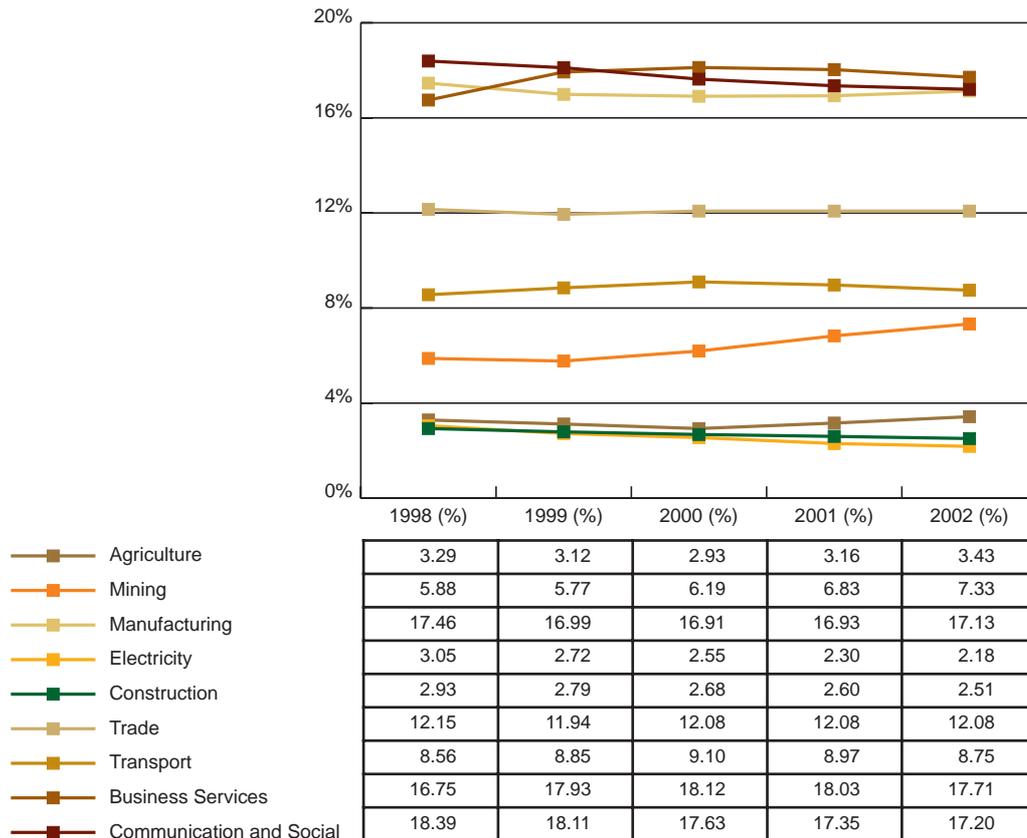
⁴ PAETA Sector Brief, Department of Labour, 2002.

⁵ SA Reserve Bank Annual Report 2002, p8.

which information and communication technology is vital, represent the fastest growing industry, and have overtaken manufacturing in their contribution to GDP. Crime levels have also led to significant growth in industries such as private security and insurance services. At the same time, globalisation is placing greater demand on some industries, such as banking and other financial services, to become aligned to international standards in order to remain competitive locally and internationally. Again, this translates into the need for a much more flexible and sophisticated workforce that can adapt quickly to changes in the working environment.

Figure 4 shows trends in the economic profile of SA over the last five years.

Figure 4: Sector contribution to GDP



Source: Statistics SA, various October Household Surveys and Labour Force Surveys.

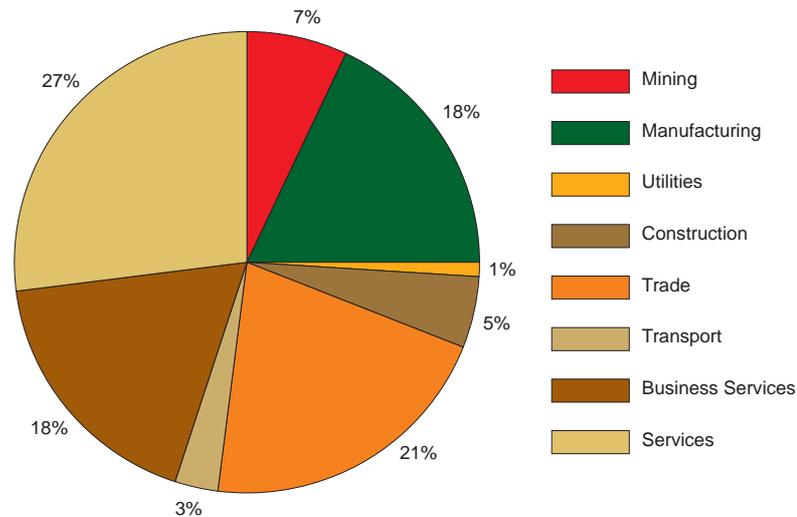
In the 10 years of democracy, the overall structure of the South African economy has been relatively stable. The economy has been growing at a rate of between 1.5% and 3.1% overall. The most significant shift occurred in 1998, when financial or business services (comprising financial intermediation, insurance, real estate, and business services) overtook manufacturing as the leading contributor to GDP, marking a shift in the economy towards a greater service orientation. Over time, financial services has shown a gradual but steady increase from 15% of GDP to 18%, while manufacturing has fallen from 19% to 17%. At the same time, the agriculture and mining sectors' contribution to GDP grew during this period. This unlikely result for the primary sectors is largely influenced by the devaluation of the Rand during this period, as the commodities in both these sectors are traded on the world markets in dollar denominated terms. Other sectors have either remained relatively unchanged, or declined in their contribution to GDP over time.

4.2 Employment by sector

Employment patterns by sector show that:

- There have been significant structural shifts in economic sectors, with changes in the types of employment contracts between workers and employers. More flexible modes of work are becoming increasingly popular, leading to greater use of independent contractors, and temporary, part-time, and casual workers
- Employment expansion has been experienced in trade, agriculture⁶, business services, community services, private households (domestic workers), and manufacturing
- Smaller decreases occurred in mining, construction, and transport.

Figure 5: Workers by industry (excluding agriculture)



Source: Statistics SA, Survey of Employment and Earnings, Dec. 2002.

As at December 2002, the sectors with the highest employment levels overall were community and social services (predominantly government services), trade (wholesale, retail, hotel, and others), manufacturing, and business services respectively.

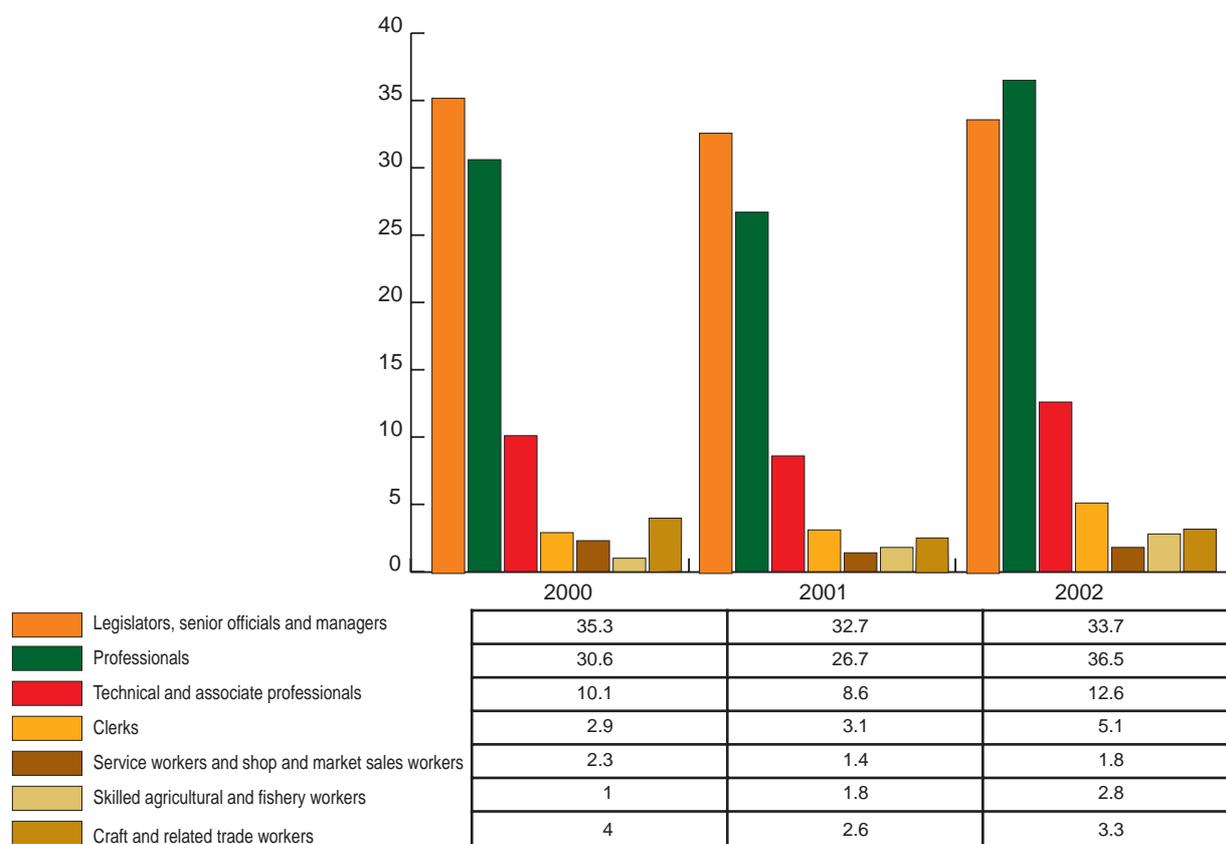
The levels of wages at current prices have risen over the same period in response to inflation and increased productivity. Other reasons for this include the introduction of minimum wages, collective bargaining processes, shortages for particular types of skills, and increased proportions of higher skilled workers earning correspondingly higher wages. Thus, even sectors that are in decline overall such as agriculture, mining and transport are employing proportionately more skilled and highly skilled workers, even as they are shedding others at the lower end of the qualifications spectrum.

Changes in wage rates between different occupations can also provide a signal of the nature of skills in demand. **Figure 6** shows how wage rates between different occupations in South Africa have changed over time. Unsurprisingly, this figure shows the percentage of workers earning R8 001 or more a month are located in high skilled occupations, especially legislators, senior officials, managers, as well as those in the professional category. The largest growth in the percentage earning R8 001 or more a month are technicians and associated professionals. This suggests that demand is high for middle level skills. The increase in wages for professionals is also consistent with the falling numbers of professionals in the labour market,

⁶ The agriculture employment figures is likely to be influenced by seasonal factors, and may vary depending on the time of the year when measurement occurs.

as employers have to pay more to attract and keep limited numbers of qualified workers in this occupational category.

Figure 6: Trends in the percentage of South Africans earning R8 001 or more a month in different occupations



Source: Stats SA, Labour Force Survey and October Household Survey.

4.3 Profile of workers by occupation

The occupational mix of the country's workforce was discussed in Section 3. However, what is more important from the demand perspective is how this occupational mix changed over time, especially between the different industrial sectors (see **Table 4**). This data illustrates changes in labour demand patterns, especially with regard to what skills levels are required in each sector and correspondingly how these have changed over time. For example, one of the most significant trends in the agricultural sector, as well as the mining and quarrying sector, is the shift from low skilled to semi-skilled employment. Whilst, in manufacturing, transport and communications and finance the shift has been from semi-skilled to highly skilled.

Table 5: Share of employment by three skills categories⁷ and main sector

Main Sector	Year	Skilled %	Semi-skilled %	Low skilled %
Agriculture	1995	1	22	77
	2002	1	56	43
Mining and Quarrying	1995	4	77	19
	2002	4	89	7
Manufacturing	1995	6	74	19
	2002	10	75	15
Utilities	1995	6	79	13
	2002	9	82	8
Construction	1995	6	74	19
	2002	6	74	20
Internal Trade	1995	14	66	20
	2002	10	60	30
Transport and Communication	1995	15	73	11
	2002	22	67	11
Transport	1995	19	69	12
	2002	23	64	12
Communication	1995	5	83	10
	2002	17	78	5
Finance	1995	17	77	6
	2002	25	67	8
Comm Services	1995	13	71	15
	2002	19	70	11
Private Households	1995	0	3	97
	2002	0	16	84
Unspecified	1995	7	35	17
	2002	5	17	4
Total	1995	9	59	31
	2002	11	61	27

Source: H Bhorat, Employment and Unemployment Trends in Post-Apartheid South Africa. Development Policy Research Unit, University of Cape Town, 2003. Unpublished paper.

4.4 Summary of demand for skills

The data on the demand for skills shows a number of interesting trends. In terms of the structure of the economy:

- Financial and business services have expanded significantly over the last five years

⁷ Skilled includes legislators, senior officials, and managers, as well as professionals. Semi-skilled includes technical and associate professionals, clerks, service workers, skilled agricultural and fisheries workers, and craft and related trades. Low skilled includes labourers.

- Manufacturing remains a major contributor to the national output, but its share contribution has been declining
- Mining as a sector shows moderate growth, however, this has been associated with large-scale job losses as mining houses turn to technology to improve profitability.

With respect to the labour force:

- Employment growth has been most evident amongst the middle level skilled workers, although care needs to be taken when interpreting this data
- In agricultural, mining and quarrying there has been a shift in skills levels from low skilled to semi-skilled
- Whilst, in manufacturing, transport and communications and finance the shift has been from semi-skilled to highly skilled
- At the same-time earning levels in current Rands are rising, especially for those employed in financial and business services, trade, manufacturing and community and social services
- Employment equity remains a challenge, with the majority of senior management and professional posts still held by white males.

5. Skills base in South Africa

How far has the skills base in South Africa been responding to the demands identified above? These are demands that, broadly speaking, require improvement in general education for all people of school going age, expanded access to further and higher education institutions of learning and improved responsiveness of further and higher education to the higher and intermediate levels of skills that are in demand in the various sectors of the economy.⁸ It is also important to investigate the extent to which the inequalities associated with apartheid are being redressed. In order to obtain signals on whether education or training provision is responding to such demands it is necessary to investigate the:

- output and quality of the General Education system



Employment growth has been most evident amongst the middle level skilled workers, although care needs to be taken when interpreting this data.

⁸ This report does not address the role of government in providing training for unemployed people. For information on progress in this regard, see the National Skills Development Strategy Implementation Report, April 2002 to March 2003. Pretoria, Department of Labour, 2003.

- output and quality of the Further Education and Training (FET) system
- output and quality of the Higher Education System (HE).

In an ideal world all of the above should be addressed, but this task is difficult due to the:

- absence in some instances of accurate and up to date information
- lack of time series data which enables us to trace trends over time, especially with regard to the availability of data broken down by population group
- inability to disaggregate national level data and the corresponding lack of specific output signals that are meaningful to planners.

This report will, nevertheless, make the best use of available data and, where possible, provide signals to decision makers on potential areas for investing resources in skills development.

5.1 General Education's role in skills development

Research has shown that in developing or transitional economies one of the fundamental principles for developing a skilled workforce is to have a good quality general education system – one that is widely accessible and that has high participation levels. The number of young people enrolled on formal programmes of study at schools can provide a means of measuring the volume of basic skills that are made available to the labour market. In South Africa Gross Enrolment Ratios (GER) measures participation levels at different stages in the schooling system. Gross Enrolment Ratio is defined as the numbers of learners, regardless of age, enrolled in a specific school phase (e.g. primary) as a ratio of the appropriately aged children in the general population⁹. The national GER for females was higher than for males at the secondary level, but lower at the primary level¹⁰. This evidence suggests that over the next couple of years basic skill levels for young people will be higher for females, but over the medium term this might be reversed to males.

A useful measure of educational quality is to look at the number of learners who have achieved a matriculation level qualification and how this has changed over time. **Table 6** highlights that the national pass rate has risen by 6.4% over the 1994 to 2001 period, indicating that the quality of skills produced by the schooling system are improving over time. The largest growth in net pass rate over this period occurred in Gauteng (20.1%) and the Limpopo (34%). It is also important to note that in 2002 only 3 335 out of the 15 000 Africans who passed matriculation on a higher grade will be going into science and technological related fields. This points to the possible skewed nature of skills formation in South Africa. From the planners perspective these trends represent a challenge of how to encourage learners to enrol on programmes of study in the field of engineering and other scientific areas, especially in the light of the demand identified earlier.

⁹ The GER for primary education is the total primary enrolment over the number of 7 – 14 year olds in the general population. Thus, a GER greater than one may be an indication of overagedness in schools.

¹⁰ Department of Education, 2003.

Table 6: Comparative national pass rates of the Senior Certification Examination 1994, 1998 and 2001

Province	1994 %	1998 %	2001 %	Net change
Eastern Cape	56.8	45.1	45.6	-19.7
Free State	55.8	43.4	59.0	5.7
Gauteng	61.3	55.6	73.6	20.1
KwaZulu-Natal	67.6	50.3	62.8	-7.1
Limpopo	44.4	35.2	59.5	34.0
Mpumalanga	47.5	52.7	46.9	-1.2
North West	70.2	5.0	62.5	-11.0
Northern Cape	77.7	65.4	84.2	8.3
Western Cape	85.6	79.0	82.7	-3.4
National	58.0	49.3	61.7	6.4

Source: 1994-2001 SNAP Surveys – see Department of Education, 2003

5.2 Public Further Education and Training Colleges' role in skills development

A second and equally important component of a country's skills base is determined by the public Further Education and Training (FET)¹¹. FET Colleges have experienced a radical transformation over the past few years, with a significant growth in the number of learners and in the distribution of learners by population group (see **Table 7**). This data portrays a large proportion of Black learners at FET public institutions.

Table 7: Number of learners in the public FET sector by population group and gender, 2001

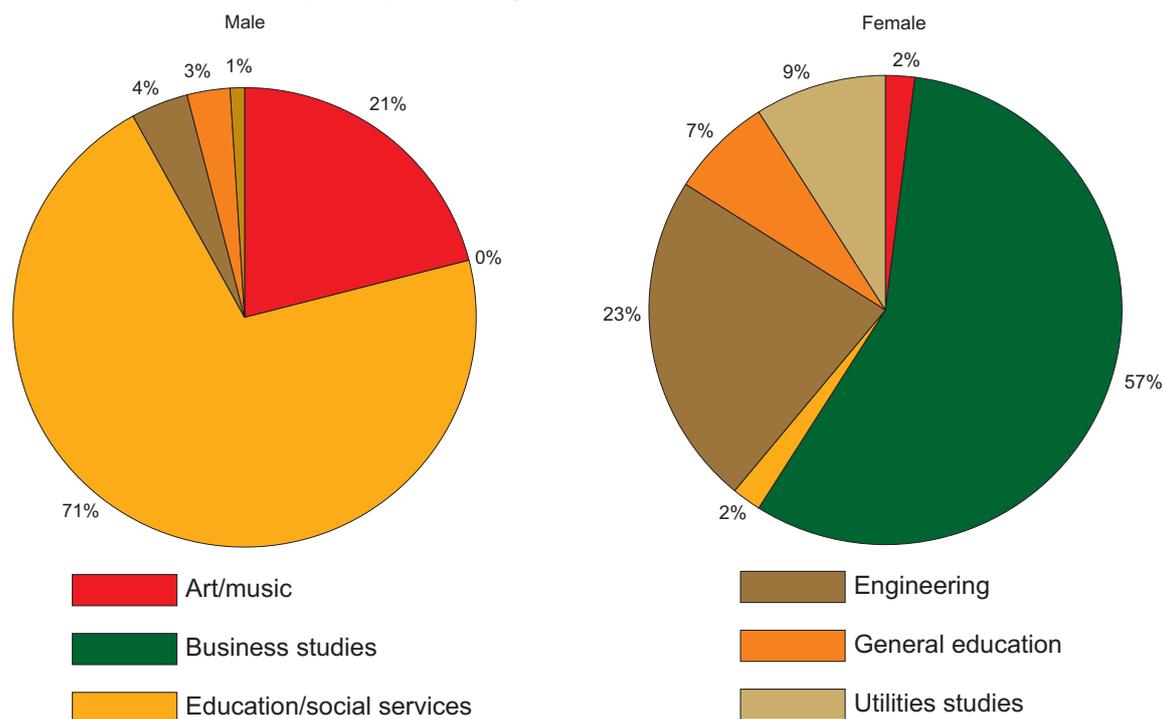
Population Group	African	269 922
	Coloured	23 731
	Indian	5 541
	White	43 480
	Unknown	13 374
	Total	356 049
Gender	Female	134 097
	Male	189 564
	Unknown	32 388
	Total	356 049

Source: 2001 FETMIS database.

Figure 7 goes further to show what subjects were studied by learners in FET colleges. The highest overall learner figures were in the field of engineering (184 306). The percentage of female learners studying engineering at FET institutions has grown from 13% in 1998 to 23.4% in 2001, representing a growth of 10.4%.

¹¹ In this report FET colleges refers to public registered former technical colleges. In the year 2000 there were 152 officially registered technical colleges, which were merged into 50 FET colleges.

Figure 7: FET enrolment by subject and gender, 2001



Source: 2001 FETMIS database.

What about the quality of provision at the FET level? One of the ways of measuring quality or responsiveness is to look at the employment of graduates from public FET colleges. The employment distribution of graduates by economic sector is not fully aligned with the general structure of the economy. However, it is consistent with the predominantly technical or commerce oriented nature of studies pursued at colleges. Similarly, the distribution of graduates by occupation shows that the majority can be classified as technicians and associate professionals (20.5%), craft and related trade workers (25.7%), plant and machine operators and assemblers (15.7), and service, shop, and market sales workers (15.8%). Given the inherent bias towards technical subjects in colleges, assessing the responsiveness of these institutions must be informed by the placement statistics of these graduates.

Table 8: Sectors in which FET college graduates are employed

Sector	% Employed in the sector ¹²
Manufacturing	18.9
Wholesale/Retail/Repairs/Hotels	17.7
Electricity/Gas/Water supply	15.1
Community/Social/Personal services	14.3
Mining/Quarrying	11.4
Construction	7.8
Financial/Insurance/Real Estate/Business services	7.1
Transport/Storage	4.7
Agriculture/Hunting/Forestry/Fishing	1.8
Other	1.1 ¹³
Total	100.0

Source: Cosser et al (2002).

¹² Almost a fifth of respondents (19.4%) could not identify from the list provided the sectors in which they worked. A post-coding of their verbal responses according to the nine SIC sectors has produced the results in this table.

¹³ The "other" category here accounts for the percentage of invalid responses to the question.

According to a recent HSRC study, in terms of placement, 34% of graduates were in employment or self-employment within the two years of completing their studies; 35% were in further studies; and 31% were unemployed. However, it should be noted that the decision of those engaged in further studies occurred because a significant proportion could not find employment - pointing to the complex nature of the labour market and the need to take care when interpreting such information.

Feedback from the employers of these college graduates shows that they are generally satisfied with the level of competence of the new workers. However, the average earnings of college graduates are lower than the industry average, perhaps indicating that employers tend to place less value on the qualifications obtained at colleges relative to those of other institutions or to work-based experience. Interestingly, of those who were employed, 58% of White graduates were able to secure employment within two years of completion, compared with 21% of Africans. Data from the LFS also highlights differences in unemployment levels amongst population groups with tertiary level qualifications. For example, the unemployment rate for Africans with a tertiary level qualification stood at 16.41% in 2002, compared with a figure of 3.15% for Whites in the same year (see Borhat, 2002).



Feedback from the employers of these college graduates shows that they are generally satisfied with the level of competence of the new workers.

Thus, evidence from the FET sector suggests that the legacy of apartheid is being redressed in that Africans represent a significant proportion of students educated at such institutions. Similarly, females are represented on courses that were traditionally male, such as engineering. It is also apparent that the FET sector is supporting skills development in areas that are in short supply, such as those associated with programmes of study in the fields of business studies and engineering. Nevertheless, in the light of the evidence presented on the schooling system there is still a need to encourage greater participation of learners into specific programmes of study, including those focusing on scientific and technological subjects, as well as those which provide the opportunity to develop managerial level skills, such as business studies.

5.3 Higher Education's (HE) role in skills development

The final component of a country's formal education system comprises the higher education institutions. This sector plays an important role in skills development at the higher end and produces scientists or innovators who are capable of introducing change, as well as managers

who are capable of managing change. Headcount enrolments of contact and distance mode students in public higher education institutions for 2001 are shown in **Table 9**. This highlights that 61% of students on programmes were Africans, 27% were White, 7% were Indian and 5% Coloured. The evidence also suggests that participation of Africans were highest in contact programmes at Technikons (73%).

Table 9: Headcount enrolments of contact and distance mode students in public higher education institutions in 2001 (000s)

Institution	Contact					Distance				
	African %	Coloured %	Indian %	White %	Total %	African %	Coloured %	Indian %	White %	Total %
Universities	47	6	8	39	100	64	4	8	24	100
Technikons	73	6	4	16	100	75	6	3	16	100
Total for Public Institutions	57	6	7	30	100	67	5	7	22	100

Source: Department of Education, HEMIS 2001.

From a policy perspective it is important to understand what subjects are being studied at the Higher Education institutions and to what extent institutions are responding to the technological demands identified earlier. Enrolment levels by major field of study at public higher education institutions for 2001 are shown in **Table 10**. What is significant is that the majority of students at University (an estimated 57%) were enrolled on programmes of study in either teacher education or the broad humanities and social sciences. In contrast at Technikons the emphasis was more on programmes in business and management (47%) and in science, engineering and technology (33%), indicating that Technikons are playing an important role in meeting skills demanded in the economy.

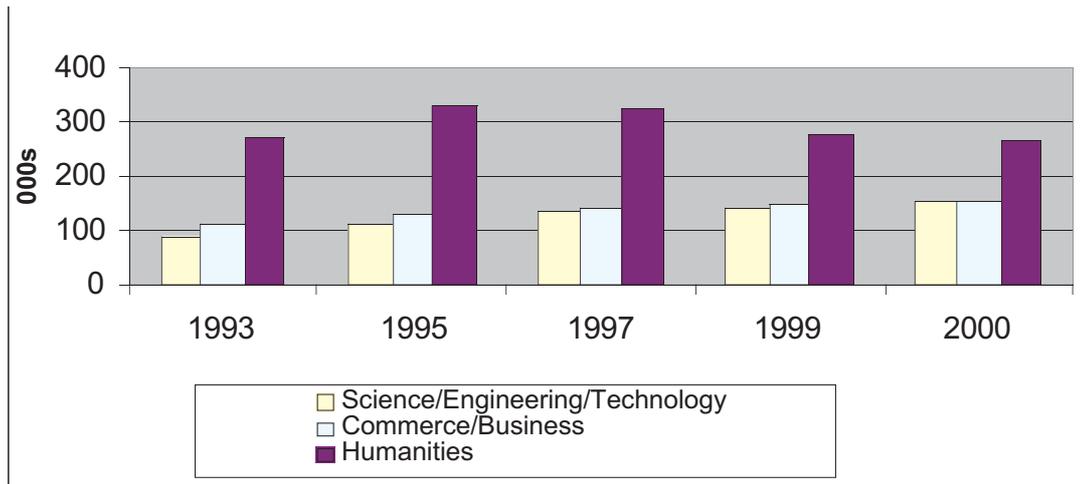
Table 10: Headcount enrolments by major field of study and formal qualifications in public higher education institutions in 2001

Institution	Major field of study					Total
	Science, Engineering and Technology	Business and Management	Education	All other Humanities and Social Sciences		
Universities	98 728 (22%)	92 147 (21%)	109 821 (24%)	148 171 (33%)		448 868 (100%)
Technikons	71 071 (33%)	102 162 (47%)	12 271 (6%)	30 994 (14%)		216 499 (100%)
Total for Public Institutions	169 800 (26%)	194 310 (29%)	122 093 (18%)	179 164 (27%)		665 367 (100%)

Source: DOE HEMIS 2001.

Times series data on enrolment levels by subject area are shown in **Figure 8**. This illustrates a shift in enrolment patterns from humanities towards commerce/business and science, engineering and technology. The largest growth in enrolment levels since 1994 has occurred in the field of science, engineering, and technology, where enrolment levels have increased by nearly 40%. At this stage it is difficult to tell whether this shift reflects students perception of employment prospects towards more vocational orientated subjects, or whether institutions are attempting to encourage participation on more applied or vocational programmes of study (Council for Higher Education).

Figure 8: Higher Education enrolment by academic field of study



Source: CHE, 1998, 1999, and 2000 annual reports.

Although enrolment levels provide us with an indication of the potential skill base it is important to consider actual graduation rates. Unsurprisingly this follows a similar pattern to enrolment figures in that the majority of graduates at university are in the field of education or humanities – together these categories represent over 59% of total graduates. Whereas for the Technikons only 28% of their graduates come from the humanities and social science category, 34% of their graduates successfully studied science, engineering, and technology, and a further 38% successfully studied business and management.

Disaggregated national level data on graduates is needed in order to obtain more precise signals about what scientific subjects young people have studied, as well as the extent to which Africans are represented on such programmes. Information about the number of graduates on science, engineering, and technology programmes at University and Technikons are portrayed in **Table 11**. This data shows that a significant proportion of undergraduates and postgraduates gain qualifications in the field of Health Care and Health Science. **Tables 12** and **13** show that Africans at university are concentrated in the traditional caring subjects, such as Health Care and Health Science, a trend reversed at Technikon where the majority are in engineering and engineering technology. By contrast, White graduates are concentrated in engineering and computer science and data processing both at University and Technikon. These trends confirm an issue raised earlier, namely the problem of developing a technologically advanced Black workforce.

Table 11: Number of Science, Engineering and Technology Graduates by Technikon and University

CESM Category	All 21 University Graduates - 2001			All 15 Technikon Graduates - 2001		
	Undergraduate	Postgraduate	Grand Total	Undergraduate	Postgraduate	Grand Total
Agriculture and Renewable Resources	445	300	745	687	16	703
Architecture and Environmental Design	509	251	760	773	3	776
Computer Science and Data Processing	1 443	509	1 951	1 611	10	1 621
Engineering and Engineering Technology	1 348	687	2 035	2 336	37	2 373
Health Care and Health Sciences	4 372	1 971	6 342	1 292	92	1 384
Industrial Arts, Trades and Technology	34	34	68	336	0	336
Life Sciences and Physical Sciences	1 306	1 607	2 913	635	16	651
Mathematical Science	930	342	1 272	96	1	97
Total	10 386	5 700	16 085	7 767	175	7 942

Source: Department of Education Higher Education Management Information System, 2001.

Table 12: University graduates by population group

	All 21 University Graduates - 2001				Grand total
	Total African	Total Coloured	Total Indian	Total White	
Agriculture and Renewable Resources	364	4	5	371	745
Architecture and Environmental Design	110	26	59	564	760
Computer Science and Data Processing	558	86	214	1 088	1 951
Engineering and Engineering Technology	423	69	200	1 329	2 035
Health Care and Health Services	2 369	286	772	2 909	6 342
Industrial Arts, Trades and Technology	4	5	1	58	68
Life Sciences and Physical Sciences	1 006	158	245	1 495	2 913
Mathematical Science	515	48	121	579	1 272
	5 349	682	1 617	8 393	16 085

Source: Department of Education Higher Education Management Information System, 2001.

Table 13: Technikon graduates by population group

	All 15 Technikon Graduates - 2001				Grand total
	Total African	Total Coloured	Total Indian	Total White	
Agriculture and Renewable Resources	344	18	5	337	703
Architecture and Environmental Design	338	70	34	335	776
Computer Science and Data Processing	826	142	193	461	1 621
Engineering and Engineering Technology	1 206	199	145	823	2 373
Health Care and Health Services	627	133	145	479	1 384
Industrial Arts, Trades and Technology	50	32	20	235	336
Life Sciences and Physical Sciences	394	66	66	125	651
Mathematical Science	49	12	3	33	97
	3 834	671	610	2 827	7 942

Source: Department of Education Higher Education Management Information System, 2001.

Despite progress being made at the Higher Education levels, especially with regard to previously disadvantaged groups, it is important to bear in mind the targets set by the National Commission for Higher Education (NCHE). The NCHE projected an increase in enrolments from 600 000 in 1996 to a figure of 1 500 000 in 2005. In the light of the expected shortfall the Ministry of Education revised their targets. One of the reasons for this shortfall is due to the small number of school leavers with entry-level matric¹⁴. It can be seen, therefore, that whereas a shift from enrolments in the humanities to more market orientated fields of study appears to be occurring at a steady pace, achieving a fully representative skills base, by population group, will probably take a longer time – in spite of measures to accelerate this pace.



The National Skills Fund provided the necessary funds to specific SETAs for NSF Strategic Projects.

A disturbing development has been the increase in unemployment amongst graduates from the higher education sector. Although the unemployment rate declines for those with tertiary qualifications and degrees as a proportion of all unemployed people, there has been an

¹⁴ South African Institute of Race Relations, 2001

increase in the number of unemployed people with degrees. In 1995 there were 14 479 unemployed people with degrees and this increased to 59 556 in 2002.¹⁵ In other words, while higher levels of education improve the chances of accessing the labour market, a tertiary qualification is not a guarantee of obtaining employment in the current labour market situation. The type of degree held by unemployed people will also be important to monitor over time. In 2002, there were more unemployed graduates with degrees in education and training, in the health sciences and social services and in the field of business, commerce and management studies.¹⁶ Unemployment amongst graduates in these fields also differs by population group. So, for example, there were more unemployed Africans with degrees in education, whereas there were more unemployed Whites with degrees in business. Many factors have a bearing on graduate employment prospects, including public sector restructuring, the reputation of institutions amongst employers and curriculum design issues. In addition, many graduates lack work experience, which makes it difficult to secure employment. As in the case of the FET colleges, the placement of graduates from the higher education sector is likely to become an increasingly important issue in the context of high unemployment in the labour market.

5.4 The workplace and skills development

Alongside formal education and training institutions the workplace plays an important role in skills development. What information is available about the volume of workplace training, as well as the type of training provided? Monitoring of implementation of the National Skills Development Strategy provides information from the SETAs on training in their sectors. The most recent data from the 2003 NSDS Implementation Report highlights that:¹⁷

- A total of 111 367 workers completed structured NQF level 1 learning programmes, out of whom 78% were Black and a much lower 20% were female
- During the same period a significantly higher 1 398 461 employed workers participated in structured learning programmes, including NQF level 1 learning programmes. Out of this number, 55% were Black and 39% were female.

There was enormous growth in the number of workers on structured learning programmes in 2002/03. With 1.3 million learners participating in structured learning programmes, the target set for this success indicator of the National Skills Development Strategy was exceeded by 428 learners. This means that 15% of all workers covered by all 25 SETAs are already enrolled on structured training programmes.

The labour force survey provides us with a broad indication of volume of work related training received by the working population over the past month. This data shows that 15% of the employed workforce has received some form of training related to their job, with a marginally higher 17% of employed males receiving such training, compared to 13% of employed females (see **Table 14**).

¹⁵ H Bhorat, Employment and Unemployment Trends in Post-Apartheid South Africa. Development Policy Research Unit, University of Cape Town, 2003. Unpublished paper.

¹⁶ Ibid.

¹⁷ The data quoted in this study was obtained from the National Skills Development Strategy Implementation Report April 2002 to March 2003, Pretoria, Department of Labour, 2003.

Table 14: Population of working age who have received work related skills training by gender and labour market status (000s)

		Total	Has been trained	Has not been trained	Don't know
Male	Total population	13 340	1 453	11 757	121
	Total	8 444	1 293	7 074	72
	Workers	6 184	1 053	5 080	47
	Unemployed	2 259	240	1 993	25
Female	Total population	14 634	1 112	13 382	130
	Total	7 418	862	6 481	68
	Workers	4 841	640	4 160	38
	Unemployed	2 577	223	2 322	31
Total	Total population	27 984	2 566	25 148	251
	Total	15 866	2 156	13 559	140
	Workers	11 029	1 693	9 243	85
	Unemployed	4 837	462	4 316	55

Source: Statistics SA, Labour Force Survey, September 2002.

As regards equity, the legacy of apartheid is still evident in the fact that 41% of skilled workers, defined as skilled technical, junior management and those in supervisory positions, are White. Similarly, when it comes to semi-skilled workers 62% are African and only 18% are White¹⁸. However, it is clear that measures are being introduced to narrow this gap and according to the Commission for Employment Equity, out of 1 222 employers who were surveyed nearly 70% had introduced some affirmative action in the field of training and development for their workers.

5.5 Summary of skills base in South Africa

Based on the above analysis, the following trends are important for understanding the skills base in South Africa:

- The quality of education provision within the general education and training band appears to have improved over the past five years, although only a small number of Africans will study science or technological subjects at a higher level
- Considerable progress is being made at the public FET colleges since enrolment levels amongst Africans and females are increasing in programmes traditionally dominated by males, such as engineering
- At the HE level similar progress is made in that enrolment levels are rising for Africans and there is a general shift in enrolments from humanities and arts programmes to management, science, engineering and technological related programmes
- More disaggregated data is required about the precise nature of skills being supplied at different levels in South Africa
- More information is also required about the placement and labour market experience of graduates from the FET and HE sectors.

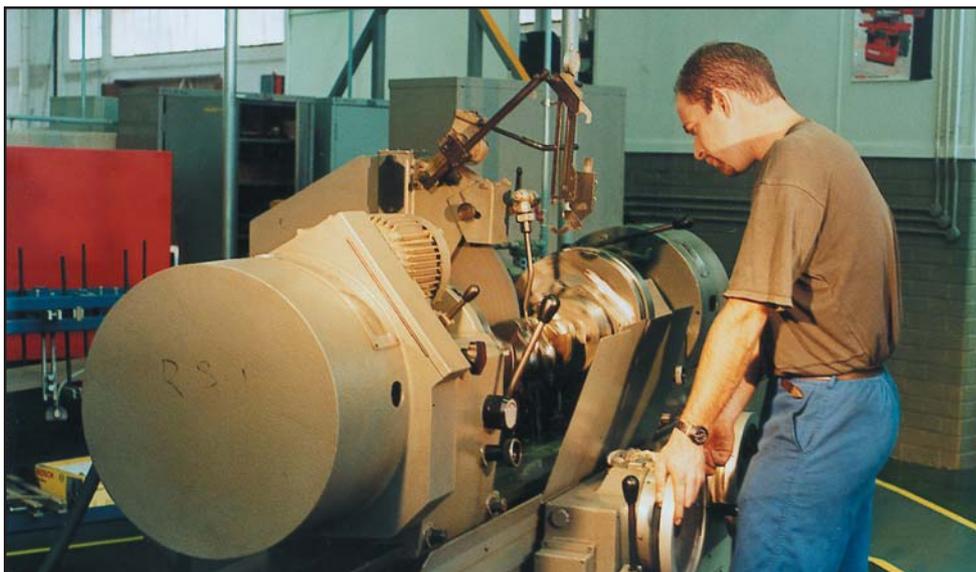
¹⁸ Commission for Employment Equity, 2002.

6. Skills needs in the South African labour market

Improving the ability of policy-makers, planners and researchers to identify skills that are in short supply or for which demand exists, has become an important challenge in South Africa. Being in short supply simply refers to a situation in which the demand for certain occupational groups or for certain skills, outstrips the supply. A recent example is that of nurses in South Africa. Nurses are associate professionals, employed in both the private and public sectors of the economy. At present, it has been reported that there are in excess of 31 000 vacancies for nurses – which is greater than the number of nurses graduating from the further and higher education sectors.¹⁹ This example points to a skills needs situation that is relatively straightforward. The need for nurses can be monitored on the basis of existing and vacant posts in relation to the bed occupancy rate in public and private hospitals. There is also a reasonable overlap between the training for the occupation (nurses, in this case) and the skills and competencies that need to be applied in the workplace. There are, however, different categories of nurses – theatre nurses, senior nurses, intensive care unit nurses and others. Different qualifications and experience attach to the different categories of nurses. But the skills need is reasonably clear, it can be monitored and the specifics can be obtained from hospitals and professional bodies.

In the case of other skills, determining needs is not so straightforward. Most economies lack adequate information on the skills composition of the population. In many situations, workers may be stuck in jobs where they cannot utilise their skills and many will be working in other capacities. Many engineers, for example, work as managers. For these reasons analysis of skills needs should be undertaken with caution. And it is important to adopt a multidimensional approach in identifying skills needs.

One way of identifying skills needs is through the analysis of job vacancy information. This section begins by drawing on one such exercise.



Most economies lack adequate information on the skills composition of the population. In many situations, workers may be stuck in jobs where they cannot utilise their skills and many will be working in other capacities.

¹⁹ Pretoria News, 2003.

6.1 Job vacancies and signals of scarce skills

Signals of skills shortages can be enriched through the analysis of job vacancies. The Skills Development Planning Unit implemented a pilot Job Opportunity Index (JOI) to identify vacancy levels for various occupations in the Gauteng Province between April and June 2003. This involved tracing job vacancies advertised in 'Workplace', a weekly supplement of *The Star* newspaper, published on the first Wednesday of each month²⁰. All vacancies were coded using the South African Standard Classification of Occupations (SASCO), using four or five digits as appropriate. The initial analysis of these job vacancies is shown in **Tables 15** and **16**. The highest proportion of vacancies during the period of the study occurred amongst skilled occupations, especially professionals and associate professionals. The proportion of vacancies for semi-skilled or intermediate occupations, for example, clerks was found to be roughly 20% in all months. The less skilled occupations, such as operators and assemblers, account for only a small proportion of the vacancies advertised. Another important issue is whether vacancies for a particular occupation grew or declined over this three-month period. For technicians and associated professionals vacancies rose by 10% over the period, whereas there was a fall of 15% for professionals.²¹

Table 16 shows the number of vacancies in selected professional unit groups as a percentage of all professional vacancies.²² The relatively high proportions for computing professionals (including programmers as well as system designers and analysts), engineers (all technical fields) and accountants underline the point that does appear to be a continued demand for professionals despite the Labour Force Survey showing a decline in employment in this occupational group (see Section 3).

The proportion of vacancies for accountants (including chartered accountants, auditors and other accounting occupations) is particularly high, ranging from more than a quarter of all professional vacancies to almost 40%. In addition, relatively high proportions can be noted for personnel and careers professionals (human resources managers, remuneration managers, recruitment consultants, etc.).

**Table 15: Proportion of vacancies by major occupational group
April to June 2003**

SASCO		April 2003	May 2003	June 2003
1.	Legislators, senior officers and managers	10.0	14.2	10.0
2.	Professionals	38.3	33.4	23.6
3.	Technicians and associate professionals	22.4	26.8	34.6
4.	Clerks	20.4	19.5	20.3
5.	Service workers and shop and market sales workers	4.5	4.3	4.9
6.	Skilled agricultural and fishery workers	0.0	0.0	4.2
7.	Craft and related trades workers	3.0	0.7	2.1
8.	Plant and machinery operators and assemblers	1.5	1.0	0.0
9.	Elementary occupations	0.0	0.0	0.2
Total		100.0	100.0	100.0

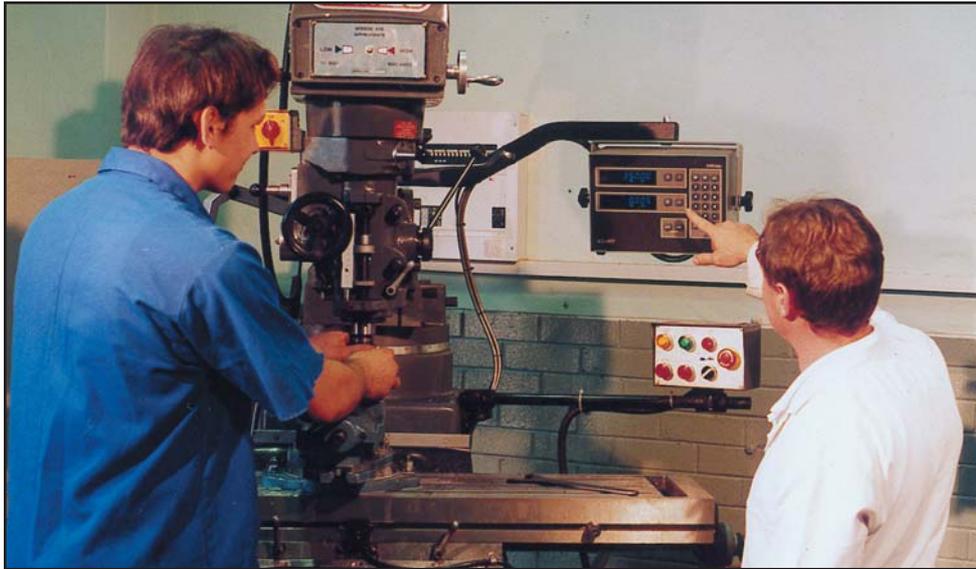
²⁰ The sample was captured on the first Wednesday of April, May, and June 2003.

²¹ Apart from a bias towards highly skilled and better-paid occupations, the source of the vacancies may also result in a geographical bias in favour of Gauteng.

²² Both Computing professionals and Engineers are aggregates of a number of unit groups that are difficult to distinguish in vacancies.

**Table 16: Proportion of vacancies in professional unit groups
April to June 2003**

SASCO		April 2003	May 2003	June 2003
2131-2	Computing professionals	9.1	11.9	16.8
2141-9	Engineers	14.3	27.7	11.9
2411	Accountants and related accounting occupations	39.0	34.7	26.7
2412	Personnel and careers professionals	10.4	5.0	15.8
2441	Economists	10.4	4.0	7.9



The SDPU has compiled an indicative list of skills needs in the South African labour market (see page 30).

6.2 Indicative list of skills in short supply

Using the original Sector Skills Plans submitted by SETAs in 2000, evidence from recent SSP updates and special research initiatives, the SDPU has compiled an indicative list of skills needs in the South African labour market.²³ The overwhelming majority of identified skills needs occur at the managerial, professional, technician and associate professional level – a trend that corresponds to the analysis in earlier sections of this report and to the job vacancy analysis.

Table 17 provides an indicative list of scarce skills approved by the South African Cabinet as the basis for prioritising investments in skills development and implementing the Immigration Act of 2002.

²³ A special survey of skills needs in the Public Service was undertaken in early 2003. This survey covered 16 national government departments.

Table 17: Indicative list of skills that are in short supply in the public and private sectors

Main occupational category	Minor occupational category
Scientists and researchers	Experienced and qualified scientists and researchers across all disciplines, but with special emphasis on those working in scientific and technological areas.
Managers	Experienced and qualified senior managers: <ul style="list-style-type: none"> ● Project Manager ● Financial Management ● Production planning ● Logistics management ● Business leadership
Professionals and qualified and experienced technicians and associated professionals	Financial specialists, including <ul style="list-style-type: none"> ● Chartered Accountants ● Actuaries Experienced ICT specialists, including <ul style="list-style-type: none"> ● Computer Programmer ● Computer systems analyst ● Computer systems designer ● Professional Software engineers ● Computer network management Sectoral professionals and technicians, including <ul style="list-style-type: none"> ● Macro-economic researcher/ Analyst ● Venture Capital specialist ● Hydrocarbon specialist ● Energy Planning specialist ● Medical specialists, including Medical Officers: Theatre, ICU, Orthopaedics, Paediatrics and Advanced Midwives, Health Therapists: Physiotherapist, Dental therapist, radiographer ● Bioprocess Business Area specialists ● Hydro geologist ● Agricultural Economist ● Forensic Investigators ● Forensic Investigators ● Equitable Share Modelling ● State Veterinarians ● Food Safety and Quality Assurance Specialists ● Medical specialists including Nurses ● Pharmacists ● Forensic Pathologist ● Geo hydrological Modeller ● Environmental Geochemist ● Biotechnology Manager ● Agricultural product technicians ● Quantity Surveyors ● Architects Engineers, including <ul style="list-style-type: none"> ● Electrical ● Mechanical ● Chemical ● Electronic Sensor Systems ● Coal Mining ● Mechanical ● Mining including Rock Engineers ● Environmental Engineer ● Radio Astronomy.
Artisan and related workers	Experienced and qualified artisans*, including: <ul style="list-style-type: none"> ● Electrician ● Fitter and turner ● Millwrights, ● Specialist steel welders

Sources: SETA SSPs (various) 2000; Bureau of Market Research, University of South Africa, "Key skills shortages and the fast tracking of skills development", December 2001, and SDPU (2003) Survey of Public Sector Skills Needs.

Skill needs are not only identifiable in relation to occupations, but also in the areas of generic skills. These are skills that are required for individual development and to allow workers to contribute meaningfully to the organisations that they work in. **Table 18** contains generic skills needs identified by the SETAs in analysing their sectors.

Table 18: Generic skills in demand across and within sectors

Sector	Generic scarce skills
Primary Sector: MQA, PAETA	ABET, team building, problem solving, communication skills, industrial relations, managing HIV/AIDS.
Secondary Sector: ESETA, CHIETA, FIETA, FOODBEV, MERSETA, TEXTILE, CETA and MAPPP SETA	General management, supervisory skills, leadership skills, facilitation skills, ABET entrepreneurship, IT skills, health and safety, administrative skills, financial skills, understanding legislation and project management.
Services Sector: FASSET, ISETT, BANK SETA, THETA, W&RSETA, TETA, HWSETA and INSETA	Analytical and interpretive skills, understanding of financial regulations, report writing, communication, general management, leadership skills, customer service, occupational health and safety, computer literacy, motivational skills.

6.3 Summary of skills needs in the SA labour market

Important sectoral trends include the following:

- In all sectors there is a high demand for basic level skills, including ABET, numeracy, and IT skills
- Across each of the sectors there is also a strong demand for generic skills, especially those concerning how to work with others, collecting and interpreting information and communication skills²⁴
- In the primary sector there is a large demand for skills associated with HIV, including awareness of the disease and how to manage it in the workplace
- Other sector skills in demand include an understanding of global markets and regulations governing access to global markets
- In the service sector specific skills that are highest in demand are more analytical and interpretative skills.

The above represent the present skills needs in South Africa. They indicate situations where demand for skills exceeds supply, in relation to certain jobs and occupations and also generic skills that workers are expected to have in certain sectors. No attempt has been made to quantify employment opportunities in the identified occupational and skills needs. As indicated in the State of Skills report published in 2002, these skills needs should be treated as *signals* of skills demand.

²⁴ In the country's National Qualification Framework these skills are called Critical Cross Field Outcomes.

7. Conclusion

The focus of labour market signalling is on identifying trends from a variety of economic and labour market indicators, all of which point to the prevailing supply and demand for skills in an economy. The approach arises from recognising that labour market analysis is not an exact science. Many factors impact on the operation of the labour market and findings from research and labour market information generally can be subject to a variety of interpretations.

The analysis presented here reflects the state of the skills in South Africa, based on a selection of key indicators. Although it is not possible to draw linear conclusions based on such analysis, the findings provide pointers to researchers, analysts and policy makers on where possible shifts may occur within the local labour market and where imbalances could arise. The findings, particularly regarding skills needs, are also intended to provide pointers to those involved in career guidance and counselling new entrants to the labour market. In this regard, identifying skills shortages or skills needs must be viewed as a moving target and care must be taken when interpreting trends. The interaction between the general education system, the workplace, product markets, and technological innovation can give divergent skills requirements from year to year.

The first National Skills Development Strategy is nearing completion, and a new Strategy is under development at present. This is a reflection of the government's acknowledgement that raising the skills profile of the SA labour force is an important factor in improving the performance of the domestic economy, and hence the well-being of its citizenry. At the same time, government has prioritised poverty relief and job creation in recognition of the fact that those at the lower end of the skills spectrum require much more than training in order to improve their livelihoods. The Growth and Development Summit held between government, organised business and organised labour and the community constituency in June 2003, resulted in the adoption of undertakings that integrate both skills development and job creation to address these needs.

References

Baatjies, I, Aitchison, J, and Vaughn, J (2002). A Baseline Study of ABET in the Mining and Minerals Sector: Improving Provision and Delivery, Pretoria: MQA and GTZ.

Bhorat, H., *Employment and Unemployment Trends in Post-Apartheid South Africa*, Development Policy Research Unit, University of Cape Town, 2003. Unpublished paper.

Campbell, M.; Baldwin, S; Johnson, S; Chapman, R; Upton, A; and Walton, F, (2001), *Skills in England 2001 – The Research Report*, Leeds: Policy Research Institute, Leeds Metropolitan University.

Commission for Employment Equity, Annual Report 2001-2002, Pretoria: Department of Labour.

Council for Higher Education (2002) Annual Report, 2001/2002, Pretoria, CHE.

Cosser, M; McGrath, S; Badroodien, A and Maja, B (2002) *Technical College Responsiveness*, HSRC, Occasional Paper.

De Moura Castro, C., *In defence of planning (but only up to a point)*, International Labour Review, 130 (4), 1991.

Department of Education (2003) *Education Statistics in South Africa at a Glance in 2001*.

Department of Labour (2002), *SETA Sector Briefs*, Pretoria: Department of Labour.

Department of Labour, *Green Paper: Skills Development Strategy for Economic and Employment Growth in South Africa*, Pretoria, 1997.

Edwards, L., *Globalisation and the skills bias of occupational employment in South Africa. The South African Journal of Economics*, 69(1), 2001.

Psacharopoulos, G. *From Manpower planning to labour market analysis*, International Labour Review, 130 (4), 1991.

SA Institute of Race Relations (2001) *Seven Lean Years – Fast Facts*, South Africa Institute of Race Relations, No.6.

SA Institute of Race Relations (2002) *HIV/AIDS: A Threat to the Education System – Fast Facts*, South Africa Institute of Race Relations, February 2002.

SA Reserve Bank, Annual Economic Report 2002, Pretoria: SARB.

Statistics South Africa (various) *October Household Surveys and Labour Force Surveys*, Pretoria: STATS SA.

Van Adams, A., Middleton, J., and Ziderman, A., *Market based manpower planning with labour market signals*, International Labour Review, 131 (3), 1992.

