



# IRMSA Risk Report South Africa Risks **2015**

First Edition

## Who participated?



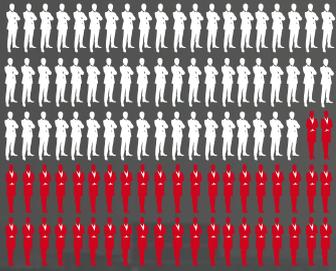
53% Black

33% White

9% Indian

5% Coloured

58% male



female 42%

## Participation from industry

620

Total participants

2

Online Surveys

1

Survey  
IRMSA Conference

1

Risk Lab Workshop  
Johannesburg

1

Risk Lab Workshop  
Cape Town

## What does IRMSA do?

### The Institute of Risk Management South Africa (IRMSA)

is the leading source of information and networking opportunities within the Risk Management industry, with members from a wide range of organisations both from the private and public sector. As the Professional Body for Risk Management in South Africa, IRMSA represents individuals and companies committed to the enhancement of the Risk Management discipline. We aim to be the risk management institute of choice for risk professionals and practitioners in Southern Africa, dedicated to the advancement of the risk management profession and accreditation, through research, promotion, education, upliftment, training, guidance and strong relationships with other Institutes and Associations.

## What does the Risk Intelligence Committee do?



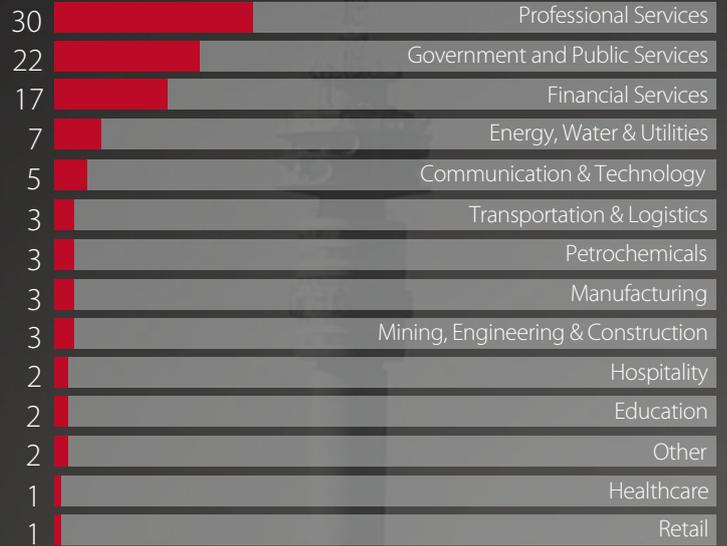
BLOG



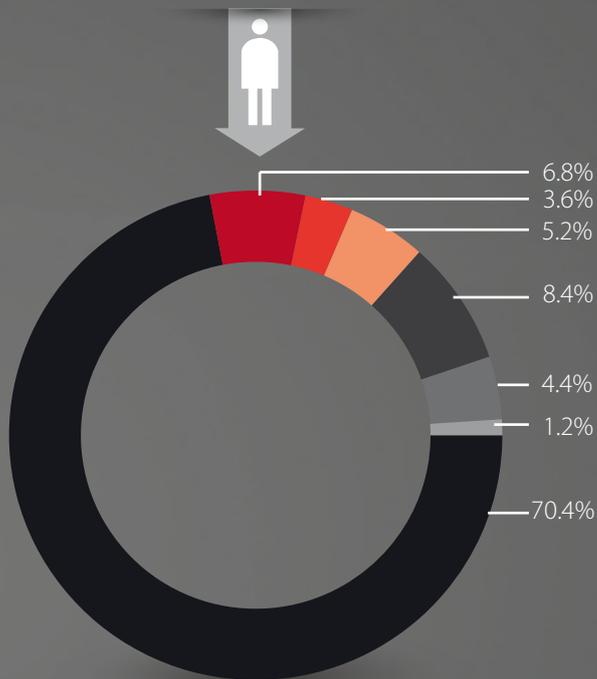
RISK REPORT



RISK CHAT

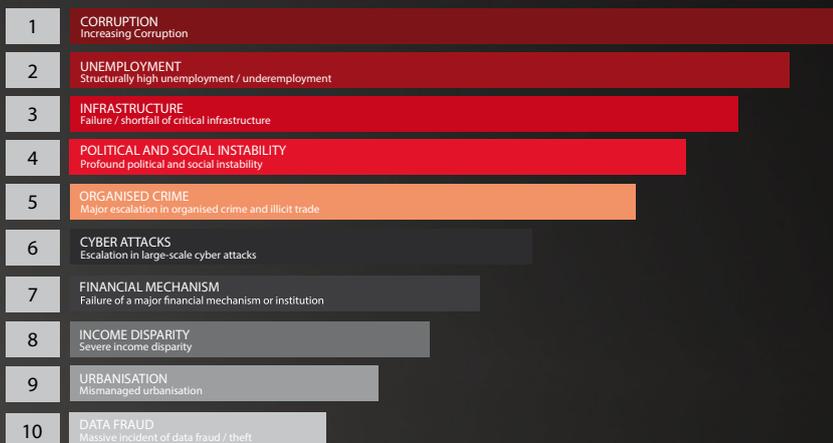


On what level do you interact with your organisation's risk management?



- Daily
- 2-3 Times a Week
- Once a Week
- 2-3 Times a Month
- Once a Month
- Less than Once a Month
- Never

## Top 10 SA risks by likelihood



## Top 10 SA risks by consequence



## Next milestones for this report





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# Preface

**As the Institute of Risk Management South Africa (IRMSA) has evolved over the past eleven years, we have continued to identify the needs of our members and have ensured that, as far as possible, we proactively respond to these needs as well as those of the Risk Management community as a whole.**



One area that we were able to address has been risk intelligence, and we accomplished this by the formation of the IRMSA Risk Intelligence Committee late in 2013. The purpose of this committee is to identify and address the issues pertinent to our members in the Risk Management fraternity. The initial objective of the committee was to present members with expert insight on relevant current events. However, the committee soon appreciated that there was a need for a much broader body of work focusing on Risk Management and how it affects South African businesses in particular.

Every year we reflect on the World Economic Forum Global Risks Report to prepare and inform the programme for our annual Risk Lab in order to address risks facing businesses in South Africa. To complement and enhance this process, the committee saw the need for a similar but more specific report focused on South Africa.

We therefore present the first annual IRMSA South Africa Risks Report 2015. The report will grow and mature each year and your feedback in support of our objective for continuous improvement will be appreciated.

I would like to thank our IRMSA Members for their invaluable input, as the content of this report has been driven through membership participation. This project would not have been possible without the contributions made by the IRMSA Executive Committee and our subject matter experts. My appreciation goes to the Risk Intelligence Committee, under the leadership of Christopher Palm, and I am also most grateful to Michael Ferendinos for sharing his time and skills on this project.

It is our intent that this document be used widely by risk practitioners and business leaders. We also encourage you to share it within your organisation and to use it as input for your decision-making processes in 2015.

**Gillian le Cordeur**  
Chief Executive Officer  
Institute of Risk Management South Africa

# Foreword

**A**s Chairman of the Risk Intelligence Committee of the Institute of Risk Management South Africa (IRMSA), I recommend this first edition of the South Africa Risks Report 2015 as a “must-read” to all business leaders and risk practitioners in South Africa.



I am sure you have contemplated the possibility of empowering your company’s board and executive committee with some world-wide “breaking risk” information that you have sourced on the web or from your various networks. Some of you have actually had the opportunity to do just that, only to be disappointed by the perceived lack of enthusiasm for your efforts displayed by the audience. Two of the most common questions or comments at the end of such a presentation are often “Is this really relevant to South Africa and to our organisation?” or, “It does not resonate with our view of the country’s or industry’s risks.”

Our report sets out to present the reader with the most significant risks identified by the South African risk fraternity and, by default, the most significant country-specific risks that need to be considered by South African organisations. We have supplemented each risk we have identified with views from participating subject matter experts who truly “South Africanise” the risk with their thought leadership, give relevant detail, further clarify the risks and make them more relevant to your own business leadership space.

As the IRMSA South Africa Risks Report 2015 was formulated along the lines of the World Economic Forum Global Risks initiative, it would be most useful when utilised in conjunction with the Global Risks view.

I trust that using this report to better manage your organisation’s risk context will result in better informed business leadership and will support your risk governance processes, enabling a more effective risk response, an improved risk culture and entities that will be taking the right risks and exploiting opportunities in pursuit of their objectives.

**Christopher Palm**  
Chairman  
IRMSA Risk Intelligence Committee



## Executive Summary

The first annual Institute of Risk Management South Africa's (IRMSA) South Africa Risks Report 2015 has been compiled within a specific context – that of a country still reeling from political and economic turmoil.

The Association of Mineworkers and Construction Union (AMCU) on 29 July 2014 announced the end of a 5-month platinum sector strike by 80,000 workers which resulted in a fall of nearly 25% in mining production. South Africa's credit rating was downgraded by Standard & Poor's (S&P) and Moody's. The country's outlook was shifted from stable to negative by Fitch Ratings, meaning that the country is a single notch away from junk status. The South African government continued to experience difficulties to meet the expectations of the population in terms of the fight against unemployment, poverty and corruption, potentially giving rise to increased social instability. The International Monetary Fund (IMF) slashed its economic growth forecast for South Africa by 0,3 percentage points to only 1,4% for 2014 and by 0,4 percentage points to 2,3% for 2015, suggesting that the sustainability of the country's economy is under severe pressure.

These events indicate that South Africa is in no position to deal with further unforeseen shocks in the near term considering that its resilience and ability to cope with new challenges is being increasingly compromised. A key characteristic of these events is their systemic nature, implying that they have the potential to affect the entire country, as opposed to compartmentalising their sphere of influence according to national, regional, provincial and municipal levels.

The report represents an evaluation of the country's top risks over a two-year time horizon through several workshops at IRMSA conferences and a survey of 620 of the country's foremost risk management experts. The risk management fraternity respondents represent every major industry within the public and private sectors. What makes this exercise different is that the respondents who assessed the risks covered in this report are responsible for proactively managing these risks in their own organisations on a daily basis. A greater understanding of the risks in this regard should lead to a more accurate evaluation of the risks in the South African environment. The report is created within the context of the latest World Economic Forum's (WEF) Global Risks report, which examined 31 global risks in five categories, namely economic, environmental, geopolitical, societal and technological risks.

Figures 1 and 2 respectively show the prioritisation of the top ten South African risks for 2015, which were evaluated in the survey as having the highest perceived likelihood and potential consequence over the next two years.

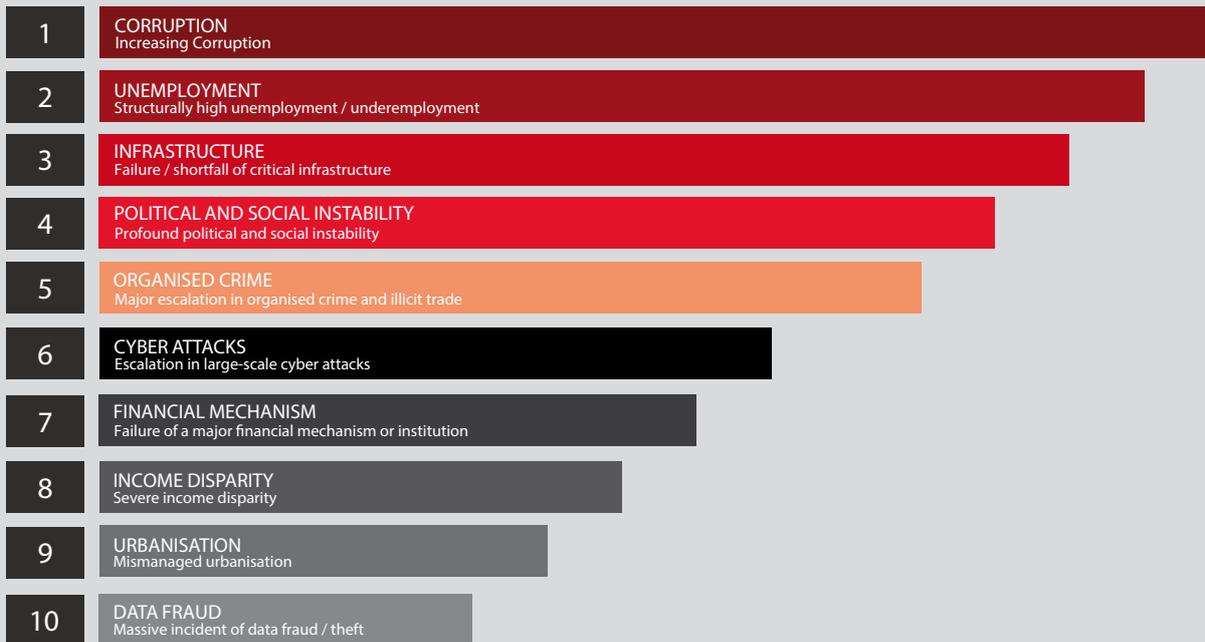


Figure 1: Top Ten South African Risks by Likelihood

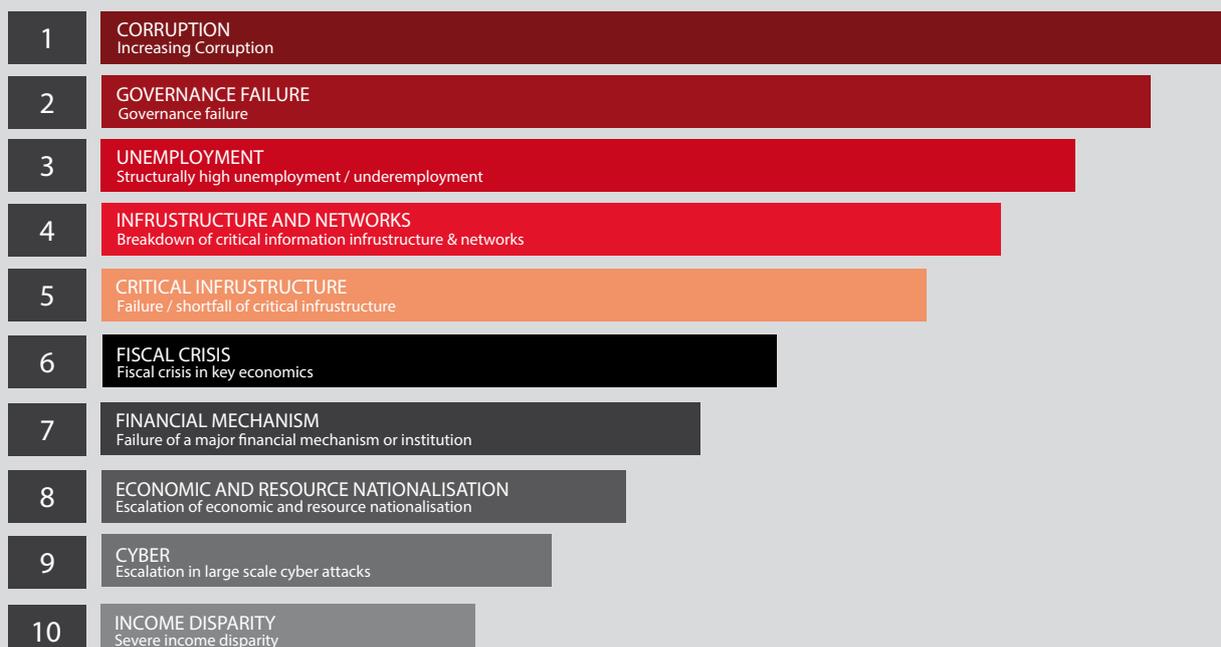


Figure 2: Top Ten South African Risks by Consequence



Six risks appear on both the likelihood and consequence top-ten list. The geopolitical risk of increasing corruption is at the top of the pile of risks affecting the South African landscape. It has both the highest likelihood and consequence rating for the entire risk profile. South Africa has steadily been performing worse in Transparency International's Corruption Perceptions Index (CPI), which ranks countries/territories based on how corrupt a country's public sector is perceived to be. The country is ranked 72nd out of 177 countries surveyed, with a score of 42 out of 100 in the index; this could prove damaging to its reputation.

**Structurally high unemployment / underemployment** is next and is particularly relevant in the South African context when coupled with another top-ten risk of severe **income disparity**. According to Statistics South Africa, the unemployment rate is around 25%, which translates into approximately 5,2 million unemployed persons. When compared to larger African countries, South Africa has the most developed democracy and has the largest economy after Nigeria; yet, in spite of this, it is among the most unequal in terms of income inequality. In a global ranking according to the Gini Coefficient, a measure of income inequality, the country lists as one of the worst.

Because South Africa is a developing middle-income country, the risk of the **failure / shortfall of critical infrastructure** features high on the priority list. Considering that this is a key requirement for economic growth, the impact of this risk is significant for the country. South Africa is becoming increasingly exposed to technological risks, especially the **escalation in large-scale cyber-attacks** coupled with a breakdown of critical information infrastructure and networks.

Aon, one of the leaders in the risk management and insurance broking arena, estimates that over 70% of South African businesses are significantly unprepared for cyber liability risks and are thus considerably underinsured when it comes to managing the financial and legal implications that follow a major cyber breach. Finally, South Africa has recently witnessed the **failure of a major financial mechanism or institution** through the events impacting African Bank. Apart from the credit rating downgrade of the four largest South African banks, there are also rising concerns about other lenders.

# Introduction

The South Africa Risks Report 2015, First Edition, demonstrates that the country is not isolated from the increasingly interdependent and rapidly evolving global risks landscape.

In saying that a recognition that the country does not operate in a vacuum, we do not suggest that the prioritisation of its risk profile should mirror the global risks profile. In fact, global risks are viewed as South Africa's external context that interacts with the country's unique internal environment. This view is consistent with the ISO 31000 definition of a risk, which is stated as "the effect of uncertainty on objectives", in that risks are only relevant when they interact with the distinctive and ever-changing internal and external environment of the entity under consideration. The notion of a constantly evolving environment is an important one, as it points toward the need for a regular annual review of the country's risk profile in response to this dynamic environment.

## Objectives of the South Africa Risks 2015 Report

As with any organisation, effective risk management is regarded as essential for the achievement of South Africa's developmental objectives. Only once we fully understand and proactively manage the country's risks will we be able to provide greater certainty and security for all three sectors that comprise South African society, namely government, business and civil society.

We will be better informed, more decisive and will move with increased confidence to achieve our vision of creating a foundation for South Africa's competitive position, which is sustainable from an economic, environmental and social perspective.

With this in mind, it is IRMSA's objective to provide, through its Risk Intelligence Committee, an annual South African Risk report that enables the country to become more proactive in identifying risks evolving on its landscape.

The 2015 report highlights the most significant risks relevant to South Africa as identified by public and IRMSA member participation, and in consultation with subject matter experts and various industry bodies. A top-ten risk view by likelihood and consequence forms part of this report coupled with a greater understanding of these risks provided by the subject matter experts.

Part 1 of the report provides a comparison between the results of the 2015 South Africa Risks Survey and the WEF Global Risks Perceptions Survey. Respondents were asked in both cases to identify and prioritise the ten risks that they thought were most likely and would have the greatest consequence.

This is followed by an "additional risks" section, highlighting further uncertainties that respondents were concerned about, with particular relevance to the South African risk landscape. These risks were not explicitly surveyed and are independent of the list of risks tabled in the latest WEF report.

Part 2 presents the comments from the subject matter experts associated with each of the top South African risks that were identified. IRMSA's Risk Intelligence Committee posed the following questions to the experts:

- What is your opinion of this topic as a risk to South Africa?
- In your view, what are the most significant causes giving rise to this risk?
- If not managed effectively, what would be the most significant consequence for South Africa?
- What do you believe is the most effective risk response in managing this risk?
- Is there anything else you feel should be considered when addressing this risk?

Part 3 delves into the methodology followed by the Risk Intelligence Committee leading up to the survey results.

Part 4 acknowledges the parties that were integral to the successful creation of the report and contains information about the project team.

# Part 1: South Africa Risks 2015

## 1.1. Survey Results and WEF Comparison

The 2014 comparison between South African and WEF respondents' views provides interesting reading (refer to Figure 3 below). South African respondents are most concerned with economic risks as opposed to the environmental risks that dominate the attention of WEF respondents. In each case, three out of the remaining four risk categories are evenly spread across the respective risk profiles, with societal and technological risks receiving equal focus on both sides. It is fascinating to see that geopolitical risks are very important to South African respondents from a rating perspective, but they do not appear on the WEF top ten list, whereas environmental risks, which are prioritised by WEF respondents, do not appear at all on the South African top ten list by likelihood and consequence. This demonstrates the unique nature of the South African risk landscape. The WEF explanation of the five risk categories is provided overleaf.

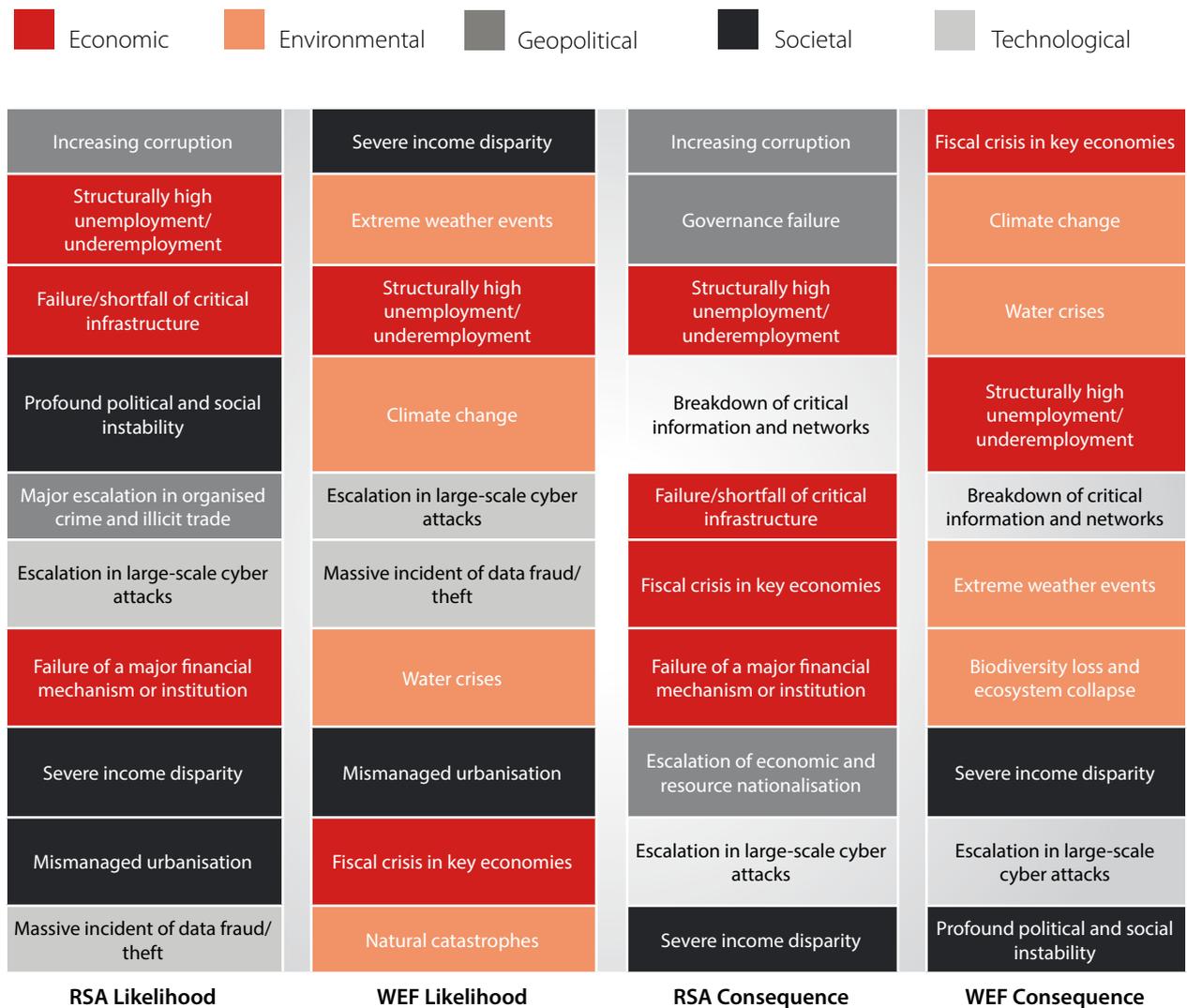


Figure 3: Comparison between Top South African and WEF Risks by Risk Category

### Economic Risks

Risks in the economic category include fiscal and liquidity crises, failure of a major financial mechanism or institution, oil-price shocks, chronic unemployment and failure of physical infrastructure on which economic activity depends.

### Environmental Risks

Risks in the environmental category include both natural disasters, such as earthquakes and geomagnetic storms, and man-made risks, such as collapsing ecosystems, freshwater shortages, nuclear accidents and failure to mitigate or adapt to climate change.

### Geopolitical Risks

The geopolitical category covers the areas of politics, diplomacy, conflict, crime and global governance. These risks range from terrorism, disputes over resources and war to governance being undermined by corruption, organised crime and illicit trade.

### Societal Risks

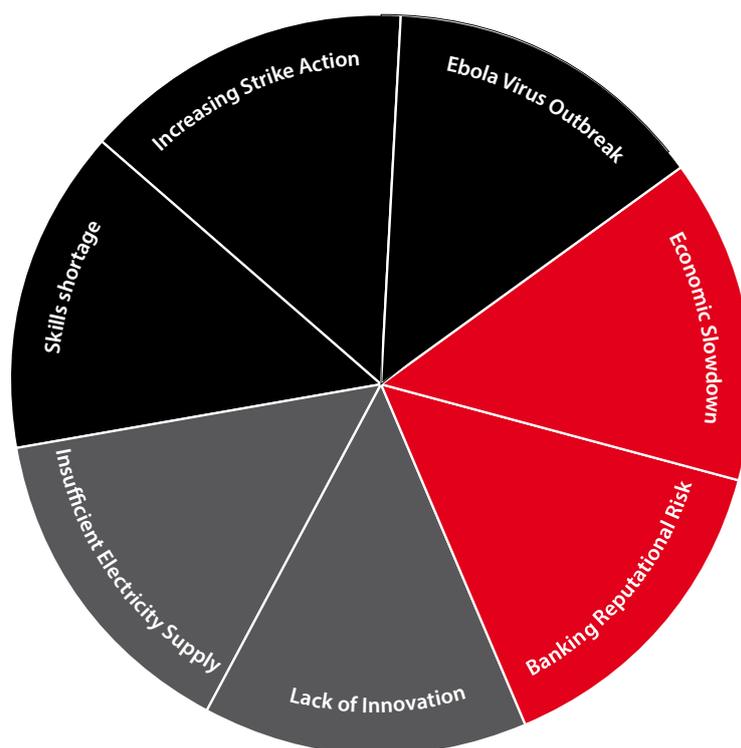
The societal category captures risks related to social stability – such as severe income disparities, food crises and dysfunctional cities – and public health, such as pandemics, antibiotic-resistant bacteria and the rising burden of chronic disease.

### Technological Risks

The technological category covers major risks related to the growing centrality of information and communication technologies to individuals, businesses and governments. These include cyber-attacks, infrastructure disruptions and data loss.

## 1.2. Additional Risks in the South African Context

The annual IRMSA Conference, which took place in September 2014, was used as a platform to identify the risks that are specifically relevant to South Africa despite not being explicitly surveyed. Figure 4 illustrates the uncertainties that the respondents identified most often. These risks are unrelated to the broader terminology used to describe the risks in the WEF report. Seven additional risks were raised – in no particular order – spanning across the societal, technological and economic risk categories.



### Skills Shortage:

Although many contest its nature and extent, South Africa's skills shortages are widely regarded as a key factor preventing the achievement of targeted growth rates. Adcorp, the labour market specialist, attributes South Africa's skills shortage to emigration of high-skilled workers, immigration restrictions for high-skilled foreigners and an education system that is not responding adequately to the demands of the workplace. The CGF Research Institute states that overly prescriptive regulation and the lack of a skilled workforce are considered to be two of the most significant business growth inhibitors in South Africa, with clear and direct impacts on employment. According to the Institute, 38% of South African business executives state over-regulation (and red tape) as a major cause for limited growth, while 36% of business owners indicate that lack of skills is constraining their expansion plans.

### Increasing Strike Action:

South Africa is still recovering after a historic mining workers' stoppage left the economy reeling. The unprecedented five-month dispute took place in the platinum mining sector and involved 80,000 workers. In response, South Africa has opened the door to a change in labour laws that would limit the power of the unions to strike. Between 2008 and 2014, South African workers have already lost substantial amounts in wages due to strikes and rolling mass actions. Interestingly, the Department of Labour's latest annual industrial action report shows that R6,7 billion in wages were lost in 2013, while the figure was R6,6 billion the previous year.

### Ebola Virus Outbreak:

At the time of writing this report, an Ebola virus outbreak has hit several countries in West Africa (Guinea, Liberia, and Sierra Leone), with limited cases reported in Mali, Nigeria, Senegal and the Democratic Republic of Congo (DRC). Not only is this the largest Ebola outbreak ever reported, both in terms of case numbers and geographical spread, but it is also the first time that the disease has reached the large cities in the affected countries. The world also witnessed the unprecedented transmission of Ebola outside of Africa, in the United States and Spain respectively. In theory, an outbreak in South Africa is just a plane flight, boat or bus ride away, considering that it receives a regular influx of visitors from West Africa. Whether South Africa can create a barrier to the entry of Ebola remains to be seen; the country does however arguably have better resources and capacity to contain the virus than most of its African neighbours.



### Insufficient Electricity Supply:

South Africa continues to struggle with power supply constraints, forcing heavy investment in the construction of new power stations and the diversifying of energy sources. As a result, banks have become more averse to lending to investors in energy-intensive sectors. The country's inability to increase long-term investment will limit economic growth. Eskom currently supplies about 95% of South Africa's electricity and approximately 45% of Africa's and is under pressure to respond to the region's rapidly growing demand for electricity. Eskom has a long-term plan to expand generating capacity by more than 40%, while facing a R225 billion funding shortfall until 2018. South Africa can expect electricity supply shortages and above-inflation price increases for another five years before a reliable supply of electricity becomes possible again.

### Lack of Innovation:

According to the Human Sciences Research Council (HSRC), in order to be competitive in the global economy, it is critical for organisations, industries and countries to innovate. According to the latest report by the WEF, South Africa ranks in 56th place out of 144 countries in terms of its business and innovation environment, slipping from 53rd in 2013 and 52nd in 2012. South African executives surveyed as part of GE's (formerly General Electric) fourth global innovation poll, on the other hand, are fairly upbeat about the state of innovation in the country. The GE Global Innovation Barometer results were presented at the SA Innovation Summit in Cape Town on 16 September 2014, after over 3 000 senior executives across 20 countries were surveyed – including 100 in South Africa. Only 34% of South African respondents thought that enough financial support is being provided by the government in supporting innovative companies, and 92% of respondents felt that educational curricula needed to be better aligned with the needs of business. On a positive note, 88% agreed that collaborating with small and medium-sized enterprises (SMEs) and start-ups would drive innovative success in the future and 66% indicated that it was essential to use the intelligence gained from big data to innovate successfully. (Big data refers to the collection and analysis of large volumes of information from customer interactions or electronic sensors to produce useful information.)

The full GE Global Innovation Barometer 2014 report can be accessed here or at <http://www.ideaslaboratory.com/projects/innovation-barometer-2014/>

Significant finger-pointing takes place when trying to explain the country's perceived lack of innovation. For example, business leaders argue that Science and Technology Minister Naledi Pandor, has in the past blamed South African universities for their alumni's lack of innovation in different industries. The difficulty in finding venture capital is another reason often used to explain why local research companies battle to develop their inventions commercially. Other reasons include inadequate education, poorly qualified personnel and a market dominated by established businesses that would rather play safe and maintain market share than innovate and risk losing face.

### Economic Slowdown:

The South African economy is struggling to achieve the required traction in order to make the much-needed dent in the high unemployment rate. The IMF recently slashed the country's economic growth forecast for 2014 by 0,3 percentage points to only 1,4%, and its forecast for 2015 stands at 2,3%. In response to these economic constraints, and serving as a guide to spending, the South African government developed the Medium Term Strategic Framework. Guided by the National Development Plan, it sets out its priorities and key targets for the next five years. Some of the key priorities include creating an inclusive economy that grows by more than 5% a year with higher employment and better export competitiveness. Finance Minister Nhlanhla Nene believes that South Africa's growth is likely to be slower than expected, but does not expect the economy to slip into recession.

Several global factors also contribute to the current economic climate, including China's slowdown, falling oil prices and the expected tightening of monetary policy in the United States.

### Banking Reputational Risk:

Gary Allemann, Managing Director at Master Data Management, says that apart from macroeconomic reasons, there is a serious lack of trust in the compliance culture of the South African banking system following the recent failure of African Bank, and the Moody's subsequent downgrading of all the country's banks. Over the last few years, African Bank has transgressed the National Credit Act on over two hundred occasions. The onus is on South African banks to restore international trust following African Bank's many misdemeanours. As can be expected, the major banks have assured stakeholders of their robustness, and hopefully this will also provide comfort to foreign investors.

## 1.3. Further Action

The aim of the South Africa Risks Report is to remain at the cutting edge of collective understanding of the country's risks. In response to the objective of improving the analysis, IRMSA will ensure that the approach and methodology is regularly updated. The 2016 report will continue to engage with the South African risk management fraternity to gain a holistic and current view of the country's evolving risk landscape.

During the review of this report by a number of risk experts, we identified some enhancements for the next report:

- An assessment of risk interconnections, and the creation of a risk interconnections map, by evaluating the average strength of these interconnections. In future, this report will increasingly emphasise the importance of interconnectivity and the systemic nature of South Africa's risks, considering that they could lead to multiple concurrent or consecutive shocks.
- The 2016 report will contain risk ratings instead of solely prioritising the top risks by likelihood and consequence following the risk identification sessions.
- The next report will link the identified risks to the country's objectives. This will provide an understanding of the national objectives that are the most vulnerable, and for which of them further risk taking will enhance the likelihood of success.
- As a living system, South Africa's risk profile is continually shifting. A causal loop diagram (CLD) will be created to explain the behaviour of this system by showing a collection of connected nodes and the feedback loops created by the connections.



'The aim of the South Africa Risks report is to remain at the cutting edge of collective understanding of the country's risks.'

# Part 2: Analysis of Top Risks: Feedback from Subject Matter Experts

The top South African risks come under scrutiny in this section. Each risk contains the applicable feedback provided by the subject matter experts who were asked to address the country's top risks.

## 2.1. Increasing Corruption and a Major Escalation in Organised Crime and Illicit Trade

The geopolitical risk of **increasing corruption** is at the top of the list of risks affecting the South African landscape. It has both the highest likelihood and consequence rating for the entire risk profile. This risk has been coupled with the risk of a major escalation in **organised crime and illicit trade** because of their close relationship. South Africa has steadily been performing worse in Transparency International's Corruption Perceptions Index (CPI), which ranks countries/territories based on how corrupt a country's public sector is perceived to be. The country is ranked 72nd out of 177 countries surveyed, with a score of 42 out of 100 in the CPI. This could prove damaging to the country's reputation.

### Dual Risks of Increasing Corruption and a Major Escalation in Organised Crime and Illicit Trade

*Terrance Booysen, Executive Director, CGF Research Institute*

#### **Corruption in government**

The Special Investigating Unit (SIU) estimates that 20-25% of state procurement, representing approximately R180 billion, is lost each year due to corruption. Corruption of this magnitude undermines state legitimacy and service delivery; it furthermore distorts market competition, increases the cost of doing business and decreases the ease of conducting business. Understandably, this scourge is a massive and debilitating burden upon South Africa's development and it remains a critical area of risk for business stability and sustainable growth in our economy. For any reasonable chance of arresting this endemic rot that is devouring our country, decisive change with punitive consequences must be enforced against those found guilty of this evil, selfish practice. Change and support to combat this scourge must start with the top leadership structures in South Africa and be applied unilaterally across South Africa. Indeed, the change must be supported at all levels in our society, business and government with swift and relentless pressure to eradicate the effects created by the perpetrators. Hopefully, with the introduction of the blacklist for local government officials found guilty of corruption, including the recently promulgated Municipal Systems Amendment Act – which bars officials dismissed on charges of corruption from working in a municipality for a period of ten years – these problems will decrease significantly over time.

## Crime

South Africa's rampant, increasing crime rates continue to impact business and civil society in a manner that erodes the nation's psyche on a daily basis. The 2014 Global Economic Crime Survey shows that nearly 70% (Q1: 2014) of business executives in the private and public sectors have experienced some form of economic crime in the last 24 months. The global average is 37% – there has been an increase of 3% since 2011, compared to a 9% increase in South Africa over the same period of time. The local figure is not far off the 79% of business people – polled at the recent Corruption Watch business conference – who said that they had experienced some form of actual or attempted corruption. It is believed there is a steady decline in the effectiveness of whistle-blowing systems in South Africa, which may be related to senior management committing more crimes. It is further believed that the rise in economic crime is directly linked to the demise of the corruption-busting Directorate of Special Operations (aka the Scorpions), which was disbanded in 2009 and replaced by the Directorate for Priority Crime Investigation (aka the Hawks).

Main types of economic crime experienced		
Type of crime	Experienced by South Africans	Experienced by global counterparts
Asset misappropriation	77%	69%
Procurement fraud	59%	29%
Bribery & corruption	52%	27%
Human resources fraud	42%	15%
Financial-statement fraud	35%	22%
Cybercrime	26%	24%
Money-laundering	14%	11%
Tax fraud	11%	6%
Illegal insider trading	9%	5%



# Dual risks of Increasing Corruption and a Major Escalation in Organised Crime and Illicit Trade

*Nico Snyman, Founder and Owner, Global Leaders Academy – Africa*

## **Opinion of this topic as a risk to South Africa**

These issues are go hand in hand and dovetail each other. The one cannot do without the other.

Crime is and will stay a huge discussion point on the agenda of every person in South Africa. It is a fact that we have transformed from a society where the South Africa Police (SAP) were a force to be reckoned with to a community-based society where the South Africa Police Service (SAPS) has been de-militarised. The perception that the SAPS members do not have enough powers to execute (and this word was deliberately used) their work and the fact that Section 49 of the Criminal Procedure Act has been in the news so many times and has been changed, has decreased the feeling of power within the SAPS.

## **Most significant causes giving rise to this risk**

If one looks back over the past four or so years, with the appointment of Nathi Mthethwa and the Police Commissioner Bheki Cele, you will see that the communication strategy from the SAPS has changed. This went from a more community-based, inclusive approach back to a Police Force approach, where it was stated on many occasions that the SAPS will shoot to kill. This resulted in many unnecessary shootings and abuse (Germiston issue, Marikana, etc.), major blunders, and the perception by SAPS members that they are above the law. You would also have seen the change back to the old military rank structure in 2009/2010. This is indicative of the illusion that we are in control. No rank will build trust in the communities. It is the conduct of the SAPS members and the trustworthiness of the people in it that counts.

One can look at the quality of the SAPS members employed and their progress as well as the career paths they have. Some of the members have been stuck in their ranks for 14-20 years, and are thus actually getting poorer. This creates the conditions for increasing temptation towards corruption and collusion with organised crime.

This is not only in the SAPS, but with the SAPS as the most visible governmental structure or entity in power, one will always see this as the major indicator and barometer of trust. This sets the tone for corruption and organised crime across industries and government departments.

## **Most significant consequence impacting South Africa**

Our reputation in the international community will be gravely affected. This is already happening. We are losing our credit rating, thus confidence is decreasing. We are losing corporates (Lonmin), who are selling out to move their risk overseas. Our inflation is increasing, thus basic living expenses are on the increase. The repo rate is increasing, thus the spendable income of households is decreasing. In fact, people on the lower end of the scale are getting poorer. This has a knock-on effect on education, water, electricity, services and leads to crime, corruption and organised crime.

This cannot be seen as a simplistic approach, but needs to be seen as a collective, encompassing and holistic approach. The National Crime Prevention Strategy (NCPS), published in the Government Gazette in 1997, explains this process step by step as well as a total country-wide risk management process. This strategy needs to be revisited and the principles stipulated therein must be implemented.

## **Most effective risk response in managing this risk**

Openness and transparency and people being held accountable, immediately. Crime Line and Corruption Watch is fantastic, but it is a one-way street. The result, feedback and successes are not widely publicised. If we want to change this country, the behaviour and the culture, we need to be bold and involve the broader communities. I have seen it work and with the current social media that are so powerful, we need to drive information to be intelligent. We can do it. This is the same as addressing a disaster. Our reputation as a country and continent is on the line.

This is all about the leadership, vision, missions and objectives for South Africa that are set in Parliament and must be cascaded down to the various departments for effective and efficient implementation.

This also means that leadership on each and every level needs to be outspoken regarding the single vision, mission and objectives. This must be a constant communication and positioning strategy. Each and every one must be on the same page.

Step 1: Standards must be set, verbalised and communicated in a way that everyone can understand.

Step 2: Implementation, or say what we do and do what we say. Again, this is all about leadership and the integrity that goes with it. This must be a single delivery method within government and corporates. Implementation and the success of implementation must be measured; if not, the roll-out could be partial and misaligned. This must include whistle-blowers and their protection. Secondly, this must culminate in actionable outcomes. We know the Labour Relations Act (LRA) and the Basic Conditions of Employment Act (BCEA), but there must be other ways to handle anonymous information.

Step 3: Action must be taken and there must be official, scheduled and feedback that is open to the community. Community structures have to be appointed or involved in the validation of the information and feedback. This is public oversight; thus, difficult and direct questions must be asked and answered openly and freely.

Step 4: The strategy must be measured and the success and failures must be reported back to the public, from micro communities to the total macro environment.

Step 5: Corrective steps. There is always room for improvement and the process must be dynamic. It cannot be set in stone and could take three years to amend. The strategies involved in Change Management must be implemented to change the culture of the society. There are too many silo approaches and no synergy.

**Anything else to consider when addressing this risk**

It is significant that this is a fantastic country and that we have changed peacefully to a democracy. We are an icon for the world of how a country can transform under the leadership of two brave men, Nelson Mandela and FW de Klerk. De Klerk needs to be recognised for his brave decision to negotiate and release Mandela, and Mandela created the conditions and laid the foundation. This is all about leadership and drawing the line in the sand to say: No more.



## 2.2. Structurally High Unemployment / Underemployment

**Structurally high unemployment / underemployment** is particularly relevant in the South African context considering that the unemployment rate is at around 25% according to Statistics South Africa, which translates into approximately 5,2 million unemployed persons. The country's unemployment is now one of the highest in the world and the manufacturing and agriculture sectors showed the biggest job losses at both a quarterly and an annual rate. The concern for South Africa, as with many emerging economies, is that high unemployment rates coupled with high levels of inequality could lead to social unrest on a national scale.

### Employability – is the next generation jobless?

Where unemployment is high while skilled and talented individuals are a sought after resource

*Dr Mark Bussin, Chairperson, 21st Century Pay Solutions Group*

Where are all the skilled ones? Who ate my job? Why is the unemployment rate for the younger generation so high? These are all current questions in the workforce.

South Africa's high jobless rate is exacerbated by the fact that it is now one of Africa's slowest-growing economies, but rigid labour markets probably matter even more. Countries that let business associations control competition, that have high taxes on labour and high minimum wages and where regulations make it hard to fire people, are bad places for the young jobless.

Economists are now emphasising another problem, which includes the mismatch between the skills that young people offer and the ones that employers need. Employers are awash with applications, but complain that they cannot find candidates with the right abilities. McKinsey reports that only 43% of the employers in the nine countries that it has studied in depth (America, Brazil, Britain, Germany, India, Mexico, Morocco, Saudi Arabia and Turkey) think that they can find enough skilled entry-level workers. Middle-sized firms (between 50 and 500 workers) have an average of 13 entry-level jobs empty.

The most obvious reason for the mismatch is poor basic education. In most of the advanced economies, whether growing or shrinking, the jobless rate for people with less than a secondary-school education is twice as high as for those with university degrees. The following two graphs emphasise the unemployment rate in SA as well as the discouraged job seekers difference between 2008 and 2014.

Our matriculants cannot find jobs. Even many with university degrees cannot find work. It is high time that schools, universities, employers and government sat around the same table and thrashed out the question "What skills and education will be required in ten to twenty years' time"? South Africa needs a 25-year plan. To do that, we need to know what the jobs of the future are. Surely, problem solving should be a full school subject by now. And why is IT not compulsory like Mathematics and English? We have to fix our education system so that it is delivering and relevant in the next 25 years. University courses can take up to five years to implement. By that time, the curriculum is almost obsolete! Things are moving fast and we are just too slow.

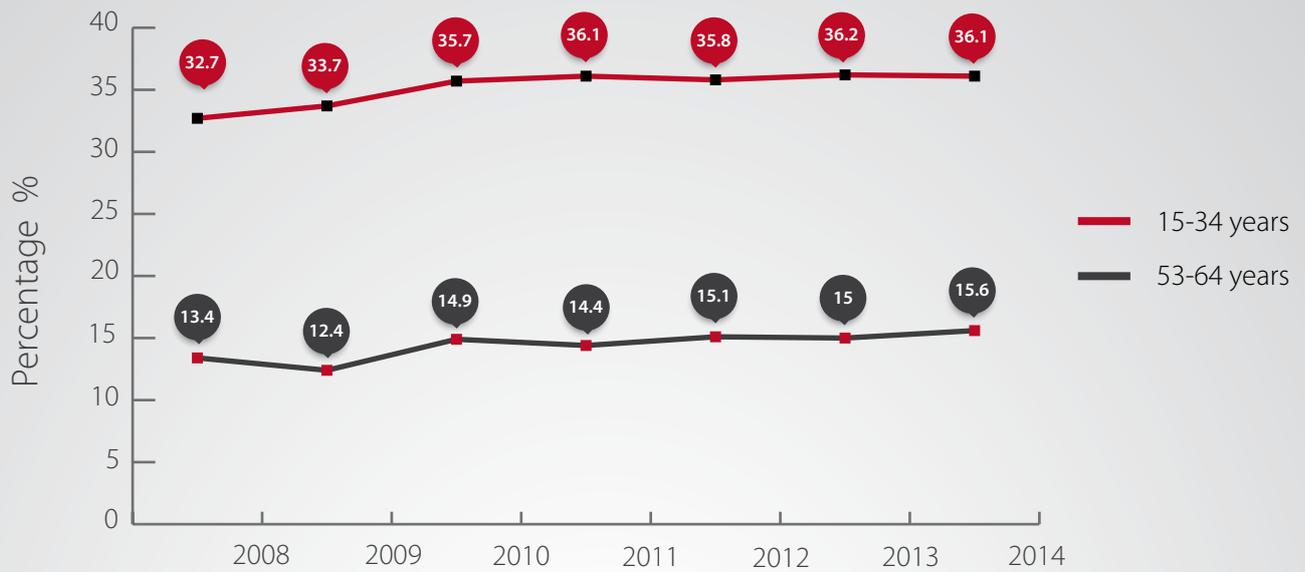


Figure 5: Unemployment rate of youth and adults, 2008 and 2014 in SA  
Source: Statistics SA, 2014

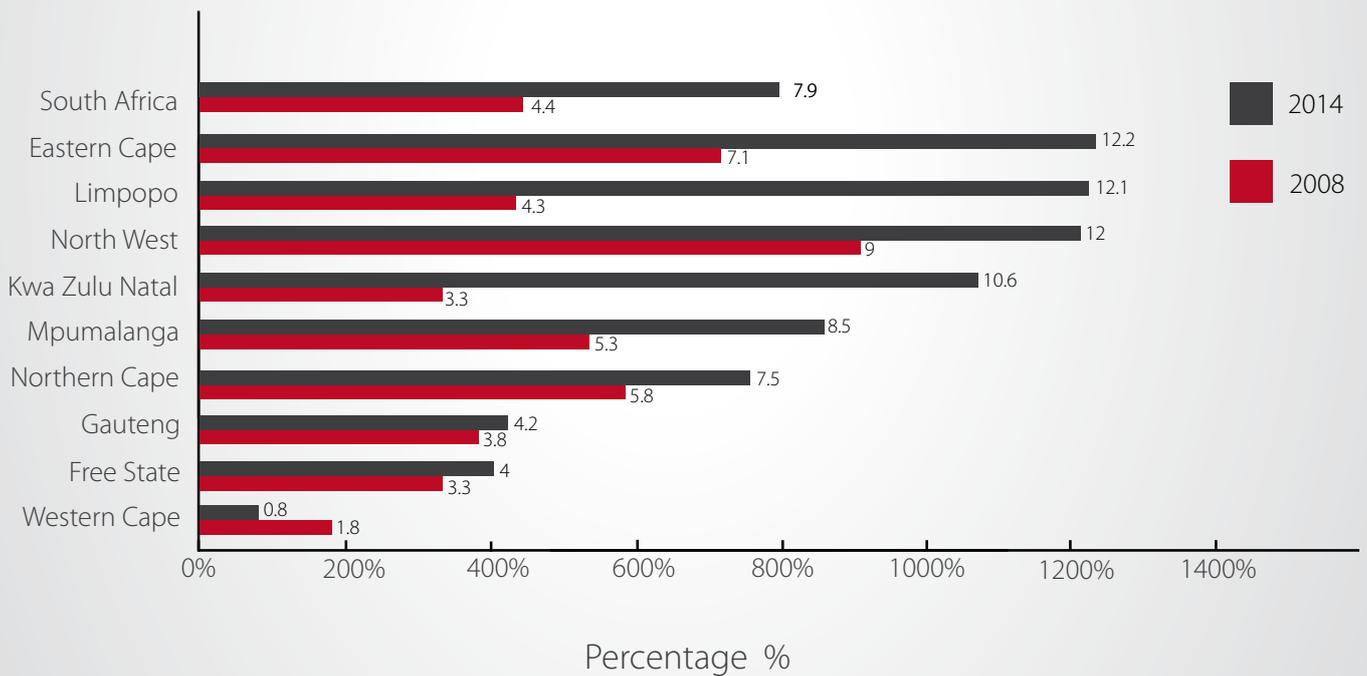


Figure 6: Discouraged work-seekers aged 15-34 years as a percentage of the working age population, 2008 and 2014  
Source: Statistics SA, 2014

### **Will growth give them a job?**

The most obvious way to confront this problem is to reignite growth. That is more easily said than done in a world plagued by debt, and, even so, is only a partial answer. Throughout the recession, companies have continued to complain that they cannot find young people with the right skills. This underlines the importance of two other solutions: reforming labour markets and improving education. These are familiar prescriptions, but ones that need to be delivered with both a new vigour and a new twist.

Youth unemployment is often at its worst in countries with rigid labour markets. Factors like cartelised industries, high taxes on hiring, strict rules about firing, high minimum wages help condemn young people to the street corner. South Africa has of the highest unemployment figures south of the Sahara, in part because it has powerful trade unions and rigid rules about hiring and firing.

### **The graduate surplus**

It could be believed that people who left school at the earliest opportunity are twice as likely to be unemployed as university graduates. But it is unwise to conclude that governments should simply continue with the established policy of boosting the number of people who graduate from university.

What matters is not just number of years of education people get, but its content. This means expanding the study of science and technology and closing the gap between the world of education and the world of work, for instance by upgrading vocational and technical education and by building closer relations between companies and schools.

### **Putting it in perspective**

"Young people ought not to be idle. It is very bad for them," said Margaret Thatcher in 1984. She was right; there are few worse things that society can do to its youth than to leave them in mid-air.

I strongly believe that schools, universities and government should collaborate and that they need to start talking about skills required in the future. Thus, one of the crucial solutions is to change the curriculum of schools and universities in order to grow students and prepare them for future jobs that may not exist yet. Instead of producing academic giants, grow and teach individuals who can be employed and fill the scarce skills positions. For example, add problem-solving and computer science as compulsory subjects in schools.

Closing the gap will also require a change of attitude from business. This will include revamping their training programmes. However, the fear that employees will be poached discourages firms from investing in the youth. There are ways of getting around the problem: groups of employers can co-operate with colleges to design training courses, for example. Technology is also reducing the cost of training: programmes designed around computer games can give youngsters some virtual experience, and online courses can help apprentices combine on-the-job training with academic instruction.

Companies are beginning to take more responsibility for investing in the youth. And technology is helping democratise education and training. The world has a real chance of introducing an education-and-training revolution worthy of the scale of the problem.

### Considerations

It is hard to be optimistic about a problem that is blighting the lives of so many people. But perhaps it is time to be a bit less pessimistic. Policymakers know what to do to diminish the problem – ignite growth, break down cartels and build bridges between education and work. New technology also gives them powerful tools. Countries that make the investments and choices needed to grapple with their unemployed youth could see some dramatic improvement ahead.

There can be no doubt that youth unemployment in South Africa is a serious cause for concern. Currently, a generation of young people in South Africa are caught in an inhumane dilemma that affects all areas of their lives. Ridding the country of unemployment is one of the transformation issues that just cannot wait. Thus, job creation strategies need to increase in quantity and pace. Maximising the country's obvious human potential needs new and flexible thinking.

It is time to obliterate ignorance through education and employ each and every one of our citizens.

## 2.3. Failure / Shortfall of Critical Infrastructure

As South Africa is a developing middle-income country, the risk of the **failure / shortfall of critical infrastructure** is highly prioritised considering that this is a key requirement for economic growth. In 2012, the South African government adopted a National Infrastructure Plan with the intention to transform the country's economic landscape while simultaneously strengthening service delivery and creating a significant number of new jobs. It is anticipated that the implementation of the plan will remedy the skewed implementation of infrastructure during the apartheid years, and to meet the demands of a growing economy and population. Service delivery is being addressed through investments that will improve access by South Africans to healthcare facilities, schools, water, sanitation, housing and electrification. The growth of the economy should be boosted by investment in the construction of ports, roads, railway systems, electricity plants, hospitals, schools and dams.



## Failure / Shortfall of Critical Infrastructure

*Michael Lalor, Director, Ernst & Young Africa Business Centre*

### **Opinion of this topic as a risk to South Africa**

Our experience over the past few years – particularly with regard to electricity, water and housing supply – indicates that this is a real risk. Although the provision of basic services to most South Africans has clearly improved, there are still many shortfalls. From a business perspective, energy security is a critical precondition to the long-term health, competitiveness and growth of our economy.

### **Most significant causes giving rise to this risk**

The magnitude of the challenge is enormous, and this needs to be borne in mind. In this context, trade-offs and choices need to be made in terms of focusing on what is most critical for long term socio-economic development. In making these choices, there does not always appear to be a clear enough distinction between shorter-term political expediency and longer-term policy/strategic planning. There is also a concern that once decisions are made, that implementation is fraught with various obstacles.

### **Most significant consequence impacting South Africa**

There is a real danger that, if we fail to properly implement the infrastructure programme, the economy WILL continue to stagnate and even lose ground globally. The likely knock-on effect is ongoing high levels of unemployment, frequent service delivery protests, with a steady descent into widespread social unrest.

### **Most effective risk response in managing this risk**

The implementation of government's infrastructure programme must be prioritised. There also needs to be far more collaboration across government, business and social sectors in terms of how to effect this implementation.

## Failure / Shortfall of Critical Infrastructure

*Mark Robins, Senior Vice President Group Risk, AngloGold Ashanti*

I agree that this is a major external risk. There is a challenge in addressing this risk as it requires a long-term solution. Specific concerns include electricity, water (still underplayed) and also transport infrastructure, which, if not addressed, will have an impact on our competitiveness as a country, with stiff competition from our Southern African neighbours and also Nigeria as the other large African economy.

## Failure / Shortfall of Critical Infrastructure

*Rob Newsome, Director, PricewaterhouseCoopers*

### **Opinion of this topic as a risk to South Africa**

Very relevant.

### **Most significant causes giving rise to this risk**

Insufficient funds to commit to infrastructure spend; loans raised to cover operational budget (due to social services expenditure and high cost of labour in public sector); public sector chaos to maintain the infrastructure – no accountability for maintenance and theft/corruption and civil resistance to the use-and-pay principle as a response to the high tax rates and maladministration.

### **Most significant consequence impacting South Africa**

South Africa could become like Nigeria: Crumbling infrastructure; flight of capital; massive increase in taxes; continual currency devaluation; unemployment; massive civil unrest and profound political and social instability.

### **Most effective risk response in managing this risk**

Budget deficit must be closed so that loans are only raised for infrastructure development – severe labour cuts in public sector; drawback of social grants and spending; rationalisation of the health sector where spending is uncoordinated and use infrastructure spend for upgrading electricity generation rather than tariff.



## No Water, but it's "Beyond our Control"

*Clare van Zwieten, Managing Editor, EE Publishers*

It is a national disgrace that parts of Johannesburg, Ekurhuleni and Tshwane experienced a water supply disruption in recent weeks, and government's response to this unprecedented situation has been singularly disappointing.

At a media briefing on 26 September 2014, the Minister of Water and Sanitation, Nomvula Mokonyane, said there was a need to move beyond the "blame game", and a joint statement released by the Department and Rand Water on 30 September 2014 stated that the interruptions had "largely been as a result of vandalism and circumstances beyond our control".

I put it to the Minister that this is not a game, and that the circumstances are not beyond the Department's control. This is a matter of national security, and the perpetrator was not a terrorist grouping but rather the very organisations legally tasked with the responsibility of regulating the storage and supply of water for Gauteng, as well as the rest of South Africa.

The Department of Water and Sanitation is well aware of the obstacles standing in the way of its goal to provide effective, sustainable municipal water services. The Department's own reports indicate that these include relying on a workforce with an increasing lack of technical skills, aging water infrastructure, increasing investment requirements, inadequate water resources, rising energy costs, competing political priorities within municipalities and poor water services planning and prioritisation.

A 2013 Strategic Overview of the Water Sector in South Africa prepared by the then Department of Water Affairs reveals that few water service authorities practice proper management of their water services infrastructure. As a result there are regular service failures resulting in non-functionality of schemes, customer dissatisfaction, threats to health and financial losses. In addition, a presentation by Department of Water Affairs' representatives at the 2013 World Water Week in Stockholm identifies Johannesburg, Ekurhuleni, and Tshwane as being "highly vulnerable" water service authorities on a Municipal Strategic Self-Assessment of Water Services (MuSSA) vulnerability index of 17 priority municipalities.

In view of this, surely the Department of Water and Sanitation and Rand Water should be operating on high alert and be planning ahead to deal with possible scenarios that can have a detrimental impact on Gauteng's integrated water network. Blackouts are not unusual occurrences, and neither is cable theft. The impact of incidents of this nature on the water supply system need to be fully understood, and contingency plans need to be developed to minimise the risk.

There are ample technologies – geospatial, mechanical and automative – available to facilitate the effective and efficient management of the country's water supply and these should have triggered alarm bells when pumping stopped and Gauteng's reservoirs started emptying. It is not apparent, though, whether these technologies are being used in our integrated water management systems. Were alarms triggered? And, if these alarms were triggered, what action was taken?

The Department of Water and Sanitation and Rand Water have been entrusted with the responsibility of monitoring and managing our water resources and systems. Taking responsibility for what happened and ensuring that it does not happen again, is certainly within their control.

## Electricity Crisis? What Crisis?

*Hannes Roos, Past President, Association of Municipal Electricity Utilities*

Most South Africans are inconvenienced by power interruptions at some time, and may believe that there is a crisis in the supply of electricity, but are unsure what caused it, where it is, or what can be done about it.

Wikipedia describes a “crisis” as any event that is, or is expected to lead to, an unstable and dangerous situation affecting an individual, group, community, or whole society. It continues, “Crises are deemed to be negative changes in the security, economic, political, societal, or environmental affairs, especially when they occur abruptly, with little or no warning. More loosely, it is a term meaning ‘a testing time’ or an ‘emergency event.’”

Most thinking South Africans will feel that this fairly describes the electricity industry in our country for the past several years. They will point to the fact that even the government has acknowledged this in various ways: in the distribution sector, not least by the fact that we have spent billions of rands in a failed “restructuring” attempt to “fix” the industry; and by the ongoing saga of years of talking about the need to upgrade distribution networks that are past their “sell-by” dates and the lack of any meaningful corrective action. In the generation sector, by the public apology for an error of judgment by government from the then president after the 2008 load-shedding crunch; and by various ministerial pronouncements in the past year or two on Eskom’s failure to commission new generation capacity on time and within budget.

Lurking in the background is the very real problem of the skyrocketing tariffs and the costs directly related to this that are now affecting every South African, the horrendous non-payment and energy theft problems, the insidious losses in the national revenue pool arising from lost production in most industrial sectors following energy curtailments. The list goes on and on. Thrown into the mix is the very real problem of pollution coming from many of our power stations and the enormous effort and funding needed to meet international and local emission standards.

So yes, we have a crisis, but what can be done about it?

In the short term, those of us in the municipal distribution industry, with a direct responsibility for keeping the lights on to some 60% of the nation’s homes, must do – and for the most part are doing – everything possible to provide an acceptable supply to our customers both in terms of quality and availability. We design and build our distribution networks to that end and maintain them on restricted budgets with limited staff. While we strive to reach that perfect 100% level, it is nevertheless a fact that for about 99,9% of the time the power is on and useable for 99,9% of our consumers.

Certainly it is a crisis if the housewife’s baking is delayed or spoiled by a two hour blackout each year; it is even more of a crisis when a commercial operation cannot trade during that time; and worse still, when a large industry has a process or production batch curtailed or ruined or, even worse, has plant damaged. We recognise these problems and are individually doing our best to reduce unplanned outage times to zero.

It is common knowledge that, thanks largely to the direct and indirect effects of our country’s unenviable recent social history, this “our best” is often carried out under very difficult circumstances. Lack of skills of every type is patently obvious to technical and non-technical people alike, and it is common knowledge that most organisations are critically short of qualified staff. In the context of local authorities, the severity is illustrated by the fact that there has never been a time when so much work has been contracted out and so little “institutional memory” and internal expertise has been available to operate and maintain systems. While it is not all “doom and gloom” and there are numerous pockets of excellence of which we can rightly be proud, we would be foolish to gloss over, or turn a proverbial blind eye to, the very serious deficiencies and difficulties that exist.

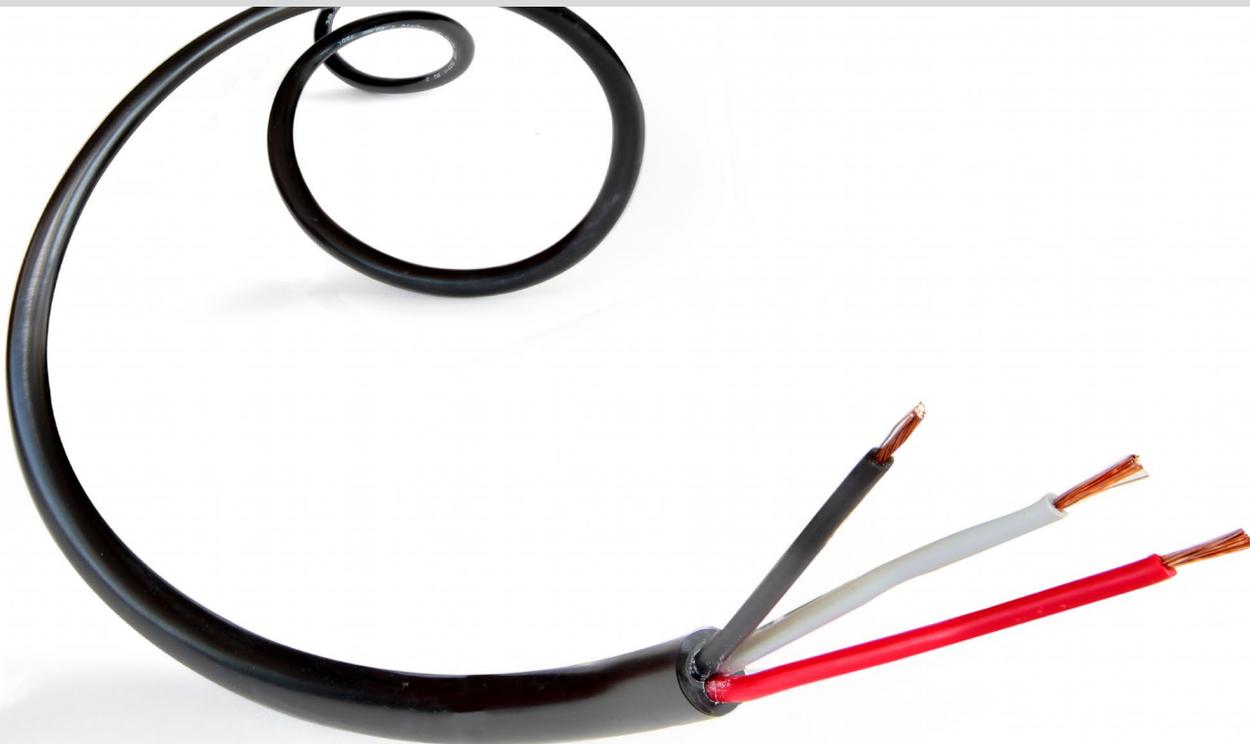
Couple this with the diversion of large amounts of capital to social upliftment projects, unwieldy procurement processes in most municipalities, far too many overall administrative weaknesses as identified in persistent negative audit reports, endless calls for more statistics and time-consuming reports that often seem to have no bearing on reality, and we have a toxic cocktail of gigantic proportions waiting in the industry's wings.

Beyond our individual utility operational problems, we need to understand that our industry as a whole was not helped, either technically or economically, by the setback resulting from the government's recent complete somersault on the restructuring of the distribution industry which consigned REDs to the dustbin of history.

Neither is it helped by the delays caused by the inherently sluggish system now in place to try to find an alternative industry model. One cannot but wonder at the chances of success of such a process when the answer eluded mega-brains and failed in spite of consuming mega-energy of effort and mega-bucks of money. The Electricity Distribution Industry Restructuring Committee (EDIRC – predecessor of EDI Holdings) was appointed in 1999 and we will never know how much time and money has been wasted in this futile exercise. Nor just how much our creaking systems would have benefitted if the funds had been allocated directly to the most needy network upgrades. If anything speaks of the amazing resilience of our industry it must be the fact that the lights are still on!

We all know that modern civilisations develop where electricity is available and reliable, so perhaps we need a concerted effort to impress this fact – and the fundamental needs to make it happen – on the public, on business leaders and all layers of government. We need more strategic public involvement, more regular media “non-sensational” reporting and exposure time. Perhaps if every technical journal highlighted particular problem areas and the solutions on a regular basis, the public and the policymakers would develop a better understanding of the industry at a fundamental level and support the steps necessary for permanent solutions. The time is ripe for the nation to stop the once-off sensation-seeking attention to the industry – which is invariably characterised by a flurry of knee-jerk stop-gap activity – and support the steps essential to build greater reliability in the entire electricity supply chain.

The right time to act is NOW!



## Six Reasons Why Eskom is Load Shedding

*Fin24 Interview with Chris Yelland, Managing Director, EE Publishers*

As the country once again experiences rolling scheduled blackouts for the third time this year, energy analyst Chris Yelland explained to Fin24 what he thinks the real reasons are.

Eskom has blamed the country's electricity woes on a collapsed coal storage silo, a short supply of diesel, water and the weather.

"The reasons that Eskom has given for the prevailing blackouts that we have been experiencing are consequential reasons based on an underlying cause, namely that the completion of Medupi and Kusile is running ten years late."

Yelland said the first five-year delay was caused by policy indecisions and the second five years by execution delays.

"The government has only itself to blame for policy indecision and Eskom is largely responsible for the execution delays."

He warned that load shedding problems will continue. "They will get worse until Medupi and Kusile come on line and even then we are still going to be playing catch-up," said Yelland.

"If Eskom had adequate generation reserve margins then it would not matter if we had wet weather or hot weather or cold weather or a coal silo collapse."

"To blame the weather is nonsense. To blame the shortage of diesel and water is nonsense."

Yelland cited the following six reasons for the delays at Medupi and Kusile that have caused the prevailing electricity crisis:

1. The first reason is a lack of clear policy decision. Yelland said this delayed the decision to proceed with Medupi and Kusile by five years.
2. The absence of a funding plan. Yelland said that the construction of Medupi and Kusile had proceeded without knowing where the money would come from to pay for the projects. "A few years into the projects, they had to be delayed until government had put a funding plan in place."
3. Geological problems during the civil work phase. Yelland said that inadequate geological surveys were done. "This resulted in major delays in the construction of the foundations of Medupi and Kusile."
4. Boiler-welding issues. The contract with Hitachi saw major welding quality problems within the boilers, which required significant rework.
5. Inadequate level of skills and inadequate availability of skills. Yelland said this was partly due to the fact that two megaprojects were built at the same time.
6. Labour problems resulted in significant strikes and labour unrest during the construction period which brought work at Medupi and Kusile to a standstill. "Initially, Eskom did not implement a site-wide labour agreement," said Yelland. "Conditions of employment of site labour were left to the many contractors, and this meant, for example, that workers doing similar work were being paid differently, leading to discontent."

Economist Chris Hart told Fin24 that the latest round of load shedding seems to have been better implemented compared to previous blackouts.

However, he also expressed concern about the power plant delays. "The main thing that we are missing out on is the main reasons why Medupi is delayed. At the end of the day we need extra energy capacity."

Hart said load shedding is costly from an investments point of view and the economy itself, although he noted that South Africa is not the only country to suffer from power shortages.

## The Risks associated with South Africa's Ageing Energy Infrastructure

*Roger Lilley, Editor, Energise – EE Publishers*

The risks associated with ageing energy infrastructure and networks are important discussion points for South Africa at this time. Eskom's chief executive, Tshediso Matona, recently acknowledged that maintenance of power stations has been neglected, and it is common knowledge that many of the municipalities are not up to date in the maintenance of the electrical distribution infrastructure under their management.

The principal reasons given for this situation include a lack of sufficient numbers of suitably skilled and/or trained personnel, a lack of financial resources as a result of electricity theft and the high incidence of cable theft, which keeps maintenance teams busy replacing cables when they could have been undertaking maintenance.

Electricity and cable theft must be addressed urgently. The loss of revenue through electricity theft and the destructive effects of cable theft are serious matters. Cable theft can lead to death, and the revenue lost by businesses due to reduced productivity can lead to job losses. In addition to this is the problem of maintenance crews deployed to replace cables when maintenance tasks could have been undertaken.

The most likely long-term result of neglected maintenance on the electricity distribution network is prolonged electricity outages with resultant reduction in productivity, leading to economic stagnation or even decline.

## The Effect of Theft on Critical Infrastructure

*Leon van den Berg, Independent Forensic Investigations Consultant*

### **Opinion of this topic as a risk to South Africa**

A very serious risk. It has a direct impact on delivery of essential services (electricity – Eskom and Metros, public transport – PRASA, Gautrain and Transnet, Telecommunications – Telkom and cellular service providers and water supply). A conservative estimate of the yearly financial impact on the South African economy is ±R15 billion.

### **Most significant causes giving rise to this risk**

Socio-economic – unemployed people revert to crime for survival coupled to a huge demand for copper internationally.

### **Most significant consequence impacting South Africa**

A total collapse in the delivery of essential services resulting in a huge inconvenience to the public in general, as well as a serious impact on the economy of South Africa.

### **Most effective risk response in managing this risk**

More strict legislation coupled with effective policing. Public awareness and willingness to report relevant suspicious activity to the authorities.

### **Anything else to consider when addressing this risk**

Contrary to popular belief, zero incidents is not the ultimate indicator of success. As a matter of fact, it is near impossible. The aim should be to have available an appropriate crime combating strategy supported by an effective and efficient implementation component. The aim should be to have zero supply interruptions and to manage the number of incidents to the lowest possible level.

## 2.4. Escalation in Large-scale Cyber-attacks and a Breakdown of Critical Information Infrastructure and Networks

South African businesses, as well as the country's **critical information infrastructure and networks**, face unprecedented levels of **cyber-attacks** in a rapidly evolving world of security threats. The availability, reliability and resilience of the country's information infrastructure and networks are essential to the functioning of South Africa's economy in areas such as power distribution, telecommunications, national defence, water supply and public health and emergency services. The Cisco 2014 Annual Security Report revealed that cybercriminals are increasingly attacking Internet infrastructure rather than individual computers or devices, with password and credential theft, hidden-in-plain-sight infiltrations and breaching and stealing data. Disruptive cyber-attacks are becoming more effective at breaching security defences, causing major disruption and sometimes bringing down organisations for whole working days. In a recent study carried out by British Telecommunications (BT), one of the world's leading providers of communications services and solutions, distributed denial of service (DDoS) attacks are seen as a key concern by two-thirds of South African organisations, higher than the global average of 58%. A related BT study revealed that, while 58% of South African organisations have a response plan in place should a DDoS attack occur, only 20% are convinced that they have sufficient resources in place to counteract an attack.

### Dual Risks of an Escalation in Large-scale Cyber-attacks and a Breakdown of Critical Information Infrastructure and Networks

*Basie van Solms, Research Professor, University of Johannesburg*

#### **Opinion of this topic as a risk to South Africa**

This formulation can be interpreted in more than one way, e.g.

- The risk of a single large-scale cyber-attack, e.g. on the JSE, Eskom, etc.
- The risk of continuous cyber-attacks on large numbers of institutions (government departments, companies and individuals) in South Africa.

Whatever the interpretation, the risk to South Africa is massive and can have and is already having a significant effect on the economic, social and strategic dimensions in the country. Already, according to the 2012/2013 Norton Security Report, South Africa is third on the list of cyber-crime victims internationally, with only China and Russia ahead of us. (<http://www.htxt.co.za/2013/10/02/south-africa-ranks-third-worst-in-cybercrime-report>)

The impact of this is that cyber-crime is rampant in South Africa, and everyone is suffering. One specific very important aspect is that of SMMEs.

A recent report from the South African Department of Communications (DOC) ('E-commerce, Cybercrime and Cybersecurity – Status, Gaps and the Road Ahead') [www.doc.gov.za/documents-publications/ict-policy-review.html](http://www.doc.gov.za/documents-publications/ict-policy-review.html), indicates that small companies contribute on average 55% to South Africa's overall GDP and 61% to employment. Furthermore, 66% of such small companies have online websites and 70% of these small companies acknowledge that business without a website would not be possible. Nevertheless, the same report states that small businesses are reported to be the largest growth area for cyber-attacks. 31% of all attacks targeted small businesses, as SMMEs are less prepared to handle cyber risks. Cyber criminals face less resistance from SMMEs than from much better prepared large corporate companies.

International statistics show clearly that there is a large growth in cyber-attacks on small companies, and as the DOC report shows, these small companies are also becoming more lucrative targets in South Africa. Just in this area, the risk to South Africa is immense – if cyber-attacks compromise these companies, steal money and sensitive information, and these companies have to close their doors, the impact on employment and South Africa's GDP will have national and strategic impacts. The irony is that this is happening every day, contributing to the country being 3rd on the Norton list.

#### **Most significant causes giving rise to this risk**

There are many causes, some of which are the following:

- Lack of awareness of cyber security risks (Cyber Security Awareness)
- Lack of sufficient cyber security capacity (knowledge, skills, skilled people)
- Lack of action from the side of the government

There can be no doubt that the major cause of this risk is the inactivity on this matter from the side of the government. Currently, South Africa does not yet even have a publicly published National Cyber Security Policy, which many other countries, even in Africa, already have. At the moment there is no initiative from the government to speed up capacity building in cyber security or to create cyber security awareness or to create cyber-related Public-Private Partnerships with industry. Personally, I cannot see the matter improving in any way before the government takes decisive and immediate steps in this regard.

#### **Most significant consequence impacting South Africa**

'Too horrible to contemplate!' If the cyber risk is not managed by all involved, with the guidance of the government, South Africa will slide into the cyber-crime hell of Africa (if we are not there already). Commerce will be impacted as no internet-based transaction will be trusted anymore, e-Commerce will not be trusted, e-government will not be trusted, e-Health will not be trusted etc. In fact, cyber-crime will soar and we may go back to pencils, paper and candles. SA is part of a global cyberspace, and to operate and do business in the global economy, we must secure our cyberspace or lose out – it is as simple as that.

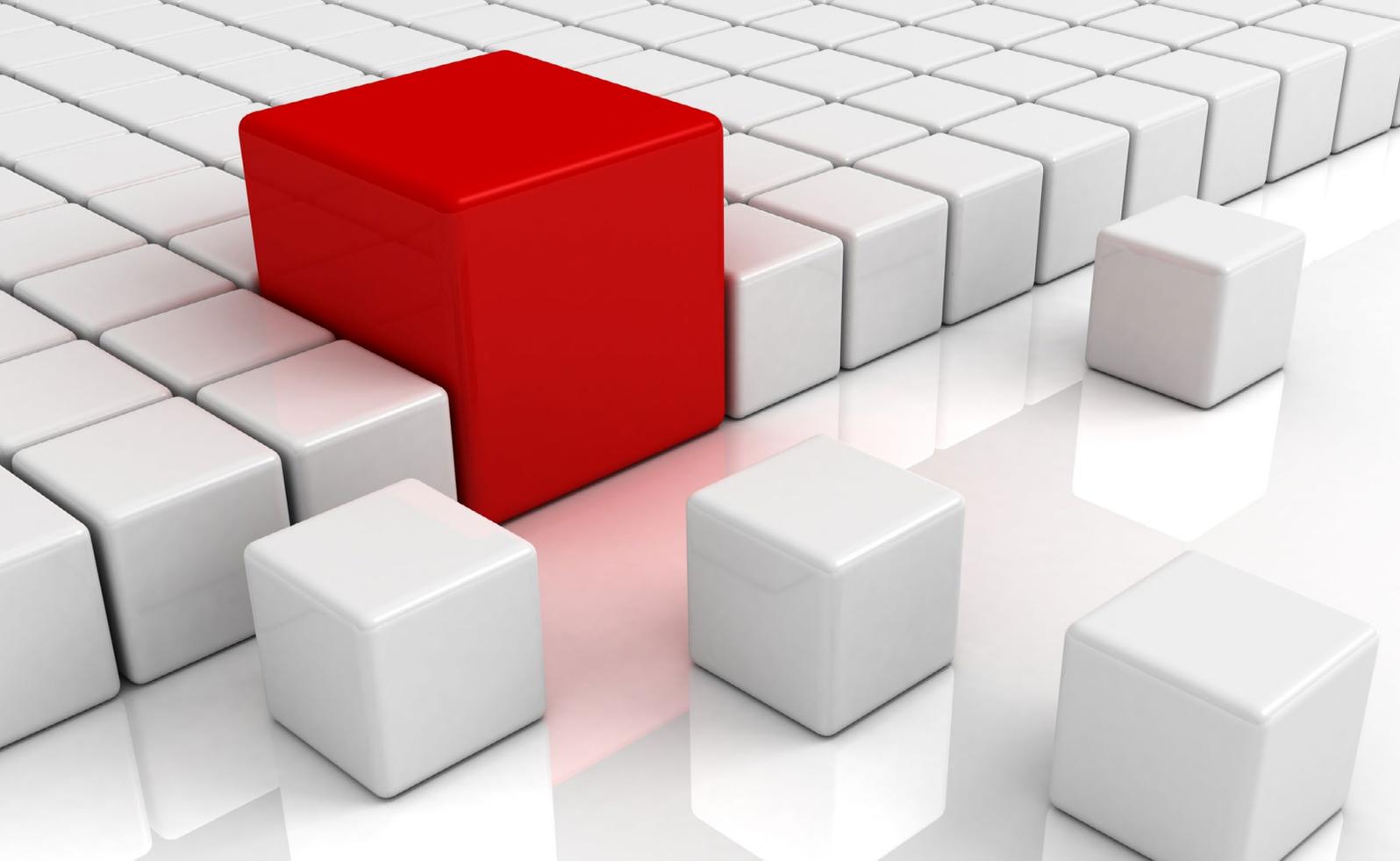
#### **Most effective risk response in managing this risk**

I have no doubt at all that government action is the first important step in starting to manage the cyber risk in South Africa. The government has the ultimate responsibility to create a secure cyber space over the country, and without that input, the risk will keep increasing.

#### **Anything else to consider when addressing this risk**

The Centre for Cyber Security of the University of Johannesburg has, in 2012, started some cyber security capacity-building initiatives. These initiatives are specifically directed towards people working full time and who want to increase their cyber security knowledge on a part-time basis. The first course introduced was a Certificate in Cyber Security, and from 2015, a Certificate in Digital Forensics will be added. Both courses result in a formal Certificate from the University of Johannesburg. The Certificate in Cyber Security course has two intakes per year, and both are normally oversubscribed. For more information, visit [www.cybersecurity.org.za](http://www.cybersecurity.org.za)

This initiative can, however, only produce a drop in the bucket. We need initiatives from government to increase such cyber security capacity building a hundred times over. The South African Cyber Security Academic Alliance (SACSAA) ([www.cyberaware.org.za](http://www.cyberaware.org.za)) is an initiative by three universities, The University of Johannesburg, UNISA and the Nelson Mandela Metropolitan University, to start creating Cyber Security Awareness in schools. Good work has been done by SACSAA so far, but South Africa needs a national program in this, and wider coverage – this can only come from the side of government.



## Dual Risks of an Escalation in Large-scale Cyber-attacks and a Breakdown of Critical Information Infrastructure and Networks

*Professor Adrie Stander, Senior Information Systems Lecturer, University of Cape Town*

While the risk of large scale cyber-attacks for most of the world are is a little above average and certainly below risks such as natural disasters, civil unrest and health related disasters, it is unlikely that an attack of this nature will be seen in South Africa in the near future. Attacks of this nature mostly have a strong political component and the current relatively neutral position of South Africa reduces the risk of such an attack, compared to countries actively involved in war efforts. Even in situations where it is more likely to happen, the physical damage that can be inflicted over the Internet is limited, and the damage is likely to be similar to that of a serious accident.

While the word “war” is often used in this regard, a cyber-attack is more likely to be seen as a terrorist attack than as an act of war. For this reason, escalation is likely to be limited in nature. This, however, does not mean that it cannot happen in South Africa. There is always the possibility that an individual or group could launch such an attack for personal reasons, if infrastructure is found that is not properly protected.

At particular risk are public services, such as water and electricity, emergency, traffic control services and transport. While the risk is low, it cannot be ignored and access to the infrastructure should be strongly protected. As most of the vulnerable areas form part of critical infrastructure, emergency plans should already exist, but where this is not the case, they should be implemented without delay.

## 2.5. Failure of a Major Financial Mechanism or Institution

South Africa has recently witnessed the **failure of a major financial mechanism or institution** through the events impacting African Bank. Apart from the credit rating downgrade of the four largest South African banks, there are also rising concerns about Capitec Bank and other lenders. This has shaken local and international investor sentiment and local banks have tried to allay these fears by demonstrating their robustness.

### Failure of a Major Financial Mechanism or Institution

*Michael Lalor, Director, Ernst & Young Africa Business Centre*

Although the consequences of this could be devastating to the economy, I do not believe it is a significant risk at this point in time. Our financial institutions and systems are among the most robust and well-managed in the world. Obviously though, in the absence of meaningful economic growth, as the current account and budget deficits continue to bite, and as the consumer (and credit) industry come under increasing strain, there will be growing pressure on the financial system. However, unless there is a significant policy shift in the next few years, the chances of any critical failure are very low.

### Failure of a Major Financial Mechanism or Institution

*Mark Robins, Senior Vice President Group Risk, AngloGold Ashanti*

I see this risk more as a financial stability risk and, while there is concern regarding African Bank, I believe that our financial systems are relatively stable. The greater concern is pressure caused by over-regulation and the changing financial services landscape with the advent of disintermediation by the likes of telco's.

### Failure of a Major Financial Mechanism or Institution

*Rob Newsome, Director, PricewaterhouseCoopers*

#### **Opinion of this topic as a risk to South Africa**

Very relevant.

#### **Most significant causes giving rise to this risk**

Greed of investment banks; not requiring banks to share in losses of the investments they manage; not ring-fencing retail banking from investment banking; another global banking failure impacting on South Africa and overexposure to one market segment (e.g. mining where commodity prices result in insolvency of mines – notably the emerging and BEE companies).

#### **Most significant consequence impacting South Africa**

Loss of confidence in the financial services industry; massive burden on the state for pensions and health service; supersonic tax rates and failed economy.

#### **Most effective risk response in managing this risk**

Constant vigilance by SARB and FSB on risk exposures; law requiring investment houses and their traders to share in the profits and losses of the portfolios they manage and executive remuneration to encourage long-term performance.

## 2.6. Severe Income Disparity

When compared to larger African countries, South Africa has the most developed democracy and has the biggest economy after Nigeria. In spite of this, it is among the most unequal societies. In a global ranking by Gini Coefficient, a measure of **income inequality**, the country comes off as one of the worst. According to the World Bank, South Africa's Gini Coefficient is the second worst index of poverty levels in the world and falls far behind the other BRIC countries (Brazil, Russia, India and China). Inequality has affected all facets of South African life due to systemically enforced divisions and institutionalised unequal development along racial lines. These facets range from education, health and employment to welfare, human settlement and access to infrastructure.

### Severe Income Disparity

*Terrance Booysen, Executive Director, CGF Research Institute*

#### **A largely divided and unequal society**

For centuries the country has been divided along numerous racial and economic lines and this was exacerbated through the apartheid era and policies. Starting with the early pioneers, South Africa's indigenous black inhabitants were almost entirely excluded from the benefits colonialism brought through development, infrastructure and administration. In more recent times, the lines of division are largely based upon economic lines where the gap between the rich and poor is widening at an exponential level. Figures show that the devastation of this travesty is felt mostly by women and children. While the income of black households may have increased by an average of 169% over the past ten years, it is a sixth of those of white households. According to the World Bank, South Africa's Gini Coefficient currently hovers around 65%; it is the second-worst index of poverty levels in the world and trails far behind the other BRIC countries. About a quarter of the population are unemployed and according to UNAIDS, about a third of South Africa's roughly 53 million people live on two dollars or less a day. Ironically, despite the early ANC slogan "A better life for all", South Africa has become one of the most unequal and divided societies in the world.

#### **Education**

The quality of the schooling or education system for most black children is sub-standard and critics believe schooling is in a deep crisis. Gauging from the recent Annual National Assessments (ANA), our children's performance is not on par – particularly as it pertains to maths and science – as compared to our much poorer neighbouring countries, which largely out-perform us. Clearly, with poor levels in literacy and numeracy, South Africa will continue to limp along with a shortage in the high-skill set levels we desperately require. Indeed, such a dilemma also exacerbates the country's poverty levels, including levels of inequality for development and growth. Sadly, twenty years into our democracy, only 35% of our junior black school children can read, with results ranging from 12% in Mpumalanga to a "high" 43% in the Western Cape. In contrast, most white school children enter Grade 12 and/or some form of tertiary education, while only 50% of black children get to Grade 12 and only 12% make it to university. Indeed, the unreliable provision of teaching and learning materials, including the Education Department's inability (or failure) to deliver on their core functions, as well as many inept teachers who fail to assume their responsibilities, does not bode well for the efficacy of the current educational system.

#### **Ailing public health system**

While a lot of progress has been made in South Africa's public health system, life expectancy is still unusually low and this is exacerbated by a multi-faceted disease burden, consisting of HIV/AIDS, tuberculosis and other diseases related to poor nutrition and exercise habits (e.g. obesity, hypertension). It is worth noting that six infectious diseases make up over 90% of all deaths. HIV/AIDS, tuberculosis, pneumonia, diarrhoeal diseases, measles and malaria are the infectious diseases that overwhelm health care systems and they are the biggest drivers of health care cost.

Interestingly, all these diseases are preventable. Compounding South Africa's healthcare problem are matters such as the high rate of violence associated with criminal and domestic violence, together with the country's high road accident incident rates. According to the World Bank's 2013 Global Atlas of the Health Work Force, South Africa's doctor-to-patient ratio is well behind the ratios of our BRIC counterparts. Currently, South Africa stands at 0,8:1 000 people, while Brazil (1,9:1 000) and Russia (4,3:1 000) outperform us, and India (0,7:1 000) faces similar difficulties. Other developing countries, like Egypt (2,8:1 000), Cuba (6,7:1 000) and Mexico (2,1:1 000), are also well ahead of South Africa. It is worth noting further that in 2009, 17% of our graduating medical professionals emigrated for better opportunities overseas. Expectedly, while there is a marked difference between the quality of the healthcare standards of the public versus private healthcare establishments, critics argue that the private healthcare systems do not optimally serve the country's needs, stating that the costs of private health care are prohibitively higher when compared to other developed countries and that private healthcare only benefits a relatively small segment of the population. It is suggested that the solution to address both systems may be found within an integrated national healthcare system, as proposed through the National Health Insurance. Finally, the public healthcare sector is described as a 'collapsing' system mostly due to insufficient locally skilled healthcare professionals, antiquated hospital equipment and systems, maladministration and corruption.

## Severe Income Disparity

*Michael Lalor, Director, Ernst & Young Africa Business Centre*

### **Opinion of this topic as a risk to South Africa**

This is arguably the greatest risk to our long-term economic and social stability. Despite the progress the country has made over the past 20 years, this possibly remains our single biggest challenge.

### **Most significant causes giving rise to this risk**

Clearly, there are long-term historical challenges relating to education, the nature of our economy, employment practices, spatial development, etc. that all contribute to structural inequality. At the same time, it is very difficult adequately to address these deep and inter-related structural issues in an environment of low economic growth both domestically and globally.

### **Most significant consequence impacting South Africa**

The consequence is likely to be a downward spiral of social unrest, political instability and economic stagnation.

### **Most effective risk response in managing this risk**

From a government perspective, there are clearly no quick fixes. It is most critical to get the balance right between keeping the economy stable and enhancing our competitiveness in a global context, while driving steady progress on structural economic transformation – in this regard, it is critical, for example, that BEE legislation is effectively implemented. For a private-sector organisation, what is required is greater cognisance of their broader role and responsibility in this society – not only to shareholders but to the broader communities in which we operate. Arguably the most effective risk response would be to consciously and actively embrace a philosophy of shared values at the heart of a business. The idea that you can pursue profit with purpose, that you can do business while having a direct positive economic impact on the communities in which you operate.

## 2.7. Governance Failure

South Africa celebrated its twentieth year of democracy in 2014. The African National Congress (ANC) is the longest surviving and strongest political party in South Africa and the inadequate democratic governance within its national committee could have a long-lasting negative affect on the country. There are significant challenges to democratic elements in the Constitution and the freedom of the media is a notable example. Arguably the greatest single **failure of governance** in South Africa is at local government level, as the lives of far too many citizens – especially those in small towns and rural areas – remain basically unchanged. In spite of the negative perception, South Africa's quality of governance on national level has ranked fourth in a list of 52 African countries, according to the Mo Ibrahim Foundation's Index of African Governance for 2014, the most comprehensive collection of data on African governance.

### Governance Failure

*Michael Judin, Senior Partner, Goldman Judin Inc. (special mention given to Timothy Meyer, Assistant Professor of Law, University of Georgia School of Law)*

#### **Opinion of this topic as a risk to South Africa**

My opinion of this topic as a risk to South Africa is that this topic is a risk to every country and that every country should be ever mindful of this ever-present risk.

#### **Most significant causes giving rise to this risk**

Some of the most significant causes giving rise to the risk that (a) states will oppose the imposition of substantive regulations and will use various processes as a way to try to block the adoption of substantive regulation; (b) policies adopted in one institution can lead to governance failures or higher costs to co-operation in other institutions.

#### **Most significant consequence impacting South Africa**

There are many significant consequences that will impact South Africa in the event of the risk of governance failure, which include the lack of meaningful international co-operation, trade sanctions, the inability to become members of international organisations and, in today's global world, to be denied access to important information.

#### **Most effective risk response in managing this risk**

When institutions are linked in some way, whether institutionally, at the bargaining table or functionally, there are several effective risk responses in managing the risk, which include (i) the fragmenting of institutions by giving them very narrow mandates that can reduce the risk and (ii) giving institutions the ability to promulgate binding legal rules.

#### **Anything else to consider when addressing this risk**

As Assistant Professor Meyer argues, the scholarly focus on increasing participation and deterring free riders has caused commentators to underestimate the ways in which common features of international legal institutions can undermine those institutions' ability to facilitate co-operation. International institutions can be designed in a number of ways that compound the risk that international co-operation will fail, which he refers to as "governance risk". He argues that there are features of institutional design that are intended to encourage participation in public goods institutions, but can create the risk of gridlock and governance failures. It is important for South Africa to focus on reducing gridlock and ensuring that governance failure does not occur.

# Governance Failure

*Terrance Booysen, Executive Director, CGF Research Institute*

## **Poor governance**

Among a number of issues that can be categorised as 'poor governance', the strongly held hold position over the ANC-led government by mainly Cosatu, NUMSA, AMCU and the SACP leaves little room for the government to be able to make its own and independent decisions for the best interests of the country as a whole. Statistics have shown the support of the ANC has been slowly eroding, and this may be largely due to a previously much larger ANC supporter base beginning to lose patience with failed promises made by the ANC, including countless accusations of corruption and nepotism.

In the second quarter of 2013, it was reported that as much as 67% of South African privately held businesses were putting off their investment decisions owing to their uncertainty about the future political direction of South Africa. A further 48% were considering investing offshore, while 27% were contemplating selling their businesses and 14% were seriously considering emigrating. The question today is, Has this position changed as divisions between the ANC-led government have surfaced with many trade unions, most notably the Congress of South African Trade Unions (Cosatu) and its affiliate the National Union of Metalworkers of SA (Numsa)? With the understanding that Cosatu and Numsa were notably the biggest supporters of Jacob Zuma's presidency, today they largely oppose the implementation of the government's National Development Plan (NDP). Indeed, this stance has dire implications for the future sustainability of South Africa, including President Zuma's existing government.

## **Leadership**

South Africa has in more recent times been described as a 'rudderless ship', drowning in bureaucracy and going nowhere fast. In fact, the country is reportedly regressing on many fronts as the government produces one national socio-economic development plan after the next, where each 'plan' essentially amounts to zero. Bureaucrats and so-called "tenderpreneurs" appear to be benefitting from the public purse, creating multi-millionaires through large-scale practices of nepotism and cronyism with seemingly no end in sight. Individuals who lack personal integrity and who have no moral and ethical qualities are no substitute for iconic leaders, such as the late President Nelson Mandela, who personally sacrificed portions of his government monthly salary as a demonstration against greed. Sadly, while many of the current government leaders talk glibly about "taking ownership of South Africa's future", few of them actually believe these statements, neither do they practice what they preach. As an example, South African citizens yet again recently learnt of more lavish government spending where they intend spending R1,4 billion on a luxurious new debating chamber, a banqueting hall (while millions of people are short of food) and specially appointed lounges for the use of foreign dignitaries.

## 2. 8. Profound Political and Social Instability

**Political and social instability** is especially those who do not yet have a presence in the country. South African privately held businesses are also putting off investment decisions due to uncertainty about the future political direction of the country. According to the CFA Institute 2014 Global Market Sentiment Survey, more than half of South African investment professionals see political instability as the biggest risk to the economy in the coming year. The fact that South Africa is currently experiencing and is likely to experience significant social unrest in the future also poses a serious investment risk. The Economist Intelligence Unit (EIU) measures the risk of social unrest in 150 countries around the world; it has classed South Africa as being under 'High Risk' of social unrest along with volatile countries such as Iran, Mexico, Tunisia and Pakistan.

### Profound Political and Social Instability

*Dr Steven Briers, Partner, KPMG*

*Good evening. Here is tonight's news at seven.*

*One million citizens remain gathered at the Union Buildings in Pretoria demanding the resignation of the government. Opposition militia have barricaded all entrance and exit roads around O.R. Tambo airport, effectively halting all flights. Protestors are gathered at municipal buildings in all provinces and looting has been reported in seven city centres. One group of rebels has captured a mine in the Northern Cape and numerous farmlands in Limpopo have been set ablaze by protesting farmworkers.*

*Martial law has been declared by the government. Curfews are in place across all major cities. International investors have pulled capital from the stock exchange, which saw a 15% drop in value at the close of trading today. The rand plunged in value to 22 rand to the US dollar.*

How likely is this scenario in 2015? Profound political and social instability and the effects of South Africa's structurally high unemployment have been identified as having a high likelihood by the Institute of Risk Management members.

Risk analysis techniques, such as identifying potential triggers, interpreting underlying exposures and trend monitoring, can help us to interpret the possibility of traumatic social unrest.

#### **Potential triggers:**

Globally, the historic causes of rebellion are usually a spike in food prices, the widening gulf between rich and poor, disdain for the poor by the ruling elite and are often ignited by a specific unjust incident, such as the shooting of an innocent protestor or the assassination of a prominent social figure.

Several of these underlying causes set the Arab Spring ablaze. Those societies had been characterised by dissatisfaction with government rule, wide gaps in income levels and political corruption. Contributing factors were economic decline, unemployment, widespread poverty and a large body of dissatisfied youth.

Most of these conditions prevail in South Africa now. Research data reveals that we face declining social cohesion. An international Corruption Perception Index tells us that the country is perceived to be twice as corrupt as it was 15 years ago. Public opinion survey data on satisfaction with delivery of basic services shows a strong decline over the past ten years.

### **Underlying risk exposures:**

One study states that more than five million members of the employable workforce are **unemployed**. This is the equivalent of Norway's entire population. The trend is worsening and the unemployed are spread evenly across all provinces.

Half of the unemployed are young – 15 to 24 years old. They are all but excluded from access to formal employment and must survive on short-term unemployment benefits. This exposure is compounded by the dissonance between labour, private and public sectors regarding ownership of the country's existing assets of production.

The demographic profile of the unemployed correlates somewhat with that of current EFF membership. A rising trend in opposition to the government is evident in several ways, such as support for the EFF, the emergence of AMCU, growth in DA vote numbers in the 2014 general election and Numsa's split from the ANC – and possibly from Cosatu.

There are a number of **contextual societal factors** that compound the unemployment and unrest risk scenario. Recent history indicates that some communities have a propensity for xenophobia, violence and inherent societal tension. Studies into the number of foreign residents here vary, but some state that there are two to four million illegal immigrants in South Africa. There are said to be up to three million Zimbabwean citizens resident here. Widespread unrest in Zimbabwe may have repercussions for us.

**Economic variables** shape the risks associated with structural unemployment. Data suggests that we are not betting on ourselves. There is a stagnant trend in R&D spending and patent registrations and there is a high dropout rate at schools. Only a small percentage of South Africans have access to computers, the internet and broadband.

We have a falling position in global competitiveness indices and our levels of Foreign Direct Investment (FDI) are low. Gross fixed capital formation is stagnant. The country faces low GDP growth and a persistent government budget deficit, increasing the debt to GDP %, a widening current account deficit, inflation above the 6% target and increasing. Food inflation is currently above 9% and increasing. All of these factors have a bearing on social unrest risks.

### **Timing:**

Research tells us that the majority of the youth do not vote in municipal elections, but could the 2016 municipal elections be a pivot for expressing dissatisfaction with social delivery? What if the EFF wins seats and governs municipalities? How will that play out? What kind of opposition are they likely to face? Is an ANC split likely under such circumstances?

It is hard to foresee how victory for any opposition party or rebel group would create new jobs without considerable investment in the country's intrinsic assets of wealth generation, such as mining, tourism and innovation.

There are, of course, a number of existing mitigations to the risks outlined above, such as job creation initiatives, the national development plan and loyalty to the ruling political party.

But history has taught us that desperate people do not wait for general elections to express their anger, fury and rage, and we may face a dreadful wake-up call if we remain oblivious to this increasing risk.

## 2.9. Fiscal Crisis in Key Economies

Following its first democratic elections in 1994, it became evident that the concerns about the management of **South Africa's fiscal policy** were completely unfounded. The country's improvement in fiscal discipline allowed government's gross domestic debt to ease from almost 50% of GDP in 1995/1996 to a low of 23,1% of GDP in 2008/2009. South Africa entered the 2008 economic crisis in a sound budgetary position due to a solid record of fiscal prudence, enabling an aggressive countercyclical fiscal and monetary policy response. The decision saw the budget deficit expand radically to over 6% of GDP and it has not recovered to the previous level due to the combination of high levels of consumption spending coupled with sluggish economic growth.

## Fiscal Crisis in Key Economies

*Mark Robins, Senior Vice President Group Risk, AngloGold Ashanti*

Global markets risk remains a big concern; the big issue for South Africa is being driven by global markets. I think that the bigger concern for us is not being drawn along with the global economies when they do improve, as a result of some of the other inter-connected risks including political, infrastructure etc.

## Fiscal Crisis in Key Economies

*Eleni Albanis and Malebo Phala, Nedbank ERM; Cruywagen-IRMSA Risk Foundation Interns selected for an exchange programme to the University of Illinois in 2014*

### **In your view, what would be the most significant consequence for South Africa?**

The effects of a fiscal crisis is far-reaching and goes beyond the risks we have already identified and affects other areas, such as weakened country trade, depreciating currency, policy uncertainty, a downshift in economic output, consumption and financial wealth. This is where the domino effect is highlighted in the case of a fiscal crisis, whether its initial effects are on the identified risks in this report or others. The effects on the risks influenced will somehow affect another risk and this is when the dominoes start falling – without remorse. Ultimately, a fiscal crisis, like that of 2008/9, is the main switch to activate all other risks and negative effects in South Africa.

Global economic conditions have had a variety of effects on our economy. According to The National Treasury, South Africa's fiscal agility has been compromised by rising global interest rates. Our trading terms have been impaired and commodity prices are set to impact the revenue prospects of both the public and private sectors. The depreciation of the rand will impact earnings in the long term and the economy's ability to grow under the tide of slower spending. Governmental budget constraints will continue to place more pressure on employers and society to meet the societal demands that will appear. Business could potentially experience an array of challenges specific to their industries including a decrease in the demand for their products both locally and globally.

### **What do you believe is the most effective risk response in terms of managing this risk?**

The government's NDP contains a thoughtful and broad blueprint for addressing several of the constraints, notably in infrastructure, education, healthcare and public service delivery. As the NDP says: "South Africa needs to fix the future, starting today." Failure to address the structural problems will weaken growth prospects and hamper efforts to reduce unemployment and inequality. It could also trigger a decline of confidence and a pullback of capital flows. In the long run, failure to deliver inclusive growth poses a risk to social stability. Structural reforms are the key to unlock South Africa's potential.

Many of the most successful initiatives that regulators have launched have incorporated the use of stress testing and scenario analysis to help financial institutions understand how much capital they need in order to guard against future crisis events. These approaches are a useful complement to the internal models that currently lie at the heart of financial regulation. It is recommended that regulators take these exercises further and make them a regular part of the supervisory process.

### **Is there anything else you feel should be considered when addressing the risk?**

Regulators cannot succeed in creating a risk-free financial system; future crises will occur. Any attempt to eliminate this natural tide is neither achievable nor desirable. Since the end of apartheid, South Africa has made great strides in economic and social development. The imperative now is to generate the growth necessary to create the numerous jobs needed to absorb new entrants into the labour force. The reform process will require political courage, but it is the way to bring the most benefits to the entire population and continue building an inclusive country that can be a proud example to the international community.

## 2.10. Escalation of Economic and Resource Nationalisation

South Africa favours **economic nationalism** over nationalisation. Both perspectives prioritise the local economy and national development and punt state intervention. However, nationalism contrasts with nationalisation in that it is supportive of private capital. **Resource nationalism** is a balancing act between promoting investment and maximising in-country benefits. Its elements include increases in taxes and royalties, more costly and demanding conditions and social investment requirements and restrictions on foreign ownership and requirements for indigenous shareholdings. Ernst & Young's survey of business risk in mining clearly demonstrates the growing concerns about resource nationalism as it has consistently been a top five global mining risk in the last three years. The South African government currently promotes beneficiation in the country, with the intention of creating jobs in the mining industry and maximising the use of mineral deposits. Mining companies with operations in South Africa are constantly involved in discussions about how beneficiation could ensure that the country benefits directly from its resources.

### Escalation of Economic and Resource Nationalisation

*Mark Robins, Senior Vice President Group Risk, AngloGold Ashanti*

#### **Opinion of this topic as a risk to South Africa**

This is a very real risk to South Africa – although outright nationalism is unlikely – nationalism by stealth under many guises is increasingly likely as the State cannot adequately fund expenditure to meet increasing social demands from a declining revenue base.

#### **Most significant causes giving rise to this risk**

Political agendas, increasingly social demands, inability to meet expenditure demands.

#### **Most significant consequence impacting South Africa**

Failed state

#### **Most effective risk response in managing this risk**

Ensuring that State expenditure is spent wisely, that the economy grows and ensuring that the electorate understands the risk.

### Escalation of Economic and Resource Nationalisation

*Rob Newsome, Director, PricewaterhouseCoopers*

#### **Opinion of this topic as a risk to South Africa**

This is very relevant to South Africa.

#### **Most significant causes giving rise to this risk**

Corruption; political capital and withdrawal of international mining companies.

#### **Most significant consequence impacting South Africa**

South Africa is a resource/commodity dependent economy and if these resources are nationalised, we will become a failed state quicker than for any of the other risks. Much of the economy supports the mines and farms and without mining and agriculture South Africa has little on which the economy can be based.

#### **Most effective risk response in managing this risk**

Make South Africa investor friendly for internal and external investment. Business and civil society have to use every means possible to enforce accountability and the rule of law. The electorate needs to express their real views in the ballot box. Interesting will be the nationalisation of the fracking oils if exploited as they offer some redemption to the risk and economy in general.

## 2.11. Mismatched Urbanisation

**South African urban areas** are extremely inequitable and inefficient due to decades of apartheid mismanagement. Cities and towns generate the majority of the country's GDP, which infers that better performing urban areas will not only enhance South Africa's global competitiveness but are also paramount for the alleviation of poverty and the creation of a more equitable society. Inequality has also been the driver for local government and city municipalities being put under the spotlight in recent years, due to a wave of service delivery protests, which brought about clashes between protesting residents and law enforcement authorities.

### Mismatched Urbanisation

*Terrance Booysen, Executive Director, CGF Research Institute*

#### **Inadequate and poorly located infrastructure**

While optimists may argue that South Africa's infrastructure is still very good as compared to other SADC regions, in truth many citizens feel cheated by the government and believe that after two decades of democracy, the standards of infrastructure – as compared to many previous 'whites-only' establishments and residential suburbs – are still largely skewed in favour of white people. This has exacerbated the massive divisions between the so-called rich and poor, as well as opening past racial and political tensions. Indeed, the lack of basic services forms a great part of this growing problem and is now not only a question of many people not getting access to some, or all, of these basic services, but many of the older systems are also beginning to fail too. These growing problems are also part of the reason for limited social inclusion and retarded economic growth.

#### **Poor performance of the failing public service**

Many local municipal authorities will, as an example, deny any of their own wrongdoing in respect of poor public service management, which has become daily news across most of South Africa's media platforms. While the vast majority of municipalities are essentially defunct and consistently receive qualified audits, municipal authorities – who have approximately R320 billion budget under their control – blame poor performance and service delivery on ageing systems and/or any other convenient excuses for the country's current public service delivery woes. In truth, many of the problems can be attributed to the incompetent people who head the public services and who lack the most basic managerial, financial and technical skills. They refuse to be held accountable for any forms of mismanagement or substandard performance. Indeed, the problems in rural and/or poorer communities are further exacerbated by the poorer municipalities being totally dependent upon government grants and loans, as they are not able to draw on a substantial tax base from affluent residents. In a recent report, the Minister of Co-operative Governance, Pravin Gordhan, stated that out of the 278 chief financial officers at municipalities, 170 were not qualified for their position. The Minister further said that a third of the existing 278 municipalities were dysfunctional. That being said, in many instances the public have voiced their outrage through violent protests, damaging public and private property and even leading to human fatalities. In respect of the business sectors sentiment, research from the fourth quarter of 2013 showed that 59% of business executives were negatively impacted by poor government service delivery; these statistics had more than doubled when compared to a previous survey just six months earlier. Eighty-one percent of business executives stated reliable utilities as a core issue, such as water and electricity supply (Q1:2013 - 41%), while 69% mentioned road concerns including potholes and traffic light issues (Q1:2013 - 21%) and 58% cited billing issues (up from 23% in Q1 this year). Indeed, considering the latest verbal, ANC-led political media attacks upon the Public Protector in respect of the Nkandla saga, among many other corruption-related matters, these actions do not bode well for raising the standards of sound governance. Expectedly, any form of government red tape and bureaucracy just makes matters worse and most employees in the public sector have become masters of using this to their advantage to avoid personal liability.

## Mismanaged Urbanisation

*Rob Newsome, Director, PricewaterhouseCoopers*

### **Opinion of this topic as a risk to South Africa**

This is very relevant to the country at this stage.

### **Most significant causes giving rise to this risk**

Collapse of rural economy; farmers chased off commercial farms; perceived wealth of urban areas; lack of services in rural areas – health and education; mining collapse resulting in urban communities relocating.

### **Most significant consequence impacting South Africa**

Profound political and social instability; lack of rule of law; massive crime surge (not necessarily organised crime); crumbling urban area; disease and plague (Ebola type); failed health care and capital flight.

### **Most effective risk response in managing this risk**

Creation of strong and accountable local government capable of influencing national and provincial government not to abdicate their responsibilities and be held accountable. Increased investment in agriculture to improve the economy of rural areas. Security of land tenure and safety of farmers. Spending on housing development in areas that can absorb the urbanisation.

## 2.12. Massive Incident of Data Fraud / Theft

It is estimated that US\$3,5 trillion is lost each year to global **fraud and financial crimes**. Robert Griffin, Vice President of Counter Fraud Solutions at IBM, anticipates that money launderers, organised crime networks and cyber thieves are behind 80% of all cybercrime. South African businesses are not isolated from the increasingly hyper-connected local and global society that creates and shares more information than ever before. The rise in the usage of mobile devices, social networks and cloud computing exacerbates the situation. Fraudsters are also targeting big data in order to hide their tracks in an information smokescreen.

## Massive Incident of Data Fraud / Theft

*Andrew Allison, Group Chief Operating Officer, Quirk*

### **Opinion of this topic as a risk to South Africa**

Both of these risks (data fraud and cyber-attacks) are increasing in South Africa, particularly due to the fact that the origin of these attacks is of an international nature. While strong information security industries have developed in response to the risk prevalent in developed and first-world markets, South Africa lags quite far behind in this respect, both on the supply and demand side of the equation. Cyber-liability and similar insurance products are very new in the country (or are imported) and are very expensive and onerous in their requirements, meaning that only big corporates are able to invest in high-quality systems and personnel (the latter also being seriously lacking in South Africa).

Both of these risks are serious and need to be treated as such, particularly for organisations that process large volumes of personal information and especially for those that process financial transactions.

### **Most significant causes giving rise to this risk**

Increased volumes and scope of online transactions and communications, involving the sharing of personal information. As e-commerce and digital financial transactions become more and more commonplace in South Africa, the country will be increasingly attractive as a target for attacks and we will see more and more incidents.

### **Most significant consequence impacting South Africa**

A global perception of South Africa as a weak player in the information security space would arguably increase the threat of attacks looking to exploit this weakness, which would in turn stunt the further development of the online commercial environment by undermining investor (local and foreign) and consumer confidence.

### **Most effective risk response in managing this risk**

A proactive approach, which aims to limit the processing of information to the absolute minimum required for business, would be a very effective first port of call (this much is required for POPI and PCI compliance in any event). Following from that, the implementation of a robust policy and security governance infrastructure (relating to information security, physical security and confidentiality), combined with strict controls and regular reviews is critical. Ideally, a data security specialist should be employed by organisations who can afford one, and those who cannot, should out-source this function. This needs to be supported by an extensive programme of educating staff and stakeholders about the need for increased security, compliance and vigilance. Ultimately, a responsible, compliant and vigilant culture should be fostered in organisations that are particularly exposed – this will require full, demonstrable support from the CEO and will require the implementation of a multi-layered risk management strategy. Appropriate insurance is also strongly advisable, as is compliance with some form of third-party security governance standard (e.g. ISO 27001; Sarbanes Oxley).

## Massive Incident of Data Fraud / Theft

*Professor Adrie Stander, Senior Information Systems Lecturer, University of Cape Town*

This is a relatively high risk area. Sensitive data in many areas are at risk from attacks with a criminal or hacktivist objective. This does not only apply to business, but also to the government and any other organisation dealing with data where privacy is a concern.

The defenders of these systems are in a difficult position, as they have to protect many different access routes, while the attackers only have to find one vulnerability. A continuous flood of attacks is launched from many different parts of the world and, while most successful incidents are at a relatively low level, the likelihood of an incident affecting a large amount of data or money is relatively high. It is simply a question of time before it happens.

It is very difficult to measure the impact of cyber-attacks, as much of the value is intangible, such as reputation and the effect on stock prices. It is also difficult to determine the full range of potential vulnerabilities such as outsourcing, supply chain and other factors. In this case, the damage is more likely to affect a particular organisation than society in general. Large-scale financial losses can however have a far-reaching impact, as investors might not necessarily be protected from the effect of criminal incidents.

Attacks on a particular organisation do not have to be successful to have a serious effect, but since most businesses are linked to other services, such as credit card clearance or other payment systems, the loss of data can still happen even if the organisation itself is well protected. Risk assessment should therefore also include related services.

While it is not often seen, it is possible that an incident of this nature can lead to the total destruction of a business. This is particularly true for a business that does not have the financial means to survive a total loss of trust by clients. Even adequate financial means may not be enough to survive such an incident.

No organisation is immune to such an attack. What is often seen is that organisations rely heavily on technology to prevent such attacks and do not prepare beyond that. There should however be an emergency plan in place to deal with a failure. Such a plan should not only include technical responses to a breach, but also a public relations response that can be executed immediately. A well-executed plan of this nature can go a long way toward diminishing the negative effects of such an incident.



## Part 3: South African Risk Assessment Methodology

The groundwork for the report was carried out by the IRMSA Risk Intelligence Committee, commencing early in 2014. Initially, IRMSA members were asked to give feedback on what they felt South Africa's top risks were through online surveys, but the results lacked focus and structure. The Risk Intelligence Committee decided to change the approach by starting broadly, followed by a process of continual refinement, until the results were directly relevant to the South African context. The WEF Global Risks report for 2014 was used as the broad base for this endeavour considering that the country is exposed to these cross-border or cross-region risks in varying degrees. The WEF categorisation of economic, environmental, geopolitical, societal and technological risks provided a useful framework for the objective of ensuring a robust and all-encompassing risk identification process. A series of workshops and surveys were carried out with South Africa's top risk management professionals utilising a variety of platforms during various stages of the risk assessment. A high-level description of the risk assessment methodology is provided below.

### A) South African Risk Identification Surveys: Delegate Participation at IRMSA Risk Labs

#### **WEF Global Risks Relevance**

Delegates that attended the Johannesburg and Cape Town Risk Labs in July and August respectively worked with the thirty one WEF global risks for 2014. The risks were grouped into their relevant categories and loaded onto a "ThinkTank" survey tool. Thereafter, delegates were asked to form teams and to rate the global risks in terms of their anticipated likelihood and consequence in the South African context using a standard 1-to-5 rating scale. The relevance of each global risk to South Africa was represented by one of the three boxes below. This exercise was facilitated by members of the Risk Intelligence Committee.

## B) South African Risk Prioritisation Survey: Approach

250 risk management fraternity respondents participated in an online survey where they were asked to prioritise the top 15 or 16 South African risks in order of severity of likelihood and consequence following the risk identification session carried out at the Risk Labs. A drag-and-drop mechanism was used to rank the country's top risks over the next two years. The top risks in each rating category, prior to the survey ranking, are presented in the tables below.

Antibiotic-resistant bacteria
Escalation in large-scale cyber attacks
Failure of a major financial mechanism or institution
Failure of climate change mitigation and adaption
Failure/shortfall of critical infrastructure
Food crises
Increasing corruption
Major escalation in organised crime and illicit trade
Massive incident of data fraud/theft
Mismanaged urbanisation
Oil-price shock to the global economy
Profound political and social instability
Severe income disparity
Structurally high unemployment/underemployment
Water crisis

Table 1: Top South African risks by Likelihood before Prioritisation

Breakdown of critical information infrastructure and networks
Escalation in large-scale cyber attacks
Escalation of economic and resource nationalisation
Failure of a major financial mechanism or institution
Failure/shortfall of critical infrastructure
Fiscal crisis in key economies
Food crises
Governance failure
Greater incidence of natural catastrophes and natural catastrophes
Increasing corruption
Liquidity crises
Mismanaged urbanisation
Oil-price shock to the global economy
Severe income disparity
Structurally high unemployment/underemployment
Water crisis

Table 2: Top South African risks by Consequence before Prioritisation

## Profile of Survey Respondents

Approximately 80% of the survey respondents (refer to Figure 7) interact with their respective organisation's risk management programmes at least once a week; the majority of that group do so on a daily basis. Not only are the respondents well-qualified considering that they actively manage these risks in their own organisations, but they are also diverse in that they represent every major industry within the public and private sectors.

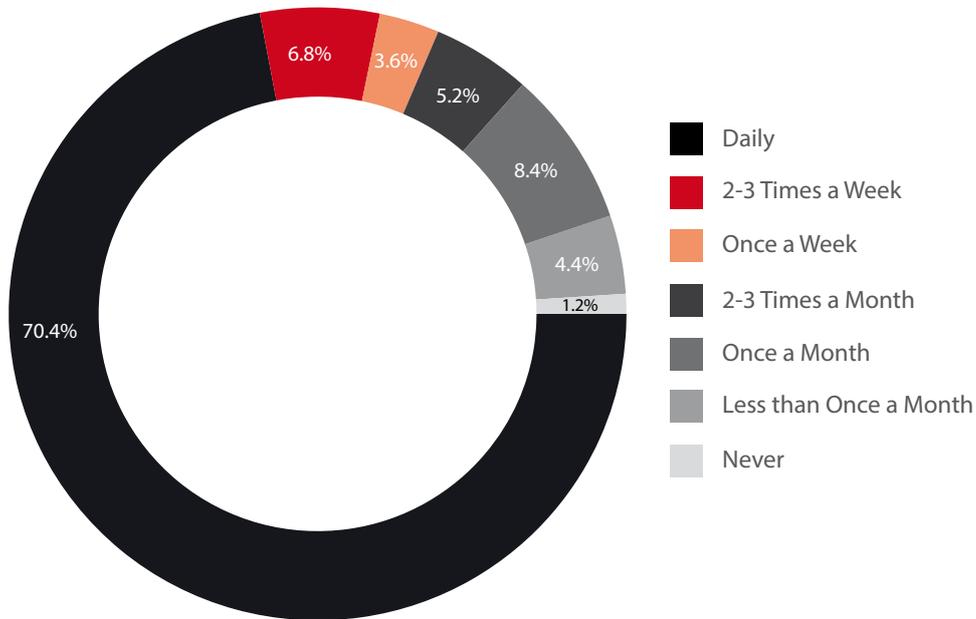


Figure 7: Level of interaction that respondents have with their organisation's risk management programmes

## Profile of all Participants

A total of 620 participants, including the survey respondents and the Risk Lab attendees, contributed toward the identification and prioritisation of the risks that are relevant in the South African context. The images below indicate how the participants are broken down into race, gender, sector (public and private) and industry.

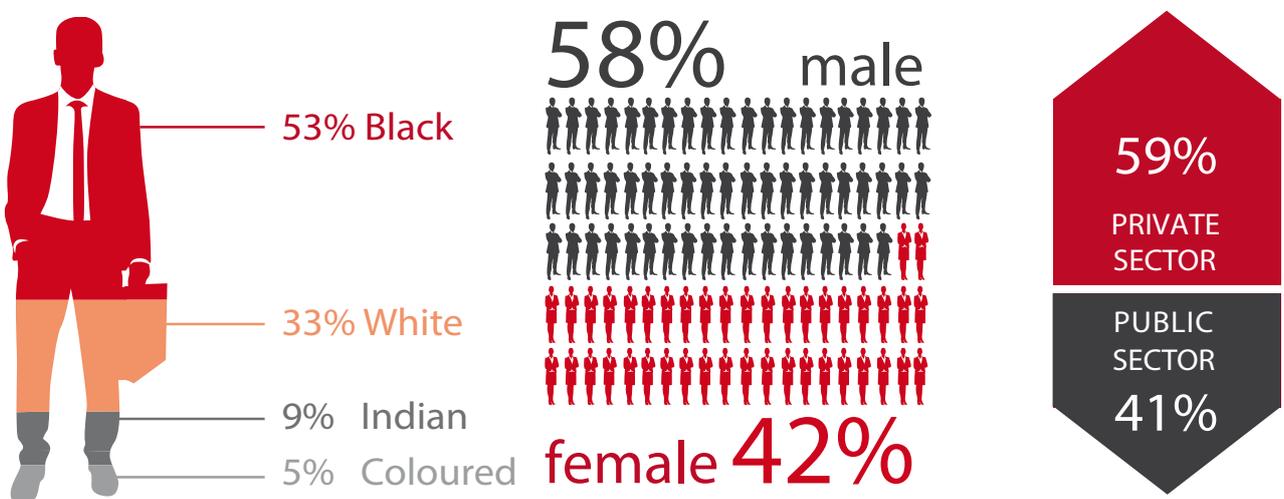


Figure 8: Participant distribution by race, gender and sector

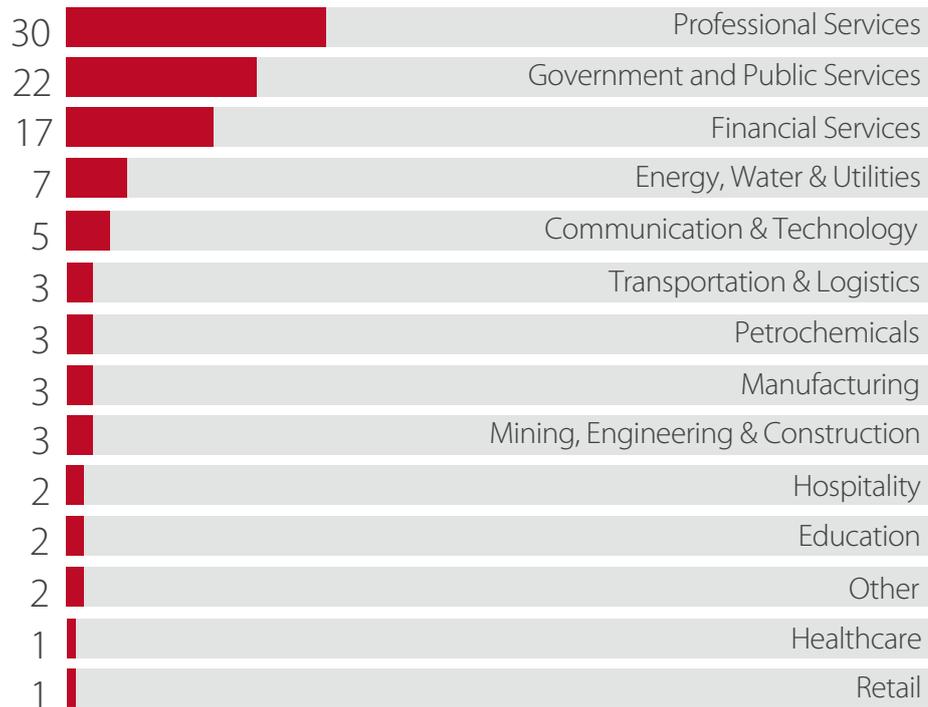


Figure 9: Level of interaction that respondents have with their organisation's risk management programmes

## C) Identifying the Risks that are missing in the South African Context: Delegate Participation at Annual IRMSA Conference

Delegates that attended the annual IRMSA Risk Conference that took place in September 2014 were asked to list the top three risks that could affect their organisations and the country at large. While a large number of risks were identified, many proved to be subsets of the broader terminology used to describe the risks in the WEF report. The remaining risks that were identified most often, and unrelated to the WEF risks, were presented in order to understand the unique nature of the South African risk landscape.

# Part 4: Acknowledgements and Project Team

A project like the IRMSA Risk Report cannot be accomplished by one individual, but it is rather a collaborative effort by a team of enthusiastic and committed contributors. IRMSA would particularly like to thank its membership, the IRMSA Risk Intelligence Committee, the IRMSA Executive Committee and the subject matter experts who lent their expertise.

## Risk Intelligence Committee

We would like to thank those members on the Risk Intelligence Committee who gave considerable time to the project.



**Christopher Palm**  
Risk Report Project Lead



**Michael Ferendinos**  
Writer



**Madeline Black**



**Bronwyn Blyth**



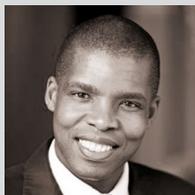
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**Nicola Loubser**



**Boitumelo Mokgatle**



**Alicia Swart**

## 2014 Cruywagen-IRMSA Risk Foundation Interns



**Eleni Albanis**



**Malebo Phala**

## Subject Matter Experts



### Andrew Allison

Andrew Allison joined Quirk in 2010 as Chief Financial Officer and has acted as Chief Operating Officer since March 2014. He studied Business Science and Law at UCT and spent seven years in legal practice in Johannesburg and London, specialising in international mergers and acquisitions, corporate restructuring and company law. He holds a Master's Degree in Tax Law and is a member of the South African Institute of Tax Practitioners.

While he is primarily responsible for Quirk's operational health, he also manages its broader governance, risk and legal functions, and has driven various restructuring initiatives within the Quirk Group to streamline its rapid growth in recent years. In addition to his duties at Quirk, Andrew is a director of the IAB South Africa, where he heads the Regulatory and Treasury functions.



### Terry Booysen

In 2004, Terry co-founded CGF Research Institute ('CGF'), where he is an Executive Director and majority shareholder. Terry regularly speaks to business and government leadership on GRC (Governance, Risk & Compliance) issues covering the corporate, SME and public sectors, and he has published numerous GRC-related articles.

Terry previously held senior managerial and executive positions in the banking industry. He also served in an executive position at IBM SA covering thought leadership in the financial services sector, before becoming a consultant, specialising in smartcard banking, e-business and the corporate governance arenas.



### Steven Briers

Steven Briers is a partner of KPMG, based in Johannesburg, and is a member of the firm's global working groups for enterprise risk management and governance, risk and compliance. He has worked in various risk management disciplines during his career, including insurance, risk finance, loss prevention, enterprise risk management and corporate governance and has performed risk assignments in over 30 countries.



### Mark Bussin

Mark is the Chairperson of 21st Century Pay Solutions Group, a specialist reward consultancy. He is a Commissioner in the Presidency as a member of the Independent Commission for the Remuneration of Public Office Bearers and is a Chairperson and member of various boards and remuneration committees. Mark holds a Doctorate in Commerce and has published or presented over 200 articles and papers. Mark has been a guest lecturer at various academic institutions and supervises Master's and Doctoral theses. He is the current President of the South African Reward Association and is a Global Reward Practitioner (GRP) tutor.

## Subject Matter Experts



### Michael Judin

Michael Judin obtained his law degree at the University of the Witwatersrand and commenced practice in Johannesburg at the end of 1969. He is the senior partner of the Johannesburg-based law firm, Goldman Judin Inc. He has delivered lectures and addresses and has authored several published articles on various topics nationally and internationally.

Michael was the convenor of the sub-Committee that wrote the chapter dealing with negotiation, mediation and arbitration as contained in King III, South Africa's Corporate Governance Report and Code.



### Michael Lalor

Michael is a partner in the Europe, Middle East, India and Africa (EMEIA) practice of Ernst & Young and is responsible for the firm's Africa Business Center, where his responsibilities include thought leadership initiatives on Africa, such as the flagship Africa Attractiveness publication. He has a background in political science, economics and literary studies. Michael's areas of focus include strategy and business development. He has assisted clients across a range of sectors in projects ranging from business concept feasibility studies to developing processes for innovation to developing blue-sky growth strategies.



### Rob Newsome

Rob leads PwC's Risk Assurance and Governance Risk and Compliance services in Nigeria. Prior to joining the Nigerian firm, Rob served as the client priority leader of PwC's African Risk section within the firm's Advisory practice. Rob has previously been a senior university lecturer in accounting, a partner with an accounting firm, Head of Internal Audit at Eskom, Southern African Lead Partner Corporate Governance at KPMG, General Manager Group Internal Audit at MTN and Senior Executive Partner Business Risk Services Ernst & Young.



### Mark Robins

Mark Robins has twenty-nine years' experience in civil and geotechnical engineering and risk management, predominantly in the heavy civil and mining sectors and is currently working for AngloGold Ashanti as SVP: Group Risk accountable for group risk management globally.

Mark is a Chartered and Professional Engineer registered with Engineering Council (UK) and ECSA respectively. He has a BSc in Civil Engineering (University of Surrey) and MSc in Geotechnical and Materials Engineering (University of the Witwatersrand). Mark's key experience includes enterprise risk management, geotechnical and environmental engineering.

## Subject Matter Experts



### Hannes Roos

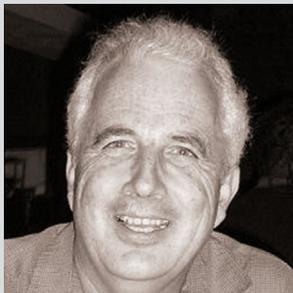
Hannes Roos has been the Director of Operations and Maintenance Ekurhuleni Metropolitan Municipality since 2000, and is the former president of the Association of Municipal Electricity Undertakings (AMEU).



### Nico Snyman

Nico is the Managing Director of Crest Advisory Africa (Pty) Ltd. In 2007, he was appointed as the Executive of Security and Risk Management for Bombela Civil Joint Venture and Bombela Operating Company, where he established the Security and Risk Management frameworks for the construction and operation phases of the Gautrain. He was also the initiator and Project Manager for the development and physical implementation of the legislation governing the Gautrain Security and Risk environments. Prior to this, Nico served in the South African Police Service for over 11 years in the Elite Clandestine Operations and was instrumental in the transformation of the policing model.

Nico holds a Master's Degree in Business Administration.



### Andrie Stander

Prof Andrie Stander has more than 35 years' experience in the IT field. He is a senior lecturer in Information Systems at the University of Cape Town, where he specialises in Digital Forensics and was responsible for the first Postgraduate Program in Digital Forensics in Africa. He lectures regularly at universities in Europe, has published widely on this topic and has spoken at many conferences. He also has experience of many Digital Forensic investigations, including some very large fraud cases.



### Leon van den Berg

Leon was employed as a detective in the SAPS, attaining the rank of Lieutenant. He obtained a BProc degree through UNISA. On leaving the SAPS, Leon was appointed as Senior Forensic Investigator in Eskom's Forensic Investigations Department.

In 2003, Leon was appointed as national chairperson of the Non-Ferrous Theft Combating Committee. Leon is currently a Forensic Investigations Consultant, advising clients on combating theft of non-ferrous metals, as well as on other crimes perpetrated by organised crime syndicates.

## Subject Matter Experts



### Clare van Zwieten

Clare van Zwieten is managing editor at EE Publishers (Pty) Ltd. Clare has a BA degree in African Politics and African History, as well as an Honours degree in Journalism from the University of the Witwatersrand.



### Mark Victor

Mark is a Director at Deloitte in Risk Advisory, an integrated team of Governance, Risk Management, Regulatory Compliance and Control experts. Mark has experience in corporate governance, regulatory and risk consulting. Mark qualified as a Chartered Accountant in 1995 and has extensive experience in providing co-sourced Internal Audit services to Internal Audit functions across a wide range of industries as well as regulatory, risk management, governance and compliance consulting services.



### Prof Basie von Solms

Prof SH (Basie) von Solms is a Research Professor in the Academy for Computer Science and Software Engineering at the University of Johannesburg in Johannesburg, South Africa. He is also the Director of the Centre for Cyber Security at the University of Johannesburg.

Prof von Solms specialises in research and consultancy in the area of Information and Cyber Security, Critical Information Infrastructure Protection, Cyber Crime and other related cyber aspects. He is a Fellow of the Computer Society of South Africa and a Fellow of the British Computer Society and a Chartered Information Technology Professional (CITP).



### Chris Yelland

Chris Yelland obtained a Bachelor of Science degree in electrical engineering from the University of Natal in 1976, and he is currently the managing director of EE Publishers (Pty) Ltd, the publisher of EngineerIT, Energize, Vector and PositionIT magazines.



IRMSA

# SOUTH AFRICA RISKS REPORT 2015

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