



IRMSA Risk Report South Africa Risks **2016**

Second Edition

01

Participation from Industry

Male

56%

44%

Female



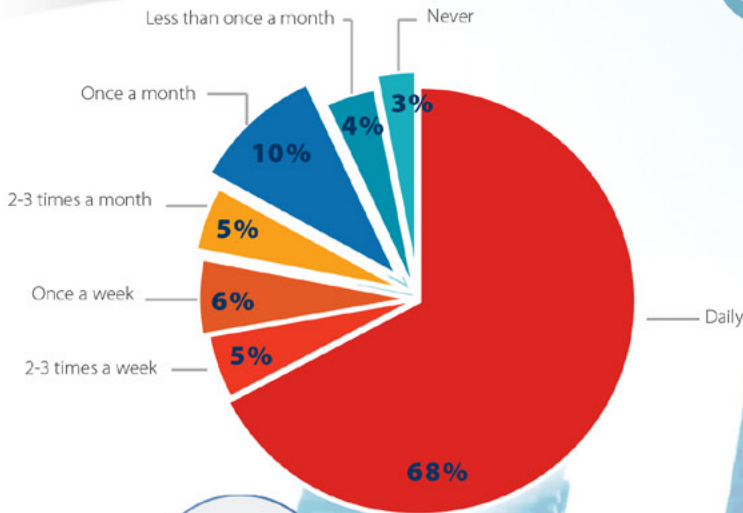
1007 PARTICIPANTS

1 Online survey

- 1 Survey with other professional bodies
- 1 IRMSA Conference - Interactive Session
- 1 Risk Lab Workshop, JHB - Interactive Session
- 1 Risk Lab Workshop, CPT - Interactive Session
- 1 Scenario Workshop

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

02



Private Sector

58%

Public Sector

42%

Top 10 South African Country Level Risks

03



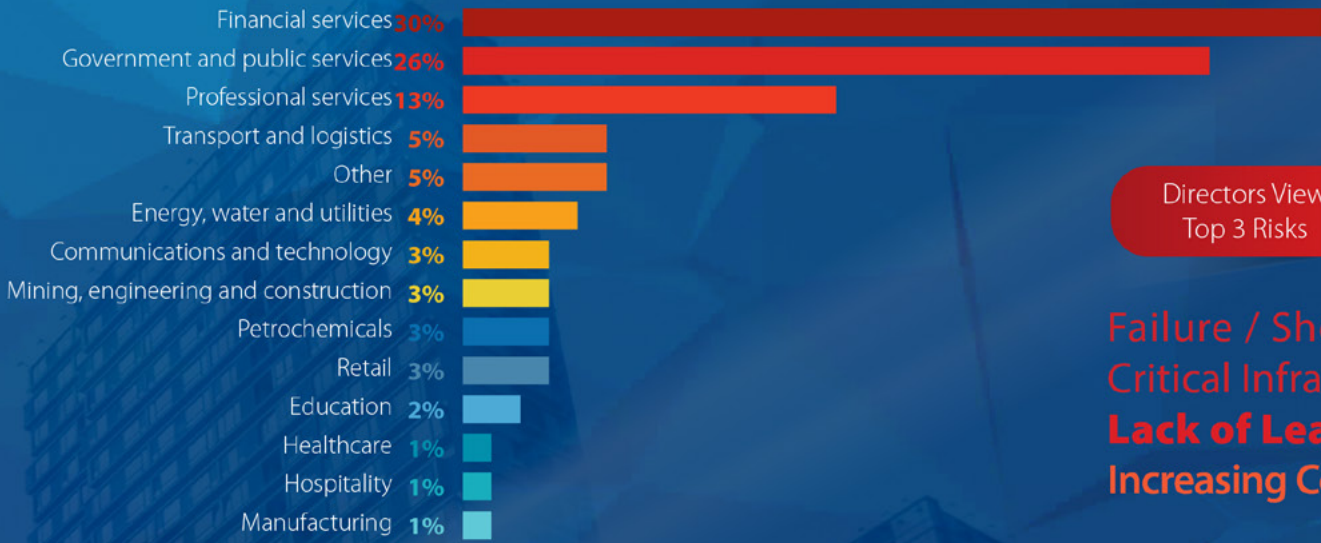
04

Top 10 South African Industry Level Risks



05

Industry



Directors View
Top 3 Risks

07

**Failure / Shortfall of
Critical Infrastructure
Lack of Leadership
Increasing Corruption**

06

Top 3 Industry Risks

Financial Services

1. Regulatory / Legislative Changes
2. Insufficient Electricity Supply
3. Massive Incident of Data Fraud/Theft

Consulting & Professional Services

1. Insufficient Electricity Supply
2. Increasing Corruption
3. Regulatory / Legislative Changes

Government & Public Services

1. Increasing Corruption
2. Insufficient Electricity Supply
3. Lack of Leadership

Energy, Water and Utilities

1. Water Crisis
2. Increasing Strike Action
3. Skills Shortage

Transport and Logistics

1. Regulatory / Legislative Changes
2. Insufficient Electricity Supply
3. Government Policy Changes

08

What does the IRMSA
Risk Intelligence
Committee do?



Live Tracking of South Africa's most likely Projected Developmental Scenario Linked to NDP Implementation

A Year to Year Comparison between the Current and Previous Year's Top Risks

Risk Readiness Assessment

Full Risk Descriptions

Ongoing Monitoring of Risks Throughout the Year

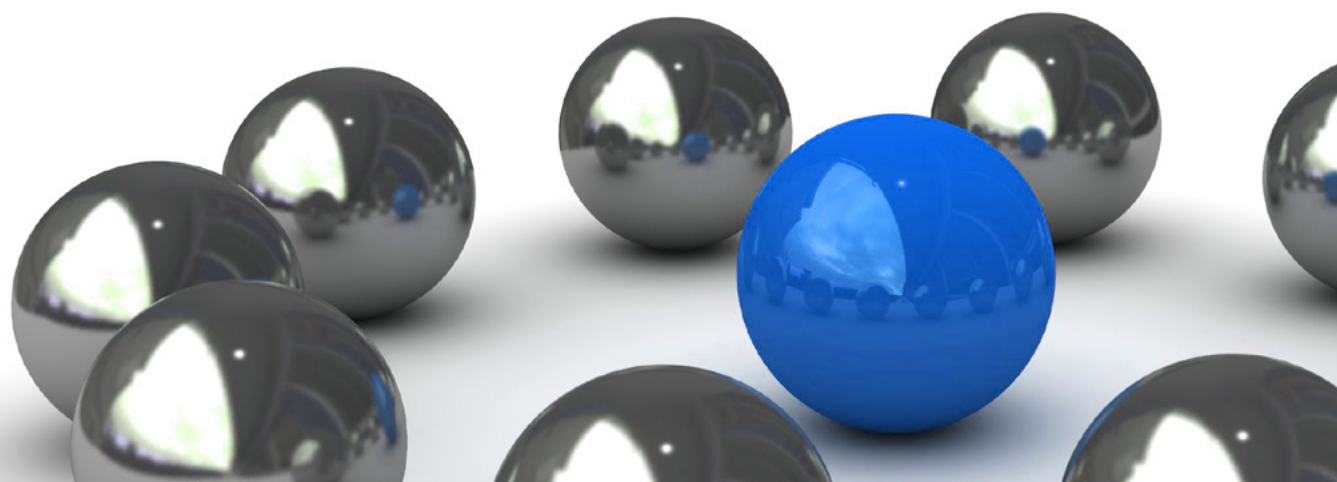


Next milestones
for this report

09

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"The report is thought provoking and should encourage one to explore the risks facing your own organisations from different points of view."

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

Preface

After the first South Africa Risks Report was released by The Institute of Risk Management South Africa (IRMSA) at the beginning of 2015, the feedback received from members of the Institute, the Risk Management and business communities in South Africa and internationally, has been extremely positive. With this feedback in mind the IRMSA Risk Intelligence Committee's decision to make this an annual report was validated.

The Risk Intelligence Committee's purpose at IRMSA is to identify and address issues which are pertinent to our members in the Risk Management Industry, and to assist the direction of these professionals with strong thought leadership. In order for this year's South Africa Risks Report to add even more value, the Committee has taken a closer view of risks from an industry point of view and from the view of South Africa achieving the National Development Plan objectives. The report is intended to be thought - provoking and should encourage the reader to explore the risks facing his or her own organisation from different points of view.

What has been very clear from the results of our process this year, is the strong interdependencies of the risks that have been identified in the South African business landscape and how no organisation should operate in isolation.

The support and participation we received this year from the business community has been fantastic and will be

quite evident as the report is read. We have had many interventions where members of various organisations have participated and given opinions and insight. Our partnerships with other Professional Bodies were also very useful and allowed us to expand our reach and receive feedback from other industry professionals. We were also extremely lucky to have Clem Sunter join us at IRMSA for a full day where he assisted the Risk Intelligence Team and members of our Executive Committee unpack the risks identified this year and work on the various scenarios.

I would like to thank the IRMSA Membership for their invaluable input as much of the content of this report has been driven through membership participation. This project would not have been possible without the contributions from the IRMSA Executive Committee and our Subject Matter Experts. My appreciation goes to the Risk Intelligence Committee, under the leadership of Michael Ferendinos, who not only led the project but was the author of much of what you will read.

Once again, our intention is for this report to be used widely by Risk Managers and the business community and for it to influence and assist organisational decision making processes for 2016.

"I trust that the report will provide local and international organisations operating in South Africa with the insights necessary to thrive in this increasingly complex environment."

Michael Ferendinos
Chairperson
IRMSA Risk Intelligence Committee



Foreword

The second edition of the IRMSA South Africa Risks Report is presented during a volatile period in the country's development, highlighted by Fitch, Standard & Poor's and Moody's all lowering their outlook on South Africa's credit rating to essentially one notch above junk status in December 2015, the rand trading at its worst-ever levels against the pound and the dollar in nominal terms in the same month, Pravin Gordhan being named the third finance minister in less than a week, and widespread public protests. These and other events are occurring as South Africa grapples with the worst drought to hit the country in decades.

Developments of this nature remind us that risks and their consequences seldom occur in isolation in a world characterised by increasing interconnectedness and an insatiable appetite for change. Building on this theme, South Africa does not operate in a vacuum and the achievement of the National Development Plan objectives will be subject to a myriad of internal and external uncertainties that can compromise this endeavour. The components of the plan are also multifaceted, indicating that national development is dependent on social, economic, political, environmental, infrastructural and technological dynamics.

In order to evaluate the country's risk landscape more accurately, the South Africa Risks Report 2016 has evolved from the 2015 first edition by broadening its scope to 52 global risks derived from several reputable sources; linking the top risks to national objectives; considering risk interconnectedness by assessing whether each risk has a strong, weak, or no link with the other risks in the profile; projecting the future trajectory of the top risks; and by creating possible scenarios related to national development.

This report captures the input of Risk Management professionals in both the public and private sectors, Subject Matter Experts, and the members of the Institute of Directors in Southern Africa, the South African Institute of Chartered Accountants and the Institute of Internal Auditors South Africa. On behalf of the IRMSA Risk Intelligence Committee, I would like to thank the 1007 survey and workshop participants, without whose expert contributions this report would not have been possible. I trust that the report will provide local and international organisations operating in South Africa with the insights necessary to thrive in this increasingly complex environment.



“Risk evaluation and management skills are now central to the long-term viability of any organisation.”

Clem Sunter

World renowned Futurist and Scenario Planner
Mind of a Fox

Insight

In October 2015, I was fortunate to spend a day at the office of the Institute of Risk Management South Africa (IRMSA). I was there to facilitate a session with several IRMSA members, drawn from their Executive Committee as well as from their Risk Intelligence Committee. The objective was to assist in the development of the second edition of the IRMSA South Africa Risks Report.

I was pleased to accept this role, having seen how valuable the first South Africa Risks Report had been to the industry earlier in 2015.

At the workshop, we looked at the flags changing the global and South African ‘games’. In particular, we examined how the flags might affect the risks that had already been prioritised in a survey of companies undertaken by IRMSA for the new edition. We also considered the interconnectivity of the risks to see how they might reinforce each other; and we also assessed the trajectory of the risks, namely the period within which they could become increasingly or diminishingly material to the outcome of the game.

Out of these deliberations, we fashioned a scenario gameboard with one eye on the future of the global economy and the other eye on the possibilities for South Africa. These scenarios form part of this report.

It was clear to me from this session that we have excellent risk managers in the industry. Moreover, risk management

now constitutes a premier discipline that no organisation can do without. You only have to look at the high-profile and costly examples of companies that recently were devastated by some expensive flaw in their business model being exposed to public scrutiny. What they would have given to have perceived the full extent of the problem in advance and acted on it with the swiftness of a fox!

We can no longer limit ourselves to looking superficially inside the organisation and ticking broad - category boxes on the integrity of the procedures within it. We have to dig deep below the surface because many of the potentially lethal risks are granular in nature, lurking in some dark corner. In addition, we also must gaze into the far distance and identify the flags on the horizon that could transform the context and thereby change the impact and probability of the threats to the organisation.

Directors therefore need to ensure that they choose the right people for their risk management team and that team should have a real voice at board level. Risk evaluation and management skills are now central to the long-term viability of any organisation.

Executive Summary

The consequences of elements of South Africa's risk landscape materialising were experienced throughout 2015, with several resulting in public relations disasters. The xenophobic violence in April that killed at least five people and displaced more than 2,000 in Durban pushed the country into global headlines as it faced severe negativity. This was followed by the FIFA bribe allegations, the failure to arrest Omar Al-Bashir, the Sudanese president wanted by the International Criminal Court (ICC) in June, and the fact that no one has accepted responsibility for the Marikana massacre after the release of the inquiry's report. South Africa's 'fees must fall' protests, demanding the right to quality and accessible education, produced an unprecedented movement of student activism that rapidly swept across the country's university campuses and cities, culminating in a march on the historic Union Buildings on 23 October. A youth movement this large has not been witnessed since the Soweto Uprising of 1976, when students protesting against apartheid language policies were fired on by police. In December, the country and the markets were sent into shock by the sudden replacement of respected finance minister Nhlanelo Nene with the relatively unknown David van Rooyen, who was himself replaced a few days later by former finance minister Pravin Gordhan. South Africa experienced three credit rating downgrades in the same month by Fitch, Standard & Poor's and Moody's and in nominal terms witnessed its worst exchange rate levels against the pound and the dollar ever.

From an organisational perspective, intermittent load shedding highlighted continued operational difficulties posed by inadequate energy infrastructure and technical issues, despite some relief from renewable energy Independent Power Producers and the official opening of Unit 6 of the Medupi coal-fired power plant, the first new major power plant in South Africa for 20 years. The pending mining sector strike could potentially be disastrous in an already difficult climate, especially if the trend of prolonged strikes continues. On a positive note, the week-long coal sector strike in October bucked the trend. South Africa is still experiencing its worst drought in 23 years particularly affecting KwaZulu-Natal, Free State, Limpopo, North West and Western and Northern Cape. This will most likely lead to a decline in farming output and an increase in food-prices.

These events, and their systemic nature, indicate the volatility in South Africa's current context compromising its resilience to future uncertainties.

It is important to note that the respondents' perceptions of the country's top risks are also influenced by the timing of these events in relation to when the surveys were conducted. The Institute of Risk Management South Africa's (IRMSA) South Africa Risks Report 2016 has built on the 2015 first edition by broadening the scope of risks identified, linking them to national objectives, considering risk interconnectedness, the evolution of risks over time and possible scenarios related to national development.

The report is based on several surveys and workshops with 1,007 of the country's leading risk management experts spanning every major industry within the public and private sectors. The risk management fraternity respondents examined South Africa's top risks over a two-

year time horizon across five categories, namely economic, environmental, geopolitical, societal and technological risks. The report is created within the context of 52 identified global risks derived from the following key sources: 2015 IRMSA Risk Report, World Economic Forum's (WEF) Global Risks 2015 Report, World Bank Sub-Saharan Africa Outlook 2015, Aon Global Risk Management Survey 2015, PwC Risk in Review 2015 and WEF Global Agenda 2015 Report.

In order to link the country level risk ratings to national objectives, survey respondents were asked to select the top risks that could adversely affect the achievement of the South African Government's National Development Plan (NDP) priorities and objectives, which aims to eliminate poverty and reduce inequality by 2030, as summarised overleaf. The industry level risk ratings aggregate the ratings that each respondent provided for the industries in which they practice.

NDP Interlinked Priorities:

1. Uniting all South Africans around a common programme to achieve prosperity and equity
2. Promoting active citizenry to strengthen development, democracy and accountability.
3. Bringing about faster economic growth, higher investment and greater labour absorption.
4. Focusing on key capabilities of people and the state.
5. Building a capable and developmental state.
6. Encouraging strong leadership throughout society to work together to solve problems.

NDP Developmental Themes, with Summarised Objectives:

1. Economy and Employment – Unemployment; GDP Growth; Inequality; Exports; National Savings.
2. Economic Infrastructure – Electricity; Water; Public Transport; Ports; Internet.
3. Environmental Sustainability and Resilience – Natural Resources; Land and Oceans; Greenhouse Gas Emissions; Waste Disposal; Disaster Preparedness; Agricultural Technologies; Renewable Energy.
4. Inclusive Rural Economy – Additional Agricultural Jobs; Spatial Planning; Upgrade all Informal Settlements; Intra-regional Trade in Southern Africa.
5. South Africa in the Region and the World – Intra-regional Trade in Southern Africa.
6. Transforming Human Settlements – Spatial Planning System; Upgrade all Informal Settlements; Public Transport.
7. Improving Education, Training and Innovation – Early Childhood Development; 80 – 90 Percent Pass Rate for Learners; Minimum Standards for Schools; Expand the College System; Increase Enrolment at Universities and more PhD Qualified Staff; Expand Science, Technology and Innovation.
8. Healthcare for All – Increase Life Expectancy; Reduce Infant Mortality; Reduce Prevalence of Diseases; Reduce Injury, Accidents and Violence; Access to an Equal Standard of Care; Skilled Healthcare Staff.
9. Social Protection – Minimum Standard of Living; Focus on Services to Children and Vulnerable Groups; Improve Social Welfare Sector Skills; Income Support for the Unemployed; Safe and Sustainable Pensions.
10. Building Safer Communities – Safe Environment at Home, at School and at Work; Focus on Safety of Women and Children; Professional and Well-resourced Police Service.
11. Building a Capable and Developmental State – Developmental and Transformative State and Public Service; Well-equipped Staff; Improved Relations between National, Provincial and Local Government; Governance Structures support State-owned Enterprises (SOEs).
12. Fighting Corruption – A Corruption-free Society; Ethical Society; Accountable Government.
13. Nation Building and Social Cohesion – Equal Opportunities for all Members of Society; United, Prosperous, Non-racial, Non-sexist, and Democratic South Africa.

Figures 1 and 2 respectively show the prioritisation of the top ten South African country level and industry level risks for 2016 which were evaluated in the surveys as having the highest perceived combined likelihood and potential consequence over the next two years.

Figure 1: Top Ten South African Country Level Risks

Figure 2: Top Ten South African Industry Level Risks



Five risks appear both on the national and combined industry level top ten lists. **Insufficient electricity supply** is the top South African risk and is the second highest industry level risk behind **regulatory / legislative changes**. South Africa continues to struggle with power supply constraints, despite the investment of billions of rands into the construction of new power stations and diversifying energy sources. The International Monetary Fund (IMF) stated that the deepening of South Africa's power supply crisis poses the biggest obstacle to the country's growth. The IMF believes that significant fiscal risks stem from further government support to Eskom, coupled with the fact that the envisaged six new nuclear power plants could entail a large public debt increase. The generation of renewable energy has been a positive outcome during the electricity crisis, adding 6,327 megawatts (MW) of capacity to the national grid. Natural gas could also play an important role in bridging an emerging energy supply gap.

Increasing corruption, last year's top national risk, is second highest this year and is also one of the highest industry risks. South Africa is one of eight countries named as the worst in Africa for corruption according to a survey conducted by ENSAfrica. The other hot spots include Angola, the Democratic Republic of Congo, Ghana, Kenya, Mozambique, Nigeria and Uganda. South Africa has performed slightly better in the latest Transparency International Corruption Perceptions Index (CPI) which ranks countries/territories based on how corrupt a country's public sector is perceived to be. The country's ranking has moved positively from 72nd to 67th out of 177 countries surveyed with a score of 44 out of 100 in the index. The minor improvement should however be viewed with an understanding that there are countries close behind South Africa on the index where corruption is endemic and where little can be done to turn it around.

Skills shortage is the third highest risk both on the national and industry levels. South Africa's skills shortages are widely regarded as a key factor preventing the achievement of targeted growth rates and are attributed to emigration of high-skilled workers, immigration restrictions for high-skilled foreigners and is closely linked to an education system that is not responding adequately to the demands of the workplace. According to human capital management group Adcorp, there are currently as many as 829,800 unfilled positions for high-skilled workers across a wide range of occupations in South Africa. If we review the breakdown of that figure by occupation, the skills shortage among technicians is 432,100, among managers 216,200 and among professionals 178,400. This risk is closely related to three other risks in the national top ten list namely **structurally high unemployment/underemployment, education and skills development and severe income disparity**. South Africa has one of the highest unemployment rates in the world at around 25

percent and is among the most unequal in terms of income inequality, yet employers are struggling more than ever to fill skilled positions. Manpower South Africa's tenth annual Talent Shortage Survey confirms this increased difficulty - the findings revealed that the percentage of South African employers surveyed who had reported difficulty in filling job vacancies, rose from 8% in 2014 to 31% in 2015.

The looming **water crisis** has been highlighted on a national and industry level and there are signs that it has already begun after "water shedding" started in parts of the country. The water crisis is a risk that will materialise gradually, and will not be as immediately visible as load shedding arising from electricity shortages, but will be catastrophic if left untreated. Finally, the **failure/shortfall of critical infrastructure** features on both national and industry top ten lists due to the fact that it is a key requirement for the growth of industries and South Africa's economic development.

Table 1 below unpacks the combined industry level top ten list by identifying the top three risks by industry. Regulatory / legislative changes and insufficient electricity supply appear in the top three list of risks in seven out of the 13 identified industries. The next few prioritised combined industry level risks appear in the top three risk rankings of about a quarter of the identified industries.

Industry	Key Risk 1	Key Risk 2	Key Risk 3
Communications and Technology	Regulatory / legislative changes	Insufficient electricity supply	Skills shortage
Energy, Water and Utilities	Water crisis	Increasing strike action	Skills shortage
Entertainment and Media	Profound political and social instability	Water crisis	Reputational damage or adverse media / social media attention
Financial Services	Regulatory / legislative changes	Insufficient electricity supply	Massive incident of data fraud / theft
Government and Public Services	Increasing corruption	Insufficient electricity supply	Lack of leadership
Healthcare	Regulatory / legislative changes	Massive incident of data fraud / theft	Reputational damage or adverse media / social media attention
Hospitality and Leisure	Regulatory / legislative changes	Water crisis	State collapse or crisis
Industrial Manufacturing	Insufficient electricity supply	Failure / shortfall of critical infrastructure	Increasing strike action and Water crisis
Mining, Engineering and Construction	Increasing strike action	Skills shortage	Increasing corruption
Professional Services	Insufficient electricity supply	Increasing corruption	Regulatory / legislative changes
Retail and Consumer	Insufficient electricity supply	Massive incident of data fraud / theft	Profound political and social instability
SME	Regulatory / legislative changes	Government policy changes	Major escalation in organised crime and illicit trade
Transport and Logistics	Regulatory / legislative changes	Insufficient electricity supply	Government policy changes

Table 1: Top Three Risks by Industry

The Subject Matter Experts (SMEs) were asked to indicate which industries will be most affected if the risk that they were asked to review materialises. The total number and percentage spread of the industries affected, should the top 20 South African and industry level risks materialise, is captured in Figure 3. The industries that are exposed the most by the South African risk landscape include the following:

- Manufacturing
- Government and Public Services
- Mining, Engineering and Construction
- Energy, Water and Utilities
- Communications and Technology
- Healthcare

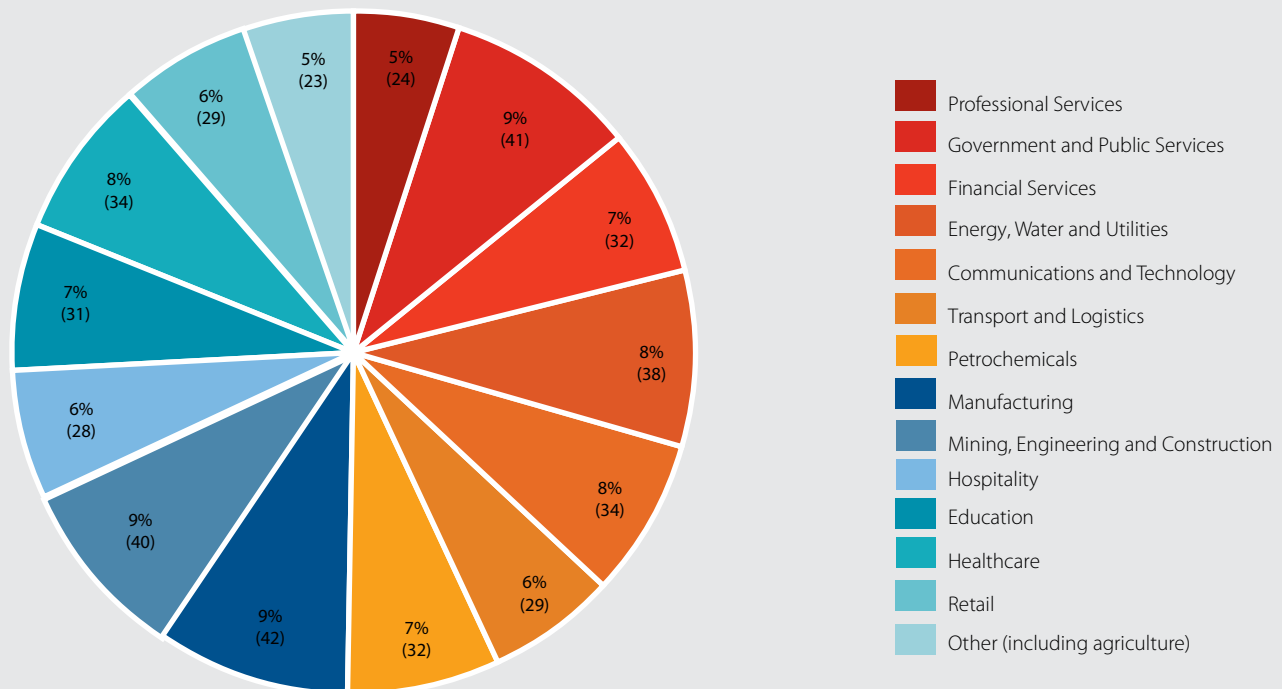


Figure 3: Number and Percentage Spread of Industries Exposed to the Top 20 South African and Industry Level Risk Profiles

IRMSA approached members of the Institute of Directors in Southern Africa (IoDSA), the South African Institute of Chartered Accountants (SAICA) and the Institute of Internal Auditors South Africa (IIASA) to gain alternative perspectives pertaining to the prioritisation of the top industry level risks in South Africa. As with the IRMSA

survey respondents, their respective members were asked to refer to the top 20 industry level risks and to provide risk ratings for the industries in which they practice. The combined industry level top 20 risk ranking for the three institutes is provided in Table 2 below demonstrating areas of alignment and contrast with the IRMSA risk fraternity.

IODSA, SAICA and IIASA Combined Industry Level Top 20 Risk Ranking	IRMSA Combined Industry Level Top 20 Risk Ranking
1 Failure/shortfall of critical infrastructure	1 Regulatory / legislative changes
2 Lack of leadership	2 Insufficient electricity supply
3 Increasing corruption	3 Skills shortage
4 Governance failure	4 Increasing corruption
5 Insufficient electricity supply	5 Government policy changes
6 Government policy changes	6 Reputational damage or adverse media / social media attention
7 Increasing strike action	7 Massive incident of data fraud / theft
8 Profound political and social instability	8 Profound political and social instability
9 Structurally high unemployment/underemployment	9 Water crisis
10 Skills shortage	10 Failure / shortfall of critical infrastructure
11 Water crisis	11 Structurally high unemployment / underemployment
12 Regulatory/legislative changes	12 Unmanaged inflation
13 Major escalation in organised crime and illicit trade	13 Governance failure
14 Lack of innovation	14 Lack of leadership
15 Massive incident of data fraud/theft	15 State collapse or crisis
16 Severe income disparity	16 Major escalation in organised crime and illicit trade
17 State collapse or crisis	17 Severe income disparity
18 Misuse of technologies	18 Increasing strike action
19 Reputational damage or adverse media/social media attention	19 Misuse of technologies
20 Unmanaged inflation	20 Lack of innovation

Table 2: IRMSA - IODSA, SAICA and IIASA Combined Industry Level Top 20 Risk Ranking Comparison

The following risks (10 out of 20) demonstrate cross-institutional alignment in thought and prioritisation i.e. where there is a ranking differential of no more than three places. Only four out of the 20 combined industry level risks have a ranking differential of more than 10 places.

- Increasing corruption
- Government policy changes
- Structurally high unemployment/underemployment
- Major escalation in organised crime and illicit trade
- State collapse or crisis
- Insufficient electricity supply
- Profound political and social instability
- Water crisis
- Severe income disparity
- Misuse of technologies

Introduction

The South Africa Risks Report 2016, Second Edition, demonstrates that the country's risk profile is dynamic following its rapid evolution during the past year. Only four of the top 10 risks in the 2015 report – increasing corruption, structurally high unemployment/underemployment, failure/shortfall of critical infrastructure, and severe income disparity – appear in the 2016 top 10 country level risk profile. The six new entrants, while being relevant from a global risk perspective, are of particular concern in the South African context. What is perhaps more alarming is the fact that the majority of the new entrants are not isolated from one another and are also quite strongly linked to the four risks carried over from the 2015 top 10 list.

The 2015 report emphasised the importance of paying attention to the South African risks that are systemic in nature, compromising entire systems as opposed to merely their component parts. The increasingly interconnected nature of the South African risk profile should not be overlooked because these interdependent risks can potentially cascade to create a “perfect storm” scenario.

This year the South Africa Risks report signifies IRMSA's intention to promote a continuous process of improving how the country's risks and their interconnections can provide government, business and civil society leaders

with critical risk-related information that will support more proactive and informed decision-making within their respective spheres of influence. It should also encourage more collaborative decision making because the national risks that have been raised need to be managed in partnership, ensuring greater national resilience. It is hoped that the dialogue that is stimulated through the collaborative management of South Africa's risks will support bringing the NDP objectives to life, benefitting all parties.

This approach to uncovering South Africa's risks is consistent with the ISO 31000 definition of a risk, 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. Whilst there is value in providing an annual snapshot view of South Africa's risk profile in relation to its changing environment and global trends, decision-makers will benefit further through the ongoing monitoring of the manner in which these risks are unfolding, and assessing whether their likelihood and impact is increasing or decreasing.



Objective of the South Africa Risks Report 2016

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 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 2016 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 10 risk view by country and industry forms part of this report coupled with a greater understanding of these risks, provided by the Subject Matter Experts. Note that the views, opinions and positions expressed by the participants and Subject Matter Experts are theirs alone, and do not necessarily reflect the views, opinions or positions of IRMSA.

Part 1 of the report provides a comparison between the results of the 2016 South Africa Risks Survey – assessing both country and industry level risks – and the WEF Global Risks Perceptions Survey. Respondents were asked in both cases to identify and prioritise the 10 risks that they thought were most likely and possessed the highest consequence.

This is followed by a "risk interconnectedness" section, placing emphasis on the interdependency and the systemic nature of the top 20 South African risks, considering that they could possibly lead to multiple concurrent or consecutive shocks.

A prediction pertaining to how the top 20 South African risks will unfold in the near and longer term will be assessed next. Subject Matter Experts were asked to provide risk ratings for the risks assigned to them in the near term (18 months) and longer term (10 years). Results from a risk velocity survey conducted with the risk professionals that attended the annual IRMSA Risk Management Conference were also incorporated. One of the key questions addressed by respondents was whether each of the top 20 risks were likely to increase or decrease over time.

The final component of this section will evaluate possible scenarios that South Africa could face in relation to its risk profile and to global trends. The scenarios were formulated during a workshop conducted by world-renowned strategic futurist and scenario planner, Clem Sunter, with key members of the IRMSA Executive Committee and the Risk Intelligence Committee.

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 the achievement of the National Development Plan (NDP) objectives for South Africa?
- In your view, what are the primary causes giving rise to this risk?
- If not managed effectively, what would the three most significant consequences be impacting South Africa?
- Which industry will be most affected if this risk materialises?
- What are the barriers that prevent us from solving this risk?
- What do you believe the most effective risk response is in managing this risk on an industry level?
- What do you believe the most effective risk response is in managing this risk on a national level?
- Rate the Impact and Likelihood of the risk in the next 18 months.
- Rate the Impact and Likelihood of the risk in the next 10 years.
- Which global trends do you think will have a major impact on the risk going forward?

Part 3 delves into the methodology followed by the Risk Intelligence Committee prior to the compilation of 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.

IT'S HARD TO IGNORE ONE PROTEST LET ALONE 25 000* OF THEM IN JUST THREE YEARS

* On September 3, 2014, Police commissioner Riah Phiyega informed the Parliamentary Police Committee that there were 12,651 incidents of civil unrest during 2010-11, plus 12,399 recorded in 2012-13.

Here's something every company should consider during these turbulent times: insurance cover against civil unrest.

And there's one insurance company that all South African short-term insurance companies trust to handle this specialised field: Sasria.

In all, we offer cover against riots, strikes, terrorism, civil commotion and public disorder to corporate

and commercial clients, as well as to individual policy-holders.

Our classes of insurance business - Material Damage, Business Interruption, Money, Goods in Transit, Motor and Construction Risk - means that we have you covered, even in the most extraordinary instances.

So, to rest assured during these times of unrest, speak to your broker today.



For more information visit www.sasria.co.za or E mail: contactus@sasria.co.za or contact us on +27 11 214 0800
Authorised Financial services provider, License no: 39117



Part 1
South Africa
Risks 2016

1.1. Survey Results and WEF Comparison

The top 10 risks comparison between South African and WEF respondents' views differ significantly (refer to Figures 4 and 5 below). South African respondents assessing national and industry level risks are virtually solely concerned with economic, geopolitical and societal risks. The risk profile for WEF respondents is far more balanced and contains risks across all five risk categories. Even where similarities do occur across all three risk profiles in terms of

risk categories, the actual risks identified are very different. Water crisis is the only risk that appears in the top 10 lists of all three risk profiles. Unemployment or underemployment and data fraud or theft are the only other WEF top 10 risks that appear in the top 10 risk profiles of either the South African national and industry levels. This demonstrates the unique nature of the South African risk landscape. Refer to the WEF explanation of the five risk categories below.

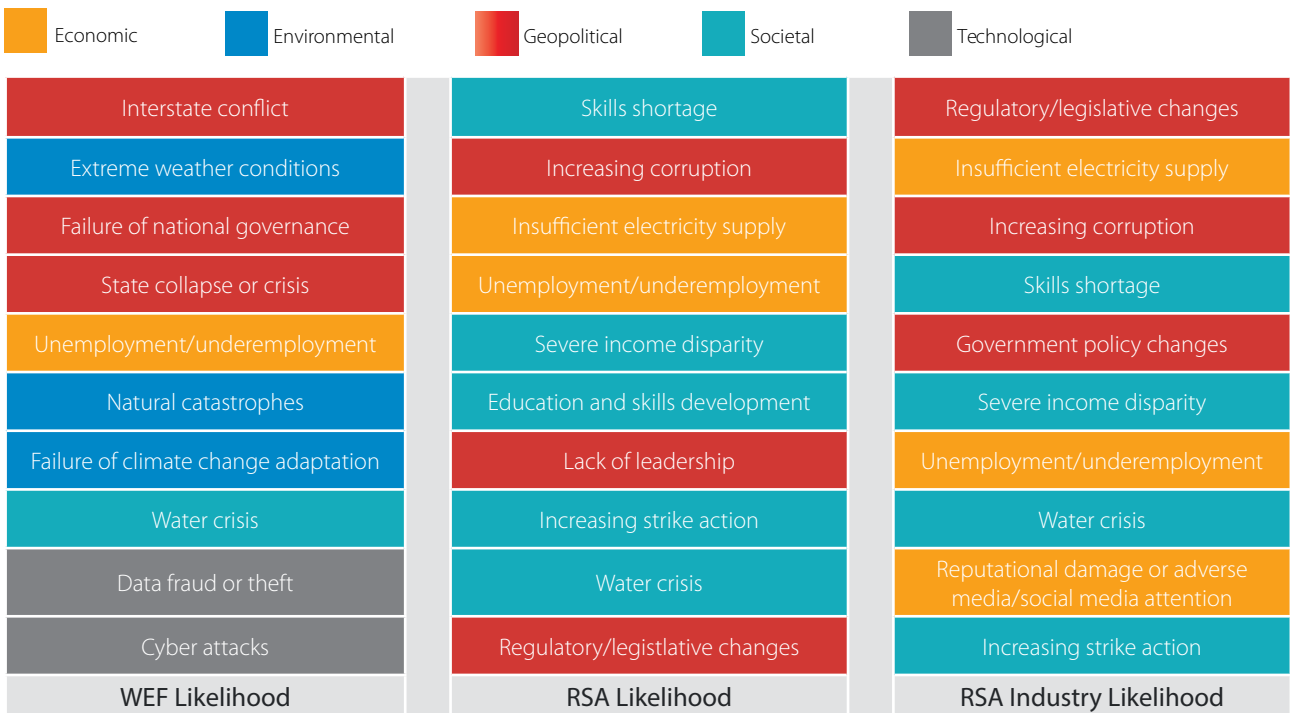


Figure 4: Comparison between Top South African (National and Industry Levels) and WEF Risks by Likelihood

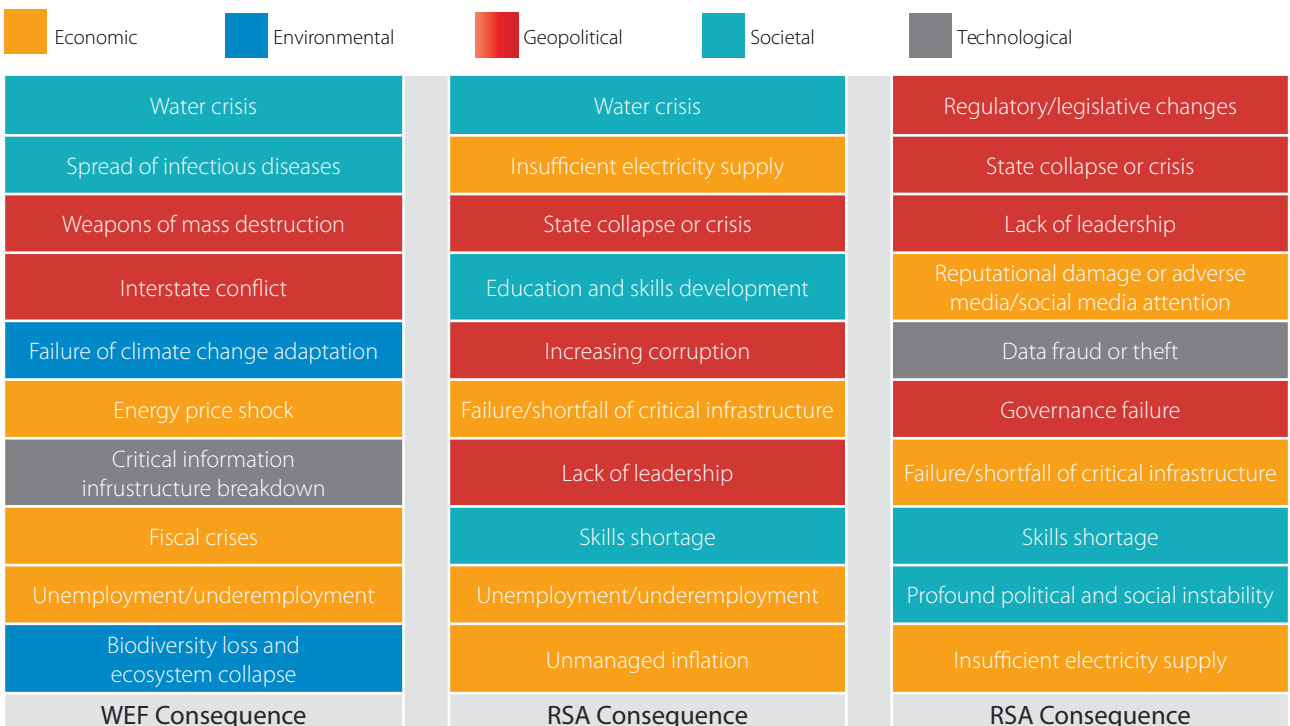


Figure 5: Comparison between Top South African (National and Industry Levels) and WEF Risks by Consequence

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

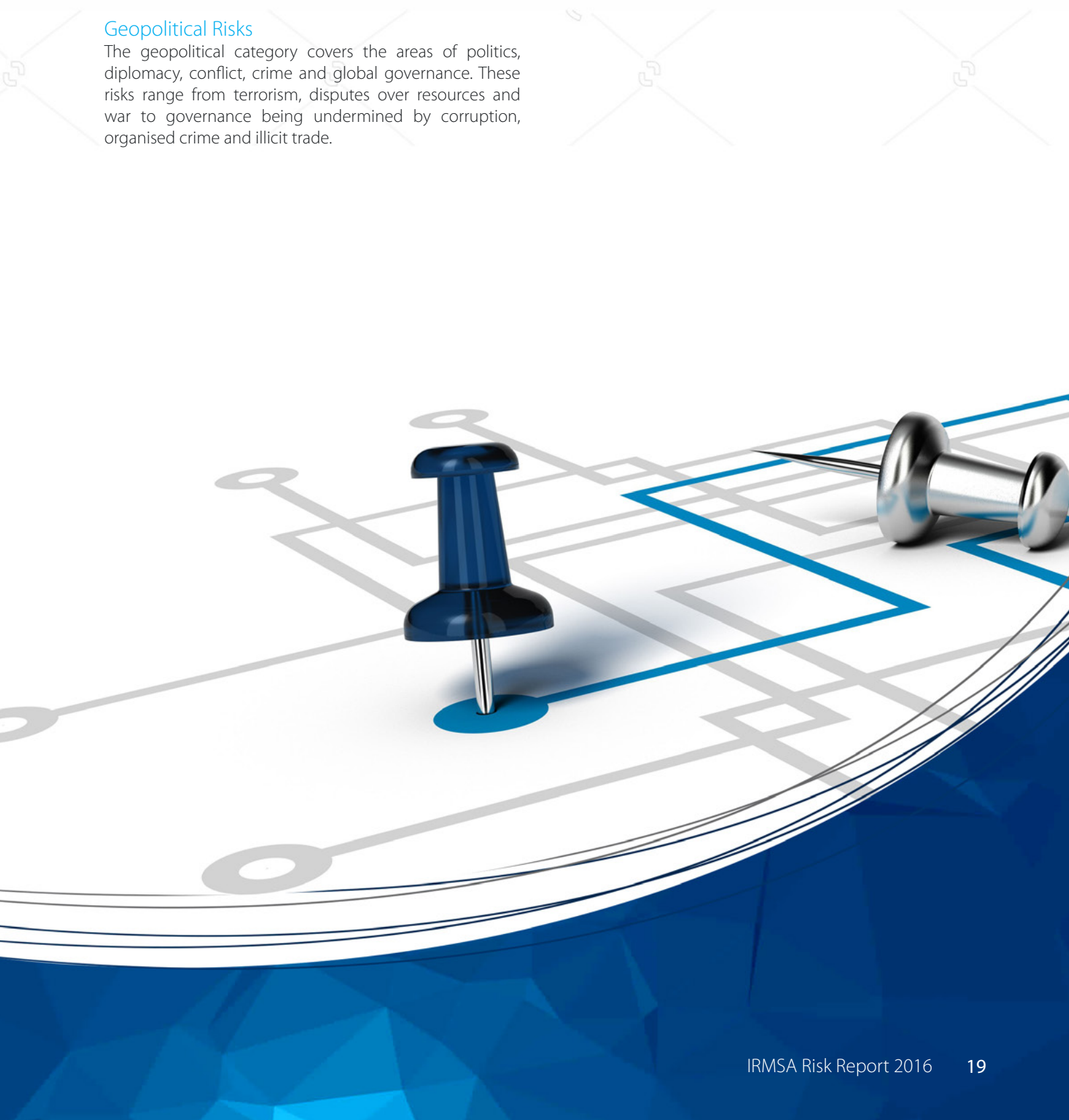
The geopolitical category covers the areas of politics, diplomacy, conflict, crime and global governance. These risks range from terrorism, disputes over resources and war to governance being undermined by corruption, organised crime and illicit trade.

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. Interconnectedness of South Africa's Top 20 Risks

This section addresses the interconnectedness/interdependency of the top 20 South African risks for 2016. Complex interconnections between these risks can lead to consequences that are far more difficult to predict or mitigate. The question posed to IRMSA Executive Committee members in table three below is whether

each risk has a strong link, weak link, or no link at all with the other 19 risks in the profile. The risks that are strongly connected should receive further attention in view of their greater influence on and exposure to other risks. Note that the assessment only implies the degree of correlation and does not include a causal or consequence analysis.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
	Insufficient electricity supply	Increasing corruption	Skills shortage	Education and skills development	Water crisis	Structurally high unemployment / underemployment	Lack of leadership	Increasing strike action	Failure / shortfall of critical infrastructure	Severe income disparity	Profound political and social instability	Major escalation in organised crime and illicit trade	The weakening of representative democracy	Governance failure	Regulatory / legislative changes	Unmanaged inflation	State collapse or crisis	Reputational damage or adverse media / social media attention	Prolonged recession in the BRICS countries	Massive incident of data fraud / theft
1	SELF				WEAK		WEAK	WEAK	STRONG			WEAK		STRONG	WEAK		WEAK	STRONG		
2		SELF	WEAK				STRONG				STRONG	WEAK	STRONG	STRONG	WEAK	WEAK	STRONG	STRONG		
3		WEAK	SELF	STRONG	WEAK	STRONG	STRONG	WEAK	WEAK	WEAK	STRONG	WEAK		STRONG	WEAK		WEAK			
4			STRONG	SELF		STRONG	STRONG	WEAK		WEAK	STRONG	WEAK		STRONG	WEAK		WEAK	STRONG		
5	WEAK		WEAK		SELF		WEAK		STRONG					STRONG	WEAK			STRONG		
6			STRONG	STRONG		SELF	WEAK	WEAK	WEAK	STRONG	WEAK	WEAK		STRONG	WEAK	WEAK	STRONG	WEAK	WEAK	
7	WEAK	STRONG	WEAK	WEAK	WEAK	WEAK	SELF	WEAK	WEAK		STRONG		STRONG	STRONG		STRONG	STRONG	WEAK		
8	WEAK		WEAK	WEAK		WEAK	WEAK	SELF		WEAK	STRONG			STRONG	WEAK		STRONG	STRONG		
9	STRONG		WEAK		STRONG	WEAK	WEAK		SELF					STRONG	WEAK			STRONG		
10			WEAK	WEAK		STRONG		WEAK		SELF	WEAK	WEAK		STRONG			WEAK	WEAK		
11		STRONG	WEAK	WEAK		WEAK	STRONG	STRONG		WEAK	SELF	STRONG	STRONG	STRONG	WEAK		STRONG	STRONG		
12	WEAK	WEAK	WEAK	WEAK		WEAK				WEAK	STRONG	SELF	STRONG	STRONG	WEAK		STRONG	STRONG		STRONG
13		STRONG					STRONG	STRONG			STRONG	STRONG	SELF	STRONG	WEAK		STRONG	STRONG		
14	STRONG	STRONG	WEAK	WEAK	STRONG	WEAK	STRONG	STRONG	STRONG	WEAK	STRONG	STRONG	STRONG	SELF	WEAK	STRONG	STRONG	STRONG		
15	WEAK	WEAK	WEAK	WEAK	WEAK	WEAK		WEAK	WEAK		WEAK	WEAK	WEAK	STRONG	SELF	WEAK	STRONG	WEAK		WEAK
16		WEAK				WEAK	STRONG							STRONG		SELF				
17	WEAK	STRONG	WEAK	WEAK		STRONG	STRONG	STRONG		WEAK	STRONG	STRONG	STRONG	STRONG	WEAK		SELF	STRONG		
18	STRONG	STRONG		STRONG	STRONG	WEAK	STRONG	STRONG	STRONG	WEAK	STRONG	STRONG	STRONG	STRONG	WEAK		STRONG	SELF		
19						WEAK													SELF	
20												STRONG			WEAK					SELF

Table 3: Interdependency of the Top 20 South African Risks for 2016 (Image provided by BarnOwl)

Table 3 demonstrates that the South African top 20 risks are highly interdependent with eight risks that are strongly linked to six or more other risks in the profile. Governance failure contains the highest number of strong links in the profile (12 in total), pointing to the fact that the management of the country's risks requires nationally-coordinated responses. Reputational damage is just behind with 11 strong links and is viewed more as a consequence should the other risks come to fruition. In addition to governance failure, four out of the remaining six strongly linked risks are political in nature and are related to corruption, leadership, representative democracy and state collapse. This demonstrates the need for a proactive

and responsive national governance system. There are nine risks in the profile that have weak links with six or more other risks in the top 20. Regulatory/legislative changes contains the highest number of weak links (16 in total) which means that it should never be viewed in isolation. In fact, the two lowest rated risks – prolonged recession in the BRICS countries and massive incident of data fraud/theft – are the only risks in the profile that can be viewed in relative isolation with two or fewer links in total. The majority of the remaining risks with a significant number of weak links are societal in nature and are related to skills, education, strike action, inequality and crime.

The bubble figure (Figure 6) indicates the spread of the total number connections, both weak and strong, across the top 20 risk profile. The size of each bubble represents the total number of interconnections for each risk. The most interconnected South African risks are governance failure, regulatory/legislative changes, and reputational damage or adverse media / social media attention.



Figure 6: Spread of Total Number of Risk Interconnections (Image provided by BarnOwl)

Figure 7 provides interesting reading because it illustrates that the majority of the top 20 risks either have a high number of strong or weak links, with very few risks that contain an even spread of both. The longer bar represents strong links and the shorter bar indicates where there are weak links.



Figure 7: Spread of Strong and Weak Links for Each Risk (Image provided by BarnOwl)

Shifting focus to the risk categories that are most closely related or connected, it is evident that the comparison is predominantly carried out between the economic, geopolitical and societal risk categories considering that they comprise almost all of the top 20 risks. Charts 1 and 2 below indicate the spread of strong and weak links within and across these categories. Starting with the economic risk category, only one quarter of the total number of strong links in the category are linked to other economic risks; the remaining 75 percent is equally spread between the geopolitical and societal risk categories. A similar trend emerges when looking at the weak links derived from economic risks whereby more than 70 percent of those links are spread between geopolitical and societal risks. This means that the majority of economic risks in the South

African landscape affect, or are affected by, risks in other categories.

Almost half of the strong links derived from geopolitical risks, on the other hand, are spread amongst other risks in this category. Geopolitical risks are thus more strongly interconnected in South Africa. In saying that, the majority of weak links derived from this category connect with the risks in the societal category. Societal risks are more strongly connected with geopolitical and economic risks than with the other risks in its category. The majority of societal risks are rather connected through weaker linkages. In general, the societal and geopolitical risk categories are more interdependent in South Africa across both strong and weak linkages.

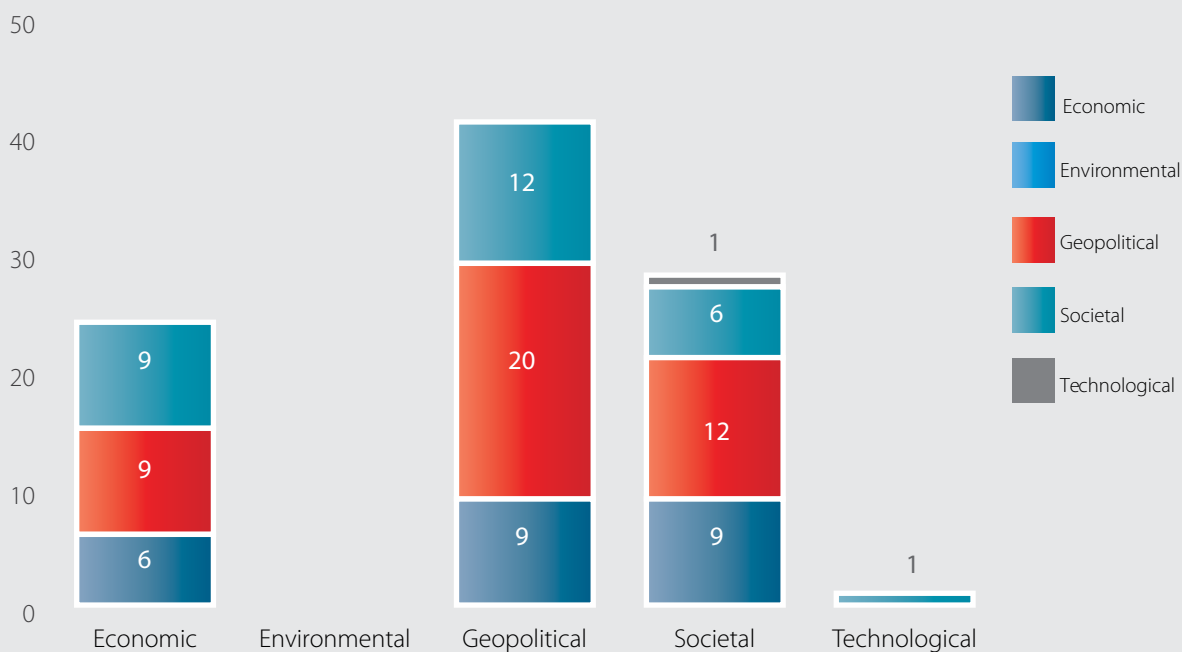


Chart 1: Number of Strong Links within and across Risk Categories

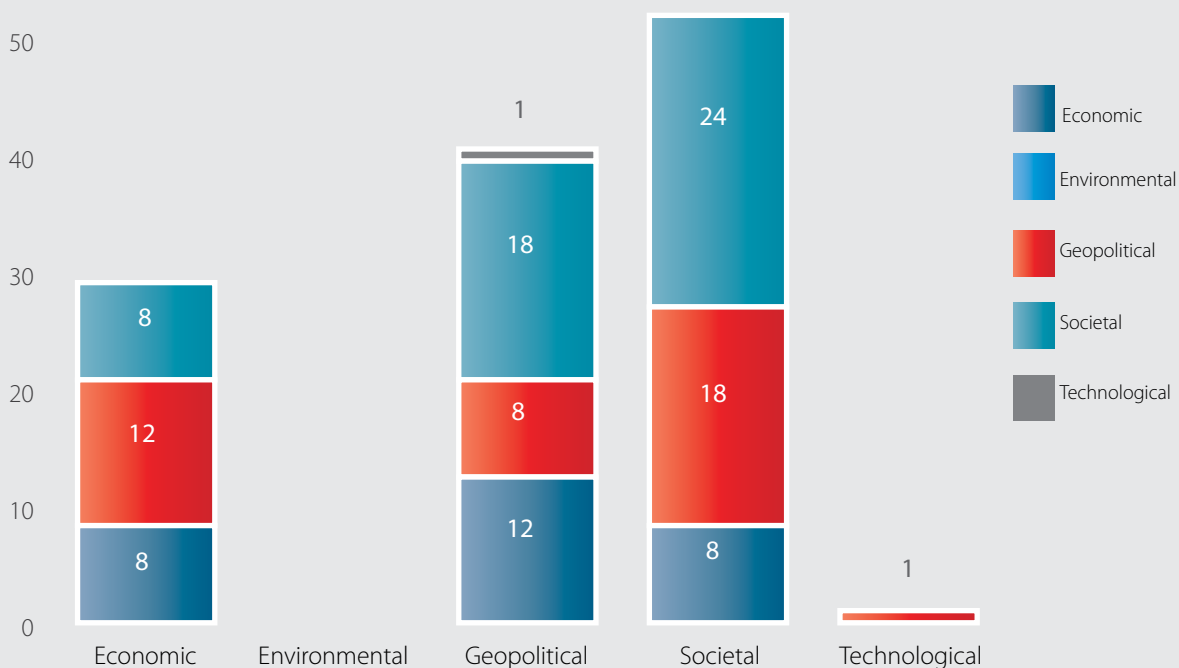


Chart 2: Number of Weak Links within and across Risk Categories

1.3. Unfolding of the Top 20 Risks - 18 Month and 10 Year Horizons

IRMSA asked respondents and SMEs to predict how the top 20 South African risks were likely to unfold in the next 18 months and 10 years by providing risk ratings for both points in time. The average risk ratings are provided in Figure 8 below and combine the often contrasting views

of all respondents and SMEs. The risk ratings are derived by multiplying the average likelihood and consequence/impact ratings using a standard one to five rating scale. This scale is presented in the risk assessment methodology section.

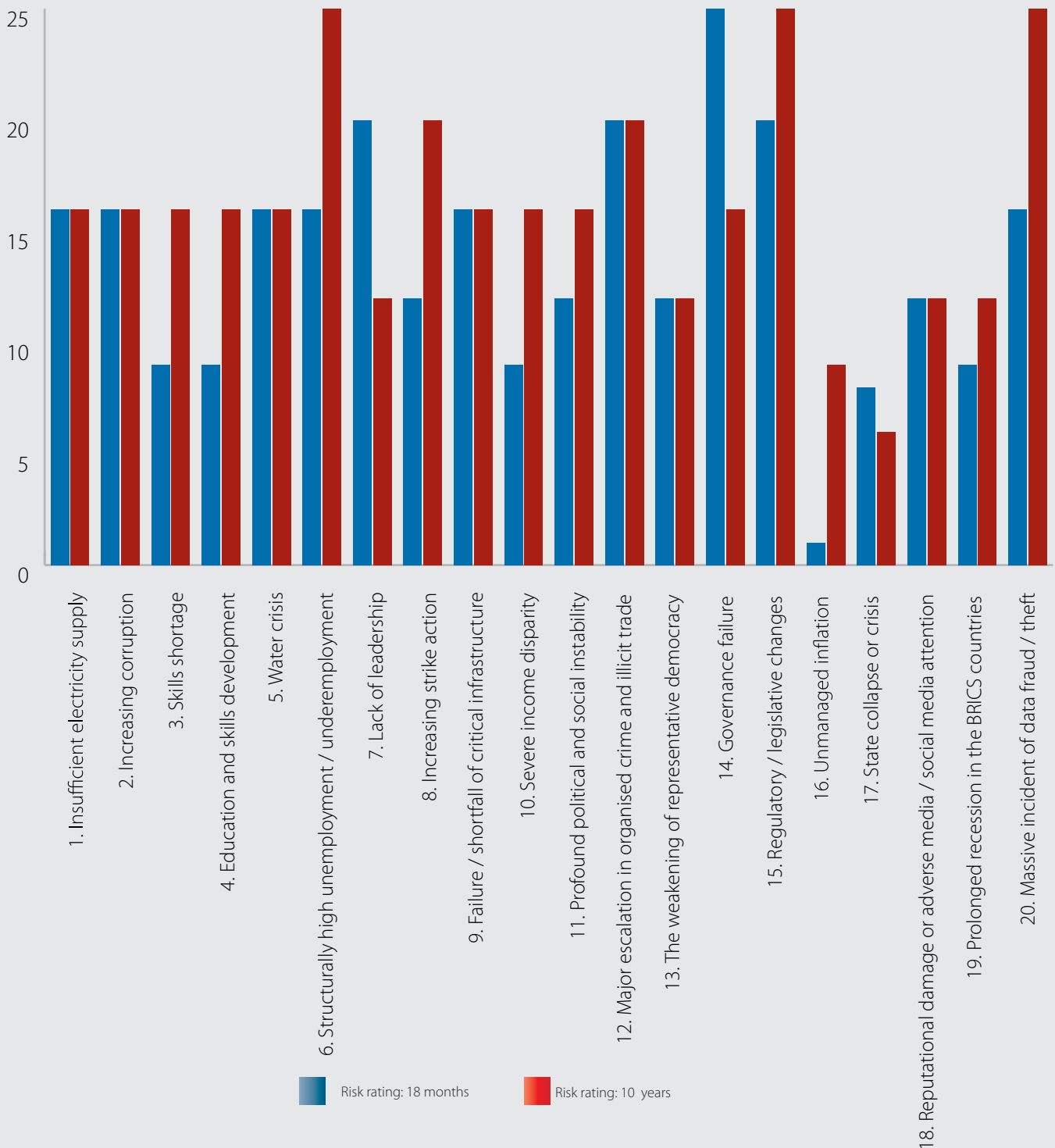


Figure 8: Future Projected Risk Ratings for the Top 20 South African Risks for 2016



The scatter diagram in Figure 9 below illustrates that half of the top 20 risks (10 in total) are expected to become even more of a concern over the next ten years. Structurally high unemployment / underemployment, unmanaged inflation and massive incident of data fraud / theft are the risks that are projected to increase the most during the period. Other notable increases are anticipated in the societal risk category. This includes skills shortage, education and skills development, increasing strike action and severe income disparity.

Interestingly, three risks are expected to reduce during the next ten years, namely lack of leadership, state collapse or crisis and governance failure. The remaining seven risks are projected to be equally important in ten years. That means that respondents and SMEs do not see any long-term improvement or worsening in electricity and water supply, corruption, infrastructure, crime, democratic consolidation and reputational damage.

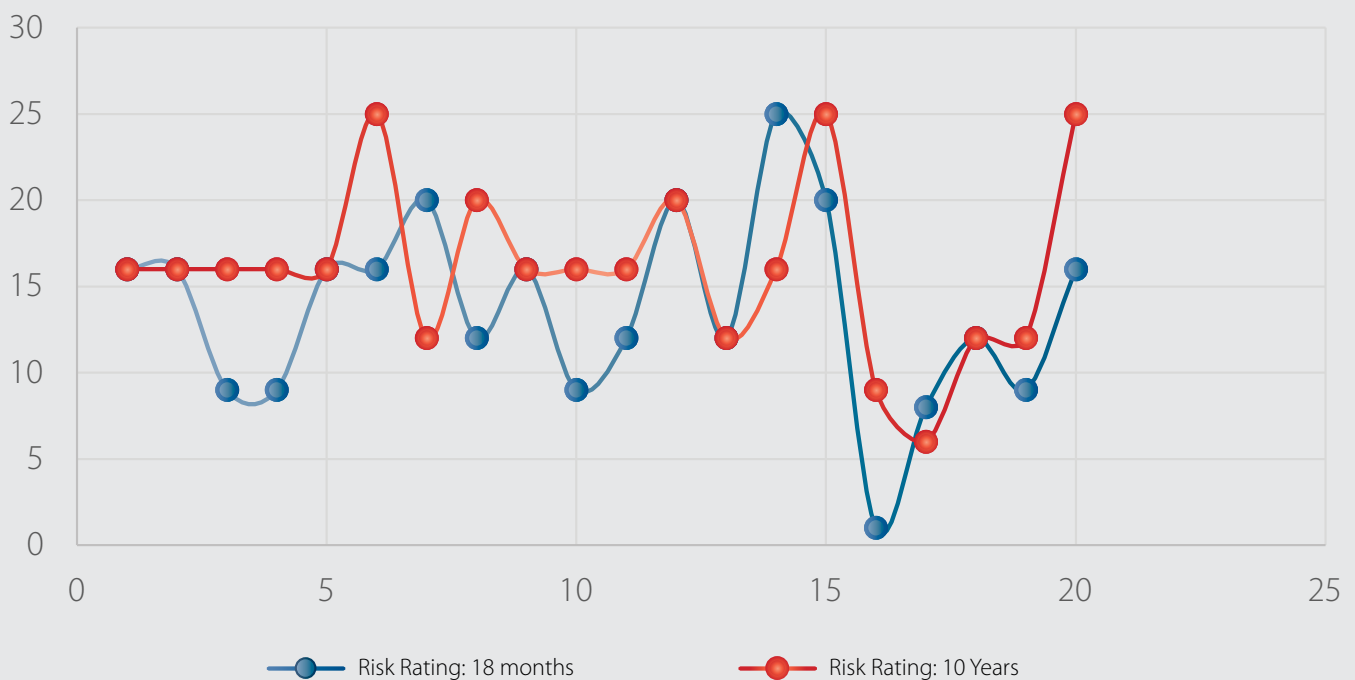


Figure 9: Scatter Diagram Illustrating Future Trajectory of Top 20 South African Risks for 2016

1.4. Exposure of the NDP Interlinked Priorities and Developmental Themes to the Top 20 Risks

This section seeks to gain an understanding of which NDP interlinked priorities (six in total) and developmental themes (13 in total) are exposed the most to the top 20 South African risks for 2016. The assessment is provided in Table 4 below. Each risk is connected to a single interlinked

priority and is also linked to two developmental themes. Even though most of the risks affect several developmental themes, only the two most relevant themes have been indicated for the purpose of this assessment.

No	Risk Name	6 NDF Priorities (1 selection per risk)						NDP Developmental Themes (2 selections per risk)																			
		1	4	8	3	0	4	Economy and employment	Encouraging strong leadership throughout society to work together to solve problems.	Building a capable and developmental state.	Focusing on key capabilities of people and the state.	Bringing about faster economic growth, higher investment and greater labour absorption.	Promoting active citizenry to strengthen, development, democracy and accountability.	Uniting all South Africans around a common programme to achieve prosperity and equity	Economic infrastructure	Environmental sustainability and resilience	Inclusive rural economy	South Africa in the region and the world	Transforming human settlements	Improving education, training and innovation	Healthcare for all	Social protection	Building safer communities	Building a capable and developmental state	Fighting corruption	Nation building and social cohesion	
1	Insufficient electricity supply																										
2	Increasing corruption																										
3	Skills shortage																										
4	Education and skills development																										
5	Water crisis																										
6	Structurally high unemployment / underemployment																										
7	Lack of leadership																										
8	Increasing strike action																										
9	Failure / shortfall of critical infrastructure																										
10	Severe income disparity																										
11	Profound political and social instability																										
12	Major escalation in organised crime and illicit trade																										
13	The weakening of representative democracy																										
14	Governance failure																										
15	Regulatory / legislative changes																										
16	Unmanaged inflation																										
17	State collapse or crisis																										
18	Reputational damage or adverse media / social media attention																										
19	Prolonged recession in the BRICS countries																										
20	Massive incident of data fraud / theft																										

Table 4: Primary NDP Interlinked Priorities and Developmental Themes exposed by each of the Top 20 South African Risks for 2016

Charts 3 and 4 below indicate the spread of NDP exposure to the top 20 South African risks. 'Bringing about faster economic growth, higher investment and greater labour absorption' is the most exposed interlinked priority and is affected by 40 percent of the top 20 risks. The two developmental themes, 'economy and employment' and 'nation building and social cohesion' are exposed to almost half of the top 20 risk profile.

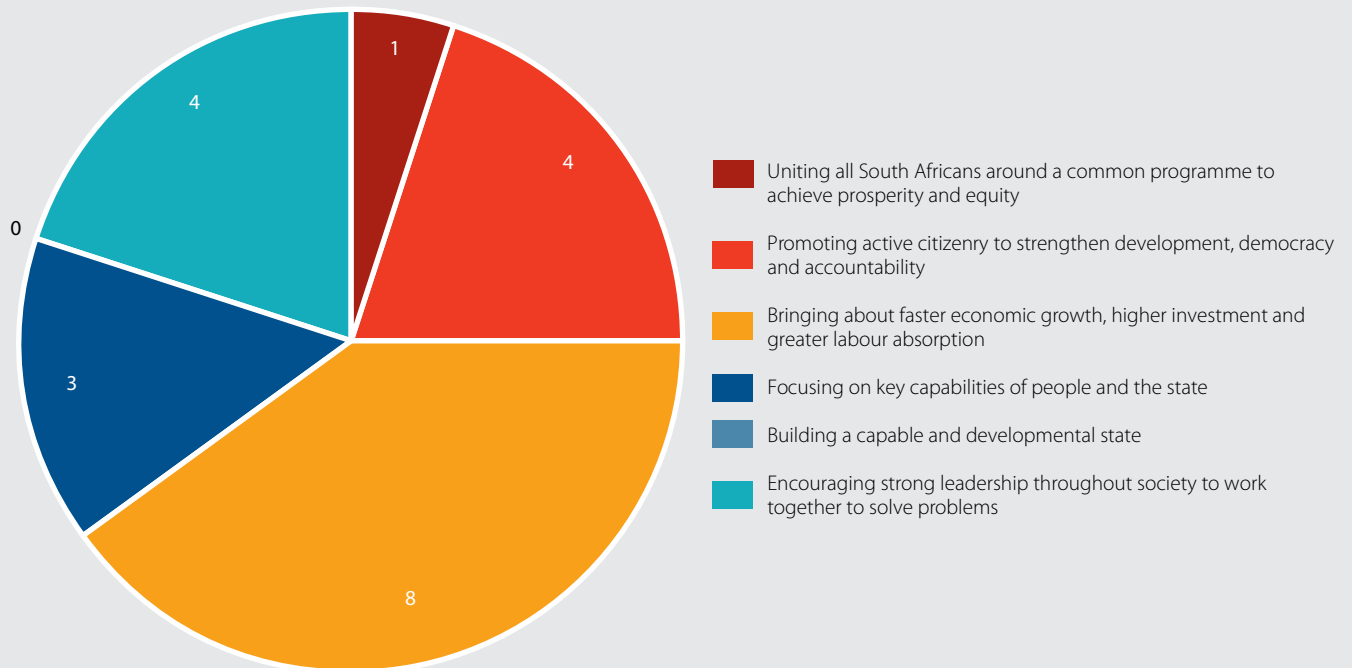


Chart 3: Number of Top 20 Risks Linked to NDP Interlinked Priorities

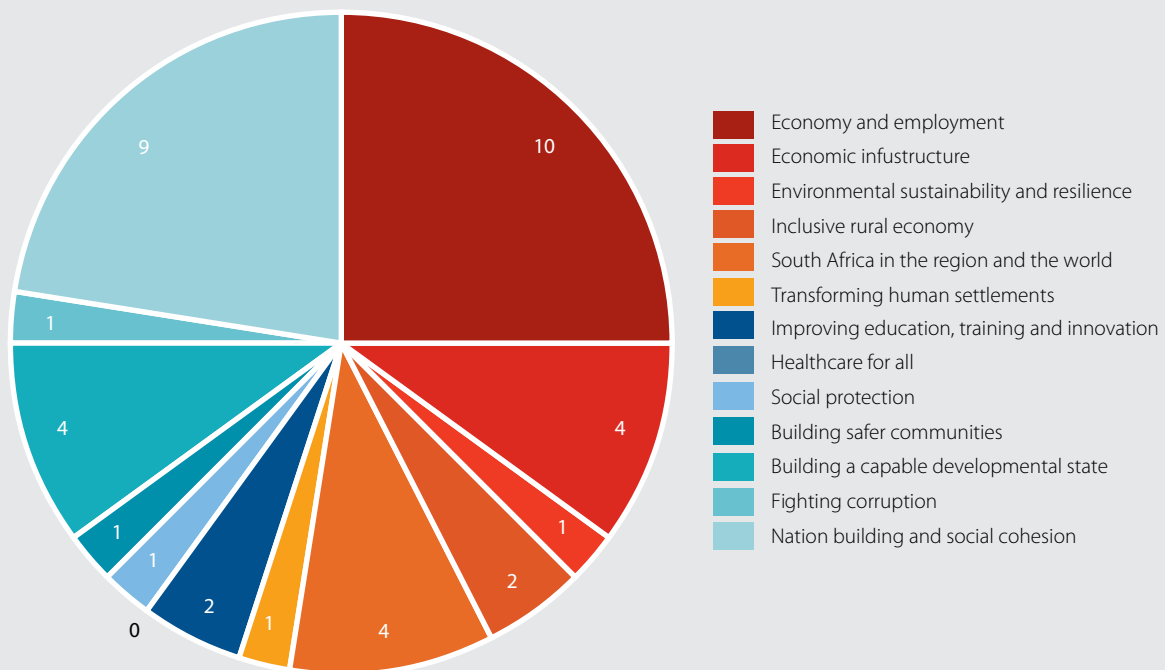


Chart 4: Number of Top 20 Risks Linked to NDP Developmental Themes (2 Themes per Risk)

1.5. Possible Scenarios for South Africa

The IRMSA Executive and Risk Intelligence committees attended a workshop hosted by Clem Sunter to unpack potential scenarios for the South African landscape in relation to NDP implementation and the country's holistic path toward development. Four possible scenarios have been identified in Figure 10 below, namely 'Sunny Summit', 'Steep Climb', 'Missed Window', and 'Avalanche'. The most likely projected scenario is based on the evolution of the X and Y axes.



Figure 10: South African Scenarios Related to NDP Implementation

The X-Axis (horizontal axis) represents the degree to which South Africa is either vulnerable or resilient. This is dependent on the nature of the country's risk profile, how readily it is able to respond to these risks, and whether they will have a material impact on NDP implementation. Essentially, resilience equates to the ability to successfully implement the NDP and vulnerability equates to the NDP

gathering dust. The Y-Axis (vertical axis) represents the global environment within which South Africa attempts to achieve its objectives, one from which it cannot be isolated. The top of this axis is the ideal environment referred to as global stability in all aspects, with the opposite end of the axis relating to global instability.



A PESTLE analysis in Table 5 below will be used to analyse and monitor South Africa's internal (degree of resilience) and external (degree of global stability) environment. This analysis refers to national and international political, economic, social, technological, legal and environmental

factors. The approach corresponds with the five risk categories provided in the annual WEF Global Risks report, with the legal category the only addition. The key characteristics of these environmental factors are provided in the table below.

Factor Name	Key Factors	
Political	Government interventions Political legitimacy Political stability Foreign policy	Wars and conflicts Terrorism Freedom of press Corruption level
Economic	GDP growth Unemployment levels Inflation Interest rates	Exchange rates Infrastructure Foreign direct investment
Social	Income distribution Demographic changes Health Safety	Living conditions Level of education Cultural considerations
Technological	New inventions Changes in information technology Global communications	Access to technology Intellectual property issues Speed of technological obsolescence
Legal	National and international laws Law enforcement	International trade regulations and restrictions
Environmental	Climate change Severe weather Natural catastrophes	Energy availability Natural resources

Table 5: Approach to the PESTLE Analysis

The continual tracking of the South African and global risks will be used to inform the PESTLE analysis once the indicators have been identified for each risk. It will be far easier to ascertain which of the four scenarios are more likely once this continual monitoring commences in 2016. This analysis will also be conducted within the context

of the significant global trends provided below which were identified in the WEF Global Risks Report. The WEF describes a trend as a long-term pattern that is currently occurring and that could contribute to intensifying global risks and/or altering the relationship between them.

Trend	Description
Ageing Population	Ageing of populations in developed and developing countries driven by declining fertility
Climate change	Change of climate attributed directly or indirectly to human activity that alters the composition of the global atmosphere and which is in addition to natural climate variability
Environmental degradation	Deterioration in quality of air, soil and water from ambient concentrations of pollutants and other activities and processes
Growing middle class in emerging economies	Growing share of population reaching middle-class income levels in emerging economies
Increasing national sentiment	Increasing national sentiment among populations and political leaders affecting countries' national and international political positions
Increasing polarization of societies	Inability to reach agreement on key issues within countries due to diverging or extreme values, political or religious views
Rise of chronic diseases	Increasing rates of non-communicable diseases, also known as chronic diseases, leading to long-term costs of treatment threatening recent societal gains in life expectancy and quality, placing a burden on economies
Rise of hyperconnectivity	Increasing digital interconnection of people and things
Rising geographic mobility	Increasing mobility of people and things due to quicker and better performing means of transport and lowered barriers
Rising income disparity	Increasing socio-economic gap between rich and poor in major countries or regions
Shifts in power	Shifting power from state to non-state actors and individuals, from global to regional levels, and from developed to emerging market and developing economies
Urbanisation	Rising number of people living in urban areas, resulting in the physical growth of cities
Weakening of international governance	Weakening or inadequate global or regional institutions' (e.g. the UN, IMF, NATO, etc.) agreements or networks, and loss of trust in them, increasing the global power vacuum and preventing effective solutions to global challenges

Figure 11: Global Trends Identified by the WEF

The SMEs were asked to indicate which global trends have a material impact on each of the risks that they were approached to analyse. The total number, and percentage spread, of the global trends affecting the top 20 South African and industry level risk profiles is captured in Figure 12. The most influential global trends affecting the South African risk landscape include the following:

- Rising income disparity
- Shifts in power
- Increasing polarisation of societies
- Urbanisation
- Growing middle class in emerging economies
- Climate change

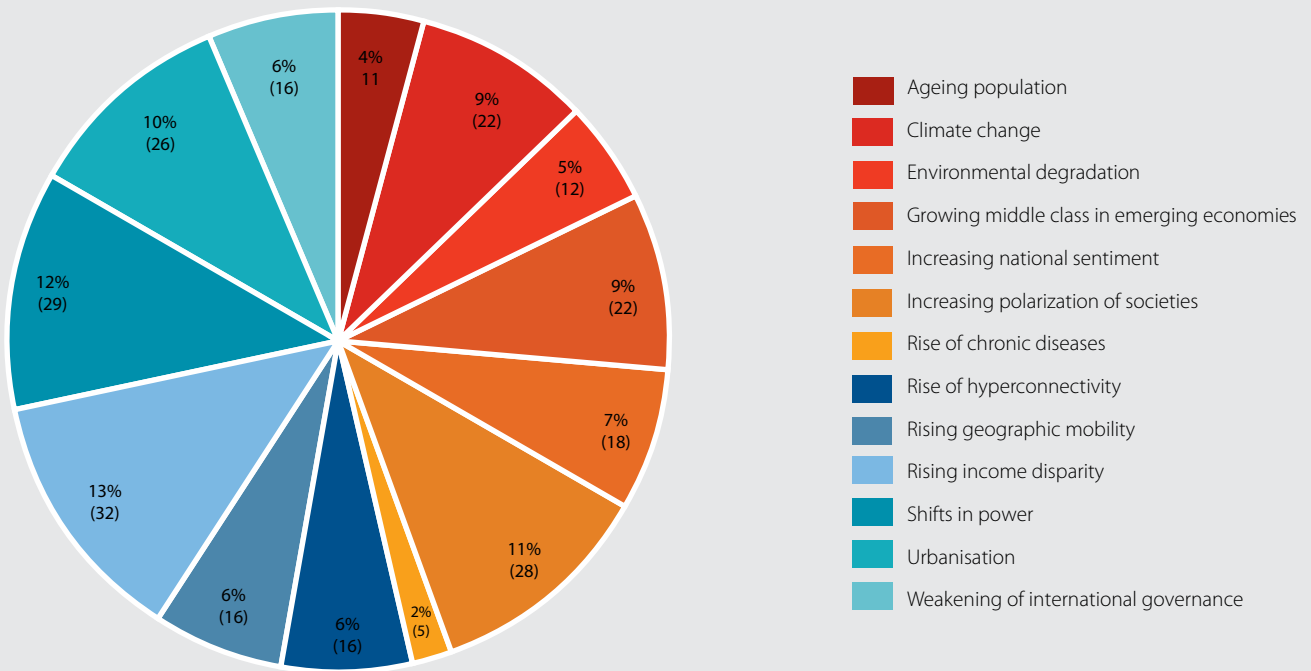


Figure 12: Number and Percentage Spread of Global Trends Significantly Impacting the Top 20 South African and Industry Level Risk Profiles

1.6. Further Action

The aim of the South Africa Risks Report is to be at the forefront 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 2017 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 have identified some enhancements for the next report:

Moving beyond an annual snapshot view of South Africa's risk profile in relation to its changing environment and global trends, IRMSA will provide ongoing monitoring of the manner in which these risks are unfolding, and assessing whether their likelihood and impact is increasing or decreasing through the Subject Matter Experts.

The initial positioning related to the four possible scenarios with the intention of achieving the NDP objectives will be

established in 2016 and then progress will be tracked using this 'live' risk profile.

The 2017 report will contain a risk readiness assessment of the top South African risks. Risk readiness refers to the level of the country's risk preparedness - undertaking a formal review of risks and putting in place a comprehensive risk management plan.

A year to year comparison between the current and previous year's top risks will be carried out from the next report. The incorporation of risk ratings - instead of solely prioritising the top risks by likelihood and consequence - makes this comparison possible.

The next report will have full risk descriptions so that the risks are better understood by the respondents and by the reader. The following risk meta-language will be used for the descriptions:

Something might happen (*the future uncertainty*)
Leading to (*the most likely consequence*)
Caused by (*the cause is always current or already happening*)

1.7. Conclusion


The South Africa Risks Report has developed a methodology over the past year to improve the prioritisation and analysis of interconnected national and industry level risks. The theme of interconnectedness in this year's report is demonstrated by almost half of the risks in the top 20 risk profile containing strong links to at least six other risks in the profile. Even though interconnectedness also features strongly when comparing the South African and global risk landscapes, their contrasting prioritised list of risks confirms that the country's risk profile encapsulates the unique elements within its environment.

The broad spectrum of these risks suggests that confronting them requires a collaborative country- and industry- wide effort. In 2016, the major risks obstructing NDP implementation include inadequate electricity supply, skills and water availability as well as high levels of corruption. Whilst debate is expected regarding the ordering of the top South African risks, there appears to be general consensus that the isolated or combined impact of the majority of these risks would be devastating. Many of the recent consequences are discussed in the executive summary.

The fact that risk perceptions vary among SMEs, industries, and IRMSA, IODSA, SAICA and IASA survey respondents should not be viewed as a negative, because the main aim of the report is to spark debate at all levels. A greater understanding of each risk should ensure a more effective and accurate response, leading to increased national resilience.

Not addressing these risks will become tougher going forward considering that over half of the top 20 risks are expected to become even more of a concern during the next 10 years.

The trajectory of national resilience and global stability will determine the most likely projected scenario indicating the ability to successfully implement the NDP. IRMSA will continue to provide a platform to endorse the importance of risk management in contributing toward the building of national resilience. This platform will also offer leaders and decision makers an opportunity to work together on preparing for risks, mitigating them and strengthening the country's resilience.



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

The top South African risks have been placed under the spotlight in this section. Each risk contains the applicable feedback provided by the Subject Matter Experts that were asked to address the country's top risks. A summary table has been provided overleaf indicating all of the Subject Matter Expert feedback for the 18 month and 10 year risk rating projections, affected industries and the global trends likely to influence the risks.

No	Risk Name	Risk Rating: 18 Months		Risk Rating: 10 Years		Industries most affected if the risk materialises														
		Likelihood Rating: A - E A. Rare/Remote B. Unlikely C. Moderate D. Likely E. Almost certain	Impact / Consequence Rating: A - E A. Insignificant B. Minor C. Moderate D. High E. Critical	Likelihood Rating: A - E A. Rare/Remote B. Unlikely C. Moderate D. Likely E. Almost certain	Impact / Consequence Rating: A - E A. Insignificant B. Minor C. Moderate D. High E. Critical	Professional Services	Government and Public Services	Financial Services	Energy, Water and Utilities	Communications and Technology	Transport and Logistics	Petrochemicals	Manufacturing	Mining, Engineering and Construction						
1	Insufficient electricity supply																			
	Silas Zimu, CEO, Suzlon Energy and President Jacob Zuma's Special Advisor on Energy	D	D	C	E															
	Peter Fowles, Strategic Advisor, Association of Municipal Electricity Undertaking	C	C	C	B															
	Dr Leslie Carlo, Risk and Engineering Management Specialist	D	E	E	E															
	Stan Bridgens, Director, South African Institute of Electrical Engineers (SAIEE)	E	D	D	C															
2	Increasing corruption																			
	Adv. Kevin Sifiso Malunga, Deputy Public Protector of the Republic of South Africa	D	D	D	D															
	Terrance Booysen, Co-founder and Executive Director, CGF Research Institute	E	E	D	D															
3	Skills shortage																			
	Dr Jody Cedras, Director: Registration and Recognition, South African Qualifications Authority (SAQA)	C	C	C	D															
	Stan Bridgens, Director, South African Institute of Electrical Engineers (SAIEE)	D	C	E	D															
4	Education and skills development																			
	Dr Jody Cedras, Director: Registration and Recognition, South African Qualifications Authority (SAQA)	B	B	C	C															
	Christine Fritz, Skills Development Manager, BankSeta	C	D	C	E															
	Professor Hermien Zaaiman, Manager and Associate Professor, Centre for Applied Risk Management	E	E	E	E															
	Dr Whitey van der Linde, Senior Lecturer, University of Johannesburg	C	D	C	D															
	Stan Bridgens, Director, South African Institute of Electrical Engineers (SAIEE)	C	C	D	D															
	Reshma Ramkumar, Chief Risk Officer, Impala Platinum	D	C	D	D															
5	Water crisis																			
	Millicent Mashamaite, Chief Risk Officer, Lepelle Northern Water	E	E	E	E															
	Marinda van der Merwe, BU Managing Partner, ERM Southern Africa	C	D	D	E															
	Oliver Laloux, Chief Executive Officer, Mondial Consultants	E	E	D	D															
	Brendan Maseti, Group Risk Manager, Lonmin	E	D	D	D															
	Fred Goede, Senior Lecturer Applied Risk Management, North-West University	D	C	C	C															
6	Structurally high unemployment / underemployment																			
	Dr Mark Bussin, Chairperson, 21st Century Pay Solutions Group	E	E	E	E															
	Professor Andre Roux, Director, Institute for Futures Research (IFR)	E	E	D	D															
7	Lack of leadership																			
	Justice Malala, Renowned Political Analyst and Commentator	D	E	C	C															
	Mavuso Msimang, Public Sector Turnaround Specialist	E	E	E	E															
	Rene Kenosi, Chairman, Independent Regulatory Board For Auditors	D	D	B	D															
8	Increasing strike action																			
	Ryan Cummings, Chief Analyst: Africa, Red24	D	C	E	D															
	Thokozile Ntshiqqa, Executive Manager: Stakeholder Management Division, Sasria	E	D	E	E															
9	Failure / shortfall of critical infrastructure																			
	Lindsay Martin, Chairperson, Chief Director: Infrastructure Development Management Systems, National Treasury	D	D	C	D															
	Thulani Mkhungo, Key Account Manager: Enterprise Risk Management, Transnet Freight Rail	E	D	E	E															
10	Severe income disparity																			
	Professor Andre Roux, Director, Institute for Futures Research (IFR)	C	C	E	E															
	Querida Saal, Human Rights Advocate and Researcher, South African Human Rights Commission (SAHRC)	D	D	D	D															

No	Risk Name	Industries most affected if the risk materialises					Global trends that will have a major impact on the risk going forward												
		Hospitality	Education	Healthcare	Retail	Other	Ageing population	Climate change	Environmental degradation	Growing middle class in emerging economies	Increasing polarization of societies	Rise of chronic diseases	Rise of hyper connectivity	Rising geographic mobility	Rising income disparity	Shifts in power	Urbanisation	Weakening of international governance	Increasing national sentiment
1	Insufficient electricity supply																		
	Silas Zimu, CEO, Suzlon Energy and President Jacob Zuma's Special Advisor on Energy																		
	Peter Fowles, Strategic Advisor, Association of Municipal Electricity Undertaking																		
	Dr Leslie Carlo, Risk and Engineering Management Specialist																		
	Stan Bridgens, Director, South African Institute of Electrical Engineers (SAIEE)																		
2	Increasing corruption																		
	Adv. Kevin Sifiso Malunga, Deputy Public Protector of the Republic of South Africa																		
	Terrance Booysen, Co-founder and Executive Director, CGF Research Institute																		
3	Skills shortage																		
	Dr Jody Cedras, Director: Registration and Recognition, South African Qualifications Authority (SAQA)																		
	Stan Bridgens, Director, South African Institute of Electrical Engineers (SAIEE)																		
4	Education and skills development																		
	Dr Jody Cedras, Director: Registration and Recognition, South African Qualifications Authority (SAQA)																		
	Christine Fritz, Skills Development Manager, BankSeta																		
	Professor Hermien Zaaïman, Manager and Associate Professor, Centre for Applied Risk Management																		
	Dr Whitey van der Linde, Senior Lecturer, University of Johannesburg																		
	Stan Bridgens, Director, South African Institute of Electrical Engineers (SAIEE)																		
	Reshma Ramkumar, Chief Risk Officer, Impala Platinum																		
5	Water crisis																		
	Millicent Mashamaite, Chief Risk Officer, Lepelle Northern Water																		
	Marinda van der Merwe, BU Managing Partner, ERM Southern Africa																		
	Oliver Laloux, Chief Executive Officer, Mondial Consultants																		
	Brendan Maseti, Group Risk Manager, Lonmin																		
	Fred Goede, Senior Lecturer Applied Risk Management, North-West University																		
6	Structurally high unemployment / underemployment																		
	Dr Mark Bussin, Chairperson, 21st Century Pay Solutions Group																		
	Professor Andre Roux, Director, Institute for Futures Research (IFR)																		
7	Lack of leadership																		
	Justice Malala, Renowned Political Analyst and Commentator																		
	Mavuso Msimang, Public Sector Turnaround Specialist																		
	Rene Kenosi, Chairman, Independent Regulatory Board For Auditors																		
8	Increasing strike action																		
	Ryan Cummings, Chief Analyst: Africa, Red24																		
	Thokozile Ntshiqqa, Executive Manager: Stakeholder Management Division, Sasria																		
9	Failure / shortfall of critical infrastructure																		
	Lindsay Martin, Chairperson, Chief Director: Infrastructure Development Management Systems, National Treasury																		
	Thulani Mkhungo, Key Account Manager: Enterprise Risk Management, Transnet Freight Rail																		
10	Severe income disparity																		
	Professor Andre Roux, Director, Institute for Futures Research (IFR)																		
	Querida Saal, Human Rights Advocate and Researcher, South African Human Rights Commission (SAHRC)																		

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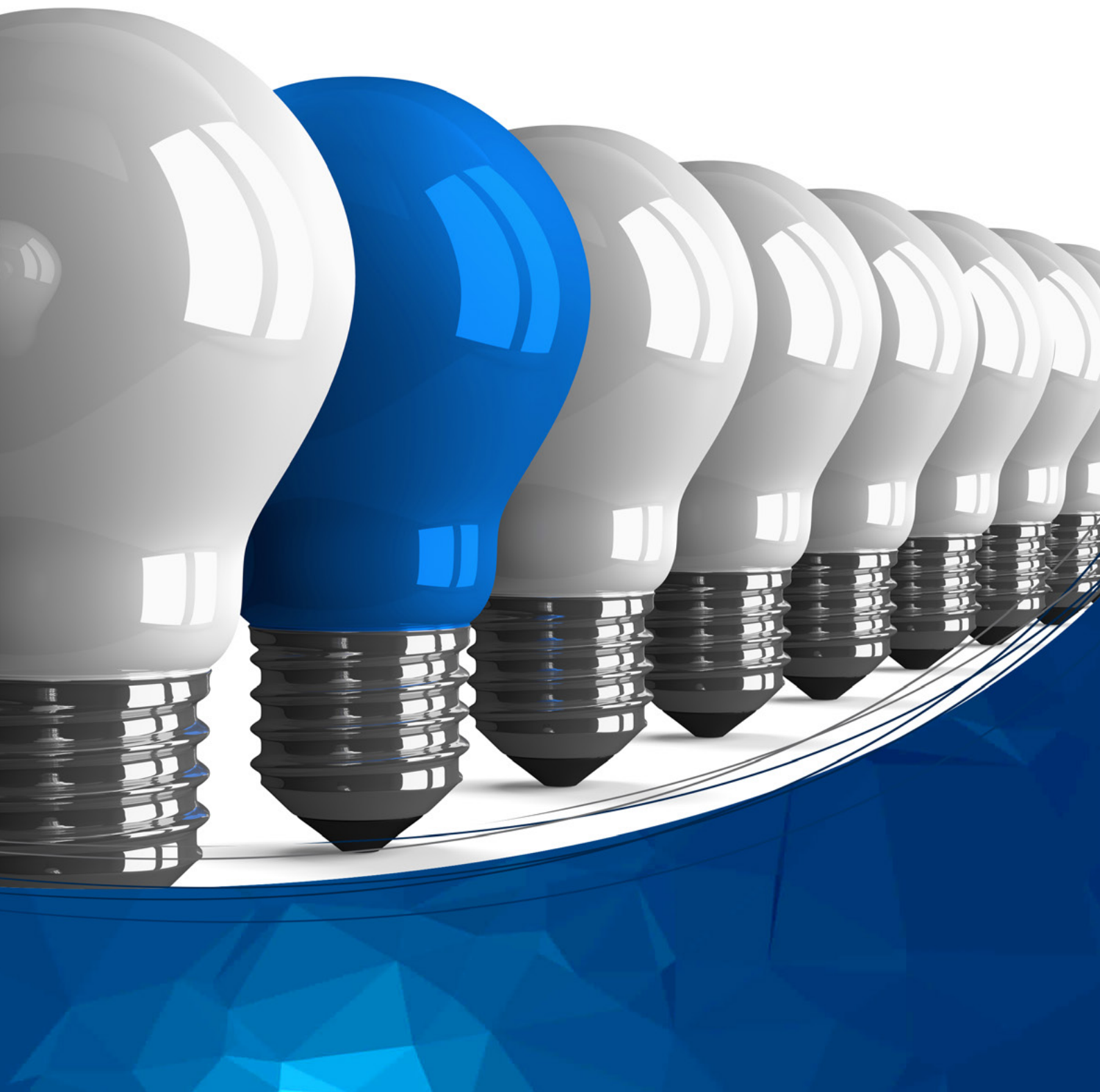


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2.1 Insufficient Electricity Supply





Insufficient Electricity Supply

Silas Zimu

Chief Executive Officer

Suzlon Energy & President Jacob Zuma's Special Advisor on Energy

Q: What is your opinion of this topic as a risk to the achievement of the National Development Plan (NDP) objectives for South Africa?

A: I believe that we need to increase our electricity supply multifold in order to stimulate the South African economy.

Q: Give the primary causes of this risk.

- A:
- High demand
 - Old power stations
 - Lack of funding

Q: What are the consequences if this risk materialises?

A: It will collapse the economy

Q: Which industry will be most affected if this risk materialises?

- A:
- Professional Services
 - Government and Public Services
 - Financial Services
 - Energy, Water and Utilities
 - Communications and Technology
 - Transport and Logistics
 - Petrochemicals
 - Manufacturing
 - Mining, Engineering and Construction
 - Hospitality
 - Education
 - Healthcare
 - Retail
 - Other

All industries will be affected

Q: What are the barriers that prevent us from solving this risk?

- A:
- Lack of leadership at our state-owned companies
 - Lack of forward thinking

Q: What is the effective risk response to treating the risk on an industry level?

A: Industry will have to reduce its dependence on the national grid.

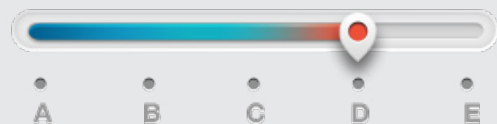
Q: What is the effective risk response to treating the risk on a National level?

- A:
- Planning
 - Coordination
 - Good implementation
 - Government and IPPs to work together

Q: Rate the Impact and Likelihood of the risk in the next 18 months.

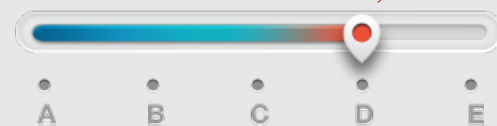
A: Impact Scale:

High



Likelihood Scale:

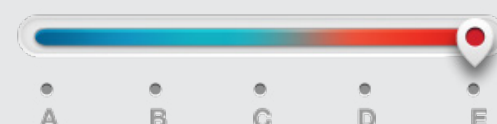
Likely



Q: Rate the Impact and Likelihood of the risk in the next 10 years.

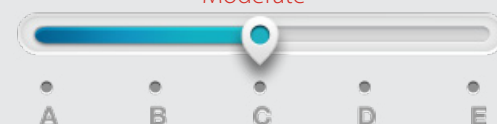
A: Impact Scale:

Critical



Likelihood Scale:

Moderate



Q: Which of the global trends do you think will have a major impact on the risk going forward?

- A:
- Ageing population
 - Climate change
 - Environmental degradation
 - Growing middle class in emerging economies
 - Rising geographic mobility
 - Rising income disparity
 - Shifts in power
 - Urbanisation



Peter Fowles

Strategic Advisor

Association of Municipal Electricity Undertaking

Q: What is your opinion of this topic as a risk to the achievement of the National Development Plan (NDP) objectives for South Africa?

A: Extremely relevant.

Q: Give the primary causes of this risk.

- A:**
- Political interference
 - Poor management
 - Inadequate skills

Q: What are the consequences if this risk materialises?

A: The country will stagnate and the economy will be even further damaged than it is now.

Q: Which industry will be most affected if this risk materialises?

- A:**
- Energy, Water and Utilities
 - Communications and Technology
 - Manufacturing
- All of them to be frank, will be affected in one way or another.

Q: What are the barriers that prevent us from solving this risk?

- A:**
- Political interference
 - Poor management
 - Inadequate skills

Q: What is the effective risk response to treating the risk on an industry level?

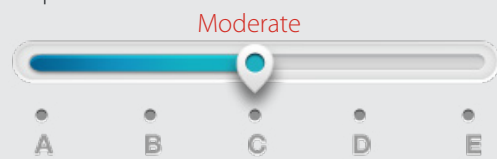
A: The industry will have to arrange for its own electricity source in order to remain operational.

Q: What is the effective risk response to treating the risk on a National level?

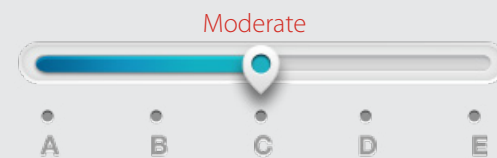
A: Create an independent system and market operator (ISMO). Unbundle Eskom but I doubt that privatisation is the answer.

Q: Rate the Impact and Likelihood of the risk in the next 18 months.

A: Impact Scale:

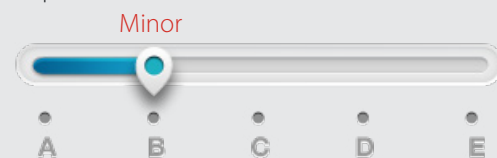


A: Likelihood Scale:

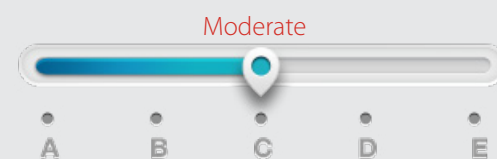


Q: Rate the Impact and Likelihood of the risk in the next 10 years.

A: Impact Scale:



A: Likelihood Scale:



Q: Which of the global trends do you think will have a major impact on the risk going forward?

A: I don't think that the risk of insufficient electricity supply in South Africa will be significantly affected by 'global trends'. We have our own unique factors that will impact it more.



Insufficient Electricity Supply

Dr Leslie Carlo

Risk and Engineering Management Specialist

Q: What is your opinion of this topic as a risk to the achievement of the National Development Plan (NDP) objectives for South Africa?

A: Insufficient electricity supply creates risk to the ability of South Africa to stimulate and grow its economy, which will impact particularly on creating jobs, expanding infrastructure, investing in transitioning to a low carbon economy, and providing quality health care.

Q: Give the primary causes of this risk.

A: The primary causes of this risk, which has largely materialised, are:

- Failure to attract investment in new major power plants due to an uncertain and non-cost reflective electricity price path. (This already resulted in Eskom being tasked, with inadequate notice, to undertake a generation capacity expansion programme).
- Poor management by Eskom of its programme to build the Ingula, Kusile and Medupi power stations.
- Deteriorating performance of Eskom's existing power generation plant.
- Inadequate funding of investment by the electricity supply industry in the resources essential to the maintenance of electricity distribution infrastructure.

Q: What are the consequences if this risk materialises?

A: South Africa has already experienced consequences of rotational load shedding. The continuation of this risk has the inevitable consequences of:

- Reduction in the sovereign credit rating, due to loss of confidence by the major credit ratings agencies, leading to higher costs and increased difficulty by government to fund programmes essential to deliver on the NDP.
- Loss of confidence of investors impeding the development of industries which are key to economic growth.
- Reduced and unreliable production of commodities and goods, in particular those key to essential export revenues.
- Disruption of essential services, telecommunications, traffic congestion and the occasional increase in life threatening situations.

Q: Which industry will be most affected if this risk materialises?

- A:
- Government and Public Services
 - Energy, Water and Utilities
 - Communications and Technology
 - Transport and Logistics
 - Manufacturing
 - Mining, Engineering and Construction
 - Hospitality
 - Healthcare
 - Retail

Q: What are the barriers that prevent us from solving this risk?

- A:
- Uncertain government policy and regulatory direction. E.g. potential independence of transmission and the system market operator, NERSA's short-term Multi Year Price Determinations (where MYPD3 is four years only).
 - The absence of a long-term electricity pricing policy linked to the Integrated Resource Plan, together with Eskom and local government electricity supply funding strategy.
 - Late delivery by Eskom of its programme to build the Ingula, Kusile and Medupi power stations.
 - Short-term funding of Eskom and local government electricity infrastructure.
 - Local government resource application and delivery capability.

Q: What is the effective risk response to treating the risk on an industry level?

- A:
- Industry level agreement and recommendations to government on restructuring the electricity supply industry.
 - Alignment between electricity authorities and DoE on the positioning and timing of new and increased Independent Power Producer generation.
 - Improvement in the performance of Eskom's existing power generation plant.
 - Improved efficiencies that enable maximum application of limited funding and other resources to the maintenance and refurbishment of electricity infrastructure.
 - Elimination of the cross subsidisation of local government operations from electricity revenues.
 - Significant reduction in non-payment of electricity accounts.

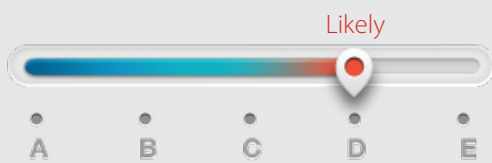
- Policy direction to address and eliminate electricity supply fragmentation and industry inefficiencies.
- Cohesive policy for the development of an electricity supply industry that improves the efficient use of resources and that supports the effective implementation of Integrated Resource Plan.
- Introducing and sustaining the attraction of investment in the electricity supply industry by creating certainty over a long-term price path.

Q: Rate the Impact and Likelihood of the risk in the next 18 months.

A: Impact Scale:



Likelihood Scale:

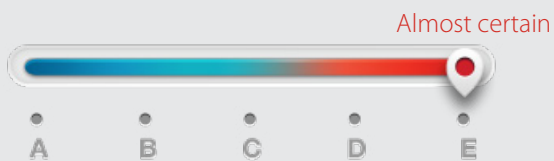


Q: Rate the Impact and Likelihood of the risk in the next 10 years.

A: Impact Scale:



Likelihood Scale:



Q: Which of the global trends do you think will have a major impact on the risk going forward?

- A:
- Climate change
 - Environmental degradation
 - Shifts in power
 - Urbanisation



Insufficient Electricity Supply

Stan Bridgens

Director

South African Institute of Electrical Engineers (SAIEE)

Q: What is your opinion of this topic as a risk to the achievement of the National Development Plan (NDP) objectives for South Africa?

A: The NDP embodies much of what would normally be done in development of infrastructure and services – all this will be delayed.

Q: Give the primary causes of this risk.

- Ideology
- Inadequate skills
- Lack of leadership

Q: What are the consequences if this risk materialises?

- A: Lack of:
- Confidence
 - Political unrest
 - Ill affordable high cost of living

Q: Which industry will be most affected if this risk materialises?

- Mining
- Engineering
- Construction

Q: What are the barriers that prevent us from solving this risk?

- Competency
- Transparency in procurement
- Political/governmental interference

Q: What is the effective risk response to treating the risk on an industry level?

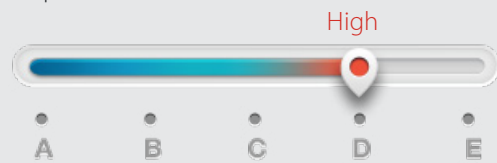
- Minimisation of exposure to risky initiatives
- Inward looking strategy first then outward

Q: What is the effective risk response to treating the risk on a National level?

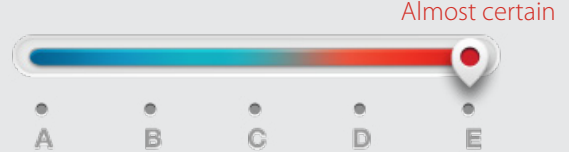
A: Conservatism

Q: Rate the Impact and Likelihood of the risk in the next 18 months.

A: Impact Scale:

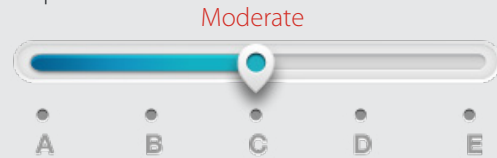


Likelihood Scale:

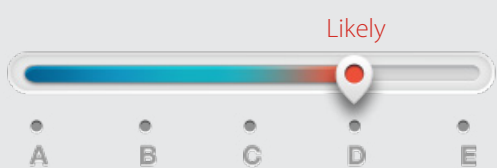


Q: Rate the Impact and Likelihood of the risk in the next 10 years.

A: Impact Scale:



Likelihood Scale:



Q: Which of the global trends do you think will have a major impact on the risk going forward?

A: Environmental degradation

2.2 Increasing Corruption





Adv. Kevin Sifiso Malunga

Deputy Public Protector of the Republic of South Africa

Q: What is your opinion of this topic as a risk to the achievement of the National Development Plan (NDP) objectives for South Africa?

A: Chapter 14 of the National Development Plan places the fight against corruption as an apex priority that is linked to economic development and stability. Corruption threatens every thread of a country's fibre from the rule of law, economy and social values.

Q: Give the primary causes of this risk.

- A:**
- Greed on the part of private and public sector players
 - Absence of consequences for wrongful behaviour
 - Inadequate implementation of legislation/policies

Q: What are the consequences if this risk materialises?

- A:** As the Public Protector we have already seen some of the consequences of the risk materialising as follows:
- Service delivery protests
 - Destruction of infrastructure by frustrated citizens
 - Mistrust of the leadership of both the public and private sectors
 - Social instability
 - Reduced investor confidence

Q: Which industry will be most affected if this risk materialises?

A: Government and Public Services

Q: What are the barriers that prevent us from solving this risk?

A: We need to seize ill-gotten assets obtained from the proceeds of corruption. Asset forfeiture needs to be effective. Criminal sanctions may also prove to be a useful deterrent against the risks associated with corruption.

Q: What is the effective risk response to treating the risk on an industry level?

A: There should be enhanced verification measures, for example, of service providers doing business with the state and verification of the suitability of

individuals being appointed to positions requiring integrity. Also a public tendering/supply chain process will enhance openness and accountability.

Q: What is the effective risk response to treating the risk on a National level?

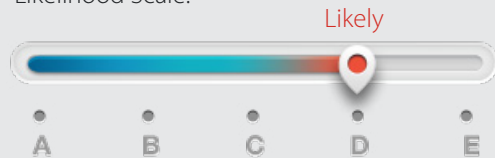
A: Increased anti-corruption advocacy on a national level from both the public and private sector.

Q: Rate the Impact and Likelihood of the risk in the next 18 months.

A: Impact Scale:



Likelihood Scale:

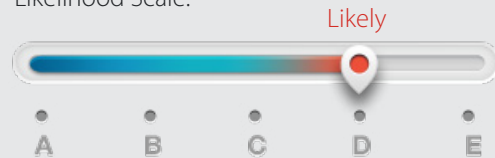


Q: Rate the Impact and Likelihood of the risk in the next 10 years.

A: Impact Scale:



Likelihood Scale:



Q: Which of the global trends do you think will have a major impact on the risk going forward?

- A:**
- Rising income disparity
 - Shifts in power
 - Increasing national sentiment

Terrance Booysen

Co-founder and Executive Director
CGF Research Institute

Q: What is your opinion of this topic as a risk to the achievement of the National Development Plan (NDP) objectives for South Africa?

A: In specific regard to the comments made by President Jacob Zuma earlier this year on anti-corruption measures in South Africa; it is of major concern that South Africa is still perceived as one of the most corrupt countries in the world. Clearly, even if the perception is not entirely accurate, reports from Transparency International (TI) who ranked South Africa 67th out of 174 countries in respect of corruption does not bode well for the country and tarnishes our brand across various fronts.

This being said, experts calculate that South Africa may have lost as much as R675 billion as a result of corruption since 1994. Indeed, whilst this figure is only an estimate, imagine what could have been done with this money in terms of developing and maintaining South Africa's infrastructure, as well as social structures. This is where the NDP becomes so vital – it is meant to be a plan which is intended to get all the necessary players (i.e. government, business and civil society) to act in concert, and against a set of 'rules' which are set within a robust governance structure.

Whilst the players are not unified on the NDP, and as corruption continues to spiral out of control, this plan amounts to nothing more than a 'pipe dream'.

Indeed, whilst this plan does not have material meaning and effect, South Africa will continue in its downward slide, evidenced through yet more country downgrades by the international rating agencies. Unless the country is able to show stability, even predictability; international investors will migrate to more stable, lower risk investment regions. Ultimately, this has dire implications to South Africa as a whole with inter alia; substantially increased foreign debt, greater burdens on the local economy, increased social pressures and tension, more unemployment and increased crime.

This becomes a toxic situation (which no country wants) and it will require decisive and clear leadership, with a robust strategy and plan (i.e. NDP) to reverse the situation and the deeply engrained (flawed) problems found in South Africa.

Q: Give the primary causes of this risk.

- A:**
- Lack of proper leadership
 - Lack of example
 - Lack of consequences (i.e. good legislation but poorly followed through)

Q: What are the consequences if this risk materialises?

A: The risk has materialised! Rating agencies as one example have downgraded SA for many reasons, and not only because of a poorly performing local economy. With many cases of alleged corruption in state organisations as an example; rating agencies assess the overall performance in these organisations and if they are not at an acceptable level of operation and performance, the country is affected in its overall ratings. Two of the rating agencies have downgraded South Africa to one level from 'junk' status. Expectedly, as corruption continues with light sanction when perpetrators are caught, the tendency is to continue with this activity. Ultimately, this erodes brand, weakens markets and increases the cost of doing business.

Q: Which industry will be most affected if this risk materialises?

- A:**
- Professional Services
 - Government and Public Services
 - Financial Services
 - Energy, Water and Utilities
 - Communications and Technology
 - Transport and Logistics
 - Petrochemicals
 - Manufacturing
 - Mining, Engineering and Construction
 - Hospitality
 - Education
 - Healthcare
 - Retail
 - Other

All industries are affected by corruption; the entire supply chain becomes negatively affected.

Q: What are the barriers that prevent us from solving this risk?

A: At the heart of the problem lies the perceived lack of accountability for maladministration and corruption which leaders in government and business appear to be avoiding. Whilst South Africa has good anti-corruption architectural structures in place to tackle corruption, they are meaningless if there is no political leadership and will to prevent the continual impunity for the perpetrators aiding and fuelling corruption.

Q: What is the effective risk response to treating the risk on an industry level?

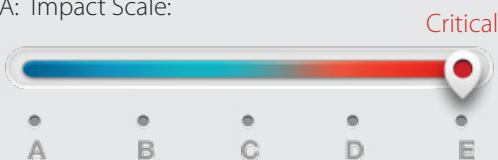
- A:
- Install proper anticorruption systems and policies
 - Enforce the anticorruption systems and policies
 - Report on deviances and/or violations
 - Act decisively and harshly against perpetrators
 - Build anticorruption systems and procedures in the organisation's supply chain
 - Conduct regular forensic audits
 - Publicise all convictions

Q: What is the effective risk response to treating the risk on a National level?

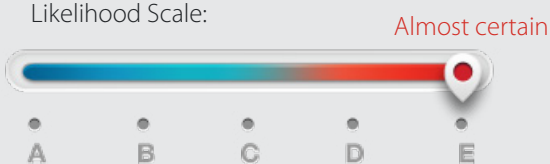
- A:
- Implement and enforce sanctions for any violations
 - Publicise all convictions

Q: Rate the Impact and Likelihood of the risk in the next 18 months.

A: Impact Scale:

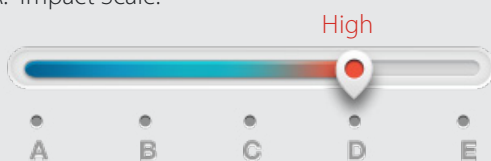


Likelihood Scale:

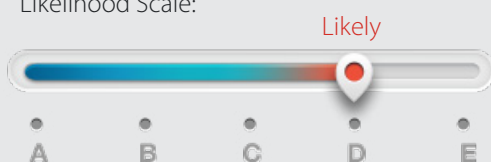


Q: Rate the Impact and Likelihood of the risk in the next 10 years.

A: Impact Scale:



Likelihood Scale:



Q: Which of the global trends do you think will have a major impact on the risk going forward?

- A:
- Rising income disparity
 - Shifts in power
 - Increasing national sentiment

2.3 Skills Shortage





Dr Jody Cedras

Director: Registration and Recognition
South African Qualifications Authority (SAQA)

Q: What is your opinion of this topic as a risk to the achievement of the National Development Plan (NDP) objectives for South Africa?

A: It is critical. Achieving the state as envisaged in the NDP will require an appropriately skilled workforce to propel our innovation and economic growth as a country.

Q: Give the primary causes of this risk.

A: School curricula and adequate preparation, specifically in the “gateway” subjects such as mathematics, science and languages for further study – the question of access/ quality and relevance of training/ growing inequalities in resource availability (and access to resources) in the ETD sector – the issue of affordability.

- Access
- Quality
- Affordability

Q: What are the consequences if this risk materialises?

- A:**
- South Africa becomes less competitive
 - Need to import skills
 - Increased social unrest
 - Rise of populist forms of political movements

Q: Which industry will be most affected if this risk materialises?

- A:**
- Professional Services
 - Government and Public Services
 - Financial Services
 - Energy, Water and Utilities
 - Communications and Technology
 - Transport and Logistics
 - Petrochemicals
 - Manufacturing
 - Mining, Engineering and Construction
 - Hospitality
 - Education
 - Healthcare
 - Retail
 - Other

There will be gradual societal breakdown or disintegration. None of our social and economic services will go unscathed.

Q: What are the barriers that prevent us from solving this risk?

A: Lack of coordinated centralised planning and political will to implement plans.

Q: What is the effective risk response to treating the risk on an industry level?

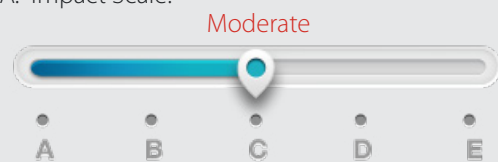
A: Do not create more structures. Use the existing structures such as the SETAs, the NSF, and organised formations such as the trade unions and professional bodies within the industrial sectors to focus their energies on implementation and not on more plans.

Q: What is the effective risk response to treating the risk on a National level?

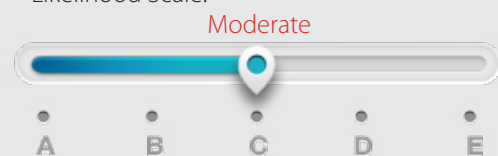
A: Partner with government through Public-Private-Institutional-Partnerships (PPIPs) in mobilising resources for implementation.

Q: Rate the Impact and Likelihood of the risk in the next 18 months.

A: Impact Scale:

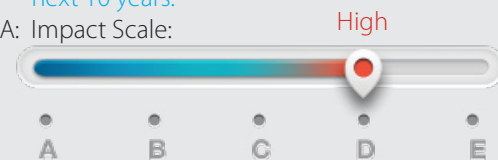


Likelihood Scale:

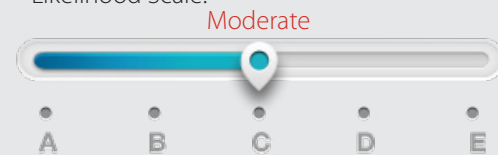


Q: Rate the Impact and Likelihood of the risk in the next 10 years.

A: Impact Scale:



Likelihood Scale:



Q: Which of the global trends do you think will have a major impact on the risk going forward?

- A:**
- Ageing population
 - Increasing polarisation of societies
 - Rise of hyper connectivity
 - Rising geographic mobility
 - Rising income disparity
 - Urbanisation



Stan Bridgens

Director

South African Institute of Electrical Engineers (SAIEE)

Q: What is your opinion of this topic as a risk to the achievement of the National Development Plan (NDP) objectives for South Africa?

A: Massive and delaying

Q: Give the primary causes of this risk.

- Poor primary/secondary education
- Misplaced experience
- SETA ineffectiveness

Q: What are the consequences if this risk materialises?

- Threat to health and safety
- Poor competitiveness
- Unemployment

Q: Which industry will be most affected if this risk materialises?

A: Government and Public Services

Q: What are the barriers that prevent us from solving this risk?

- Ideology
- Schooling system
- Low standards
- Poor leadership

Q: What is the effective risk response to treating the risk on an industry level?

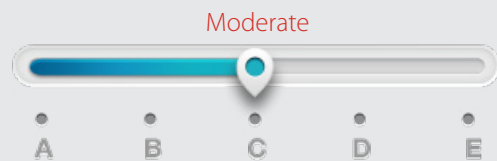
- Outsourcing at cost
- Minimise human resources and avoid training but wait for contracts and pay top dollar

Q: What is the effective risk response to treating the risk on a National level?

- Put right persons in the right jobs
- Insist on competency and good leadership qualities

Q: Rate the Impact and Likelihood of the risk in the next 18 months.

A: Impact Scale:

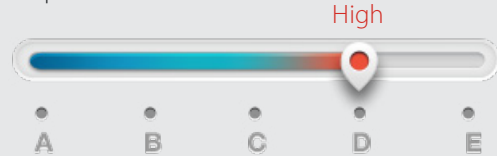


Likelihood Scale:

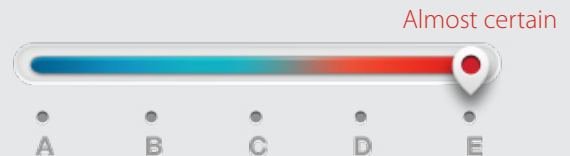


Q: Rate the Impact and Likelihood of the risk in the next 10 years.

A: Impact Scale:



Likelihood Scale:



Q: Which of the global trends do you think will have a major impact on the risk going forward?

A: Rising income disparity

2.4 Education and Skills Development





Education and Skills Development

Dr Jody Cedras

Director: Registration and Recognition
South African Qualifications Authority (SAQA)

Q: What is your opinion of this topic as a risk to the achievement of the National Development Plan (NDP) objectives for South Africa?

A: It is a crucial catalyst to ensure the kind of society we want. An educated citizenry is more likely to participate in democratic processes, contribute to the tax baseline which in turn enables a broader social safety net for the most vulnerable in our society.

Q: Give the primary causes of this risk.

- A: • Structural misalignment (SETAs, NSF, Educational Institutions, Workplaces)
- Quality
- Growing inequalities gap

Q: What are the consequences if this risk materialises?

- A: • Social unrest specifically from a growing economically disenfranchised youth
- Partial collapse of government
- Skills flight from the country
- Less confidence in public institutions

Q: Which industry will be most affected if this risk materialises?

- A: • Professional Services
- Government and Public Services
- Financial Services
- Energy, Water and Utilities
- Communications and Technology
- Transport and Logistics
- Petrochemicals
- Manufacturing
- Mining, Engineering and Construction
- Hospitality
- Education
- Healthcare
- Retail
- Other

All industries will be affected when the education and skills development system fails. Given that South Africa is a “soft” social democratic state as evidenced through its legal and policy frameworks, the most affected would be Government and Public Services, Healthcare, Education. The other industries are generally dependent on these ones.

Q: What are the barriers that prevent us from solving this risk?

A: Silo mentality, not working across the binary divides.

Q: What is the effective risk response to treating the risk on an industry level?

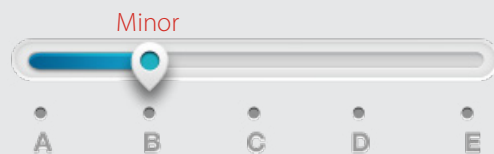
A: It is imperative that all partners within an industry seek and find ways to work collaboratively. This would include employer organisations, organised labour, government and professional bodies.

Q: What is the effective risk response to treating the risk on a National level?

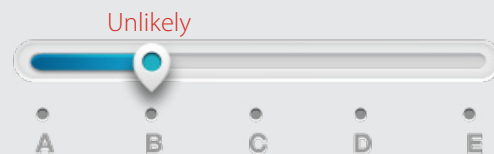
A: Government must lead and be seen to lead. Education and skills development cannot and dare not be held ransom by narrow interest groups. At times it will mean making unpopular decisions.

Q: Rate the Impact and Likelihood of the risk in the next 18 months.

A: Impact Scale:

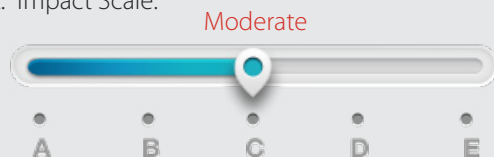


Likelihood Scale:

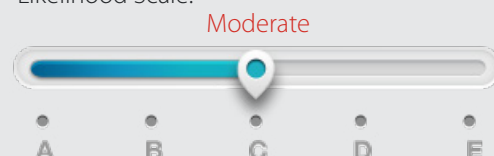


Q: Rate the Impact and Likelihood of the risk in the next 10 years.

A: Impact Scale:



Likelihood Scale:



Q: Which of the global trends do you think will have a major impact on the risk going forward?

- A: • Environmental degradation
- Growing middle class in emerging economies
- Increasing polarisation of societies
- Rise of hyper connectivity
- Rising income disparity
- Urbanisation



Education and Skills Development

Christine Fritz
Skills Development Manager
BankSeta

Q: What is your opinion of this topic as a risk to the achievement of the National Development Plan (NDP) objectives for South Africa?

A: Education and Skills Development poses a risk to the achievement of the NDP if not identified and addressed correctly.

Q: Give the primary causes of this risk.

- A:**
- Skills needed may not be identified correctly
 - Education and training may only partly address skills needs, and practical experience, which is only gained over time, may be lacking
 - Once education and training are complete successful candidates may leave the area where they are needed or even leave the country

Q: What are the consequences if this risk materialises?

A: Enabling milestones such as establishing a competitive base of human resources will not be achieved.

Q: Which industry will be most affected if this risk materialises?

- A:**
- Professional Services
 - Government and Public Services
 - Financial Services
 - Energy, Water and Utilities
 - Communications and Technology
 - Transport and Logistics
 - Petrochemicals
 - Manufacturing
 - Mining, Engineering and Construction
 - Hospitality
 - Education
 - Healthcare
 - Retail
 - Other

All industries will be affected.

Q: What are the barriers that prevent us from solving this risk?

- A:**
- Skills needed may not be identified correctly
 - Education and training may only partly address skills needs, and practical experience, which is only gained over time, may be lacking
 - Once education and training are complete successful candidates may leave the area where they are needed or even leave the country

Q: What is the effective risk response to treating the risk on an industry level?

A: Each sector has to do credible research to indicate the skills needed (Sector Skills Plan).

Q: What is the effective risk response to treating the risk on a National level?

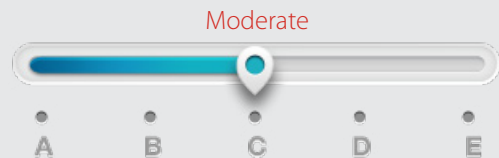
A: Sector skills Plans should be integrated on a national level.

Q: Rate the Impact and Likelihood of the risk in the next 18 months.

A: Impact Scale:

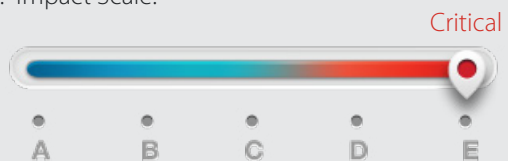


A: Likelihood Scale:

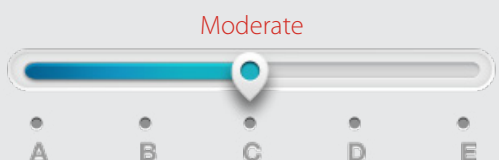


Q: Rate the Impact and Likelihood of the risk in the next 10 years.

A: Impact Scale:



A: Likelihood Scale:



Q: Which of the global trends do you think will have a major impact on the risk going forward?

- A:**
- Ageing population
 - Rising geographic mobility
 - Urbanisation



Professor Hermien Zaaiman
Manager and Associate Professor
Centre for Applied Risk Management

Q: What is your opinion of this topic as a risk to the achievement of the National Development Plan (NDP) objectives for South Africa?

A: The systemic and critical role of education and skills development to achieve the 2030 objectives are well described in the NDP. The risks related to inadequate education were clearly illustrated by the national student #feesmustfall protests in 2015. Considering the vital role that education plays in achieving our national development objectives, this risk event must be seen as a warning sign of continuing systemic dysfunction at all levels in the South African education system starting at the early childhood development level. The issues and risks related to educational dysfunction require focused attention of all role players starting with the South African national government, who has highest responsibility in the education accountability chain, through to the educators in the classroom.

Q: Give the primary causes of this risk.

- A:
- Education itself - inadequately educated and empowered educators unable to educate at the level required of them under the outcomes based educational system
 - Failure and inability of the state to implement its developmental agenda for the education sector
 - Inability of impoverished parents and societies to provide their children with educational opportunities and other basic needs

Q: What are the consequences if this risk materialises?

A: The risk of education not meeting the needs of the country has materialised. The consequences of not addressing this issue are increased pressure on the educational system at all levels, unemployment, crime and the economy of the country resulting in poverty leading to the real risk of not achieving key NDP objectives, i.e. to eliminate poverty and reduce inequality by 2030.

Q: Which industry will be most affected if this risk materialises?

- A:
- Professional Services
 - Government and Public Services
 - Financial Services
 - Energy, Water and Utilities
 - Communications and Technology
 - Transport and Logistics
 - Petrochemicals
 - Manufacturing
 - Mining, Engineering and Construction
 - Hospitality
 - Education
 - Healthcare
 - Retail
 - Other

All of the above as education is needed to be able to work in all these sectors.

Q: What are the barriers that prevent us from solving this risk?

A: The enormity of the problem, coupled with government at both national and local level's inadequate capacity to deal with this in a coordinated and effective way.

Q: What is the effective risk response to treating the risk on an industry level?

A: The education sector suffers from legacy issues that complicates the realisation of promising plans. The sector requires national and local leaders who are willing and able to take responsibility and accountability for executing this extensive task.

Q: What is the effective risk response to treating the risk on a National level?

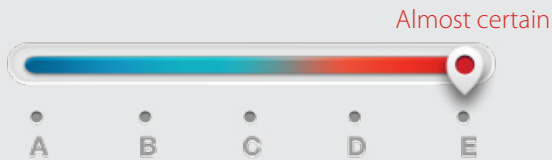
A: Clear accountability at national and institutional level is required under risk-based governance principles as prescribed in new South African education legislation, such as the DHET 2014 Regulations for reporting by public higher education institutions.

Q: Rate the Impact and Likelihood of the risk in the next 18 months.

A: Impact Scale:

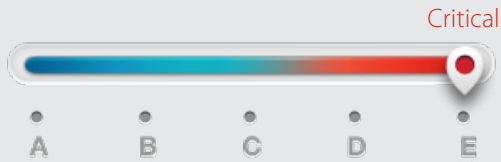


Likelihood Scale:

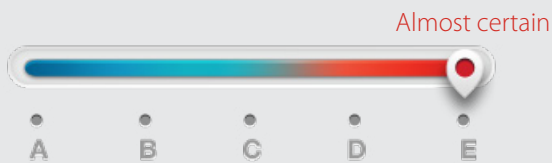


Q: Rate the Impact and Likelihood of the risk in the next 10 years.

A: Impact Scale:

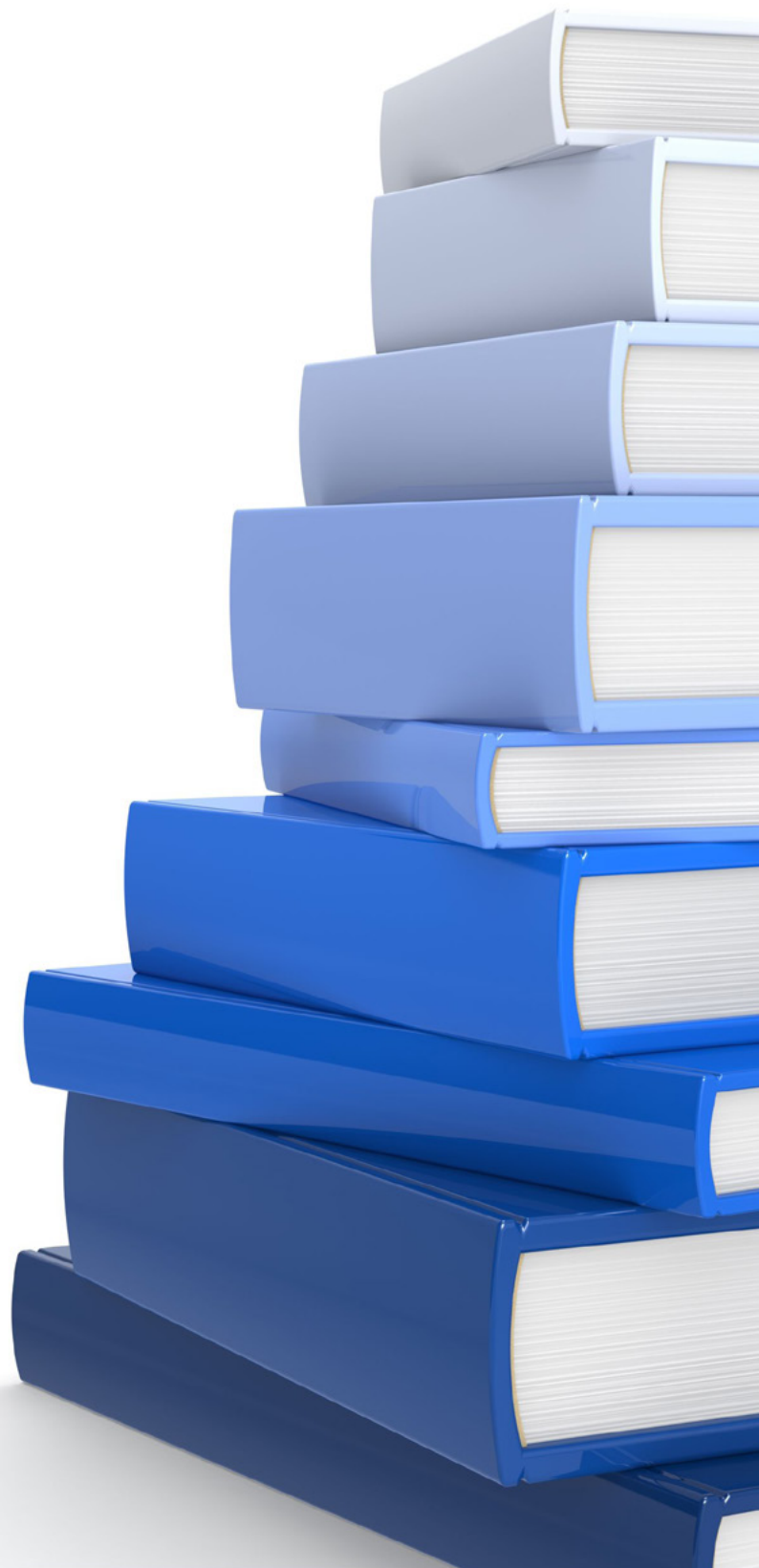


Likelihood Scale:



Q: Which of the global trends do you think will have a major impact on the risk going forward?

- A:
- Ageing population
 - Growing middle class in emerging economies
 - Increasing polarisation of societies
 - Rise of hyper connectivity
 - Rising geographic mobility
 - Rising income disparity
 - Shifts in power
 - Urbanisation
 - Weakening of international governance
 - Increasing national sentiment





Education and Skills Development

Dr Whitey van der Linde

Senior Lecturer
University of Johannesburg

Q: What is your opinion of this topic as a risk to the achievement of the National Development Plan (NDP) objectives for South Africa?

A: Not adding value – too many uncontrollable variables outside of the South African economy.

Q: Which industry will be most affected if this risk materialises?

- A:**
- Professional Services
 - Government and Public Services
 - Financial Services
 - Energy, Water and Utilities
 - Communications and Technology
 - Transport and Logistics
 - Petrochemicals
 - Manufacturing
 - Mining, Engineering and Construction
 - Education
 - Healthcare
 - Retail

Q: What are the barriers that prevent us from solving this risk?

A: Incompetent employees

Q: What is the effective risk response to treating the risk on an industry level?

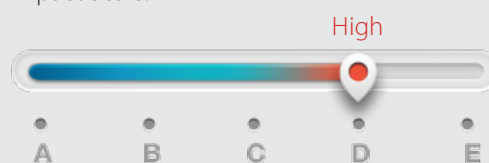
A: Appointment of competent employees and continuous training.

Q: What is the effective risk response to treating the risk on a National level?

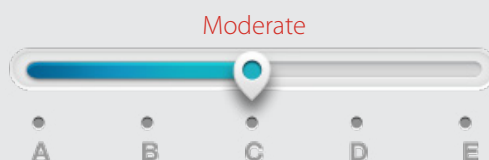
A: Review legislation and policies.

Q: Rate the Impact and Likelihood of the risk in the next 18 months.

A: Impact Scale:

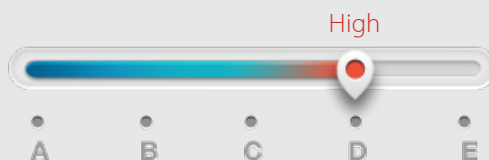


A: Likelihood Scale:

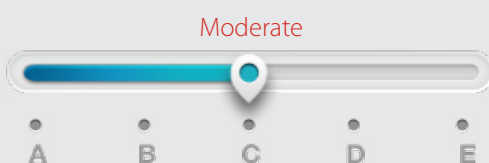


Q: Rate the Impact and Likelihood of the risk in the next 10 years.

A: Impact Scale:



A: Likelihood Scale:



Q: Which of the global trends do you think will have a major impact on the risk going forward?

- A:**
- Climate change
 - Increasing polarisation of societies
 - Rising income disparity
 - Shifts in power
 - Weakening of international governance



Education and Skills Development

Stan Bridgens

Director

South African Institute of Electrical Engineers (SAIEE)

Q: What is your opinion of this topic as a risk to the achievement of the National Development Plan (NDP) objectives for South Africa?

A: Huge cost to the NDP initially and delays in effective development of South African people.

Q: Give the primary causes of this risk.

- Lowering standards
- Ineffective teachers
- Turmoil in implementing ideology

Q: What are the consequences if this risk materialises?

- Safety and protection of community and environment.
- Poor service delivery.

Q: Which industry will be most affected if this risk materialises?

A: Government and Public Services

Q: What are the barriers that prevent us from solving this risk?

- Culture of entitlement
- Social grants
- Lack of will to enforce accountability.

Q: What is the effective risk response to treating the risk on an industry level?

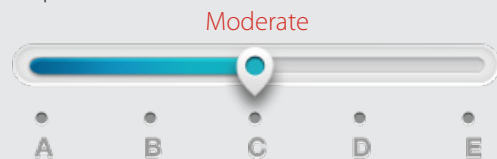
A: Retain only the minimum HR requirements to get by.

Q: What is the effective risk response to treating the risk on a National level?

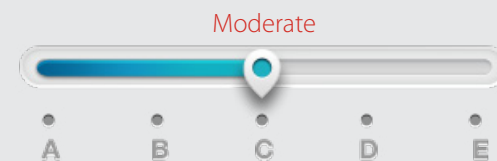
A: More legislation to counter inequality.

Q: Rate the Impact and Likelihood of the risk in the next 18 months.

A: Impact Scale:



Likelihood Scale:

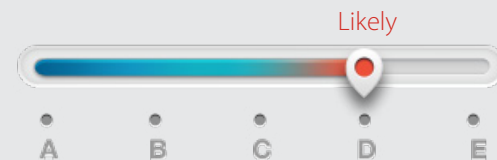


Q: Rate the Impact and Likelihood of the risk in the next 10 years.

A: Impact Scale:



Likelihood Scale:



Q: Which of the global trends do you think will have a major impact on the risk going forward?

A: Increasing polarisation of societies



Education and Skills Development

Reshma Ramkumar
Chief Risk Officer
Impala Platinum

Q: What is your opinion of this topic as a risk to the achievement of the National Development Plan (NDP) objectives for South Africa?

A: The risks that have been identified to hinder the achievement of the NDP objectives are all very topical and relevant to the achievement of the objectives. What I find most interesting is that a number of the risks identified are indeed causes of the risk being realised, e.g. education and skills development, severe income disparity and structurally high unemployment/underemployment.

Q: Give the primary causes of this risk.

A:

- All relevant stakeholders (government, industry, organised labour, investors) not producing a cohesive framework going forward to achieve the objectives.
- Poor investor sentiment for the country and particularly the mining industry.
- Identification and articulation of the key success factors and milestones to achieving the objectives by 2030. The objectives of the NDP are beautifully articulated but for true sustainable success, a complimentary roadmap articulating the synergies with similar initiatives is critical.

Q: What are the consequences if this risk materialises?

A: The achievement of the NDP is essentially the achievement of a truly sustainable country with all citizens appreciated, educated and acknowledge. The consequence will be the 'worst case scenario' materialising. We will become a failed state.

Q: Which industry will be most affected if this risk materialises?

A:

- Government and Public Services
- Energy, Water and Utilities
- Manufacturing
- Education
- Healthcare
- Retail

Q: What are the barriers that prevent us from solving this risk?

A:

- Policy uncertainty
- The absence of a proper cohesive framework to enable all parties to work together

Q: What is the effective risk response to treating the risk on an industry level?

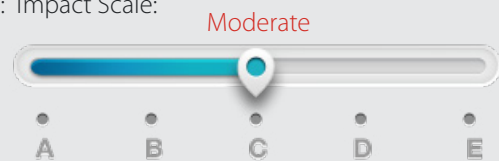
A: A consolidated approach by the different industries to collectively pool opportunities and initiatives so that the maximum benefit to society may be leveraged. Industry must speak with a unified voice in order to influence decisions and to effectively deliver on sustainable solutions.

Q: What is the effective risk response to treating the risk on a National level?

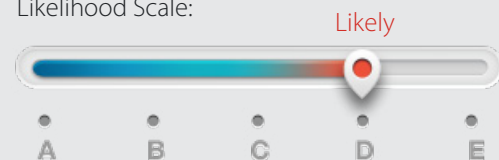
A: Again, a proper, well-structured, consolidated approach is required. The presence of enablers for the achievement of objectives, as well as clear incentives will ensure success factors.

Q: Rate the Impact and Likelihood of the risk in the next 18 months.

A: Impact Scale:

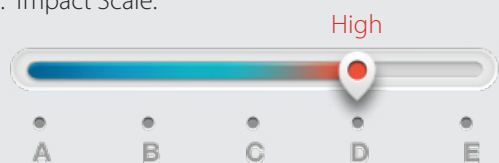


Likelihood Scale:

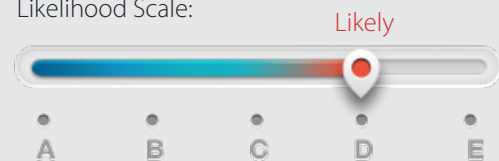


Q: Rate the Impact and Likelihood of the risk in the next 10 years.

A: Impact Scale:



Likelihood Scale:



Q: Which of the global trends do you think will have a major impact on the risk going forward?

A:

- Climate change
- Increasing polarisation of societies
- Rising income disparity
- Weakening of international governance
- Increasing national sentiment

2.5 Water Crisis





Millicent Mashamaite

Chief Risk Officer
Lepelle Northern Water

Q: What is your opinion of this topic as a risk to the achievement of the National Development Plan (NDP) objectives for South Africa?

- A: Water Crisis is a risk to the achievement of the National Development Plan objectives for South Africa as it will result in the following:
- Slowdown of South Africa's economy - possibly resulting in investor withdrawals
 - Reduced population due to diseases
 - Disruptions in the natural eco system

Q: Give the primary causes of this risk.

- A:
- Negative effects and consequences of climate change (i.e. droughts etc.)
 - Water demands that exceed available raw water allocation
 - Ageing infrastructure and improper asset management

Q: What are the consequences if this risk materialises?

- A:
- Lack of economic development
 - Deprived service delivery

Q: Which industry will be most affected if this risk materialises?

- A:
- Government and Public Services
 - Energy, Water and Utilities
 - Petrochemicals
 - Manufacturing
 - Mining, Engineering and Construction
 - Hospitality
 - Healthcare
 - Retail

Q: What are the barriers that prevent us from solving this risk?

- A:
- Fraud and Corruption
 - Skills shortages
 - Lack of long term integrated planning
 - Lack of early childhood awareness about water conservation

Q: What is the effective risk response to treating the risk on an industry level?

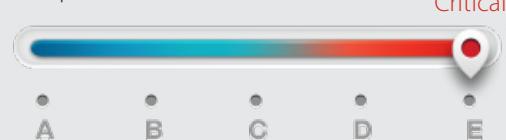
- A:
- Implementation of water conservation and demand management
 - Drilling of boreholes and appropriate management thereof
 - Rain water harvesting
 - Reuse and recycling of industrial waste and effluent water

Q: What is the effective risk response to treating the risk on a National level?

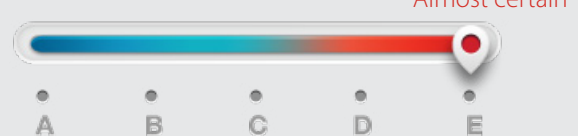
- A:
- Implementation of water conservation and demand management
 - Drilling of boreholes and proper management thereof
 - Rain water harvesting
 - Reuse of effluent water (learn from Namibia and start the implementation at full scale)

Q: Rate the Impact and Likelihood of the risk in the next 18 months.

A: Impact Scale:

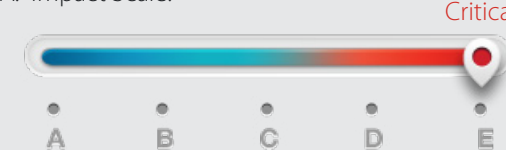


Likelihood Scale:

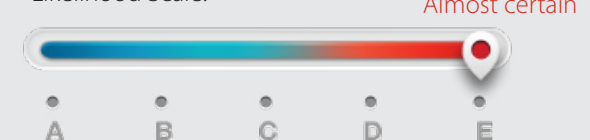


Q: Rate the Impact and Likelihood of the risk in the next 10 years.

A: Impact Scale:



Likelihood Scale:



Q: Which of the global trends do you think will have a major impact on the risk going forward?

- A:
- Ageing population
 - Climate change
 - Environmental degradation
 - Increasing polarisation of societies
 - Rise of chronic diseases
 - Rising geographic mobility
 - Shifts in power
 - Urbanisation
 - Weakening of international governance
 - Increasing national sentiment



Marinda van der Merwe

BU Managing Partner
ERM Southern Africa

Q: What is your opinion of this topic as a risk to the achievement of the National Development Plan (NDP) objectives for South Africa?

A: The looming water crisis should be considered a key risk as without water a large section of South African industry and society will be at risk. Some of the defined milestones for the NDP to achieve its 2030 objectives, such as “Ensure that all South Africans have access to clean running water in their homes”, “Realise a food trade surplus, with one-third produced by small-scale farmers or households” and “Ensure household food and nutrition security”, will not be possible without secure access to water. This risk is likely to be exacerbated by increasing climate change impacts.

Q: Give the primary causes of this risk.

- A:
- Weak enforcement by local authorities - allowing poor wastewater management, unauthorised water consumption etc.
 - Limited focus on water efficiency and management due to “low costs” of the resource
 - Insufficient investment in infrastructure, including bulk water supply programmes, maintenance of existing infrastructure (war on leaks) and efficiency/recycling initiatives
 - Lack of planning for future requirements

Q: What are the consequences if this risk materialises?

A: Water supply shortages will have significant and wide ranging impacts, from potential loss of electricity generation capacity as water plays a key role in industry, impacts on industry output and most significantly agricultural output (biggest user).

Tragically, South Africa’s poorest communities will likely suffer the most from these impacts as access to sanitation and food security will be directly impacted. The impact will be felt from the level of individuals (societal) to that of industry.

Q: Which industry will be most affected if this risk materialises?

- A:
- Government and Public Services
 - Energy, Water and Utilities
 - Petrochemicals
 - Manufacturing
 - Mining, Engineering and Construction
 - Hospitality
 - Healthcare

Q: What are the barriers that prevent us from solving this risk?

- A:
- Lack of acknowledgement that there is a crisis looming.
 - Lack of planning and coordination across stakeholders to match demand and supply at catchment level
 - There are significant opportunities for efficiency and improvement, though often these are outside of the fence of industry and to be achieved they require collaboration
 - Overall, South Africa is lacking a culture of water-use efficiency because water is considered an inexpensive and freely available resource and hence the business case for efficiency is not always favourable
 - Recognising the “true costs” of water costs of abstraction, treatment, monitoring, or community liaisons (including energy costs associated with the movement of water around sites) should also help companies to recognise the importance of the resource

Q: What is the effective risk response to treating the risk on an industry level?

- A:
- Strategic Water Partner Networks and ensuring focus on the issue through the Water Disclosure Project etc. is probably one way
 - Focus more practically on good information – understanding baseline consumption, risks and opportunities for improving performance and using systems to manage this
 - Partnerships with authorities, academia, communities (users)
 - Innovation/good practice sharing

Q: What is the effective risk response to treating the risk on a National level?

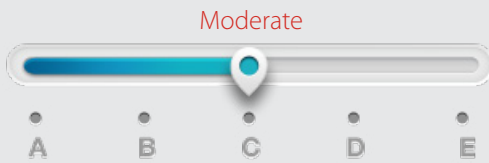
- A:
- Acknowledging that there is a crisis looming
 - Incentivising innovation and efficiency initiatives
 - Increasing clean water charges
 - Implementing the waste discharge charge system to protect our water sources
 - Improved enforcement on water use and wastewater management (including treatment and recycling of sewage and other wastewater)

Q: Rate the Impact and Likelihood of the risk in the next 18 months.

A: Impact Scale:



Likelihood Scale:

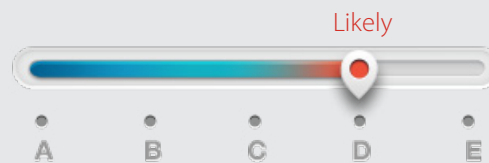


Q: Rate the Impact and Likelihood of the risk in the next 10 years.

A: Impact Scale:



Likelihood Scale:



Q: Which of the global trends do you think will have a major impact on the risk going forward?

- A:
- Climate change
 - Environmental degradation
 - Growing middle class in emerging economies
 - Urbanisation





Oliver Laloux
Chief Executive Officer
Mondial Consultants

Q: What is your opinion of this topic as a risk to the achievement of the National Development Plan (NDP) objectives for South Africa?

A: It is absolutely key as a vast number of our NDP objectives are directly or indirectly linked to water availability, quality and pricing. The water risk is also likely to result in a number of socio-political events that could well destabilise local, provincial or national government, again, resulting in a compromised NDP road map.

Q: Give the primary causes of this risk.

- A:
- Lack of investment in water infrastructure, especially at municipal level
 - Wrong social understanding of the entire water value chain and therefore public and private behaviour towards water remains misplaced
 - Supply and demand, short term and long term dynamics do not add up

Q: What are the consequences if this risk materialises?

- A:
- Socio political upheaval
 - Social impacts (food prices, people migration)
 - Health
 - Disease breakouts
 - Many people and animals could die as a result

Q: Which industry will be most affected if this risk materialises?

- A:
- Government and Public Services
 - Energy, Water and Utilities
 - Communications and Technology
 - Transport and Logistics
 - Petrochemicals
 - Manufacturing
 - Mining, Engineering and Construction
 - Hospitality
 - Healthcare

Q: What are the barriers that prevent us from solving this risk?

- A:
- Money
 - Long term and medium term planning
 - Available water
 - Cross country dynamics

Q: What is the effective risk response to treating the risk on an industry level?

- A:
- Sinking boreholes
 - Trying to secure more supply
 - A number of recycling initiatives are on the table

Q: What is the effective risk response to treating the risk on a National level?

A: High in plans (NDP, Water Plans etc.) but low on action and funding.

Q: Rate the Impact and Likelihood of the risk in the next 18 months.

A: Impact Scale:

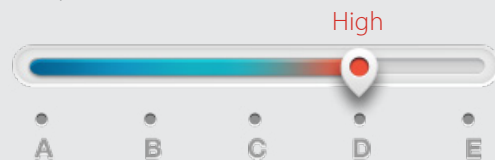


Likelihood Scale:

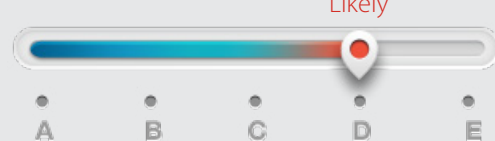


Q: Rate the Impact and Likelihood of the risk in the next 10 years.

A: Impact Scale:



Likelihood Scale:



Q: Which of the global trends do you think will have a major impact on the risk going forward?

- A:
- Climate change
 - Environmental degradation
 - Growing middle class in emerging economies
 - Rising income disparity
 - Urbanisation

LONMIN

Lonmin

Q: What is your opinion of this topic as a risk to the achievement of the National Development Plan (NDP) objectives for South Africa?

A: One of the NDP's key pillars is to reduce poverty levels through the reduction of unemployment levels. A key mechanism to improve employment levels is the implementation of the NDP Economic Infrastructure objectives across various commodities and industry sectors.

The risk of the Water Crisis (specifically a reduction in the availability of this resource) will have a major impact on the South African government to effectively execute the NDP objectives.

Various industry experts have provided views on South Africa potentially approaching a cycle of water scarcity due to the impact of global warming. This is characterised by average temperature increases, change in frequency and intensity of precipitation and an increased severity of drought. Other contributing factors are also the poor state of certain water related municipal infrastructure due to lack of or no maintenance and investment.

Q: Give the primary causes of this risk.

- A:**
- Deterioration in municipal infrastructure due to lack of infrastructure maintenance by certain municipalities which has resulted in water "losses" as well as decreased overall water quality levels at source (dams etc.)
 - The effect of climate change and reduced precipitation patterns
 - Growing consumption levels from increased population sizes and industrial process demands
 - Pollution of water sources

Q: What are the consequences if this risk materialises?

- A:** The impact of this risk on mining operations could potentially be:
- Supply constraints can potentially shut down operations as water is used as a key input to mining, smelting and refining operations
 - Increase in operational costs, as the cost of water treatment increases due to the

deterioration of its quality at source

- Supply constraints for consumption can also impact the health and general wellbeing of Lonmin employees and the communities the company supplies water too
- Social unrest should the water supply dry up, as local communities rely on Lonmin water infrastructure.

Q: Which industry will be most affected if this risk materialises?

- A:**
- Energy, Water and Utilities
 - Manufacturing
 - Mining, Engineering and Construction
 - Others including agriculture

Q: What are the barriers that prevent us from solving this risk?

- A:** Some of the key barriers preventing the mining industry from addressing this risks are:
- Challenges (financial and resources) at municipal levels that lead to poor maintenance of water related infrastructure. A major example of this is the state of sewerage plants, which has made it difficult for industrial users to "take on" the treated effluent because of reliability and quality.
 - The abovementioned challenges have resulted in a higher expectation of surrounding communities from mining companies to supply this utility, which is a major challenge in a low commodity pricing environment.
 - Lack of collaboration between various government entities in terms of potential interventions.
 - Lack of appropriate incentives/tax breaks etc. to partner with government on water related projects. The absence of these financial incentives have also resulted in slower conversion of their systems by mines, to a system of using grey water.
 - The rate of growth of nearby towns and settlements close to mining operations places is not aligned with upgrading of bulk water infrastructure supplied.

Q: What is the effective risk response to treating the risk on an industry level?

A: Current risk response strategies employed within Lonmin Platinum are:

- Internal optimisation processes (recycling and reuse) as the company continuously seeks ways to lower the intake of freshwater and increase the reuse of water in its operational processes
- Water recycling occurs through the Integrated Water Management System which optimises water reuse and recycling through a closed loop reticulation system in its processing plants
- Identification of new water sources such as the backfilled open cast pits which store large volumes of water (as a source for Lonmin operations). These anthropogenic aquifers can be used in future to further intake water.
- Innovative use of technology as part of its Integrated Water Balance that stimulates scenarios and risk assessments to assist proactive decision making in terms of optimal water management
- Ensure compliance to all requirements of the company Water Use Licence
- Conservation and demand management through ongoing monitoring, which includes groundwater modelling, surface and groundwater monitoring, toxicity testing and bio monitoring

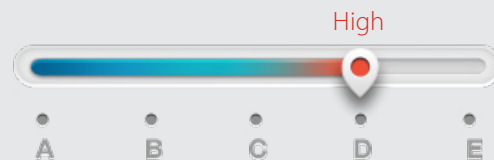
Q: What is the effective risk response to treating the risk on a National level?

- A:
- Effective management by government (municipalities) of water related infrastructure, as the lack of this has resulted in the deterioration of water quality at source
 - Internal capacity management by government entities to ensure effective execution of its mandate related to water demand management and conservation
 - Government enforcement and where possible appropriate incentives to ensure behavioural changes by major consumers
 - Government should also change its focus from a short term view (20 years) on bulk water infrastructure, to rather a longer view (50 years), as first providing the water will result in eventual development
 - An incentive scheme similar to the Electricity Demand Side Management (DSM) programme which pays users to reduce consumption of water should be investigated
 - Consistent application of government approved strategies/ policies on water conservation and demand management.

- Potential investigation of innovative applications to ensure change in behaviour patterns of consumers “Is prepaid the future after consuming your free allocation”?
- Government should ensure the strategic planning of future water supply should be aligned with the objectives across industries which supports the NDP

Q: Rate the Impact and Likelihood of the risk in the next 18 months.

A: Impact Scale:



Likelihood Scale:

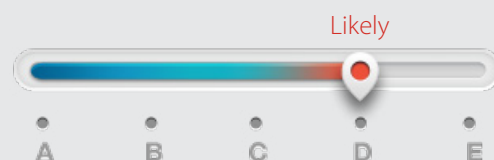


Q: Rate the Impact and Likelihood of the risk in the next 10 years.

A: Impact Scale:



Likelihood Scale:



Q: Which of the global trends do you think will have a major impact on the risk going forward?

- A:
- Climate change
 - Environmental degradation (groundwater pollution)
 - Urbanisation



Fred Goede

Senior Lecturer Applied Risk Management
North-West University

Q: What is your opinion of this topic as a risk to the achievement of the National Development Plan (NDP) objectives for South Africa?

A: Quote from the IRMSA 2015 Risk Report: "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".

The WEF environmental risks referred to last year are extreme weather events, climate change, natural catastrophes and...a water crisis!

Government needs the mandate from respondents to address the water crisis. We do not need a drought to wake us up to improve water management in South Africa. However geopolitical risk, environmental risks should receive the same level of attention.

Fortunately the 2012 NDP firmly covers environmental risks and specifically four IDP objectives were set for Water Resources. Substantial progress has been made on all four objectives with the National Water Resource Strategy 2 of June 2013 a prime example. Achieving the IDP water objectives by 2030 remains feasible, but water cannot be dealt with in isolation.

With climate change, the natural cycles and historic trends will prove inadequate for managing water risk. The implementation of the 2012 National Climate Change Response White Paper is becoming urgent and also covers water risk in a changing climate.

Importantly, water as a crisis does not stand alone. On 27-29 September 2015 the United Nations launched 17 global sustainable development goals for 2030, including multiple water related targets.

<http://www.un.org/sustainabledevelopment/sustainable-development-goals/>

The interconnectivity of all the sustainable development goals which aim to end extreme poverty, fight inequality and injustice and fix climate change, urgently calls for a revisit of how we prioritise our environmental risks in South Africa. That includes water.

Q: Give the primary causes of this risk.

- A:**
- Climate change makes water rainfall predictions increasingly difficult, as centuries of historic data become irrelevant and a new reality emerges. Rainfall becomes increasingly unreliable and resilience will have to be built into infrastructure.
 - Lack of impetus from business and government to urgently implement long term policies and strategies (especially during wet years!).
 - Competing and increasing demands on dwindling resources like water, requires integrated approaches to reduce the impact.

Q: What are the consequences if this risk materialises?

- A:**
- Human and animal suffering and crop loss
 - Increasing poverty and inequality
 - Rising costs of food, infrastructure, electricity, water resulting in political and social instability

Q: Which industry will be most affected if this risk materialises?

A: Agriculture

Q: What are the barriers that prevent us from solving this risk?

- A:**
- Lack of long term plan execution
 - Short term focus of governments and companies ("not in my life time")
 - Lack of understanding of the interrelatedness of water risks with others risks such as knock-on effects on social, economic, food, energy etc.

Q: What is the effective risk response to treating the risk on an industry level?

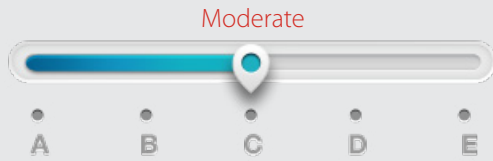
- A:**
- Partnerships between private and public sectors to find the most cost effective water solutions, e.g. water offsets as outlined in policies and strategies
 - Technology solutions such as air cooling instead of water cooling; dry ash systems instead of wet ash systems preferably during the design stage
 - Implementation of integrated strategies and policies that exist already

Q: What is the effective risk response to treating the risk on a National level?

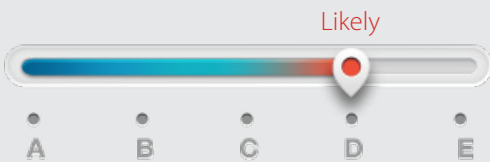
- A:
- Partnerships between private and public sectors to find the most cost effective water solutions, e.g. water offsets as outlined in policies and strategies
 - Integrated approach to the food-energy-water nexus
 - Effective roll-out of the 2011 National Climate Change Response White Paper

Q: Rate the Impact and Likelihood of the risk in the next 18 months.

A: Impact Scale:

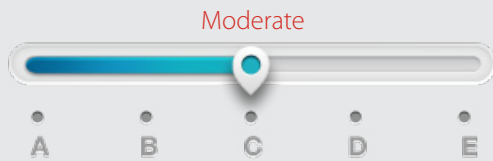


Likelihood Scale:

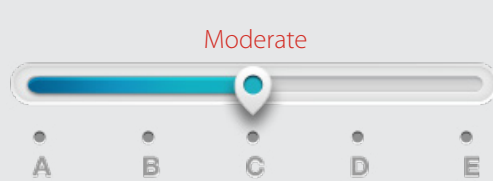


Q: Rate the Impact and Likelihood of the risk in the next 10 years.

A: Impact Scale:



Likelihood Scale:



Q: Which of the global trends do you think will have a major impact on the risk going forward?

A: Climate change

2.6

Structurally High
Unemployment /
Underemployment





Structurally High Unemployment / Underemployment

Dr Mark Bussin

Chairperson

21st Century Pay Solutions Group

Q: What is your opinion of this topic as a risk to the achievement of the National Development Plan (NDP) objectives for South Africa?

A: The achievement of the NDP is impossible unless this is addressed. It is one of the assumptions and cornerstones that needs to be in place.

Q: Give the primary causes of this risk.

- A:**
- Ill-conceived regulatory environment
 - Too many blunders in the education space
 - No GDP growth

Q: What are the consequences if this risk materialises?

A: More of the current situation – no growth, shocking education, politicians acting with impunity for self-gain.

Q: Which industry will be most affected if this risk materialises?

- A:**
- Professional Services
 - Government and Public Services
 - Financial Services
 - Energy, Water and Utilities
 - Communications and Technology
 - Transport and Logistics
 - Petrochemicals
 - Manufacturing
 - Mining, Engineering and Construction
 - Hospitality
 - Education
 - Healthcare
 - Retail
 - Other

Every one of the above suffers. There are no winners.

Q: What are the barriers that prevent us from solving this risk?

A: Poor education, ill-conceived regulatory environment, cadre deployment exacerbating incompetence, slow GDP growth, no political will – and these all lead to lower international investment.

Q: What is the effective risk response to treating the risk on an industry level?

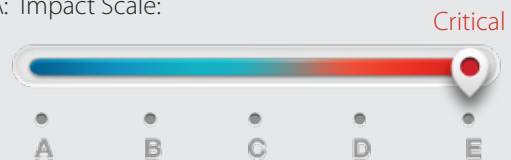
- A:**
- Create intern positions at lower salary
 - Educate all on the importance of labour stability for international confidence and investment
 - Create a culture of “ours” and abandon “us vs. them” mentality

Q: What is the effective risk response to treating the risk on a National level?

- A:**
- Voting for different policies
 - Educate and train people because of government inability
 - Continually engage government spelling out more vociferously what damage ill-conceived policies do

Q: Rate the Impact and Likelihood of the risk in the next 18 months.

A: Impact Scale:

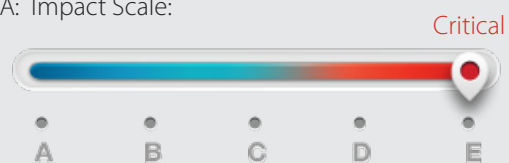


Likelihood Scale:

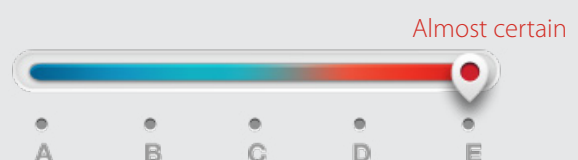


Q: Rate the Impact and Likelihood of the risk in the next 10 years.

A: Impact Scale:



Likelihood Scale:



Q: Which of the global trends do you think will have a major impact on the risk going forward?

- A:**
- Weakening of international governance
 - Increasing national sentiment
 - Slow economic growth



Structurally High Unemployment / Underemployment

Professor Andre Roux

Director

Institute for Futures Research (IFR)

Q: What is your opinion of this topic as a risk to the achievement of the National Development Plan (NDP) objectives for South Africa?

A: One of the biggest obstacles to the achievement of the NDP holistic objectives.

Q: Give the primary causes of this risk.

- A:**
- Inappropriate skills and education development (dysfunctional education sector)
 - Dysfunctional labour market (inflexible)
 - Sense of entitlement

Q: What are the consequences if this risk materialises?

- A:**
- Persistent poverty
 - High income gaps
 - Social revolution

Q: Which industry will be most affected if this risk materialises?

- A:**
- Professional Services
 - Government and Public Services
 - Financial Services
 - Energy, Water and Utilities
 - Communications and Technology
 - Transport and Logistics
 - Petrochemicals
 - Manufacturing
 - Mining, Engineering and Construction
 - Hospitality
 - Education
 - Healthcare
 - Retail
 - Other

All of the above

Q: What are the barriers that prevent us from solving this risk?

- A:**
- Inappropriate skills and education development (dysfunctional education sector)
 - Dysfunctional labour market (inflexible).
 - Sense of entitlement

Q: What is the effective risk response to treating the risk on an industry level?

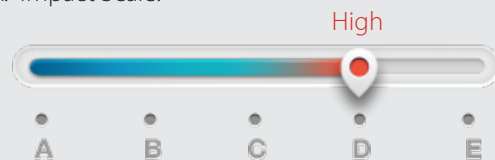
- A:**
- Sponsored skills development
 - Reduce reliance on labour as a production factor (thereby exacerbating the problem)
 - Outsourcing production to other countries

Q: What is the effective risk response to treating the risk on a National level?

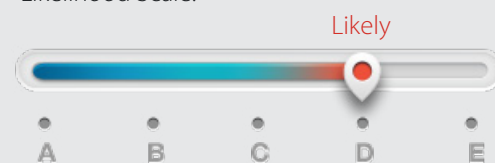
- A:**
- Co-ordinated and integrated skills development
 - Social pact

Q: Rate the Impact and Likelihood of the risk in the next 18 months.

A: Impact Scale:

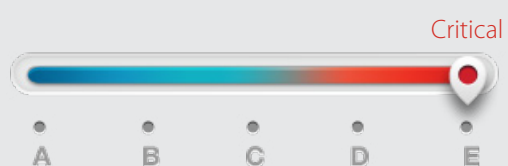


Likelihood Scale:

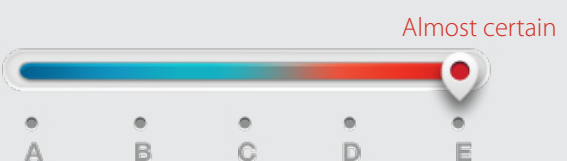


Q: Rate the Impact and Likelihood of the risk in the next 10 years.

A: Impact Scale:



Likelihood Scale:



Q: Which of the global trends do you think will have a major impact on the risk going forward?

- A:**
- Growing middle class in emerging economies
 - Increasing polarisation of societies
 - Rising income disparity
 - Shifts in power
 - Urbanisation

2.7 Lack of Leadership



Justice Malala

Renowned Political Analyst and Commentator

Q: What is your opinion of this topic as a risk to the achievement of the National Development Plan (NDP) objectives for South Africa?

A: In South Africa this will be a significant risk going forward. The departure of President Zuma and his faction may reduce the risk somewhat, but my view is that poor leadership may become institutionalised.

Q: Give the primary causes of this risk.

- The electoral system
- Culture of silence in civil society

Q: What are the consequences if this risk materialises?

- Social instability
- Poor economic growth
- Unemployment
- Failure to implement policy

Q: Which industry will be most affected if this risk materialises?

- Professional Services
- Government and Public Services
- Financial Services
- Energy, Water and Utilities
- Communications and Technology
- Transport and Logistics
- Petrochemicals
- Manufacturing
- Mining, Engineering and Construction
- Hospitality
- Education
- Healthcare
- Retail
- Other

Q: What are the barriers that prevent us from solving this risk?

- Culture of silence in business, politics, civil society
- Fear of losing government business
- Fear of losing jobs

Q: What is the effective risk response to treating the risk on an industry level?

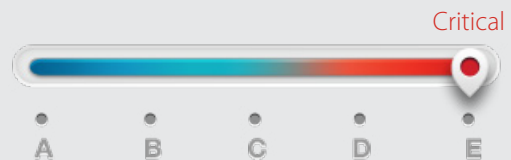
A: Forming strong associations with independent voices.

Q: What is the effective risk response to treating the risk on a National level?

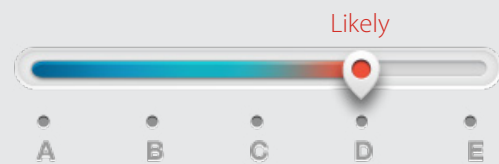
A: Encouraging civil society forums and funding effective NGOs.

Q: Rate the Impact and Likelihood of the risk in the next 18 months.

A: Impact Scale:

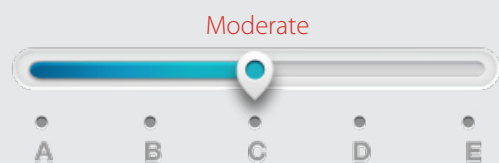


Likelihood Scale:

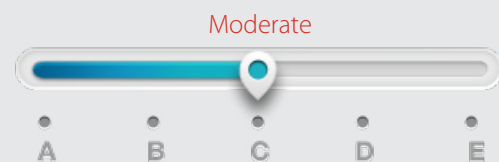


Q: Rate the Impact and Likelihood of the risk in the next 10 years.

A: Impact Scale:



Likelihood Scale:



Q: Which of the global trends do you think will have a major impact on the risk going forward?

- Increasing polarisation of societies
- Rising income disparity
- Increasing national sentiment



Lack of Leadership

Mavuso Msimang
Public Sector Turnaround Specialist

Q: What is your opinion of this topic as a risk to the achievement of the National Development Plan (NDP) objectives for South Africa?

A: Managing the South African economy requires informed and decisive leadership, in the first instance, in the government sphere but also at business and civic society levels. While there is significant availability of knowledgeable individuals in all three sectors, the crisis of leadership occurs most glaringly where critical decisions need to be made.

Q: Give the primary causes of this risk.

- A:
- The primary causes of the risk in the political arena are related to the primacy of allegiances when personnel are assigned key responsibilities. This is best illustrated by the composition of cabinet, which includes representatives of the ruling African National Congress (ANC), the Congress of South African Trade Unions (COSATU) and the South African Communist Party (SACP).
 - The practice is extended to the leadership of the civil service and state-owned enterprises that is dominated by party loyalists. This is not to suggest that these placements exclude merit considerations. While the principle and practice of entrusting the execution of key policy and strategic decisions to trusted individuals is not uncommon, and can indeed be defended in some instances, it is not unusual that loyalty trumps competence. This results in sub-optimal human resource utilisation, demotivation and loss of skills to the polity.
 - In the private sector short-term business gains often lead to the business leadership making decisions that compromise sound long-term business objectives. This may entail pursuit of misdirected business partnerships (the Black Economic Empowerment programme comes to mind.) Or, it could be involvement in corrupt practices as when industry bids for government business and collusion in order to secure government tenders on illicit terms.

Q: What are the consequences if this risk materialises?

A: The consequences if the risk materialises are, in the case of government, poor planning, avoiding hard decisions and lack of objectivity such as when mediating labour/business disputes.

Q: Which industry will be most affected if this risk materialises?

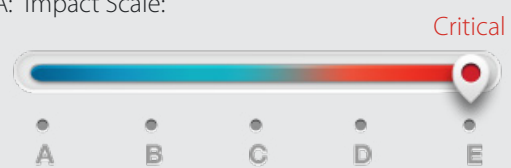
- A:
- Government and Public Services
 - Energy, Water and Utilities
 - Education
 - Healthcare

Q: What are the barriers that prevent us from solving this risk?

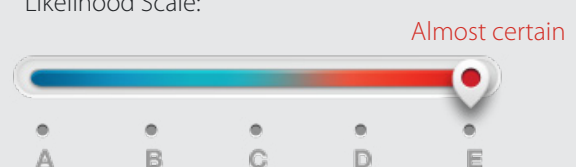
- A:
- Lack of appreciation by role players of the depth of the malaise and dismissal of sound advice
 - Lack of a (political) mandate to enforce alternative policies is also a practical constraint

Q: Rate the Impact and Likelihood of the risk in the next 18 months.

A: Impact Scale:

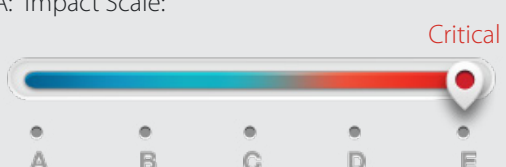


Likelihood Scale:

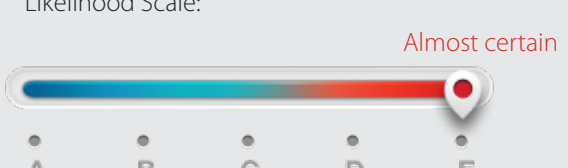


Q: Rate the Impact and Likelihood of the risk in the next 10 years.

A: Impact Scale:



Likelihood Scale:





Rene Kenosi

Chairman

Independent Regulatory Board For Auditors

Q: What is your opinion of this topic as a risk to the achievement of the National Development Plan (NDP) objectives for South Africa?

A: My opinion is that until the government gets the right people into the right positions, we will not be able to achieve the objectives as indicated in the NDP.

Whilst it may be argued at a political level that initiatives in the NDP are being achieved, the people on the ground are not seeing the impact “fast” enough. Ask the unemployed youth what their opinion on the effectiveness of the NDP is and you are bound to find a different answer.

Q: Give the primary causes of this risk.

- A:
- Wrong people in wrong positions: Leadership not surrounding themselves with individuals with technical ability and “know how”
 - Those charged with governance not being independent of the areas they are to perform oversight
 - Lack of consequence management

Q: What are the consequences if this risk materialises?

- A:
- Failed state
 - Rise in poverty and unemployment
 - Inability to provide basic services to the people
 - Lack of investment
 - Deflation of the rand

Q: Which industry will be most affected if this risk materialises?

- A:
- Government and Public Services
 - Financial Services
 - Energy, Water and Utilities
 - Petrochemicals
 - Manufacturing
 - Mining, Engineering and Construction

Q: What are the barriers that prevent us from solving this risk?

- A:
- Ineffective inter-governmental relations
 - Deployment of incompetent individuals
 - Inability to strategically plan holistically across government and all sectors
 - Legislative “red tape” preventing hampering efficient and effective implementation processes
 - Defragmented legislation resulting in contradictory legislation between sectors/ departments
 - Outdated policies

Q: What is the effective risk response to treating the risk on an industry level?

- A:
- Effective economic policies (for e.g. land reform and mining policies)
 - Robust legislation which is agreed upon at inter-governmental forums (to prevent issues such as those seen in the Tourism and Home Affairs)
 - Appointing the right people with prerequisite competence (qualifications, experience and expertise) and holding them accountable for achievement of service delivery (e.g. energy, water, utilities)
 - Making use of retired/experienced individuals who are still productive and willing to serve in areas where they are able to impart knowledge and skill for e.g. to the youth
 - Allowing concessions to mining, manufacturing industries to ensure ease of doing business and/or red tape which is favourable to all stakeholders (industry, individuals, government, etc.)
 - Those charged with governance at SOCs being held accountable for profitability of the organisations

Q: What is the effective risk response to treating the risk on a National level?

- A:
- Review of legislation and policies to ensure alignment across the board (e.g. to the Constitution where applicable)
 - Less alienating of the private sector and better collaboration and cohesion to improve service delivery, job creation, etc.

Q: Rate the Impact and Likelihood of the risk in the next 18 months.

A: Impact Scale:

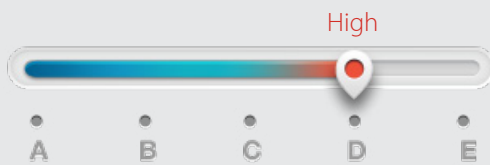


Likelihood Scale:



Q: Rate the Impact and Likelihood of the risk in the next 10 years.

A: Impact Scale:



Likelihood Scale:



Q: Which of the global trends do you think will have a major impact on the risk going forward?

- A:
- Ageing population
 - Climate change
 - Environmental degradation
 - Growing middle class in emerging economies
 - Increasing polarisation of societies
 - Rise of chronic diseases
 - Rise of hyper connectivity
 - Rising geographic mobility
 - Rising income disparity
 - Shifts in power
 - Urbanisation
 - Weakening of international governance
 - Increasing national sentiment

2.8 Increasing Strike Action





Ryan Cummings
Chief Analyst Africa
Red24

Q: What is your opinion of this topic as a risk to the achievement of the National Development Plan (NDP) objectives for South Africa?

A: Strike action both within the public and private sector, poses a significant obstacle to fulfilling some of the key objectives delineated in the 2013 NDP, particularly that of unemployment and poverty eradication. Industrial action inevitably leads to reduced productivity which in turn results in slower economic growth. As job creation is dependent on a growing economy, it is clear to see how increasing strike action and associated loss of productivity will stymie governments plan to fight unemployment and poverty.

Q: Give the primary causes of this risk.

A: There are myriad factors fuelling strike action in South Africa. However, the most preeminent of these undoubtedly are:

- Lax and/or poorly enforced regulation across various sectors, particularly mining
- Inter- and intra-labour union dynamics
- Decreasing purchasing power of low-income workers

Q: What are the consequences if this risk materialises?

A: If the scale of industrial action continues to increase in South Africa, it will have a significant impact on government's ability to reach both short- and long-term development goals. Not only will it stymie poverty and unemployment eradication but it may make these deficiencies more acute. Industrial action in various sectors has a two-fold effect of cutting productivity and increasing production costs in contexts where profit margins are often slim. In this regard, many mass scale employers may either have to scale down on employment or cease business operations altogether amid higher costs and lower output. Such outcomes are obviously incongruent with job creation and poverty eradication, in addition to other key NDP goals.

Q: Which industry will be most affected if this risk materialises?

A: • Manufacturing
• Mining, Engineering and Construction

Q: What are the barriers that prevent us from solving this risk?

A: In many sectors, commodity price volatility is an issue which directly impacts bottom lines and which inhibits the ability of employers to placate the financial grievances of striking workers. Commodity price volatility is an issue which is linked to global as opposed to domestic developments which are difficult to control and subsequently resolve when they do occur. Other barriers to solving the risk include concerns related to infrastructural problems, such as load shedding and water shortages which in turn impact production, profitability and which could play a significant role in catalysing strike action.

Q: What is the effective risk response to treating the risk on an industry level?

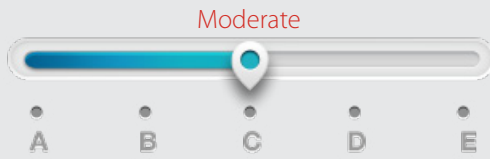
A: On an industry level, transparent and inclusive mediation with workers and labour unions representing their interests is needed on an ongoing basis. Early-warning mechanisms need also be implemented, along with robust contingency planning, as to effectively manage strike action when they do occur.

Q: What is the effective risk response to treating the risk on a National level?

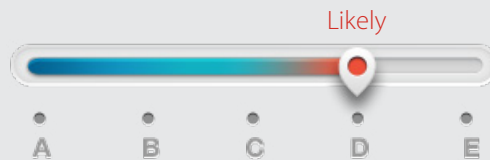
A: On a national level, policy reforms and mechanisms for compliance need to be instituted in sectors where strike action has become a common occurrence.

Q: Rate the Impact and Likelihood of the risk in the next 18 months.

A: Impact Scale:



Likelihood Scale:

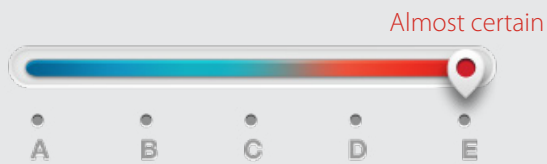


Q: Rate the Impact and Likelihood of the risk in the next 10 years.

A: Impact Scale:



Likelihood Scale:



Q: Which of the global trends do you think will have a major impact on the risk going forward?

- A:
- Growing middle class in emerging economies
 - Rising income disparity
 - Shifts in power
 - Urbanisation
 - Weakening of international governance



Thokozile Ntshiqqa

Executive Manager: Stakeholder Management Division
Sasria

Q: What is your opinion of this topic as a risk to the achievement of the National Development Plan (NDP) objectives for South Africa?

A: Strike action impacts the economy as it leads to loss of productivity in various industries. This in turn impacts profitability of corporations and as a result the ability to have higher allocation to social responsibility initiatives.

Q: Give the primary causes of this risk.

A: Strikes are generally caused by:

- Dissatisfaction with company policies
- Salary and incentive problems and overall working conditions
- Wrongful discharge or dismissal of workmen; retrenchment of workmen and closure of establishments

Q: What are the consequences if this risk materialises?

A: Strikes impact the economy:

- GDP growth might be affected
- Higher inflation
- Impact on the investment reputation internationally
- Impact on productivity and business profitability

Q: Which industry will be most affected if this risk materialises?

A: The most affected industries are:

- Retail
- Mining, Engineering and Construction
- Energy, Water and Utilities

Q: What are the barriers that prevent us from solving this risk?

A:

- High unemployment
- Unskilled community or workforce
- Poverty
- South Africa is highly unionised placing huge pressure on corporations

Q: What is the effective risk response to treating the risk on an industry level?

A: Adherence to basic conditions of employment as stipulated in legislation as well as empowering employers and employees or unions to have healthy debates on various topics.

Q: What is the effective risk response to treating the risk on a National level?

A: The Department of Labour needs to review the basic conditions of employment, furthermore government needs to ensure that organisations effectively implement the Broad-Based Black Economic Empowerment Amendment Act.

Q: Rate the Impact and Likelihood of the risk in the next 18 months.

A: Impact Scale: **High**

A B C D E

Likelihood Scale: **Almost certain**

A B C D E

Q: Rate the Impact and Likelihood of the risk in the next 10 years.

A: Impact Scale: **Critical**

A B C D E

Likelihood Scale: **Almost certain**

A B C D E

Q: Which of the global trends do you think will have a major impact on the risk going forward?

A:

- Ageing population
- Growing middle class in emerging economies
- Increasing polarisation of societies
- Rise of hyper connectivity
- Rising geographic mobility
- Rising income disparity
- Shifts in power
- Urbanisation
- Increasing national sentiment

2.9 Failure / Shortfall of Critical Infrastructure





Failure / Shortfall of Critical Infrastructure

Lindsay Martin

Chairperson, Chief Director: Infrastructure Development Management Systems
National Treasury

Q: What is your opinion of this topic as a risk to the achievement of the National Development Plan (NDP) objectives for South Africa?

A: Shortfall of critical infrastructure will negatively impact on the achievement of faster economic growth, improved competitiveness and socio-economic development.

Q: Give the primary causes of this risk.

- A:
- Financing constraints (including private sector investment)
 - Capacity and capability of the state
 - Lack of maintenance

Q: What are the consequences if this risk materialises?

A: Inability to expand access and a deterioration of critical infrastructure networks resulting slower economic growth, reduced competitiveness and a lack socio-economic development.

Q: Which industry will be most affected if this risk materialises?

- A:
- Energy, Water and Utilities
 - Communications and Technology
 - Transport and Logistics
 - Mining, Engineering and Construction

Q: What are the barriers that prevent us from solving this risk?

- A:
- Budget deficit (constrained fiscal environment makes it difficult to finance large multi-year projects)
 - Lack of coordinated action

Q: What is the effective risk response to treating the risk on an industry level?

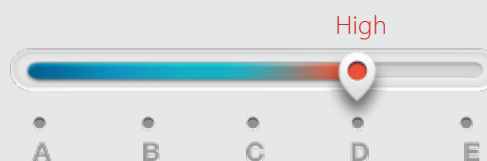
- A:
- Effective public private partnerships
 - Effective planning and prioritisation of investment
 - Review of pricing and financing mechanisms

Q: What is the effective risk response to treating the risk on a National level?

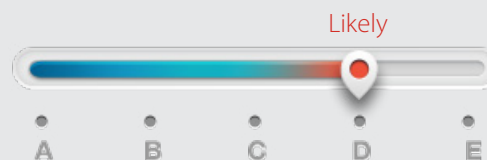
- A:
- Improved coordination around the implementation of plans, e.g. National Infrastructure Plan
 - Public and private sector agreements

Q: Rate the Impact and Likelihood of the risk in the next 18 months.

A: Impact Scale:

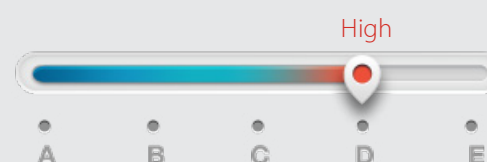


Likelihood Scale:

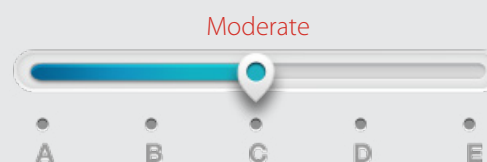


Q: Rate the Impact and Likelihood of the risk in the next 10 years.

A: Impact Scale:



Likelihood Scale:



Q: Which of the global trends do you think will have a major impact on the risk going forward?

- A:
- Climate change
 - Urbanisation



Failure / Shortfall of Critical Infrastructure

Thulani Mkhungo

Key Account Manager: Enterprise Risk Management
Transnet Freight Rail

Q: Give the primary causes of this risk.

- A:
- Poorly managed, serviced or upgraded infrastructure
 - Lack of planning for the key infrastructure as not aligned with the economic growth and population
 - NDP not aligned with the State Owned Corporation (SOC) and key national government department plans
 - Government entities failure to collect revenue e.g. Municipalities, Eskom etc.

Q: What are the consequences if this risk materialises?

- A:
- Lack of service delivery
 - Loss of revenue and decline in tax revenue
 - Decline in the economy due to international investors being reluctant to invest in South Africa
 - Community unrest
 - Job losses

Q: Which industry will be most affected if this risk materialises?

- A:
- Government and Public Services
 - Financial Services
 - Energy, Water and Utilities
 - Communications and Technology
 - Transport and Logistics
 - Petrochemicals
 - Mining, Engineering and Construction

Q: What are the barriers that prevent us from solving this risk?

- A:
- Fraud and corruption
 - Political decisions

Q: What is the effective risk response to treating the risk on an industry level?

- A:
- Planning ahead by aligning the NDP with the objectives of the government departments and SOCs
 - Invest in education for artisans and engineers

Q: What is the effective risk response to treating the risk on a National level?

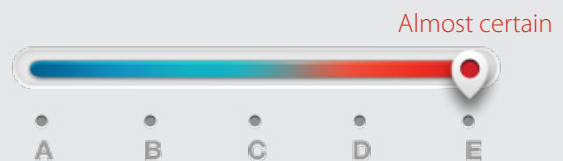
- A:
- Planning ahead by aligning the NDP with the objectives of the three phases of government departments and State Owned Corporations (SOCs)
 - Invest in education for artisans and engineers
 - Monitoring and evaluation department to be more effective to monitor the NDP
 - NDP should be flexible adjusted as the economy changes

Q: Rate the Impact and Likelihood of the risk in the next 18 months.

A: Impact Scale:

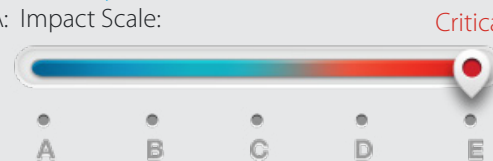


Likelihood Scale:



Q: Rate the Impact and Likelihood of the risk in the next 10 years.

A: Impact Scale:



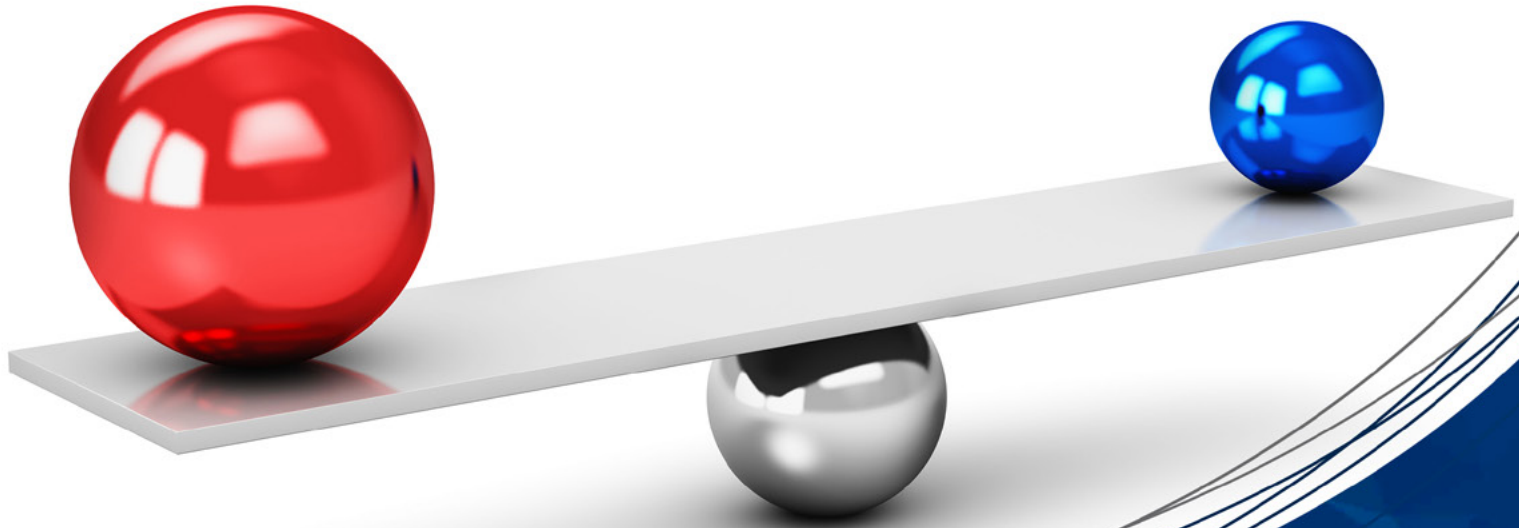
Likelihood Scale:



Q: Which of the global trends do you think will have a major impact on the risk going forward?

- A:
- Ageing population
 - Climate change
 - Growing middle class in emerging economies
 - Shifts in power
 - Urbanisation

2.10 Severe Income Disparity





Severe Income Disparity

Professor Andre Roux

Director

Institute for Futures Research (IFR)

Q: What is your opinion of this topic as a risk to the achievement of the National Development Plan (NDP) objectives for South Africa?

A: Highly relevant

Q: Give the primary causes of this risk.

- A:**
- Unemployment
 - High wage increases
 - Structural mismatch between economic activity and education/skills levels of South Africans

Q: What are the consequences if this risk materialises?

- A:**
- Growing disenchantment about the virtues and benefits of democracy
 - Growing resentment against capitalism and its perceived beneficiaries

Q: Which industry will be most affected if this risk materialises?

- A:**
- Professional Services
 - Government and Public Services
 - Financial Services
 - Energy, Water and Utilities
 - Communications and Technology
 - Transport and Logistics
 - Petrochemicals
 - Manufacturing
 - Mining, Engineering and Construction
 - Hospitality
 - Education
 - Healthcare
 - Retail
 - Other

All of the above

Q: What are the barriers that prevent us from solving this risk?

- A:**
- Entrenched unemployment
 - High costs of labour
 - Lack of competitiveness

Q: What is the effective risk response to treating the risk on an industry level?

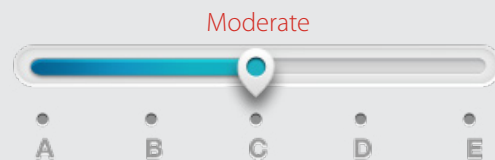
A: Moderate wage increases

Q: What is the effective risk response to treating the risk on a National level?

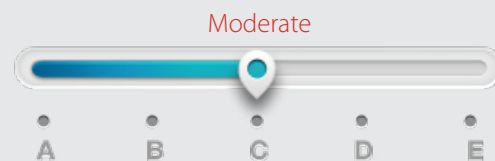
A: Further wealth redistribution (but not sustainable)

Q: Rate the Impact and Likelihood of the risk in the next 18 months.

A: Impact Scale:

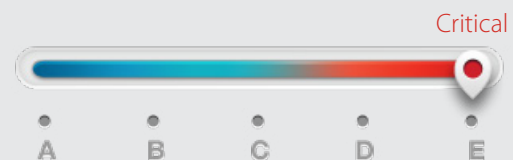


Likelihood Scale:

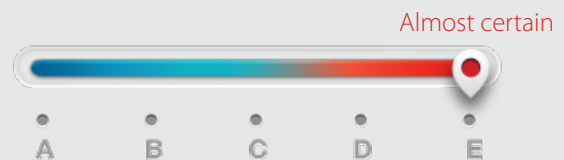


Q: Rate the Impact and Likelihood of the risk in the next 10 years.

A: Impact Scale:



Likelihood Scale:



Q: Which of the global trends do you think will have a major impact on the risk going forward?

- A:**
- Growing middle class in emerging economies
 - Increasing polarisation of societies
 - Rise of hyper connectivity
 - Rising geographic mobility
 - Shifts in power
 - Urbanisation



Querida Saal

Human Rights Advocate and Researcher
South African Human Rights Commission (SAHRC)

Q: What is your opinion of this topic as a risk to the achievement of the National Development Plan (NDP) objectives for South Africa?

A: Over the last 20 years, the State has made strides in addressing income inequality. However, income inequality remains a major challenge affecting the country and according to the NDP will continue to be a challenge, at least until 2030. The NDP suggests that inequality may be decreased from a Gini coefficient of 0.69 to 0.60, in 2030. This still leaves South Africa with inequality far above that of comparative countries, i.e. OECD countries with an average coefficient of between 0.25 and 0.35.

It also means that even if the government succeeds in reaching all the objectives contained in the NDP by 2030, income disparity will remain with us for the foreseeable future. The NDP recognises that people have been patient thus far, accepting that income inequality is part of apartheid which cannot be changed overnight. However, two decades of democratic rule have passed, and whether citizens and especially the poor will continue to accept low income as compared to their exorbitantly paid employers, is unlikely.

Furthermore, continued income inequality will likely negatively impact the NDP's objectives in relation to building social cohesion. It raises concern about the kind of participation the "active citizenry" envisioned by the NDP will engage in – it may be more negative rather than the positive sort of interaction called for in the NDP.

Importantly, income not only has intrinsic value, but is an important determinant in what other social and economic aspects individuals can access. For instance, income is a very important deterrent for accessing food and healthcare – both necessary for the full development of the person, which further impacts on productivity. Research has shown that a significant proportion of the "middle-class" earn a very low incomes. Social unrest in response to continued inequality may very likely come from this group of people rather than "the poorest of the poor". Continued income disparity therefore poses a major risk to political and economic stability – conditions so necessary for implementing a long term vision such as the NDP.

Q: Give the primary causes of this risk.

- A:**
- Slow economic growth and insufficient investment (FDI)
 - High unemployment and low wages for the employed
 - Inefficient application of policies aimed at addressing historical inequalities
 - Historical conditions: current social and economic conditions continue to mirror apartheid inequalities

Q: What are the consequences if this risk materialises?

- A:**
- Growing political and economic instability, especially given the possibility of an economic recession.
 - Growing resentment amongst low income earners and unemployed persons is likely to result in protest action. This may be in the form of protests against government due to a lack of basic services or against business, for instance protests in the mining sector.
 - Negative impacts in terms of social cohesion.

Q: Which industry will be most affected if this risk materialises?

- A:**
- Manufacturing
 - Mining, Engineering and Construction
 - Education

Q: What are the barriers that prevent us from solving this risk?

- A:**
- Low economic growth
 - Limited employment creation
 - Limited investment
 - Insufficient savings
 - Corruption

Q: What is the effective risk response to treating the risk on an industry level?

- A:** Businesses, across the board, should commit themselves to paying fair wages. Within the mining sector especially, business managers and shareholders must reconcile themselves with taking less of the profits for themselves and distributing profits more equitably, especially to benefit lower level employees.

Q: What is the effective risk response to treating the risk on a National level?

- A:
- The NDP suggests that economic growth, the creation of 11 million jobs and a decrease in inequality (from Gini coefficient of .69 to .6) is possible through export-led growth.
 - Increased economic growth and investment in the country – increased disposal income distributed more equitably amongst South Africans would result an increased tax revenue. More income generated through taxes means more funds that can be put towards social welfare policies, at least until job more opportunities are created.
 - Effective implementation of government policies and programmes geared towards job creation, land reform, etc.
 - More efficient implementation of existing policies aimed at addressing income inequality, i.e. BBBEE. More importantly, broadening the intended benefits of such policies to the majority poor and not only a select crop of individuals.

Q: Rate the Impact and Likelihood of the risk in the next 18 months.

A: Impact Scale:

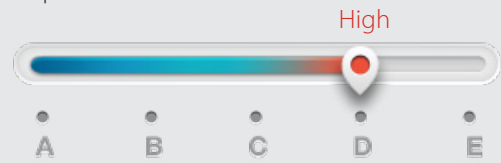


Likelihood Scale:

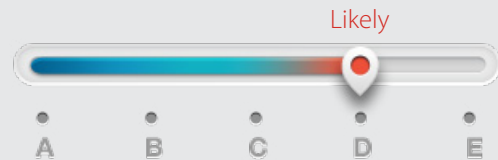


Q: Rate the Impact and Likelihood of the risk in the next 10 years.

A: Impact Scale:



Likelihood Scale:



Q: Which of the global trends do you think will have a major impact on the risk going forward?

- A:
- Climate change
 - Growing middle class in emerging economies - this will likely be a mitigating factor, especially in South African context
 - Rising geographic mobility – particularly if increased presence of non-nationals in South Africa, who South Africans perceive to be their competitors for economic opportunities
 - Rising income disparity
 - Urbanisation

2.11 Profound Political and Social Instability



Profound Political and Social Instability

Justice Malala

Renowned Political Analyst and Commentator

Q: What is your opinion of this topic as a risk to the achievement of the National Development Plan (NDP) objectives for South Africa?

A: Massive risk if this risk is not mitigated.

Q: Give the primary causes of this risk.

- Poor economy
- Poor leadership
- Social disparity
- Perceptions of crony capitalism

Q: What are the consequences if this risk materialises?

A: Country risks becoming a state flirting with failure.

Q: Which industry will be most affected if this risk materialises?

- Professional Services
- Government and Public Services
- Financial Services
- Energy, Water and Utilities
- Communications and Technology
- Transport and Logistics
- Petrochemicals
- Manufacturing
- Mining, Engineering and Construction
- Hospitality
- Education
- Healthcare
- Retail
- Other

Q: What are the barriers that prevent us from solving this risk?

- Failure to implement NDP
- Failure to set up national conversation
- Political competition overwhelming national unity

Q: What is the effective risk response to treating the risk on an industry level?

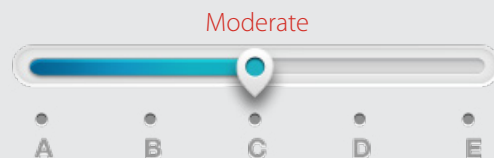
- Involvement in immediate communities
- Giving employees a feeling of ownership in business
- Continued engagement with workers

Q: What is the effective risk response to treating the risk on a National level?

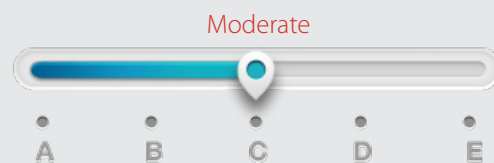
A: Encouraging government to work with business to implement NDP as quickly and effectively as possible.

Q: Rate the Impact and Likelihood of the risk in the next 18 months.

A: Impact Scale:



Likelihood Scale:



Q: Rate the Impact and Likelihood of the risk in the next 10 years.

A: Impact Scale:



Likelihood Scale:



Q: Which of the global trends do you think will have a major impact on the risk going forward?

- Increasing polarisation of societies
- Rising income disparity
- Shifts in power
- Increasing national sentiment



Profound Political and Social Instability

Dr Mzukisi Qobo

Renowned Political Risk Analyst and Public Speaker

Q: What is your opinion of this topic as a risk to the achievement of the National Development Plan (NDP) objectives for South Africa?

A: Leadership deficiency.

Q: Give the primary causes of this risk.

- Lack of political will
- Weak capacities in the state
- Weak institutions

Q: Which industry will be most affected if this risk materialises?

A: Government and Public Services

Q: What are the barriers that prevent us from solving this risk?

A: The nature of the electoral system where the party chooses the president and the leaders of the country.

Q: What is the effective risk response to treating the risk on an industry level?

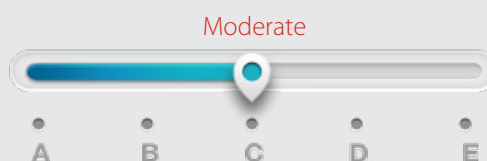
A: Build capacities within major companies to understand and monitor political risk in the political system, and its economy-wide effects.

Q: What is the effective risk response to treating the risk on a National level?

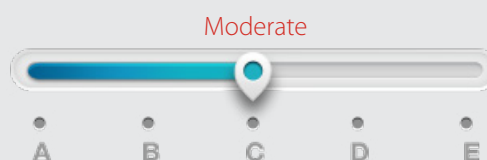
A: Organisations need to find mechanisms to engage with government, especially those ministries that interface with the economy: Trade and Industry, Treasury, Economic Development etc.

Q: Rate the Impact and Likelihood of the risk in the next 18 months.

A: Impact Scale:

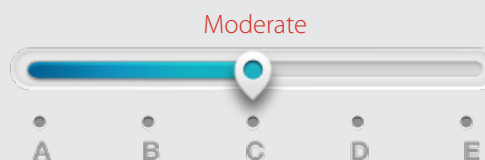


Likelihood Scale:

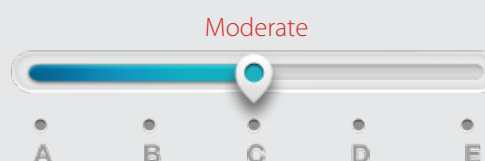


Q: Rate the Impact and Likelihood of the risk in the next 10 years.

A: Impact Scale:



Likelihood Scale:



Q: Which of the global trends do you think will have a major impact on the risk going forward?

- Growing middle class in emerging economies
- Increasing polarisation of societies
- Increasing national sentiment



Profound Political and Social Instability

Ryan Cummings
Chief Analyst Africa
Red24

Q: What is your opinion of this topic as a risk to the achievement of the National Development Plan (NDP) objectives for South Africa?

A: Profound political and social instability will have a profound impact on the ability of government to meet its NDP goals. The efficacy of the policies formulated to meet the objectives delineated in the NDP 2030 depends on a stable government who continues to have the socio-political mandate to achieve its objectives. An unstable political environment or a government which has lost the ability to maintain social stability will find it extremely difficult to meet any of the social, political and economic goals it has set out to achieve.

Q: Give the primary causes of this risk.

A: There are myriad factors fuelling political and social instability in South Africa. However, the most preeminent of these undoubtedly are:

Political instability:

- Non-adherence to constitution by executive branch of government
- Splintering of African National Congress (ANC)
- Deteriorating economic situation

Social instability:

- Growing levels of unemployment, impoverishment, inequality and associated economic deficiencies
- Polarisation of population along ethnic, religious and/or political lines
- Breakdown of social contract between state and constituents

Q: What are the consequences if this risk materialises?

A: Profound political and social instability carries the potential to not only hinder socio-economic development within South Africa but could lead to a regression of development in the country. This would only lead to further social and political instability in a vicious cycle which could end in chronic state failure and/or collapse.

Q: Which industry will be most affected if this risk materialises?

- A:
- Government and Public Services
 - Energy, Water and Utilities
 - Communications and Technology
 - Education
 - Healthcare

Q: What are the barriers that prevent us from solving this risk?

- A: The main barriers preventing us from solving political and social instability include:
- Systemic and institutionalised mechanisms which foster income inequality and associated social instability
 - Global economic and political developments which have acute domestic impacts
 - Constitutional adherence which limits options in addressing maladministration
 - Independence of political organisations and the manner in which they conduct themselves

Q: What is the effective risk response to treating the risk on an industry level?

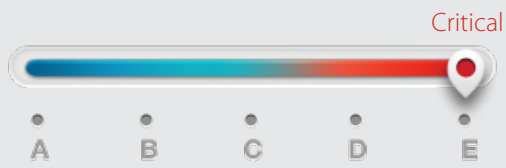
- A: Addressing issues which influence socio-economic instability on an industry level which can include but are not limited to:
- Practices which do not promote income-inequality
 - Considerations into funding political establishments promoting political or social instability
 - Financing civic organisations which are addressing the root causes of social instability

Q: What is the effective risk response to treating the risk on a National level?

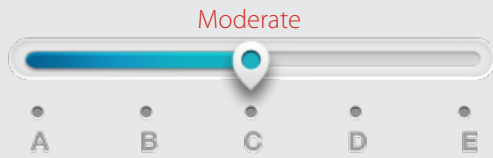
- A: Government needs to regulate itself more closely and maintain independence of branches of government. Entities seeking to implement policies or undertake decisions which could foster social and/or political instability should be dealt with within the guidelines of the constitution.

Q: Rate the Impact and Likelihood of the risk in the next 18 months.

A: Impact Scale:



Likelihood Scale:

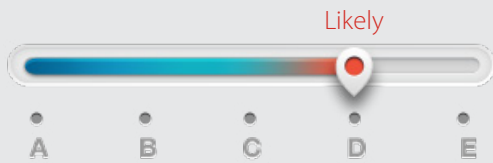


Q: Rate the Impact and Likelihood of the risk in the next 10 years.

A: Impact Scale:



Likelihood Scale:



Q: Which of the global trends do you think will have a major impact on the risk going forward?

- A:
- Increasing polarisation of societies
 - Rising income disparity
 - Shifts in power
 - Increasing national sentiment

2.12 Major Escalation in Organised Crime and Illicit Trade





Major Escalation in Organised Crime and Illicit Trade

Bernard Hotz

Director
Werksmans Attorneys

Q: What are the consequences if this risk materialises?

A: Organised criminals and terrorism. Thriving cyber-crime which is a methodology of funding terrorism (e.g. Bitcoin). Arms dealers will thrive.

Q: Which industry will be most affected if this risk materialises?

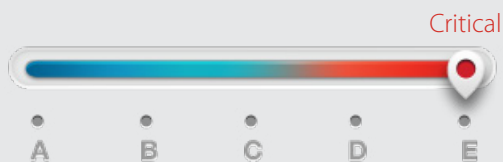
- Government and Public Services
- Financial Services

Q: What is the effective risk response to treating the risk on a National level?

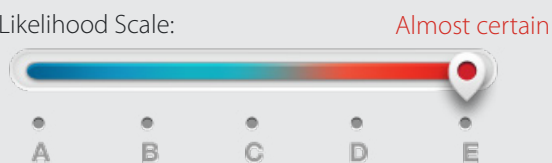
A: Enforce legislative mechanisms. If the incidents decrease, then legislative mechanisms are working, however, if it spirals out of control then legislative mechanisms are not successful.

Q: Rate the Impact and Likelihood of the risk in the next 18 months.

A: Impact Scale:

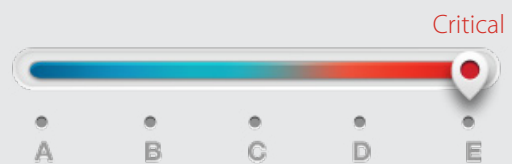


Likelihood Scale:

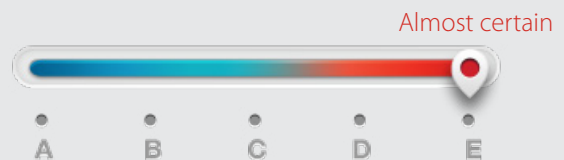


Q: Rate the Impact and Likelihood of the risk in the next 10 years.

A: Impact Scale:



Likelihood Scale:



Q: Which of the global trends do you think will have a major impact on the risk going forward?

- Ageing population
- Climate change
- Environmental degradation
- Growing middle class in emerging economies
- Increasing polarisation of societies
- Rise of chronic diseases
- Rise of hyper connectivity
- Rising geographic mobility
- Rising income disparity
- Shifts in power
- Urbanisation
- Weakening of international governance
- Increasing national sentiment



Stan Bridgens

Director
South African Institute of Electrical Engineers (SAIEE)

Q: What is your opinion of this topic as a risk to the achievement of the National Development Plan (NDP) objectives for South Africa?

A: Huge impact to effectively implementing NDP.

Q: Give the primary causes of this risk.

- A:
- Mistrust
 - No-transparent procurement
 - Greed coupled with culture of non-compliance

Q: What are the consequences if this risk materialises?

- A:
- Chaos and degradation of ethics
 - Lowering ethical relationships
 - Waste of financial resources

Q: Which industry will be most affected if this risk materialises?

A: Government and Public Services

Q: What are the barriers that prevent us from solving this risk?

- A:
- Incompetent cadre appointments
 - Lack of effective control
 - Political will to address

Q: What is the effective risk response to treating the risk on an industry level?

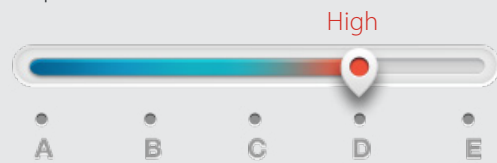
A: Non-compliance and illegality to survive.

Q: What is the effective risk response to treating the risk on a National level?

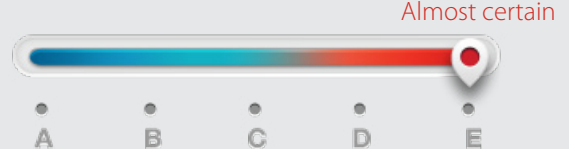
- A:
- Countering illegality
 - Holding persons accountable
 - Training

Q: Rate the Impact and Likelihood of the risk in the next 18 months.

A: Impact Scale:

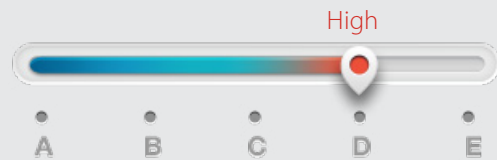


Likelihood Scale:

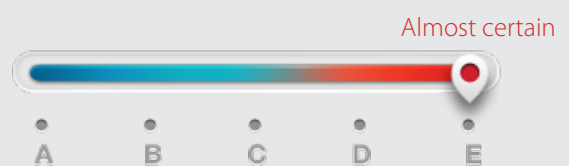


Q: Rate the Impact and Likelihood of the risk in the next 10 years.

A: Impact Scale:



Likelihood Scale:



Q: Which of the global trends do you think will have a major impact on the risk going forward?

A: Rising geographic mobility

2.13 The Weakening of Representative Democracy



The Weakening of Representative Democracy

Justice Malala

Renowned Political Analyst and Commentator

Q: What is your opinion of this topic as a risk to the achievement of the National Development Plan (NDP) objectives for South Africa?

A: This is a key risk area for the NDP and for South Africa in general. It goes to the heart of what the country is and its reputation as a beacon of democracy. Over the past six years, however, this reputation has been under severe assault as institutions of democracy have been assailed from all sides. The recent Supreme Court finding that elections in Tlokwe, North West, were not free and fair places a responsibility on South Africans to ensure that the 2016 elections are not similarly compromised. The local government elections and their outcome will be a key event in this regard.

Q: Give the primary causes of this risk.

- Disregard for constitutional principles by some leaders
- Failure to understand their powers and rights by citizens
- Complacency that “others will look after our democracy” – no taking of responsibility

Q: What are the consequences if this risk materialises?

- Illegitimate institutions which the citizenry doesn't trust, leading to attempts to undermine them
- Widespread instability as institutions collapse
- A “free for all” culture where citizens believe they can do as they please and there will be no consequences

Q: Which industry will be most affected if this risk materialises?

- Professional Services
- Government and Public Services
- Financial Services
- Energy, Water and Utilities
- Communications and Technology
- Transport and Logistics
- Petrochemicals
- Manufacturing
- Mining, Engineering and Construction
- Hospitality
- Education
- Healthcare
- Retail
- Other

Q: What are the barriers that prevent us from solving this risk?

- Ignoring the signs. There were 14,700 service delivery protests in the year to March 2015. Why? Because citizens are feeling alienated from their representatives.
- “It will never happen here” syndrome – well, Zimbabwe also used to say it would never happen to them. Now elections are routinely stolen and a small elite rules the roost.

Q: What is the effective risk response to treating the risk on a National level?

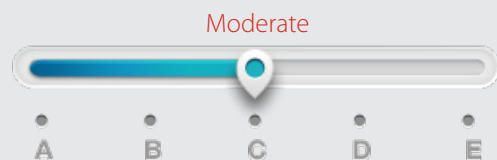
- Ensuring that leaders are subject to effective oversight
- Strengthening the institutions of democracy such as IEC

Q: Rate the Impact and Likelihood of the risk in the next 18 months.

A: Impact Scale:



Likelihood Scale:

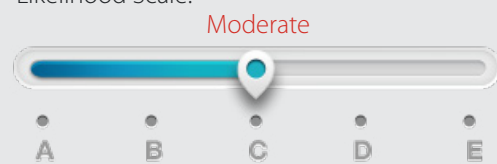


Q: Rate the Impact and Likelihood of the risk in the next 10 years.

A: Impact Scale:



Likelihood Scale:



Q: Which of the global trends do you think will have a major impact on the risk going forward?

- Increasing polarisation of societies
- Rise of hyper connectivity
- Rising geographic mobility
- Rising income disparity
- Shifts in power
- Urbanisation



The Weakening of Representative Democracy

Ryan Cummings
Chief Analyst Africa
Red24

Q: What is your opinion of this topic as a risk to the achievement of the National Development Plan (NDP) objectives for South Africa?

A: The weakening of a representative democracy poses a challenge to the achievement of NDP goals given that government would be less accountable to fulfil promises outlined to the electorate. Moreover, it creates conditions where resources allocated to stimulate social, political and economic reforms can be mismanaged with relative impunity.

Q: Give the primary causes of this risk.

A: Factors influencing the weakening of a representative democracy in South Africa include:

- Undue influence of the executive over the legislative and judicial branches of government
- The adoption of a neopatrimonialist approach to governance by the ruling party
- Government using parliamentary majority to change constitutional clauses which protect freedom of speech and other associated liberties

Q: What are the consequences if this risk materialises?

A: The consequences include a regression of democratisation and a relapse to authoritarian rule which has shown to be incongruent with economic and socio-political development in many contexts. It also impinges on the social contract which exists between the state and its citizenry which itself can lead to chronic instability.

Q: Which industry will be most affected if this risk materialises?

A:

- Government and Public Services
- Financial Services
- Energy, Water and Utilities
- Communications and Technology
- Transport and Logistics
- Petrochemicals
- Manufacturing
- Mining, Engineering and Construction
- Hospitality
- Education
- Healthcare
- Retail
- Other

Q: What are the barriers that prevent us from solving this risk?

A: The democratic institutions and processes which exist which prevents a change in governance even when that governance is deemed to be a threat to representative democracy.

Q: What is the effective risk response to treating the risk on an industry level?

A: On an industry level, particularly within the private sector, both local and foreign corporations need to consider the role they play in promoting democratic regression. This is particularly the case of organisations who are the primary patrons of political establishments whose decision-making is not congruent with the consolidation and/or furthering of democratisation in South Africa.

Q: What is the effective risk response to treating the risk on a National level?

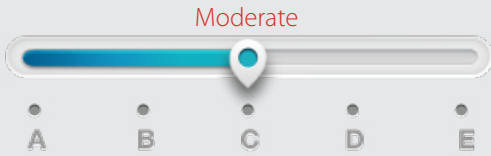
A: On a national level, South African citizenry need realise that democracy is an active process and that accountability does not end and begin with the designated voting period on election day. Citizens need to be aware of all allowances which are protected within the South African constitution which can be used to ensure that our democracy remains representative, robust and inclusive. Responsibility also needs to be undertaken by the custodians of our democracy to ensure that those who are perceived to be a threat to our hard-fought democracy are dealt within the ambit of the South African constitution.

Q: Rate the Impact and Likelihood of the risk in the next 18 months.

A: Impact Scale:

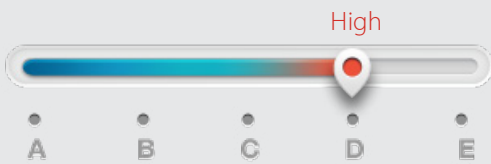


Likelihood Scale:

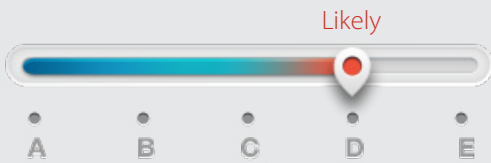


Q: Rate the Impact and Likelihood of the risk in the next 10 years.

A: Impact Scale:



Likelihood Scale:



Q: Which of the global trends do you think will have a major impact on the risk going forward?

- A:
- Increasing polarisation of societies
 - Shifts in power

| 2.14 Governance Failure



Terrance Booyen

Co-founder and Executive Director
CGF Research Institute

Q: What is your opinion of this topic as a risk to the achievement of the National Development Plan (NDP) objectives for South Africa?

A: With a clear lack of South African leadership and a decisive national strategy which is supported by all constituencies in the South African government, including the captains of local industry; the NDP will continue to limp forward. Indeed, this bleak view needs to be seriously debated by the top echelons of our country and accountability must be allocated at individual levels if there is any chance of avoiding a massive socio-economic catastrophe. Left unchecked, South Africa's credit and other sovereign ratings will continue to slide, taking the country into a failed state. There is no clear evidence that South Africa's downward trend is directly affecting all its citizens and investors have become nervous of long-term commitments. These all have direct bearing on the success of the NDP and poor governance remains the foundation to many of these problems.

Q: Give the primary causes of this risk.

- A:**
- Poor leadership and poor strategy
 - Excessive, uncontrolled corruption
 - Over burdensome regulation which negatively impacts business growth

Q: What are the consequences if this risk materialises?

- A:**
- Massive and increasing scales of unemployment
 - Increased crime
 - Social unrest
 - Disinvestment
 - Political uncertainty
 - Failed state
 - Civil riots
 - Property destruction and land grabs

Q: Which industry will be most affected if this risk materialises?

- A:**
- Financial Services
 - Manufacturing
 - Mining, Engineering and Construction

Q: What are the barriers that prevent us from solving this risk?

- A:**
- Leadership crisis
 - Political interference and uncertainty

Q: What is the effective risk response to treating the risk on an industry level?

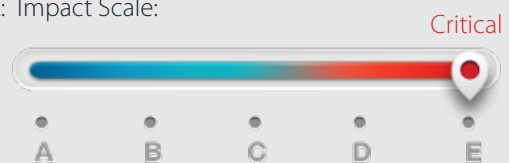
- A:**
- Diversify business
 - Open offices outside South Africa
 - Ensure Business Continuity Management (BCM) plans are implemented and updated

Q: What is the effective risk response to treating the risk on a National level?

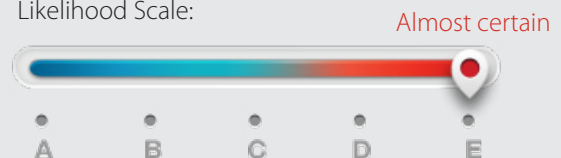
- A:**
- Implement a third CODESA
 - Urgently involve business in national plans with incentives
 - Apply strict governance laws & hold all leadership to account
 - Publicise governance wins and failures

Q: Rate the Impact and Likelihood of the risk in the next 18 months.

A: Impact Scale:

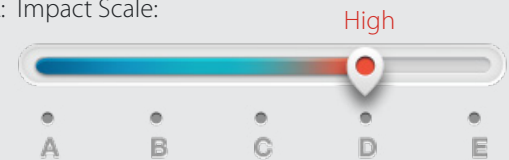


Likelihood Scale:

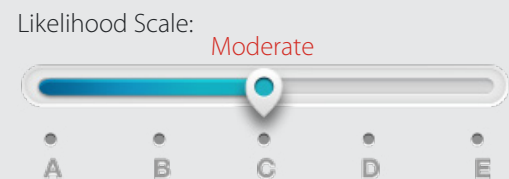


Q: Rate the Impact and Likelihood of the risk in the next 10 years.

A: Impact Scale:



Likelihood Scale:



Q: Which of the global trends do you think will have a major impact on the risk going forward?

- A:**
- Ageing population
 - Increasing polarisation of societies
 - Rising income disparity
 - Weakening of local/international governance



Michael Judin
Senior Partner
Judin Combrinck Inc.

Q: What is your opinion of this topic as a risk to the achievement of the National Development Plan (NDP) objectives for South Africa?

A: It is a great risk.

Q: Give the primary causes of this risk.

A: Ignorance is the main cause

Q: What are the consequences if this risk materialises?

A: The consequences are severe

Q: Which industry will be most affected if this risk materialises?

- A:
- Professional Services
 - Government and Public Services
 - Financial Services
 - Energy, Water and Utilities
 - Communications and Technology
 - Transport and Logistics
 - Petrochemicals
 - Manufacturing
 - Mining, Engineering and Construction
 - Hospitality
 - Education
 - Healthcare
 - Retail
 - Other

Q: What are the barriers that prevent us from solving this risk?

A: Lack of education

Q: What is the effective risk response to treating the risk on an industry level?

A: Still to be revealed

Q: What is the effective risk response to treating the risk on a National level?

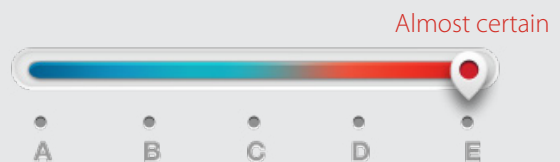
A: Still to be revealed

Q: Rate the Impact and Likelihood of the risk in the next 18 months.

A: Impact Scale:



Likelihood Scale:

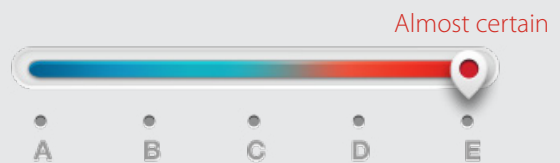


Q: Rate the Impact and Likelihood of the risk in the next 10 years.

A: Impact Scale:



Likelihood Scale:





Dr Gert Cruywagen
 Director of Risk
 Tsogo Sun

Q: What is your opinion of this topic as a risk to the achievement of the National Development Plan (NDP) objectives for South Africa?

A: This risk manifests as systemic corruption, appearance of tenderpreneurs, appointment of incompetent persons to key positions, plundering of public coffers, nepotism, and people that consider themselves to be untouchable. NDP projects are therefore awarded to non-deserving companies, are not started, are incomplete or substandard, are very late or cost much more than they should.

Q: Give the primary causes of this risk.

- A:
- The culture of entitlement
 - Officials feel they are not accountable, as they see senior officials not being held accountable
 - Lack of respect for authority, the law in general and governance rules in particular – ingrained selective morality

Q: What are the consequences if this risk materialises?

- A:
- Diminishing trust in democratic institutions by public, increasing negative perception of South Africa
 - Fruitless and wasteful expenditure
 - Increased unemployment
 - Inadequate service delivery
 - Public protests and riots
 - Increasing pressure on the fiscus
 - Gradually diminishing GDP

Q: Which industry will be most affected if this risk materialises?

- A:
- Government and Public Services
 - Energy, Water and Utilities
 - Communications and Technology
 - Transport and Logistics
 - Petrochemicals
 - Education
 - Healthcare

Q: What are the barriers that prevent us from solving this risk?

- A:
- Culture of entitlement
 - Lack of, or deficient, enforcement of laws and standards
 - Insufficient transparency at all levels
 - Tolerance of governance failures

Q: What is the effective risk response to treating the risk on an industry level?

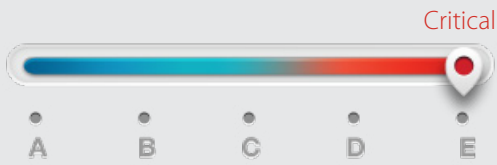
- A:
- Increased transparency
 - Enforceable governance rules and codes
 - Ethical procurement, with transparent results
 - Whistleblower structures, including protections
 - Demonstrable fines and penalties for transgressions

Q: What is the effective risk response to treating the risk on a National level?

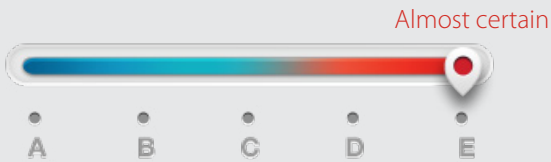
- A:
- Increased transparency
 - Ethical leadership
 - Increased accountability
 - Enforceable laws, governance rules and codes
 - Ethical procurement, with transparent results
 - Whistleblower structures, including protections
 - Demonstrable fines and penalties for transgressions

Q: Rate the Impact and Likelihood of the risk in the next 18 months.

A: Impact Scale:

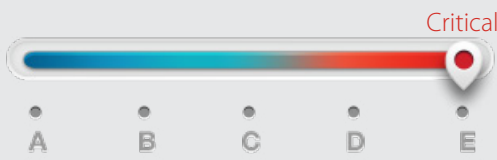


Likelihood Scale:



Q: Rate the Impact and Likelihood of the risk in the next 10 years.

A: Impact Scale:



Likelihood Scale:



Q: Which of the global trends do you think will have a major impact on the risk going forward?

- A:
- Growing middle class in emerging economies
 - Increasing polarisation of societies
 - Rising income disparity
 - Shifts in power
 - Urbanisation
 - Weakening of international governance
 - Increasing national sentiment



Rene Kenosi

Chairman

Independent Regulatory Board For Auditors

Q: What is your opinion of this topic as a risk to the achievement of the National Development Plan (NDP) objectives for South Africa?

A: Without effective governance and/or governance being considered an area of “malicious compliance” the non-achievement of objectives is increased, since there is no responsibility or accountability to ensure achievement.

Q: Give the primary causes of this risk.

- A:
- Lack of transparency and independence by those charged with governance often created by “self enrichment”
 - Political interference
 - Incompetence

Q: What are the consequences if this risk materialises?

- A:
- Usurped authority by the shareholder (Eskom, Petro SA)
 - Ineffective financial and internal controls (various areas currently within government and the private sector)
 - Financial failures (ABIL)
 - Increased conflict between various stakeholders (SABC, SAA)
 - Unfavourable international financial, sovereign and other ratings
 - Reputational risk

Q: Which industry will be most affected if this risk materialises?

- A:
- Professional Services
 - Government and Public Services
 - Financial Services
 - Energy, Water and Utilities
 - Communications and Technology
 - Transport and Logistics
 - Petrochemicals
 - Manufacturing
 - Mining, Engineering and Construction
 - Hospitality
 - Education
 - Healthcare
 - Retail

Q: What are the barriers that prevent us from solving this risk?

- A:
- Lack of political will
 - Individuals connected to high profiled political figures and become “untouchable”
 - Inability by competent individuals to perform their duties without fear or favour
 - Lack of consequence management
 - Unethical behaviour by those charged with governance – board members not abiding by code of ethics of the organisations nor that of their professions

Q: What is the effective risk response to treating the risk on an industry level?

- A:
- Effective consequence management
 - Regulatory environments holding their registrants accountable and ensuring more stringent punishment where unethical behaviour is detected
 - Private sector to ensure that there is adequate independence by individuals on their governance structures to ensure more effective combined assurance (between auditors and board members, between shareholders and board members, etc.)
 - Adequate monitoring and evaluation of governance assessments and publishing of results
 - Limitation of number of entities that those charged with governance are allowed to perform oversight on

Q: What is the effective risk response to treating the risk on a National level?

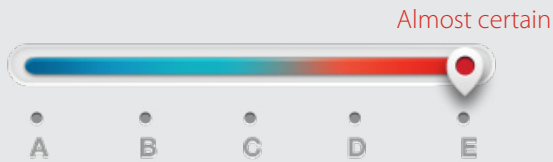
- A:
- Competent, experienced individuals appointed to various governance structures (current recycling of same pool of individuals to be stopped)
 - Restrained interference by shareholder
 - Effective consequence management
 - More accountability and transparency from those charged with governance.
 - Improved reporting mechanisms and protection for whistleblowers
 - Enhanced code of ethics and consequences for non-adherence
 - Robust monitoring and evaluation of declaration of interests
 - Transparent communication to the public

Q: Rate the Impact and Likelihood of the risk in the next 18 months.

A: Impact Scale:

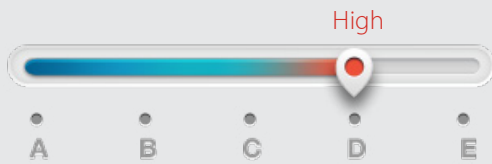


Likelihood Scale:

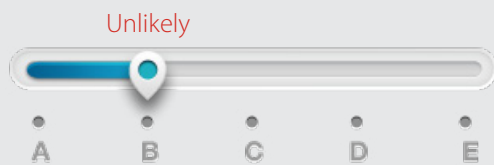


Q: Rate the Impact and Likelihood of the risk in the next 10 years.

A: Impact Scale:



Likelihood Scale:



Q: Which of the global trends do you think will have a major impact on the risk going forward?

- A:
- Climate change
 - Increasing polarisation of societies
 - Rise of chronic diseases
 - Rising geographic mobility
 - Rising income disparity
 - Shifts in power

2.15 Regulatory / Legislative Changes





Anne Reed
 Director
 Runsums Advisory Services

Q: What is your opinion of this topic as a risk to the achievement of the National Development Plan (NDP) objectives for South Africa?

A: The ideological divide in the cabinet.

Q: Give the primary causes of this risk.

- A:**
- Lack of decisive leadership from the state president of South Africa
 - A cabinet that is ideological divided
 - Talent and a delivery driven attitude are not the determining factors when appointing critical administrative government positions

Q: What are the consequences if this risk materialises?

- A:**
- Unwillingness by local and foreign business leaders to invest in commercial projects and social projects
 - High cost of borrowing
 - Increase in unemployment
 - Increase in poverty
 - Increase in social unrest
 - A poor talent pipeline for the future
 - A failed country

Q: Which industry will be most affected if this risk materialises?

A: Manufacturing

Q: What are the barriers that prevent us from solving this risk?

- A:**
- Captains of industries' passive acceptance of an incompetent civil services
 - A workforce that lacks the appropriate talent and skill set
 - A minority group that has an expectancy of entitlement, rather than a hard work by all brings just rewards for all

Q: What is the effective risk response to treating the risk on an industry level?

- A:**
- Captains of industries, with the Competition Commission, forming pro-active industry based clusters to remove the burden of regulatory/legislative changes.
 - Strong appetite to drive entrepreneurship, with banks understanding that their business model needs to reflect the dynamics of the country and that not all individuals have title deeds, for surety on commercial loans. Free cash and liquidity are strong drivers to contribute to growing the economy and sustainable economy.

- Bringing the informal business sector into the "mainstream" so that they too can contribute to the maintenance of critical infrastructure developments, as they do in fact reap rewards from these developments.

Q: What is the effective risk response to treating the risk on a National level?

- A:**
- All civil servants to write and pass with 75% an examination ensuring that they are skilled to perform the duties that they are remunerated to do
 - To remove from the statute legislation and regulation that impedes economic growth
 - To ensure that both government agencies and commercial venture deliver on the dream that South Africa is the gateway to Africa

Q: Rate the Impact and Likelihood of the risk in the next 18 months.

A: Impact Scale:

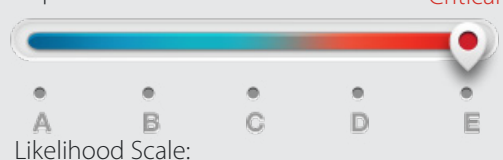


Likelihood Scale:

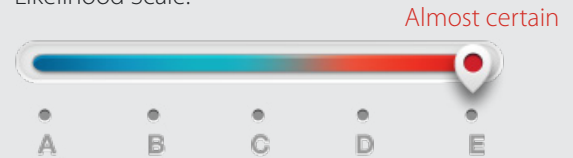


Q: Rate the Impact and Likelihood of the risk in the next 10 years.

A: Impact Scale:



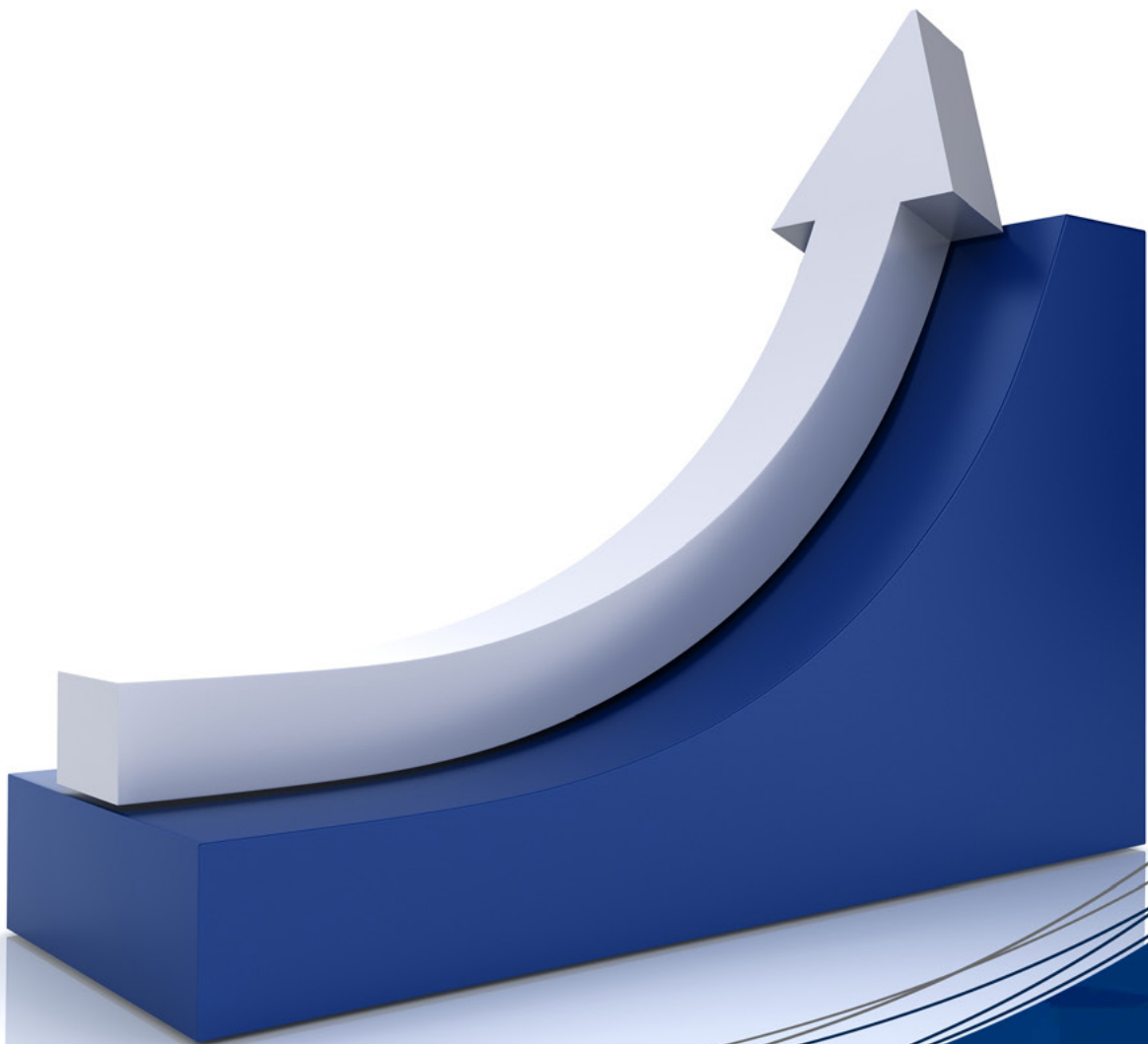
Likelihood Scale:



Q: Which of the global trends do you think will have a major impact on the risk going forward?

- A:**
- Climate change
 - Growing middle class in emerging economies
 - Shifts in power
 - Urbanisation

2.16 Unmanaged Inflation





Professor Andre Roux

Director

Institute for Futures Research (IFR)

Q: What is your opinion of this topic as a risk to the achievement of the National Development Plan (NDP) objectives for South Africa?

A: Limited risk.

Q: Give the primary causes of this risk.

- A:
- Erosion of operational autonomy of South African Reserve Bank
 - Abandonment of fiscal rectitude
 - Ongoing significant increase in the cost of labour

Q: What are the consequences if this risk materialises?

- A:
- Rising cost of living
 - Sustained weakening of the exchange rate

Q: Which industry will be most affected if this risk materialises?

- A:
- Professional Services
 - Government and Public Services
 - Financial Services
 - Energy, Water and Utilities
 - Communications and Technology
 - Transport and Logistics
 - Petrochemicals
 - Manufacturing
 - Mining, Engineering and Construction
 - Hospitality
 - Education
 - Healthcare
 - Retail
 - Other

All of the above

Q: What is the effective risk response to treating the risk on an industry level?

- A:
- Cost control
 - Ensuring productivity and competitiveness

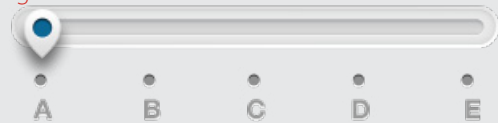
Q: What is the effective risk response to treating the risk on a National level?

A: Cannot be answered – the issue posed is that of unmanaged inflation – therefore national response not relevant.

Q: Rate the Impact and Likelihood of the risk in the next 18 months.

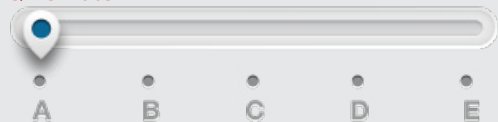
A: Impact Scale:

Insignificant



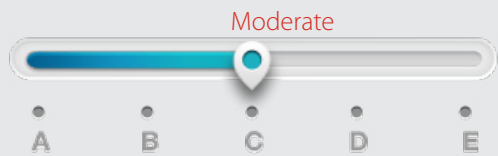
Likelihood Scale:

Rare/Remote

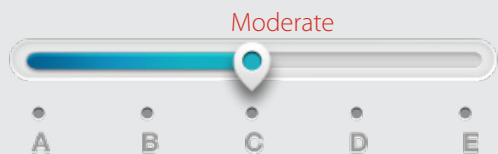


Q: Rate the Impact and Likelihood of the risk in the next 10 years.

A: Impact Scale:



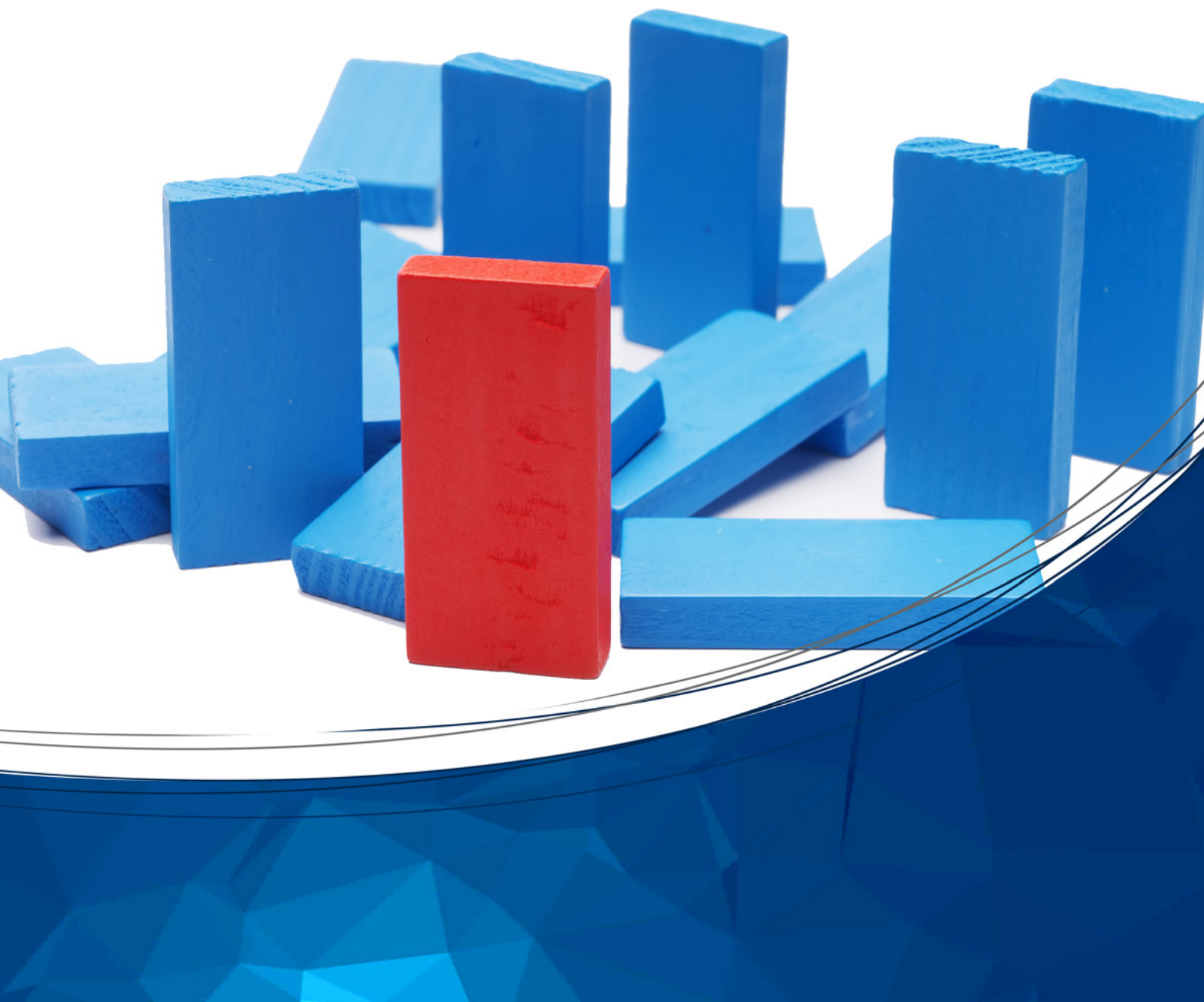
Likelihood Scale:



Q: Which of the global trends do you think will have a major impact on the risk going forward?

A: Growing middle class in emerging economies

2.17 State Collapse or Crisis



Justice Malala

Renowned Political Analyst and Commentator

Q: What is your opinion of this topic as a risk to the achievement of the National Development Plan (NDP) objectives for South Africa?

A: I believe this is a remote risk. The state will come under pressure as the economy falters and other negative developments rise up. However, I believe that there are sufficient institutions of integrity to keep this risk in abeyance for a while and – with new leadership – the trajectory could be in the opposite direction.

Q: Give the primary causes of this risk.

- A:**
- Economic collapse
 - Widespread social unrest
 - Failure of democratic institutions leading to

Q: What are the consequences if this risk materialises?

A: South Africa would become a failed state, with all the attendant consequences: crime, collapse, hunger, disease, war.

Q: Which industry will be most affected if this risk materialises?

- A:**
- Professional Services
 - Government and Public Services
 - Financial Services
 - Energy, Water and Utilities
 - Communications and Technology
 - Transport and Logistics
 - Petrochemicals
 - Manufacturing
 - Mining, Engineering and Construction
 - Hospitality
 - Education
 - Healthcare
 - Retail

Q: What are the barriers that prevent us from solving this risk?

- A:**
- Undermining state institutions that regulate our daily lives
 - Poor economic management
 - Failure to reduce the inequality gap

Q: What is the effective risk response to treating the risk on an industry level?

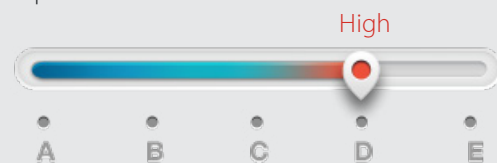
- A:**
- GDP growth of at least 5% per annum
 - Greater and sustained job creation
 - Better education outcomes

Q: What is the effective risk response to treating the risk on a National level?

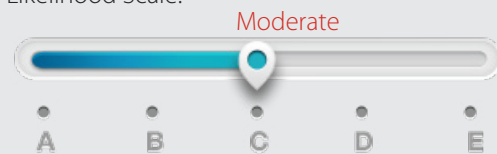
A: All role players – civil society, government business – need to remain engaged with each other, with communities and especially with young people facing the unemployment scourge.

Q: Rate the Impact and Likelihood of the risk in the next 18 months.

A: Impact Scale:

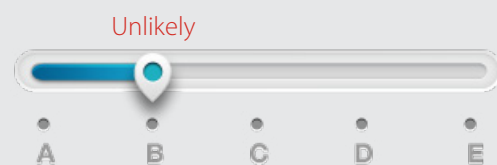


A: Likelihood Scale:

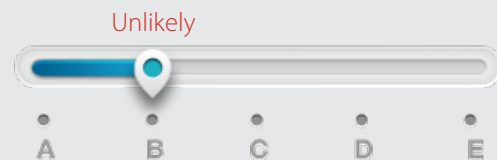


Q: Rate the Impact and Likelihood of the risk in the next 10 years.

A: Impact Scale:



A: Likelihood Scale:



Q: Which of the global trends do you think will have a major impact on the risk going forward?

- A:**
- Ageing population
 - Climate change
 - Environmental degradation
 - Growing middle class in emerging economies
 - Weakening of international governance
 - Increasing national sentiment



Ryan Cummings
Chief Analyst Africa
Red24

State Collapse or Crisis

Q: What is your opinion of this topic as a risk to the achievement of the National Development Plan (NDP) objectives for South Africa?

A: State collapse or crisis of equal proportions would not only prevent the government from achieving its NDP 2030 goals but would hamper it from providing the most basic of functions required of that of a stable state.

Q: Give the primary causes of this risk.

A: Three biggest threats to state collapse are:

- Inter- or intra-state war
- Unconstitutional change of government such as a military coup or social revolution
- Economic collapse caused by internal and/or external factors

Q: What are the consequences if this risk materialises?

A: State collapse or an equivalent crisis would mean that the incumbent administration has lost the ability to govern, maintain law and order, and oversee the economy. The consequences of such an occurrence could leave South Africa in a state of anarchy where underlying ethnic, political and social cleavages could violently manifest with few mechanisms to address and manage the unrest.

Q: Which industry will be most affected if this risk materialises?

A:

- Professional Services
- Government and Public Services
- Financial Services
- Energy, Water and Utilities
- Communications and Technology
- Transport and Logistics
- Petrochemicals
- Manufacturing
- Mining, Engineering and Construction
- Hospitality
- Education
- Healthcare
- Retail

Q: What are the barriers that prevent us from solving this risk?

A: The barriers preventing proactive responses to the risks are that certain risk factors are either external or unknown which makes them difficult if not impossible to mitigate.

Q: What is the effective risk response to treating the risk on an industry level?

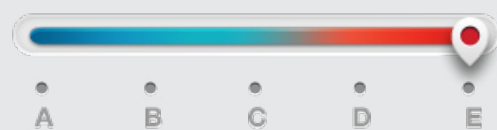
A: Focus on maintaining early warning mechanisms and creating industry specific contingencies which can effectively respond to any eventuality.

Q: What is the effective risk response to treating the risk on a National level?

A: Focus on maintaining early warning mechanisms and creating industry specific contingencies which can effectively respond to any eventuality. However, domestic and foreign policy adopted should also inherently limit the key factors which could trigger state collapse.

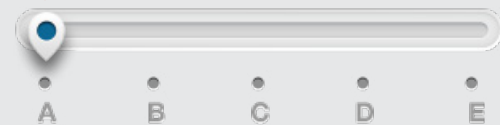
Q: Rate the Impact and Likelihood of the risk in the next 18 months.

A: Impact Scale: Critical



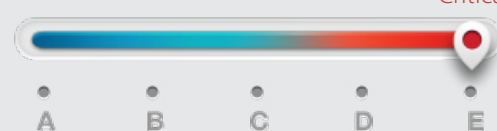
Likelihood Scale:

Rare/Remote



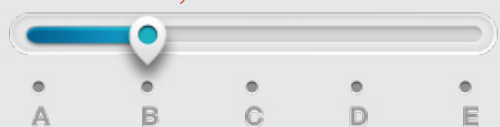
Q: Rate the Impact and Likelihood of the risk in the next 10 years.

A: Impact Scale: Critical



Likelihood Scale:

Unlikely



Q: Which of the global trends do you think will have a major impact on the risk going forward?

A:

- Climate change
- Increasing polarisation of societies
- Rising income disparity
- Shifts in power
- Weakening of international governance
- Increasing national sentiment

2.18

Reputational Damage
or Adverse Media/Social
Media Attention





Standard Bank Group

Q: What is your opinion of this topic as a risk to the achievement of the National Development Plan (NDP) objectives for South Africa?

A: Reputational damage has the biggest impact where people have the opportunity to vote with their electoral vote or with buying power. The responses below have been provided with a view that when you combine reputational damage and social media the impact on buying power is more aligned.

Q: Give the primary causes of this risk.

- A:**
- The primary cause has been the **advances in technology**, which have enabled people to share their experiences and opinions on social media.
 - The explosion of social media networks and the **evolution of the Internet** now means that more people are sharing their experiences, lives, opinions, knowledge and interests to a larger audience rather than just their close friends and colleagues.
 - The organisation's **failure to adapt with the advances in technology and the evolution social media** to build a strong social media presence and brand by proactively engaging with its customers to foster better relationships and assist with quick and effective complaint resolution.

Q: What are the consequences if this risk materialises?

- A:**
- Reputational risk
 - Adverse publicity
 - Negative public perception
 - Damage to brand and image
 - Regulatory sanctions
 - Competitiveness risk
 - Financial risk

Q: Which industry will be most affected if this risk materialises?

- A:**
- Professional Services
 - Financial Services
 - Communications and Technology
 - Manufacturing
 - Hospitality
 - Education
 - Healthcare
 - Retail

Q: What are the barriers that prevent us from solving this risk?

- A:**
- Lack of advanced processes, analytics and tools to maximise the value of social media through enhanced customer engagement, competitive intelligence, return of investment optimisation and customer relationship management integration.
 - Failure to proactively monitor and analyse relevant conversations and user-generated content across social media channels
 - Lack of innovation in business strategies that keep the organisation relevant and current with an ever changing technologically savvy environment.
 - The risk is difficult to measure and hard to control.

Q: What is the effective risk response to treating the risk on an industry level?

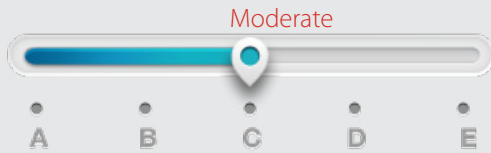
- A:**
- Building an effective social media risk management capability that brings bold ideas to life and makes a difference in the business outcomes, building social media presence.
 - Social media is an excellent tool to grow brand identity. It is also the best tool to connect with customers and gain insights on customer experiences. The establishment of social media teams that are dedicated to the quick handling of all customer feedback and complaints that are posted via the social media platforms, as well as using analytics and tools to maximise the value of social media.
 - While social media has given companies powerful marketing opportunities, its prevalence has also created the need for policies to guard against damage to reputation and increased litigation involving the conduct of employees. To manage this risk there is an increase need for policies, procedures and standards that provide structure and guidance for all employees engaging on social media platforms.

Q: Rate the Impact and Likelihood of the risk in the next 18 months.

A: Impact Scale:

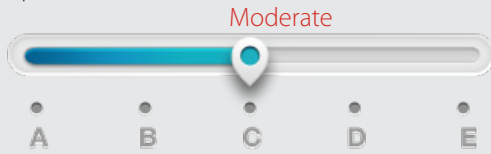


Likelihood Scale:



Q: Rate the Impact and Likelihood of the risk in the next 10 years.

A: Impact Scale:



Likelihood Scale:



Q: Which of the global trends do you think will have a major impact on the risk going forward?

- A:
- Growing middle class in emerging economies
 - Rise of hyper connectivity
 - Rising income disparity
 - Urbanisation

2.19

Prolonged Recession in the BRICS Countries



Prolonged Recession in the BRICS Countries



Louise Graham

Chief Director: International Relations
Department of Arts and Culture

Q: What is your opinion of this topic as a risk to the achievement of the National Development Plan (NDP) objectives for South Africa?

A: The topic is relevant as a risk to the achievement of the NDP for South Africa.

Q: Give the primary causes of this risk.

A: South Africa has established extended economic and trade links particularly with China and slow growth in China will effect South Africa's own growth and development. BRICS countries are growing economic and trade partners of South Africa – to supplement, not replace traditional economic ties with European and American partners, therefore slow growth or recession in BRICS will have an impact on South African exports, balance of payments, currency exchange and interest rates on state borrowing. Recession or slow growth in BRICS will also have a spin-off in terms of political, diplomatic and security impact, as economic strength dovetails and supports other areas of influence.

Q: What are the consequences if this risk materialises?

- Decreased economic power, impact and influence
- Decreased economic growth and development domestically
- Weakening of the role of BRICS globally

Q: Which industry will be most affected if this risk materialises?

- Communications and Technology
- Transport and Logistics
- Petrochemicals
- Manufacturing
- Mining, Engineering and Construction

Q: What are the barriers that prevent us from solving this risk?

A: These are external risks and only marginally in our control, also because South Africa is a small player. The global political and economic environment, and the dominant players including EU and US, and Bretton Woods Institutions have a significant influence, in addition to natural disasters and human elements including climate change, and terrorism.

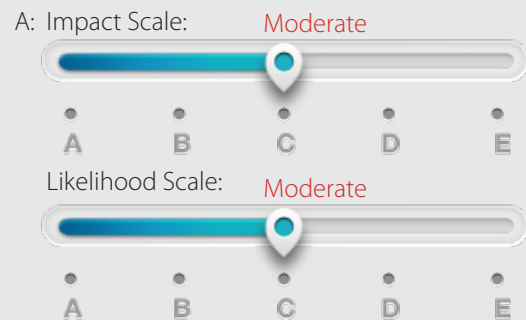
Q: What is the effective risk response to treating the risk on an industry level?

- Diversification
- Flexibility
- Responsiveness
- Innovation
- Excellence and reliability

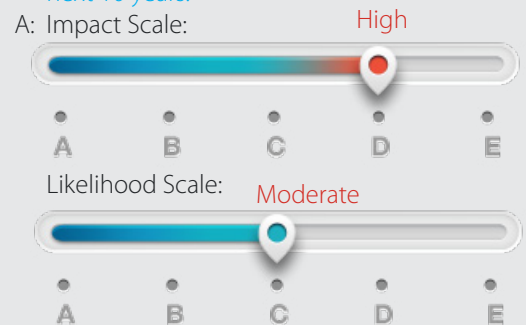
Q: What is the effective risk response to treating the risk on a National level?

- Realism
- Independence
- Strong domestically-driven growth and development
- Multiple partnerships
- Fostering strong institutions
- Responsive and productive labour markets and strong financial institutions
- Pursuing advanced innovation and IT solutions

Q: Rate the Impact and Likelihood of the risk in the next 18 months.



Q: Rate the Impact and Likelihood of the risk in the next 10 years.



Q: Which of the global trends do you think will have a major impact on the risk going forward?

- Climate change
- Growing middle class in emerging economies
- Rise of hyper connectivity
- Rising income disparity
- Shifts in power

2.20 Massive Incident of Data Fraud / Theft





Mdu Zakwe
Executive Chairman
Cyber-Core

Q: What is your opinion of this topic as a risk to the achievement of the National Development Plan (NDP) objectives for South Africa?

A: From an adversary perspective, one would be interested in data that can feed into my intentions i.e. financial wellbeing, political statement, competitive edge. Banks, Defence Force, Home Affairs and other entities that hold trade secrets become useful targets. Cash heists can cause a rundown on our banks and that can bring instability to our banking system, stealing trade-craft from our science and innovation parks, army arsenal can hamper our competitive edge in that market. This all has the potential to weaken our development status and this could mean job losses instead of job creation. People's credit cards being stolen and abused can be disastrous and can impact not only the buying power but also the will to consume. Because of a consequential fall of consumer confidence our GDP would not grow high enough to realise the ambitions of the NDP.

Q: Give the primary causes of this risk.

A: Data theft is made possible by many factors that include malicious insiders, phishing, SQL injections, cross site scripting, loss of corporate asset i.e. PC or laptop, malicious service provider or third party.

Q: What are the consequences if this risk materialises?

A: Data theft is a feared risk for commercial enterprises holding consumer data because it can be damaging to their reputation and consequentially customers can take their business elsewhere. Data thieves also have one intention to steal from data subjects. Again there is a reputational issue with a concerned enterprise. Stealing intellectual property can actually close down businesses and/or affect your competitive edge in the market.

Q: Which industry will be most affected if this risk materialises?

A: Predominately any industry that can feed into the intentions of the adversary would be most affected. Financial services would feed into the financial well-being. National critical infrastructure can feed into their political statements, institutions with massive consumer data can also feed into their quest for financial well-being.

Q: What are the barriers that prevent us from solving this risk?

A: Lack of government intervention in advocating policy direction can be a major stumbling block especially when government believes in leaving industries to regulate themselves. South Africa is in the process of adopting PoPI but it will be critically important to announce certain policy positions for all to comply with.

Q: What is the effective risk response to treating the risk on an industry level?

- A:
- Affected industries can implement very strong policies on their data. As much as they can build fancy firewalls the main treasure here is data.
 - Controls can include data classification with rules based three way authentication.
 - Corporate assets should be secured through encryption with remote lockdown if the asset is lost or stolen.
 - Educating the users on various phishing tactics being used can prove useful in identifying phishing attacks.
 - Keeping audit trails and monitoring logs on any anomaly in terms of data access is also critically important.
 - Strong certifications with third parties and service providers must be implemented and monitored to safeguard data.

Q: What is the effective risk response to treating the risk on a National level?

A: Nationally the government response in regulating cyber-crime was to draft the new cyber security and cyber-crime bill and obviously PoPI. Lack of capacity to enforce these laws can prove to be the Achilles heel in combating data theft.

Q: Rate the Impact and Likelihood of the risk in the next 18 months.

A: Impact Scale:



Likelihood Scale:

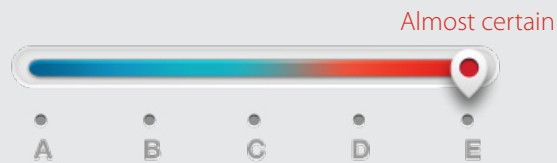


Q: Rate the Impact and Likelihood of the risk in the next 10 years.

A: Impact Scale:



Likelihood Scale:



Q: Which of the global trends do you think will have a major impact on the risk going forward?

- A:
- Increasing polarisation of societies
 - Rise of hyper connectivity
 - Rising geographic mobility
 - Rising income disparity



Thelma Kganakga

Head: Information Security, Risk and Governance
Ubank

Q: What is your opinion of this topic as a risk to the achievement of the National Development Plan (NDP) objectives for South Africa?

A: Data theft is the act of “stealing” computer-based information from an unknowing victim with the intention of compromising privacy or obtaining confidential information. Data theft is increasingly a problem for individual computer users, corporate companies and governments across the globe. Perpetrators range from individual cyber criminals, corporations and cyber terrorists targeting various governments. For example, once cyber terrorists gain access to critical country data, they can use that to launch a terrorist attack against the country. This means that perpetrators use computing resources against individuals or property to intimidate or coerce a government, the civilian population, or any segment thereof, to advance political or social objectives. This kind of cyber-attack may be detrimental to the attainment of the NDP and it is therefore a risk that cannot be ignored.

Furthermore, theft of identity data has been a feature of financial markets since alternatives to cash transactions have been introduced i.e. internet banking, cashless/card transactions EFT, etc. This type of identity theft posed a risk to the individual consumer, and the risk was relatively small. While such individualised acts of identity theft are occurring, they are now occurring on a larger scale and typically involve loss or theft of the personally identifying information of thousands if not millions of people participating in a country's economy. While this poses a risk to the individuals, it also poses a risk to the integrity and efficiency of the economic activity – the payment system, the policies, procedures, and technology that transfer information for authenticating and settling payments among participants. Theft of data such as personal identity can cause a loss of confidence in the security of certain economic exchange methods and an unwillingness to use them i.e. e-government, e-commerce, mobile municipal services, etc.

To this effect, the government has started taking measures in protecting its citizen's personal data through data protection legislation such as PoPI Act. This is intended to ensure that all South African institutions conduct themselves in a responsible manner when collecting, processing, storing and sharing another entity's personal information by holding them accountable should they abuse or compromise the individual's personal information in any way.

Q: Give the primary causes of this risk.

A: Data theft or data breaches at individual, enterprise, and at government levels are usually caused by the following:

- Disgruntled employees - internal attacks are one of the biggest threats facing enterprise data and systems. Various breaches as a result of insider threats have been reported in South Africa.
- Criminal intent – criminals usually steal data to sell it in electronic markets for example and buyers can use the information to commit fraud or blackmail. Interconnectedness of the world we live in has opened up a thriving avenue for criminals – our world today is connected via the internet networks and mobile technology usage is the order of the day for many organisations. Given these trends, an attacker in Moscow can easily launch an attack on computers in South Africa or a person in your neighborhood can steal your data by loop hopping via a number of connected computers in different global locations. As a result it is difficult to trace where the actual attack comes from.
- Human error usually exposing weaknesses in internal business processes and systems such as password hacking. Relying on weak credentials to restrict who has access to the data is a problem. Organisations that don't enforce strict policies on password management may find themselves on the receiving end of data theft.

Q: What are the consequences if this risk materialises?

A: Modern technology makes it easy to access, collect and process high volumes of data at high speeds. This information can then be sold, used for further processing and/or applied towards other malicious ends. In the wrong hands such an ability can cause irreparable harm to individuals, companies and governments.

Furthermore, the consequences of the data theft attack depends on how valuable the lost data was to you or your organisation. If the lost data was relatively unimportant, the attack may be just a minor inconvenience whereas if it was critical the attack may be detrimental to you/your business operations. These may include severe breaches of your privacy or theft of money from your bank account.

Already one of the top cyber security threats today is the prevalence of the RANSOMWARE - malware that encrypts organisation's data and holds the organisation at ransom i.e. the organisation has to pay money to get the data restored by the attackers. The creators of the ransomware instill fear and panic into their victims, causing them to click on a link or pay a ransom, and inevitably become infected with additional malware. This is a growing problem and many organisations have been hit by this type of an attack. The consequences are dire if proper controls are not in place –

- Temporary or permanent loss of sensitive or proprietary information
- Disruption to regular business operations
- Financial losses incurred to restore data files
- Potential harm to an organisation's reputation

Paying the ransom does not guarantee the encrypted files will be released; it only guarantees that the malicious actors receive the victim's money, and in some cases, their banking information. In addition, decrypting files does not mean the malware infection itself has been removed, so it becomes a vicious cycle.

Other consequences - if data is stolen from a business, the following may land in the wrong hands:

- Financial information
- Customer databases
- Intellectual property
- Strategic business plans

If data is stolen at government levels, the following consequences may result:

- Cyber terrorism attacks
- Citizen's database exposure
- Unauthorised control of national infrastructure
- Disruption of healthcare programmes
- Inter-state distrust

Q: Which industry will be most affected if this risk materialises?

A: While this type of risk affects all industries, the most affected in terms of the impact, and likelihood (which also takes into account the history of occurrence) are marked below:

- Government and Public Services
- Financial Services
- Manufacturing
- Hospitality
- Healthcare
- Retail

Q: What are the barriers that prevent us from solving this risk?

- A:
- Data theft issues are still seen as an IT problem to solve in many organisations. Until businesses realise that this is a business problem, we will remain with this issue for years to come.
 - Lack of data privacy legislation – While the government has drafted the PoPI Act, it has not been enacted as law. As such there are no sound legal grounds upon which South African citizens can lay a claim of data theft.
 - Non-disclosure of organisations – organisations do not disclose their data breaches, as such it may not be possible.
 - Good statistics on this phenomenon are not readily available, and the figures available will never represent the actual situation because many more data breaches go unreported. Those reported only include incidents that reach the media or are self-reported by companies. As such the extent of the risk may not be given the necessary attention it requires.
 - Organisations invest in security products that focus on the incoming traffic with little or no visibility on the outgoing traffic. As a result, organisations are often not aware of the risk they might be susceptible to with regards to data theft.

Q: What is the effective risk response to treating the risk on an industry level?

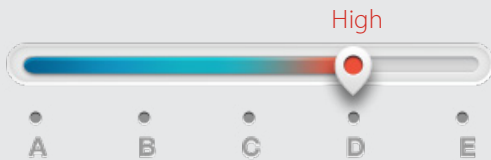
A: One of the effective ways I see that can assist in dealing with this risk proactively at industry level is through developing and formalising the industry-based Computer Security Incident Response Teams (CSIRT). The proactive services of the CSIRT can provide assistance and information to help prepare, protect, and secure constituent systems in anticipation of attacks, problems, or events. Performance of these services can directly reduce the number of incidents in a particular industry, given the collaboration that will be happening between the organisations.

Q: What is the effective risk response to treating the risk on a National level?

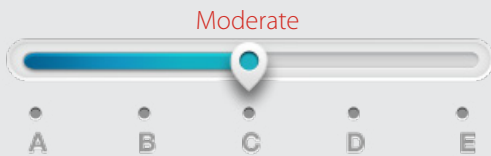
A: A national CSIRT which the government is working on can obtain feeds from the industry CSIRTs to assist in solving the problems at national level. Furthermore, the government can respond through legislation and effective implementation thereof by putting in place effective structures to assist in monitoring and effecting the legislation.

Q: Rate the Impact and Likelihood of the risk in the next 18 months.

A: Impact Scale:



Likelihood Scale:

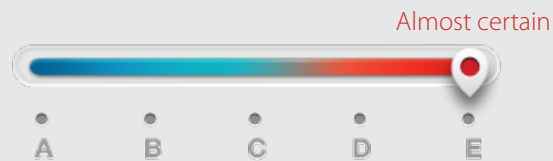


Q: Rate the Impact and Likelihood of the risk in the next 10 years.

A: Impact Scale:



Likelihood Scale:



Q: Which of the global trends do you think will have a major impact on the risk going forward?

- A:
- Rise of hyper connectivity
 - Shifts in power
 - Weakening of international governance



Wolfpack

Q: What is your opinion of this topic as a risk to the achievement of the National Development Plan (NDP) objectives for South Africa?

A: In order to accurately comment on this we would need to know which industry or government sector the massive incident of data fraud / theft occurred in. In general, a massive incident of data fraud / theft across government and industry sectors would certainly cause investors to withdraw their money resulting in the economy taking further strain. The prior combined with other political and financial impacts (increase in crime, unemployment etc) would certainly make it very difficult for the government to achieve its NDP objectives. Furthermore, such an incident would result in the public not trusting organisations, both public and private, with their personal information such as medical records, financial information etc.

Q: Give the primary causes of this risk.

A:

- Lack of effective national, industry and organisational level Computer Security Incident Response Teams (CSIRTs)
- The majority of systems are built without security being a strict requirement. The focus is typically on achieving the business requirements (functionality) as such systems are insecure from the start making it easier for criminals to compromise.
- The interconnectivity of the world means that criminals no longer have to physically be at the organisation they want to break into i.e. they can be anywhere in the world. This also increases the number of attackers organisations have to defend against.

Q: What are the consequences if this risk materialises?

A: Consequences may include:

- Reputational damage to the compromised organisation and / or industry
- South Africa may be seen as a "soft" target for criminals resulting in an increase in attacks and as a result thereof a decrease in foreign investment and trade
- Financial loss to the country, industries (organisations) and citizens
- Identify theft, which will result in an increase in fraud

Q: Which industry will be most affected if this risk materialises?

A: The industry where the massive incident of data fraud / theft occurred would be the most affected industry. However, given the current threat landscape in South Africa and the motives of cybercriminals we believe the Financial Services industry would be most affected if such an incident had to occur.

Q: What are the barriers that prevent us from solving this risk?

A:

- Lack of collaboration. There is a lack of collaboration between the public and private sector and between the organisations within each sector and industry.
- Organisations are typically reactive when it comes to incidents, they should instead be proactive.
- Lack of skills needed to respond to and / or handle incidents.

Q: What is the effective risk response to treating the risk on an industry level?

A: Organisations within industries need to collaborate with each other by sharing information with regards to the threats they face and / or incidents that occurred.

Industry CSIRTs should be established. These CSIRTs should handle incidents relevant to their industry, however, they must share threat intelligence between one another and work side by side i.e. cross industry CSIRT collaboration. This could be achieved through the recently created South African Cybersecurity Hub.

Industries need to follow best practices like ISO 27001/2, PCI DSS etc. Industries need to combine these and tailor them to their specific industry.

Q: What is the effective risk response to treating the risk on a National level?

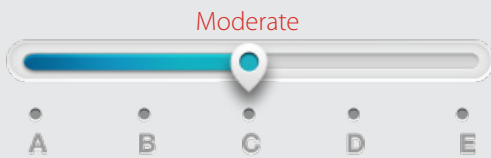
A: As mentioned before there needs to be collaboration between the public and private sector. In addition to that skills development is very important. Although more and more kids choose IT as a career there is still a major need for IT Security professionals.

Q: Rate the Impact and Likelihood of the risk in the next 18 months.

A: Impact Scale:



Likelihood Scale:

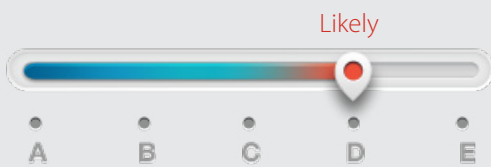


Q: Rate the Impact and Likelihood of the risk in the next 10 years.

A: Impact Scale:



Likelihood Scale:



Q: Which of the global trends do you think will have a major impact on the risk going forward?

- A:
- Rise of hyper connectivity
 - Weakening of international governance

Massive Incident of Data Fraud / Theft



Nick Shutte

Regional Manager Global Corporate
Zurich Insurance

Q: What is your opinion of this topic as a risk to the achievement of the National Development Plan (NDP) objectives for South Africa?

A: I am not sure that this risk specifically affects the National Development Plan objectives. As a significant emerging risk it has the ability to influence the achievement of the NDP objectives to a certain degree.

Q: Give the primary causes of this risk.

- A:**
- Increasing volumes of data processed (big data)
 - Increasing reliance on the internet (interconnectivity)
 - Increased demand for criminals to misuse data

Q: What are the consequences if this risk materialises?

A: Potentially catastrophic. Unfortunately there is no way to avoid the transfer of extremely sensitive data in a world of interconnectivity which means it is always susceptible to being misused if it falls into the wrong hands.

Q: Which industry will be most affected if this risk materialises?

A: Financial Services

Q: What are the barriers that prevent us from solving this risk?

- A:**
- Lack of awareness of risks of using online technologies
 - The rate at which the world is becoming dependent on interconnectedness
 - The continuous new threat of hackers which only have to exploit a single vulnerability to stage an attack i.e. so many more lines of attack than defence etc.

Q: What is the effective risk response to treating the risk on an industry level?

A: To have a multi-faceted disaster recovery plan, business continuity plan (including offsite data backup) as well as good IT infrastructure, security practices, firewalls, use of anti-virus software and defences towards malware attacks. Basically the use of as many defence methods as possible.

Q: What is the effective risk response to treating the risk on a National level?

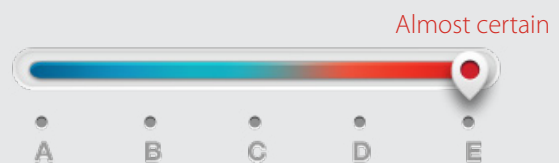
A: Regulate the way companies' process information (PoPI Act), promote the development of a National Intelligence Defence Agency for Cyber Threats and Warfare such as the U.S. in Maryland and the UK are developing currently. Elevate the attention of this risk response by making amendments to relevant legislation on reporting requirements such as Companies Act, PFMA and MFMA acts.

Q: Rate the Impact and Likelihood of the risk in the next 18 months.

A: Impact Scale:

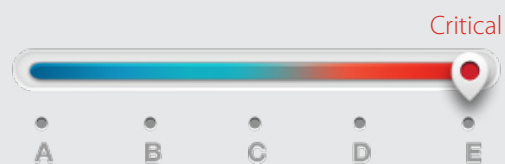


Likelihood Scale:

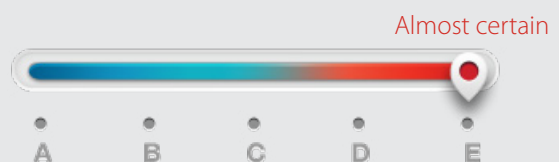


Q: Rate the Impact and Likelihood of the risk in the next 10 years.

A: Impact Scale:



Likelihood Scale:



Q: Which of the following global trends do you think will have a major impact on the risk going forward?

A: Rise of hyper connectivity

2.21 Government Policy Changes





Jonathan Crisp
 Founding Director
 IDI Technology Solutions and BarnOwl

Q: What is your opinion of this topic as a risk to the achievement of the National Development Plan (NDP) objectives for South Africa?

A: It is difficult for SMMEs to meet BEE requirements.

Q: Give the primary causes of this risk.

- A:**
- Bureaucracy
 - Entitlement and enriching a few based on politics and not economics
 - Poor education and not building skills from the bottom up

Q: What are the consequences if this risk materialises?

- A:**
- There will be no incentive to start new SMME businesses
 - Further unemployment across the country as the entrepreneurial spirit is destroyed
 - Brain drain... people will go offshore and overseas and take their skills and know-how with them and start businesses there
 - Reduced tax collection
 - Reduced economic activity
 - Recession, hardship and widening gap of rich and poor

Q: Which industry will be most affected if this risk materialises?

- A:**
- Professional Services
 - Communications and Technology
 - Education

Q: What are the barriers that prevent us from solving this risk?

A: Politics, tone and leadership from the very top of our country

Q: What is the effective risk response to treating the risk on an industry level?

- A:**
- Diversify and start focussing on business outside of South Africa
 - Try and build talent from the bottom up

Q: What is the effective risk response to treating the risk on a National level?

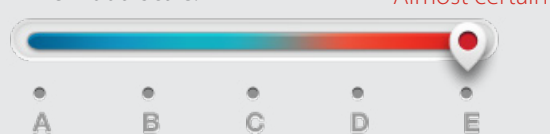
- A:**
- Sort out the poor state of education in our country
 - Stop killing small business... foster entrepreneurs and relax draconian BEE legislation
 - Move towards building a non-racial South Africa
 - Facilitate building of new businesses instead of diluting existing businesses

Q: Rate the Impact and Likelihood of the risk in the next 18 months.

A: Impact Scale:

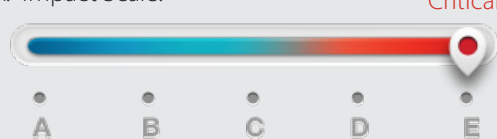


Likelihood Scale:

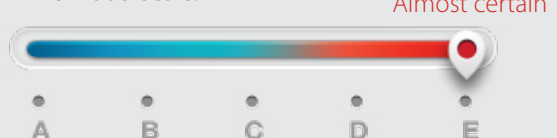


Q: Rate the Impact and Likelihood of the risk in the next 10 years.

A: Impact Scale:



Likelihood Scale:



Q: Which of the global trends do you think will have a major impact on the risk going forward?

- A:**
- Increasing polarisation of societies
 - Rising income disparity



Anne Reed
Director
Runsums Advisory Services

Q: What is your opinion of this topic as a risk to the achievement of the National Development Plan (NDP) objectives for South Africa?

- A:**
- Legislative and regulatory impact assessments either not performed or not performed with due care and skill
 - Poorly drafted and inappropriate policy changes
 - Changes that do not reflect the uniqueness of South Africa as a country. Policy change needs to reflect South Africa as a country and not have "imports" from other countries. For example a Canadian drafting the Companies Act, No 71 of 2008

Q: Give the primary causes of this risk.

- A:**
- Lack of competent and skilled civil servants whose duty is to serve the citizens of South Africa
 - Passive captains of industries
 - Communist ideology. South African Communist Party has a 50% representation in the cabinet

Q: What are the consequences if this risk materialises?

- A:**
- High unemployment
 - Increase in poverty
 - Increase in social unrest

Q: Which industry will be most affected if this risk materialises?

A: Manufacturing

Q: What are the barriers that prevent us from solving this risk?

- A:**
- Distrust between Government and commerce, which does not permit constructive, robust and resilient dialogue between these parties
 - A talented and delivery driven civil service
 - Intolerance

Q: What is the effective risk response to treating the risk on an industry level?

A: Businesses need to carry out risk impact assessments on policy changes. Then, together with the Competition Commission, form industry clusters to determine what the consolidated impact of these policy changes is to the country.

Q: What is the effective risk response to treating the risk on a National level?

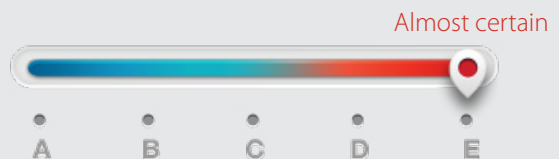
A: Government to start thinking and managing themselves as an administrative solution to a unique emerging country, that is thinking through different solutions to the problems that face South Africa today and tomorrow. Building South Africa for tomorrow.

Q: Rate the Impact and Likelihood of the risk in the next 18 months.

A: Impact Scale:

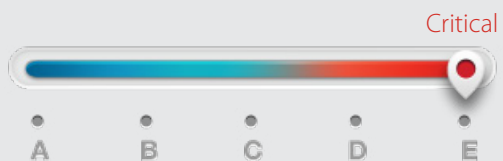


Likelihood Scale:

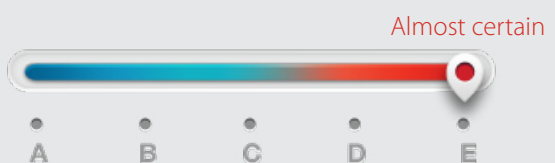


Q: Rate the Impact and Likelihood of the risk in the next 10 years.

A: Impact Scale:



Likelihood Scale:



Q: Which of the global trends do you think will have a major impact on the risk going forward?

- A:**
- Climate change
 - Growing middle class in emerging economies
 - Shifts in power
 - Urbanisation



Stan Bridgens

Director

South African Institute of Electrical Engineers (SAIEE)

Q: What is your opinion of this topic as a risk to the achievement of the National Development Plan (NDP) objectives for South Africa?

A: Delay and uncertainty impacting on investment.

Q: Give the primary causes of this risk.

- A:
- Ideology
 - Incompetence
 - Priorities misaligned

Q: What are the consequences if this risk materialises?

- A:
- Unemployment
 - Unrest
 - Lack of service delivery

Q: Which industry will be most affected if this risk materialises?

A: Manufacturing

Q: What are the barriers that prevent us from solving this risk?

- A:
- Poor advice
 - Self-interest
 - Lack of confidence

Q: What is the effective risk response to treating the risk on an industry level?

- A:
- Tempting exploitation where possible
 - Conservation
 - Seeking other opportunities elsewhere

Q: What is the effective risk response to treating the risk on a National level?

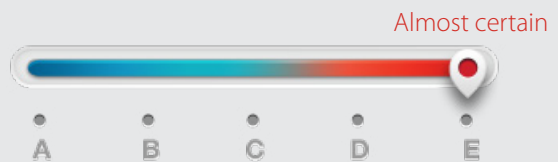
A: Dealing with non-compliance and introverted strategies.

Q: Rate the Impact and Likelihood of the risk in the next 18 months.

A: Impact Scale:

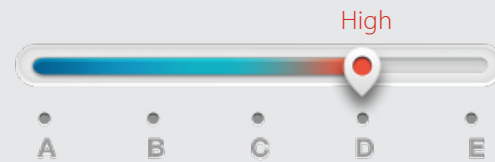


Likelihood Scale:

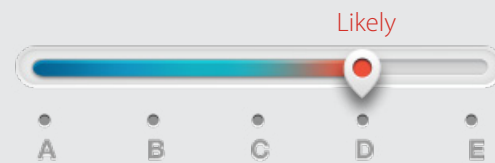


Q: Rate the Impact and Likelihood of the risk in the next 10 years.

A: Impact Scale:



Likelihood Scale:



Q: Which of the global trends do you think will have a major impact on the risk going forward?

A: Increasing polarisation of societies

2.22

Misuse of
Technologies





Nick Shutte

Regional Manager Global Corporate
Zurich Insurance

Q: What is your opinion of this topic as a risk to the achievement of the National Development Plan (NDP) objectives for South Africa?

A: I do not think this risk will have a significant bearing on the achievement of the National Development Plan for South Africa.

Q: Give the primary causes of this risk.

- A:
- Our dependence on connectedness with the internet
 - The technology we use gives us instant access and solutions
 - We are no longer fully in control of our own personal information

Q: What are the consequences if this risk materialises?

A: Misuse of technologies can lead to a breakdown of social interaction and skills, isolation from others, and other crimes such as cyber extortion and cyber bullying can arise as a consequence of misuse of the technologies. This could have an impact on the development of generations to come in terms of learning languages, basic reading and writing skills.

Q: Which industry will be most affected if this risk materialises?

A: Communications and Technology however this is not really specific to an industry but rather to individuals.

Q: What are the barriers that prevent us from solving this risk?

A: Ourselves. Human beings seek instant gratification at the touch of a button and there is no end to the increasing capabilities of our technology. Five people will sit around a table at a restaurant texting instead of talking, people texting while driving etc.

Q: What is the effective risk response to treating the risk on an industry level?

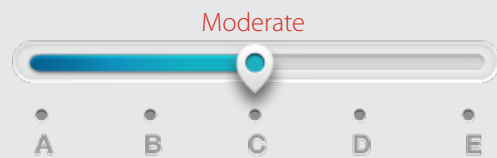
A: This is unfortunately a very pervasive trend in society which people are embracing, and the problem exists at an individual, not an industry level.

Q: What is the effective risk response to treating the risk on a National level?

A: I am not sure that this risk can be "treated" due to the widespread nature of the problem.

Q: Rate the Impact and Likelihood of the risk in the next 18 months.

A: Impact Scale:

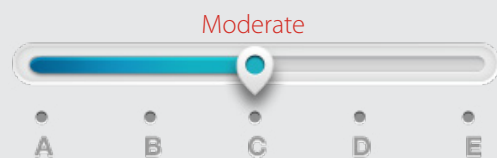


Likelihood Scale:

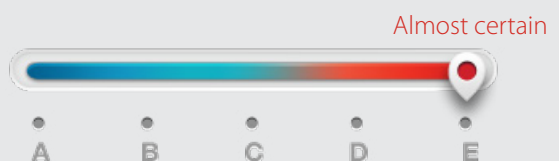


Q: Rate the Impact and Likelihood of the risk in the next 10 years.

A: Impact Scale:



Likelihood Scale:



Q: Which of the global trends do you think will have a major impact on the risk going forward?

- A:
- Rise of hyper connectivity
 - Rising geographic mobility
 - Urbanisation



Wolfpack

Q: What is your opinion of this topic as a risk to the achievement of the National Development Plan (NDP) objectives for South Africa?

A: The use of technology is definitely an enabler for achieving the NDP objectives. However, technology can also be misused in a number of instances which could negatively impact the NDP objectives. Technology has advanced at a much quicker rate than companies/people were able to keep up with resulting in security not being implemented correctly or not at all. Additionally, the technology employed by cyber criminals to launch attacks on companies and / or people has become so significantly advanced that a person with very little knowledge could launch a successful attack against someone else. The way in which technology can be misused can be divided into two parts, namely intentional and accidental misuse.

Intentional Misuse

This refers to the instances of when cyber criminals use technology as a means to commit a crime either through using advanced technology to attack an entity or by means of exploiting vulnerabilities that exist within current (legacy) technology. For example, in South Africa, our Critical Information Infrastructure is currently owned and / or run by a number of organisations in the private sector which use various technologies to manage that infrastructure. It is entirely possible for a cyber criminal(s) to identify a vulnerability in that technology or use advanced technology to bypass existing defence measures. Should this happen it would have a huge and direct negative impact on the following:

- Housing, water, electricity and sanitation
- Safe and reliable public transport
- Quality education and skills development
- Safety and security
- Quality health care
- Social protection

Accidental Misuse

This refers to instances where the technology gets misused as a result of a user error. For example, a user incorrectly configures a device that is monitoring a manufacturing facility's processes which results in financial loss and / or physical harm occurring to employees working in the facility. This type of risk

is a result of users not being properly trained with regards to how to use the technology they have. Additionally, in some cases organisations have invested thousands if not millions of Rands in technology to protect themselves against threats but the technology does not get used correctly due to it being configured incorrectly.

Q: Give the primary causes of this risk.

- A:**
- Lack of awareness
 - Lack of skills / training (applicable knowledge)
 - Security not built into technology by default

Q: What are the consequences if this risk materialises?

A: As discussed above, the consequences could be as huge as South Africa losing access to water, electricity and sanitation services or traffic / air traffic systems being manipulated. In addition to this the financial implications to both the average man on the street and organisations could be huge. This could result in criminals seeing South Africa as a good "hub" to launch attacks against.

Q: Which industry will be most affected if this risk materialises?

A: All industries that use technology or are susceptible to the misuse of technology will be affected. There is no easy way to tell which one would be most affected.

Q: What are the barriers that prevent us from solving this risk?

- A:**
- Legacy technologies that cannot be replaced
 - Organisations are not investing in training their staff on the use of newer technologies
 - Lack of awareness

Q: What is the effective risk response to treating the risk on an industry level?

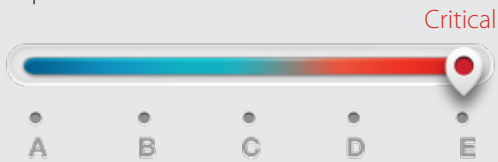
- A:**
- Provide tailor made training and awareness courses to the different organisations (people) to highlight the risks that are relevant to them as a result of working within that industry
 - Industries need to be more proactive

Q: What is the effective risk response to treating the risk on a National level?

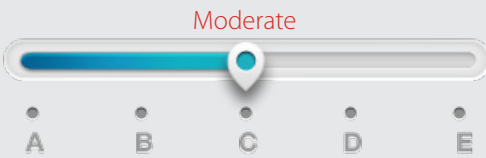
- A:
- Increase technology misuse awareness training on a national level
 - Begin skills development and awareness training within schools
 - Ensure that law enforcement are equipped to deal with the misuse of technology when the law is broken (education and awareness)

Q: Rate the Impact and Likelihood of the risk in the next 18 months.

A: Impact Scale:

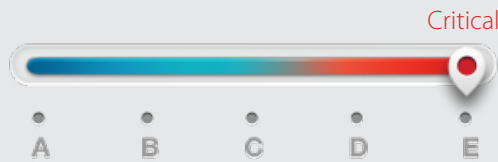


Likelihood Scale:



Q: Rate the Impact and Likelihood of the risk in the next 10 years.

A: Impact Scale:



Likelihood Scale:



Q: Which of the global trends do you think will have a major impact on the risk going forward?

- A:
- Growing middle class in emerging economies
 - Increasing polarization of societies
 - Rise of hyper connectivity

2.23

Lack of
Innovation





Mdu Zakwe
Executive Chairman
Cyber-Core

Q: What is your opinion of this topic as a risk to the achievement of the National Development Plan (NDP) objectives for South Africa?

A: The NDP emphasises the need for an innovation eco-system. Eco-systems have inputs, processes and outputs. Currently the Department of Science and Technology (through CSIR and TIA) is mandated to innovate for the betterment of the lives of South Africans. South Africans face many challenges (crime and corruption, illicit money leaving South Africa, exporting of raw materials, high unemployment) that are yet to have a helping hand from the DST. An eco-system that gets the South African Police Service, Department of Trade & Industry, Department Of Labour and National Treasury innovating with DST on these challenges can lower this risk.

Q: Give the primary causes of this risk.

A: Innovation risk is caused by an attitude of rightful inheritance without a questioning mind. The democratic government took over from the apartheid government and has made little if no strides to question why apartheid did what it did, is it still relevant, is it still serving all citizens? Another cause of this risk is the silo thinking, suffering and implosion. A third factor is a misaligned education system that rewards non-innovative matrices hence no robust feeder system into the eco-system.

Q: What are the consequences if this risk materialises?

A: This risk is materialising already. Crime affects us all, illicit economy is alive, graduates are getting wasted at home. More importantly though is that innovation without commercialisation is a real threat that can result in wasteful and fruitless expenditure. A classic example is the electric car (the Jewel) that was assembled by DST and came to a screeching halt and never made it to our roads.

Q: Which industry will be most affected if this risk materialises?

A: Almost all industries must innovate to stay in the game otherwise they will die. The private sector employs multi-prong growth strategies which include innovation. FirstRand innovation drives made impressions on me when I worked for FNB Corporate, SASOL's lifeline is innovation and they have world-class facilities. The public sector on the side has some pocket of excellence i.e. SARS' revered revenue collection machinery has brought real innovations at process and technology level. Other parts of public sector continues to lag behind though.

Q: What are the barriers that prevent us from solving this risk?

A: Certainly the issue of resources becomes a factor both financially and in terms of skills. South Africa has centres called Innovation Hubs around major cities but in a true sense of an innovation hub they are not due to factors mentioned above. MIT or Harvard Innovation Hubs are very impressive and they can assist innovators from ideating to commercialisation and have been the bed-rock for many Silicon Valley start-ups.

Q: What is the effective risk response to treating the risk on an industry level?

A: University funding must be halved and they must come up with innovation programmes where they can earn royalties. These innovations can be industry specific i.e. UniZulu working BHP Billiton and Foskor in Richards Bay in implementing the 1.5 degrees heat ceiling of COP21 recently signed in France.

Q: What is the effective risk response to treating the risk on a National level?

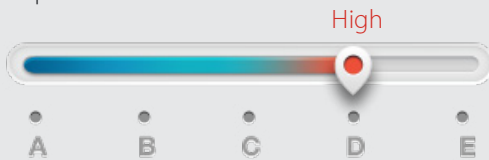
A: Private public partnerships can prove useful where expertise, financial resources and innovation pipelines are pulled together for the common good to start sustainable innovation parks where as an innovator you can have access to a one stop shop.

Q: What is the effective risk response to treating the risk on a National level?

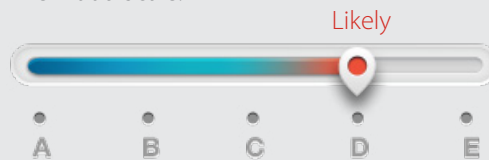
A: A national CSIRT which the government is working on can obtain feeds from the industry CSIRTs to assist in solving the problems at national level. Furthermore, the government can respond through legislation and effective implementation thereof by putting in place effective structures to assist in monitoring and effecting the legislation.

Q: Rate the Impact and Likelihood of the risk in the next 18 months.

A: Impact Scale:

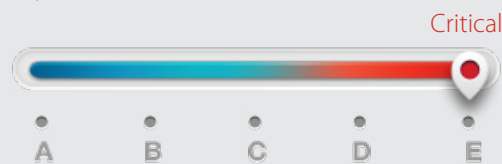


Likelihood Scale:

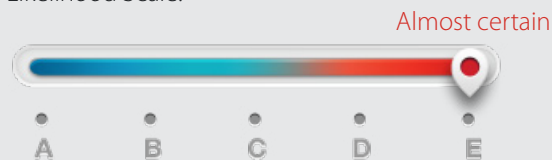


Q: Rate the Impact and Likelihood of the risk in the next 10 years.

A: Impact Scale:



Likelihood Scale:



Q: Which of the global trends do you think will have a major impact on the risk going forward?

- A:
- Climate change – the recent COP21 agreement will force many nations to innovate so they can comply with heat ceiling
 - Rise of chronic diseases – scientists will need to constantly test various combinations to mitigate against rising illnesses
 - Rising income disparity – if the income disparity gap widens, more socio-economic issues will be created and this will see innovators respond to their calling
 - Urbanisation – the more people move to a crowded urban area they are forced to innovate and make do with limited resources



Chris Brits
Executive Committee Member
IRMSA

Q: What is your opinion of this topic as a risk to the achievement of the National Development Plan (NDP) objectives for South Africa?

A: Whilst the NDP is fundamental to South Africa's progress in the sight of its own citizens and also to the international community at large, policies and processes that support the achievement of the objectives have in many instances hampered its progress. Government needs to be more in tune with the plight of SMME's and the hurdles that prevent large corporates from stimulating innovation that supports the achievement of the NDP objectives. What the private sector has in many instances resorted to, is to innovate with an internal focus to solve their own challenges in isolation and to the detriment of the broader NDP objectives in certain instances. The key issue here is that although shareholders need to be good corporate citizens, they are fundamentally shareholders and as such are focused on corporate performance and when government policies hamper growth, there is a lack of willingness on the part of the private sector to invest into general societal innovation.

Q: Give the primary causes of this risk.

- A:**
- Corruption
 - Government policy (i.e. labour/fiscal policy)
 - Macroeconomics

Q: What are the consequences if this risk materialises?

A: The large multinational corporates continue to disinvest and SMMEs continue to operate inefficiently and without sound support structures that stimulate growth.

The overall consequence is:

- A shrinking economy
- Growing cost base in government structures and debt
- Poor service delivery
- Degradation of infrastructure
- Ultimately loss of credibility and international reputation

Q: Which industry will be most affected if this risk materialises?

A: I believe all of the industries listed will be affected

Q: What are the barriers that prevent us from solving this risk?

- A:**
- Wilful blindness. We are becoming a society where it is acceptable to talk about issues but not to do anything about them. Mediocrity is desensitising us to the significant consequences and the will to incept change.
 - Education is a key factor that needs to be addressed aligned to accountability.
 - Poverty and inequality will remain a growing barrier as long as we do not address these key issues.

Q: What is the effective risk response to treating the risk on an industry level?

- A:**
- Education
 - Economic reform
 - Good governance

Q: What is the effective risk response to treating the risk on a National level?

- A:**
- Education
 - Economic reform
 - Good governance

Q: Rate the Impact and Likelihood of the risk in the next 18 months.

A: Impact Scale:



Likelihood Scale:

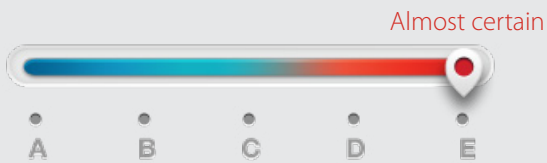


Q: Rate the Impact and Likelihood of the risk in the next 10 years.

A: Impact Scale:



Likelihood Scale:



Q: Which of the global trends do you think will have a major impact on the risk going forward?

- A:
- Climate change
 - Environmental degradation
 - Growing middle class in emerging economies
 - Increasing polarisation of societies
 - Rise of hyper connectivity
 - Rising income disparity
 - Shifts in power
 - Increasing national sentiment



Nick Shutte

Regional Manager Global Corporate
Zurich Insurance

Q: What is your opinion of this topic as a risk to the achievement of the National Development Plan (NDP) objectives for South Africa?

A: Lack of innovation could have a reasonable effect on the achievement of the NDP objectives for South Africa, depending on the areas in which there is a lack of innovation.

Q: Give the primary causes of this risk.

- A:
- Over regulation in some industries not allowing them to operate as freely as they once could.
 - Lack of education. This reduces the opportunity or ability of people to innovate.
 - Government Policies. If government does not lead by example or allow innovation.

Q: What are the consequences if this risk materialises?

A: Industries and economies stagnate, lack of growth, emigration of qualified people, increase in poverty, unemployment and crime.

Q: Which industry will be most affected if this risk materialises?

- A:
- Government and Public Services
 - Financial Services
 - Energy, Water and Utilities
 - Communications and Technology
 - Mining, Engineering and Construction
 - Hospitality
 - Education
 - Healthcare
 - Retail

Q: What are the barriers that prevent us from solving this risk?

A: Corruption, disparity in income between wealthy and poor, regulation of companies is increasing not reducing, Employment Equity and BBBEE restrictions on companies, labour strikes, weakening rand. There are many barriers and unfortunately the causes of these risks are not always direct or specific.

Q: What is the effective risk response to treating the risk on an industry level?

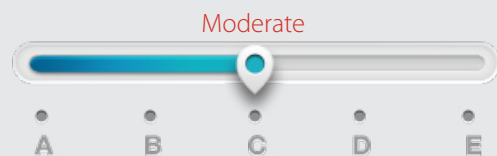
A: Companies should assess how lack of innovation would affect them and if this is significant, set up a number of actions which could reduce this risk where desired.

Q: What is the effective risk response to treating the risk on a National level?

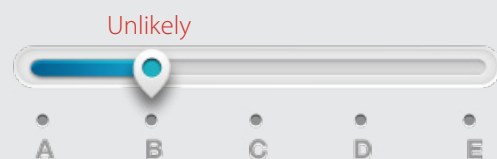
A: Evaluate the causes, formulate plans and take steps to reduce or eliminate some of the primary causes of this risk on a national scale.

Q: Rate the Impact and Likelihood of the risk in the next 18 months.

A: Impact Scale:

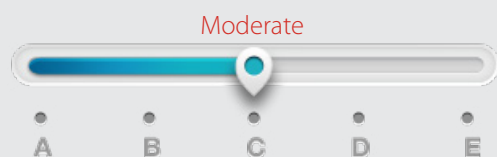


Likelihood Scale:

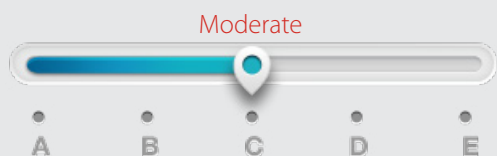


Q: Rate the Impact and Likelihood of the risk in the next 10 years.

A: Impact Scale:

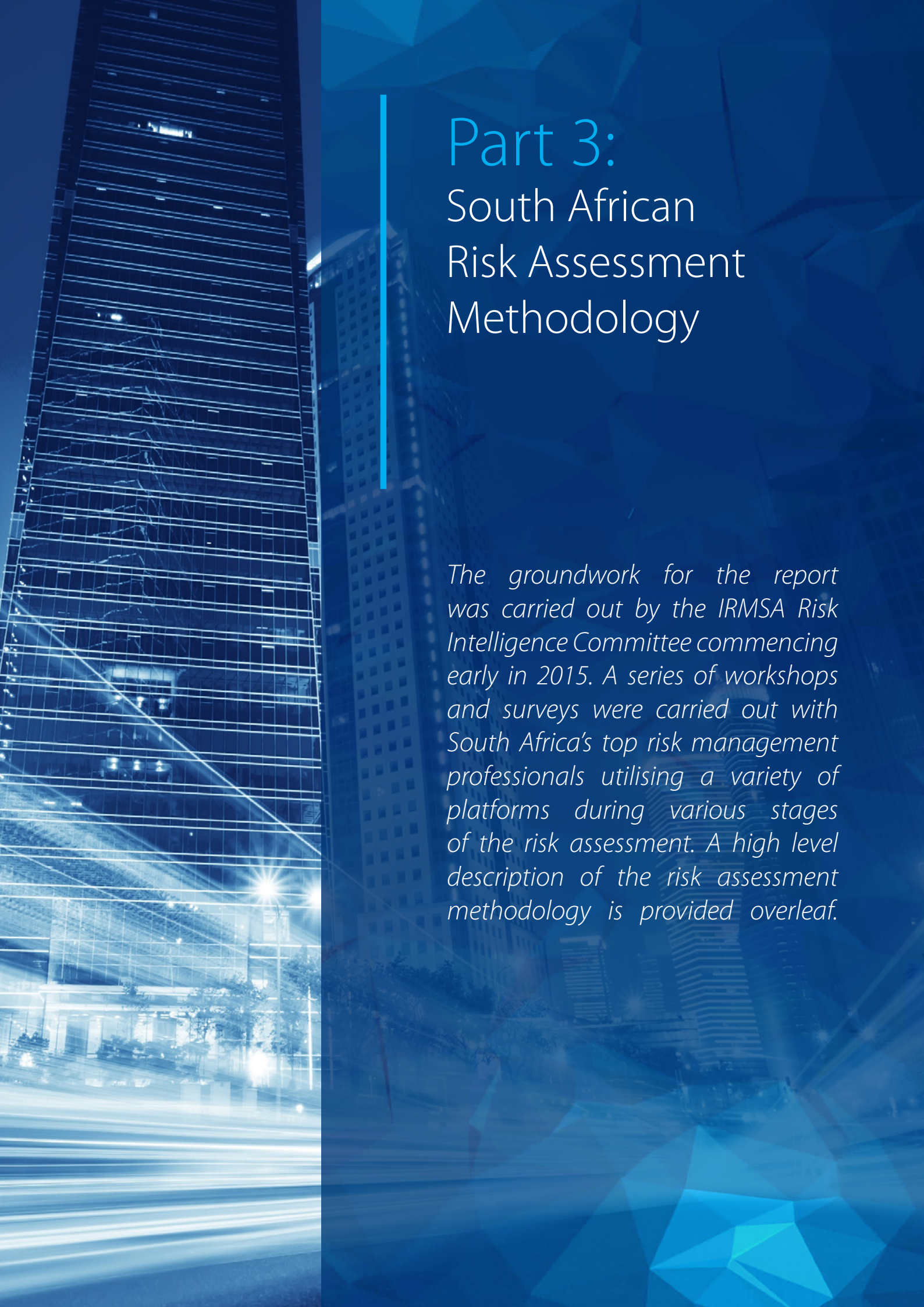


Likelihood Scale:



Q: Which of the global trends do you think will have a major impact on the risk going forward?

- A:
- Rising income disparity
 - Weakening of international governance
 - Increasing national sentiment



Part 3: South African Risk Assessment Methodology

The groundwork for the report was carried out by the IRMSA Risk Intelligence Committee commencing early in 2015. 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 overleaf.

A: Creation of a South African Risk Universe

Moving beyond solely relying on the WEF Global Risks report for 2015, IRMSA compiled a risk universe comprising 52 risks applicable to the South African context using the following additional sources: 2015 IRMSA Risk Report; World Bank Sub-Saharan Africa Outlook 2015; Aon Global Risk Management Survey 2015; PwC Risk in Review 2015; and WEF Global Agenda 2015 Report.

The list of risks and the applicable sources is provided in the Table 7 below.

Asset bubble	Banking reputational risk	Biodiversity loss and ecosystem collapse	Breakdown of critical information infrastructure & networks
Capital availability / credit risk	Commodity price fluctuations	Deflation	Droughts in Sub-Saharan Africa
Ebola virus outbreak	Economic slowdown	Education and skills development	Energy price shock
Escalation in large-scale cyber attacks	Escalation of economic and resource nationalisation	Exchange rate fluctuations	Extreme weather events
Failure / shortfall of critical infrastructure	Failure of a major financial mechanism or institution	Failure of climate-change adaptation	Fiscal crisis in key economics
Food crises	Governance failure	Government policy changes	Increasing corruption
Increasing Strike Action	Insufficient electricity supply	Interstate conflict with regional consequences	Lack of innovation
Lack of leadership	Large-scale involuntary migration	Major escalation in organised crime and illicit trade	Man-made environmental catastrophes
Massive incident of data fraud / theft	Mismanaged urbanisation	Misuse of technologies	Natural catastrophes
Profound political and social instability	Prolonged recession in high-income countries	Prolonged recession in the BRICS countries	Regulatory / legislative changes
Reputational damage or adverse media / social media attention	Rising pollution in the developing world	Severe income disparity	Skills shortage
Spread of infectious diseases	State collapse or crisis	Structurally high unemployment / underemployment	Terrorist attacks
The weakening of representative democracy	Unmanaged inflation	Water crisis	Weapons of mass destruction

Source of 2016 Risk Universe:

	South Africa Risk Report 2015		WEF Global Risks 2015 Report		WEF Global Agenda 2015 Report
	World Bank Sub-Saharan Africa Outlook 2015		Aon Global Risk Management Survey 2015		PwC Risk in Review 2015

Table 7: Risk Universe for the 2016 South African Risk Report

B: Initial Survey: Formulating Top 20 National and Industry Risk Profiles

The risk management fraternity respondents were requested to select the top 12 risks from the list of 52 risks, which they believed could adversely affect the achievement of the South African government's NDP priorities for 2030. They were then asked to select the top 12 risks that could adversely affect the achievement of their organisation's objectives within their respective industries. The Risk Intelligence Committee was able to compile a list of top 20 risks for South Africa on both the national and industry levels from the responses received. Table 8 and table 9 illustrate that the top 20 country and industry level risk profiles are comprised of risks from the various sources in both cases.

		Education and skills development	
Failure / shortfall of critical infrastructure			
	Governance failure		Increasing corruption
Increasing strike action	Insufficient electricity supply		
Lack of leadership		Major escalation in organised crime and illicit trade	
Massive incident of data fraud / theft			
Profound political and social instability		Prolonged recession in the BRICS countries	Regulatory / legislative changes
Reputational damage or adverse media / social media attention		Severe income disparity	Skills shortage
	State collapse or crisis	Structurally high unemployment / underemployment	
The weakening of representative democracy	Unmanaged inflation	Water crisis	

Source of 2016 Risk Universe:

	South Africa Risk Report 2015		WEF Global Risks 2015 Report		WEF Global Agenda 2015 Report
	World Bank Sub-Saharan Africa Outlook 2015		Aon Global Risk Management Survey 2015		PwC Risk in Review 2015

Table 8: Top 20 South African Risk Profile – National Level

Failure / shortfall of critical infrastructure			
	Governance failure	Government policy changes	Increasing corruption
Increasing strike action	Insufficient electricity supply		Lack of innovation
Lack of leadership		Major escalation in organised crime and illicit trade	
Massive incident of data fraud / theft		Misuse of technologies	
Profound political and social instability			Regulatory / legislative changes
Reputational damage or adverse media / social media attention		Severe income disparity	Skills shortage
	State collapse or crisis	Structurally high unemployment / underemployment	
	Unmanaged inflation	Water crisis	

Source of 2016 Risk Universe:

	South Africa Risk Report 2015		WEF Global Risks 2015 Report		WEF Global Agenda 2015 Report
	World Bank Sub-Saharan Africa Outlook 2015		Aon Global Risk Management Survey 2015		PwC Risk in Review 2015

Table 9: Top 20 South African Risk Profile – Industry Level

C: South African Risk Rating Session: Delegate Participation at IRMSA Risk Labs

Delegates that attended the Johannesburg and Cape Town Risk Labs in July 2015 made use of a voting tool to provide likelihood and consequence / impact ratings for the top 20 national and industry level risks, using a standard 1 to 5 rating scale provided below.

Likelihood Scale:

- A. Rare/Remote
- B. Unlikely
- C. Moderate
- D. Likely
- E. Almost certain

Impact Scale:

- A. Insignificant
- B. Minor
- C. Moderate
- D. High
- E. Critical

Refer to the ranking of both top 20 risk profiles overleaf in Table 10 with the aggregated risk ratings.

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Overall Ranking	Top 20 Risk Rankings: National Level	RI	RL	RR	Risk Sub Category
1	Insufficient electricity supply	4.69	4.47	20.96	NDP
2	Increasing corruption	4.6	4.52	20.79	NDP
3	Skills shortage	4.55	4.55	20.7	NDP
4	Education and skills development	4.6	4.37	20.1	NDP
5	Water crisis	4.76	4.2	19.99	NDP
6	Structurally high unemployment / underemployment	4.46	4.45	19.85	NDP
7	Lack of leadership	4.56	4.34	19.79	NDP
8	Increasing strike action	4.31	4.33	18.66	NDP
9	Failure / shortfall of critical infrastructure	4.56	4.08	18.6	NDP
10	Severe income disparity	4.08	4.42	18.03	NDP
11	Profound political and social instability	4.42	3.91	17.28	NDP
12	Major escalation in organised crime and illicit trade	4.2	3.93	16.51	NDP
13	The weakening of representative democracy	4.29	3.8	16.3	NDP
14	Governance failure	4.2	3.82	16.04	NDP
15	Regulatory / legislative changes	3.88	4.11	15.95	NDP
16	Unmanaged inflation	4.43	3.49	15.46	NDP
17	State collapse or crisis	4.67	3.25	15.18	NDP
18	Reputational damage or adverse media / social media attention	3.75	3.9	14.63	NDP
19	Prolonged recession in the BRICS countries	4	3.51	14.04	NDP
20	Massive incident of data fraud / theft	3.93	3.54	13.91	NDP

Overall Ranking	Top 20 Risk Rankings: Industry Level	RI	RL	RR	Risk Sub Category
1	Regulatory / legislative changes	4.28	4.19	17.93	Industry
2	Insufficient electricity supply	4.01	4.14	16.6	Industry
3	Skills shortage	4.06	3.71	15.06	Industry
4	Increasing corruption	3.82	3.92	14.97	Industry
5	Government policy changes	3.94	3.67	14.46	Industry
6	Reputational damage or adverse media / social media attention	4.21	3.35	14.1	Industry
7	Massive incident of data fraud / theft	4.15	3.34	13.86	Industry
8	Profound political and social instability	4.05	3.27	13.24	Industry
9	Water crisis	3.8	3.36	12.77	Industry
10	Failure / shortfall of critical infrastructure	3.99	3.11	12.41	Industry
11	Structurally high unemployment / underemployment	3.5	3.48	12.18	Industry
12	Unmanaged inflation	3.89	3.11	12.1	Industry
13	Governance failure	4.1	2.94	12.05	Industry
14	Lack of leadership	4.23	2.8	11.84	Industry
15	State collapse or crisis	4.26	2.78	11.84	Industry
16	Major escalation in organised crime and illicit trade	3.64	3.24	11.79	Industry
17	Severe income disparity	3.29	3.5	11.52	Industry
18	Increasing strike action	3.34	3.34	11.16	Industry
19	Misuse of technologies	3.56	3.06	10.89	Industry
20	Lack of innovation	3.7	2.94	10.88	Industry

Table 10: Top 20 National and Industry Level with Rankings and Risk Ratings



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Profile of Survey Respondents

80%

Approximately 80% of the survey respondents (figure 13) 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.

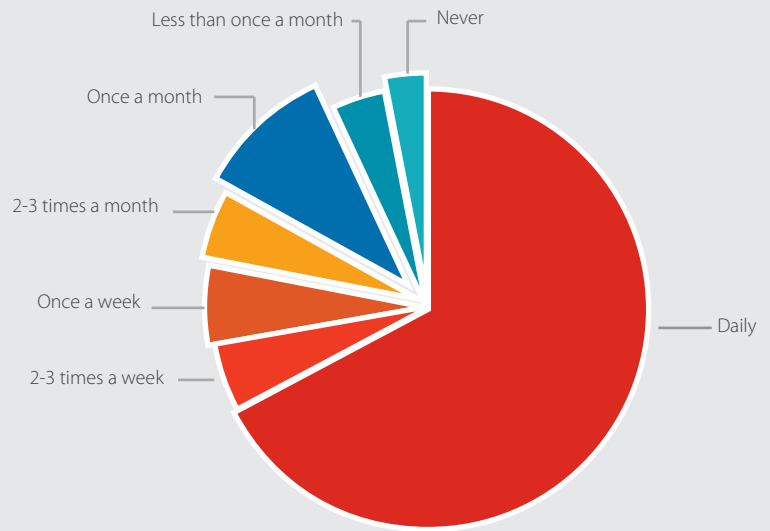


Figure 13: Level of interaction that respondents have with their organisation's risk management programmes

Profile of all Participants

1007

A total of 1,007 participants, including all survey respondents, the Risk Lab and IRMSA Conference 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 gender, sector (public and private) and industry.

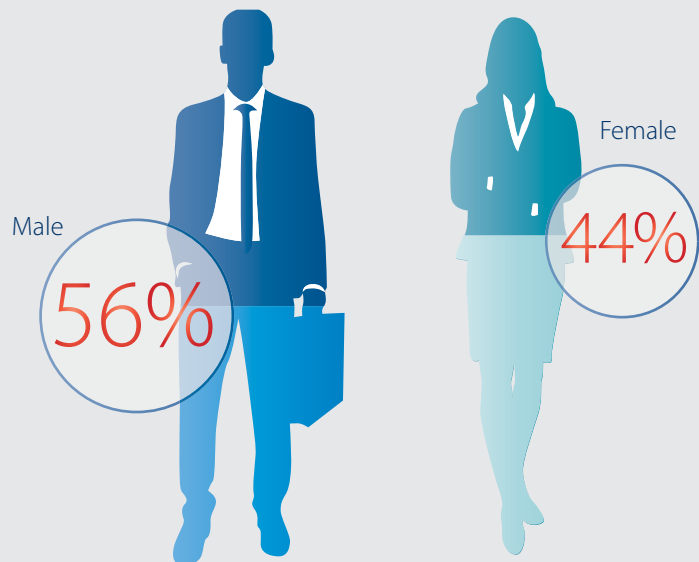


Figure 14: Participant distribution by gender

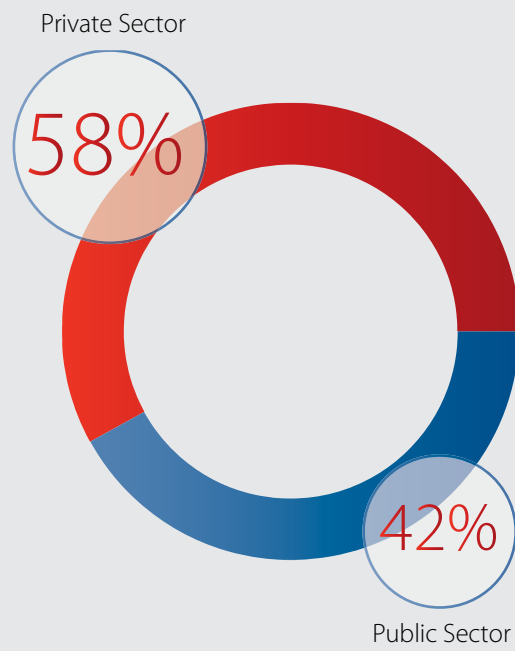


Figure 15: Participant distribution by sector

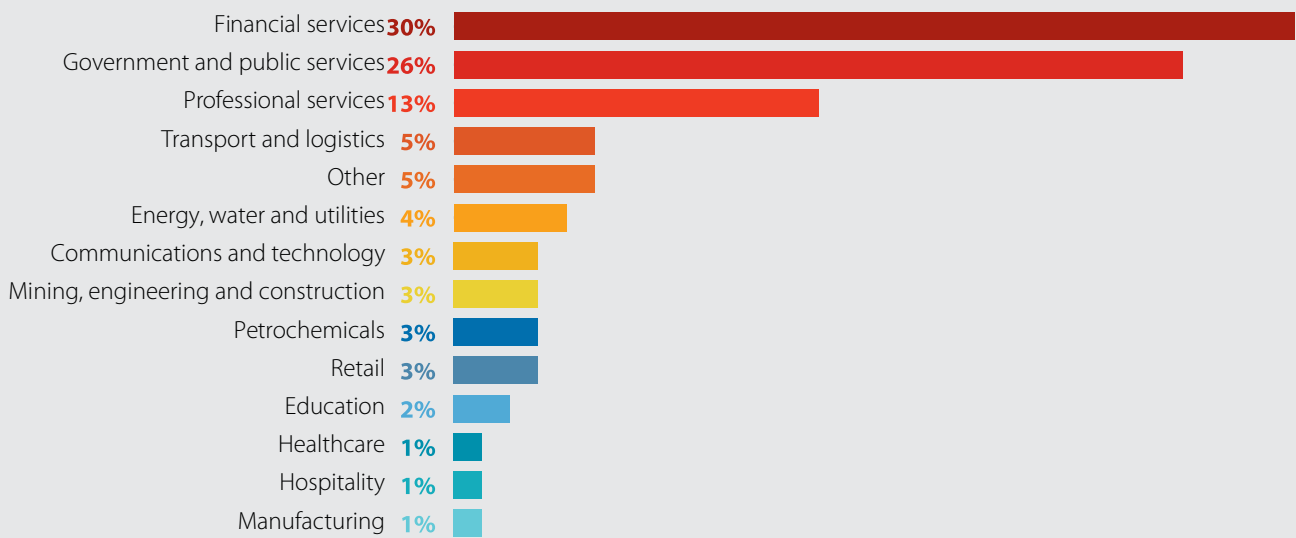



Figure 16: Participant distribution by industry



Part 4: Acknowledgements and Project Team

A project like the IRMSA Risk Report cannot be accomplished by one individual, but rather it is 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.



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Risk Report Project Lead



Les Carlo
Editor



Kay Darbourn
Editor



Jonathan Crisp



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Mark Robins
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Clem Sunter
Mind of a Fox



Terrance Booysen

In 2004, Terry Booysen 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) covering the Corporate, SME and Government 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.



Stan Bridgens

Stan Bridgens is a Registered Professional Engineer currently specialising in the professional development of young engineers and the growth of the SAIEE to greater heights in supporting the electrical engineering fraternity in South Africa. This he is able to do given his vast experience over the last 50 years serving Local Government in providing sustainable electricity to all areas around Johannesburg and interacting with all tiers of Municipal Structures and Technical arenas.

Stan is Past President of the SAIEE and serves on the Professional Advisory Committee of the Engineering Council of SA.



Chris Brits

Chris Brits' value to IRMSA is strategic input on the Executive Committee having been part of the turnaround strategy over the past 4 years. He has an in-depth understanding of the market and an astute knowledge of business environments which are invaluable at the various discussions. His practical insights and forward thinking are especially beneficial to strategy formation.

Chris' passion for promoting Risk Management has resulted in identifying the need to nurture new talent in Southern Africa. Consequently, the Student Membership Committee has been created. Under his capable leadership as Chairman a plan is being devised to develop the Risk Managers of the future and promote the profession thereby seeing his vision through to fruition.



Dr Mark Bussin

Dr Mark Bussin is the Chairman of 21st Century and has remuneration and HR experience across all industry sectors and is viewed as a thought leader in this arena. He serves on and advises numerous Boards, Audit and Remuneration Committee's and has consulted in many countries to multinational companies. He has held senior executive positions as Global head of Reward for several multinational organisations.

Mark holds a Doctorate in Commerce and has published 24 peer reviewed articles, supervised 6 PhD's and 42 Masters students. He is a Professor at UJ and Professor Extraordinaire at NWU. He is an accredited tutor for WorlDatWork on the GRP programs. Mark served as a commissioner in Presidency.



Dr Leslie Carlo

Les Carlo is a Fellow of the Institute of Risk Management of South Africa, a Fellow of the South African Institute of Electrical Engineers, a Fellow of the Institute of Engineering Technology (UK), a Registered Professional Engineer (South Africa) and a Chartered Engineer with Engineering Council (UK). He is also a Doctor of Engineering, awarded by Warwick University (UK) in 2013.

Les was trained, qualified and employed as an electrical engineer in electrical distribution industry in the UK from 1968 until emigrating to South Africa in 1983. From 1983 until his retirement, at age 65, in March 2015 he was employed by Eskom Holdings Ltd. In Eskom Holdings Ltd he initially worked as an electrical engineer specialising in transmission system protection until moving into the engineering management of Eskom's distribution operations 1986. In 2000 he moved into management roles in Eskom's telecommunications operations in South Africa and within Africa. In 2005 he undertook a three year secondment to Lesotho as the Acting CEO of Telecom Lesotho (Pty) Ltd. In 2008 on returning to South Africa he was appointed as the Chief Executive Officer of Eskom subsidiary companies Rotek Industries (SOC) Ltd and Roshcon (SOC) Ltd. In this capacity he was managed the provision of specialised maintenance services to Eskom's power generation turbo-generators and major transformers, together with civil works in support of the Eskom generation build programme. Also from 2008 until 2011 he was appointed, for various terms, as the Chairman of the Board of Eskom's subsidiaries in Mali and Uganda. From April 2012 he moved into an Eskom corporate role as the General Manager (Risk & Resilience) until retiring from Eskom.

Les had an active role as a member of the Institute of Risk Management South Africa (IRMSA) Executive Committee and Risk Intelligence Committee from 2013, until he retired from Eskom; although he continues to participate in IRMSA activities.



Dr Jody Cedras

Dr Jody Cedras completed a Bachelor of Social Science in Political Studies and Postgraduate Diploma in Law in Employment Law and Social Security from the University of Cape Town, a Master of Philosophy in Applied Ethics from the University of Stellenbosch and, a Doctor of Administration in Public Management from the University of Pretoria. His research interests include public policy, higher education, public administration, professionalisation and professional bodies, ethics, trade unionism and political leadership and he has published a number of peer reviewed articles in these areas with a strong philosophical diagnostic and strategic preference.

Dr Cedras is a founding member of the African Consortium of Public Administration and serves on the Advisory Panel of the African Journal of Public Affairs. Professionally, he has held senior positions in the following entities: Department of Higher Education and Training; Higher Education South Africa (HESA) (now Universities South Africa) and; the University of Cape Town (UCT).

He is currently employed as Director of Registration and Recognition at the South African Qualifications Authority (SAQA) where he provides strategic direction, intellectual leadership and management in the process of policy development for, and implementation of the registration of qualifications and professional designations as well as the recognition of professional bodies.



Jonathan Crisp

Jonathan Crisp is one of the founding directors of IDI Technology Solutions, founded in 1999. IDI are the owners and software developers of the BarnOwl GRC and Audit software which is implemented at over 200 blue-chip clients in South Africa, Africa, UK and Eastern Europe. Jonathan has 25 years' experience in the IT industry and has been involved in the development of large-scale systems both in South Africa and the UK including the development and marketing of BarnOwl. Jonathan is a member of IRMSA (Institute of Risk Management SA) and the IIA (Institute of Internal Audit SA) and is passionate about GRC and the value that it adds to any organisation.



Dr Gert Cruywagen

Dr Gert Cruywagen has more than 35 years of Risk experience and currently serves as the Director of Risk of the Tsogo Sun Group. He is a permanent member of the King Committee, served as convenor of its Risk Work Group for King II and King III; and currently does the same for King IV. He serves as non-executive director on a number of boards, and is an honorary life member and Fellow of IRMSA; a Fellow of the Institute of Directors of SA; an honorary life member of the IRM (UK); founder member of POLRisk; and honorary member of RusRisk. He chairs the SA technical committee for the revision of ISO 31000 and was voted IRMSA's Risk Manager of the Year in 2002 and 2009.



Ryan Cummings

Ryan Cummings is the chief security analyst for sub-Saharan Africa at the crisis management assistance company Red24 where he heads a team of analysts who provide bespoke and highly detailed security assessments for a wide range of red24's extensive private and corporate clientele. These assessments are used by both SMEs and MNCs in their strategic planning, particularly when determining the security protocols that their enterprises may require when initiating and/or expanding their operational presence in a foreign country. In addition to providing political and security risk forecasting, he also specialises in contingency and operational planning which provides business entities with the necessary intelligence and directives which they may require to ensure that their interests are secured during times of crisis.

Ryan is also an independent consultant to South Africa's private and public sector and is a contributor to various think tanks including the International Peace Institute, African Arguments, Think Africa Press and the Tony Blair Foundation. He provides consultancy and analytical services to various media organisations including al-Jazeera, CNN, Agence France-Presse, Deutsche Welle, TIME magazine and the Voice of America.

Ryan holds a bachelor's degree in politics, philosophy and economics and an honours degree in international relations from the University of Cape Town.



Peter Fowles

Peter Fowles is the strategic advisor to the Association of Municipal Electricity Utilities (Southern Africa) [AMEU]. Through his exposure with various organisations over the past forty years he has gained extensive experience in a number of areas including engineering, project management, strategy and transformation. Peter's experience includes managing the electricity department of Msunduzi Municipality (Pietermaritzburg) as City Electrical Engineer for a period of nineteen years where he played a key role in the implementation of strategies including improving the level of customer service and quality of supply, cost management and managing the electricity service as a ring fenced division in preparation for the electricity distribution restructuring in the country.

Peter has also occupied leadership positions in various professional associations including the Association of Municipal Electricity Utilities (AMEU) and the South African Revenue Protection Association, and has been actively involved with national structures such as the SALGA Technical Electricity Working Group, the National Electrification Advisory Committee and many others. He was also been closely involved with the proposed restructuring of the Electricity Distribution Industry [EDI] in South Africa.



Christine Fritz

Christine Fritz has served in a variety of positions at BANKSETA and has been involved in the Education Training and Development landscape since the inception of SETAs in 2000. She is responsible for BANKSETA's client facing departments such as Youth Development, Bursaries, Work Integrated Learning, Skills Development, Research and Quality Management. She serves on the board of Micro Finance South Africa (MFSA) and represents MFSA and BANKSETA on the Consumer Education Working Group.

Christine has completed a BA Degree in Psychology and Communication, a Leadership Development Programme through GIBS and is currently studying towards a Master of Business Leadership degree.



Fred Goede

Fred Goede is fortunate to have worked for 25 years as a specialist in the environmental field: the same 25 years that posed significant sustainability risks globally in water, waste, air quality and climate change. He played different roles in his career, starting off in academia, then R&D, followed by corporate leadership roles, consulting and today back in academia, lecturing Applied Risk Management at North West University.



Louise Graham

Louise Graham is the Chief Director International Relations, Department of Arts and Culture (DAC), South Africa since 2009. She is an international relations expert by training and a career diplomat by profession with more than 25 years of experience. She has served as diplomat for South Africa in New York, Hamburg and Paris, and has represented South Africa in numerous international conferences. She was responsible for the BRICS cultural agreement signed by the Ministers of Culture in July 2015, and has overseen reciprocal cultural seasons with France, the UK and China, and is responsible for the planning for the SA Russia Seasons to be held in 2016/2017. She has a particular interest in multilateral affairs (she represented SA at UNESCO for four years), human rights especially economic, social and cultural rights and cultural diplomacy.



Bernard Hotz

Bernard Hotz has been a director at Werksmans Attorneys in the Litigation and Dispute Resolution practice since 2000. He is the head of the Business Crimes & Investigations practice but is active in no fewer than five practice areas at the firm. Bernard specialises in all aspects of general commercial litigation. This includes corporate fraud/business crimes, insurance and banking litigation, stock exchange-related litigation and competition matters such as restraints of trade and Anton Piller orders. He also deals with all areas of intellectual property litigation, trademark and copyright enforcement, media law disputes and administrative law. Bernard is skilled in arbitration, mediation and alternative dispute resolution both locally, throughout the African continent and internationally.

In 1996 Bernard was entered on the roll of Attorneys who have the right of appearance in the High Court. He is recognised as the leading Litigation specialist in South Africa by the International Law Office in their Client Choice Awards 2010 and 2011 (chosen from more than 2,000 individual assessments received from corporate counsel worldwide).

Bernard was appointed a Commissioner of the Small Claims Court in June 2013. He holds a BCom LLB from the University of the Witwatersrand.



Michael Judin

Michael Judin is currently a senior partner in the Johannesburg based law firm, Judin Combrinck Inc. Michael is a director of, and legal adviser to, the American Chamber of Commerce (AmCham) in South Africa. On 22 November 2006, Michael was inducted as an honorary life member of AmCham in recognition of exemplary leadership and dedicated service. Michael is deputy chairman of one company, and a non-executive director of another, quoted on the Johannesburg Stock Exchange. Michael is admitted as an attorney in Botswana, Lesotho and Swaziland, and is a member of the International Bar Association. He is also an associate member of the American Bar Association, where he acts as Co-Chairman of the Corporate Governance International Developments Sub-Committee. Michael is a member of the e-commerce advisory committee of the Financial Services Board of South Africa. He is a member of the Committee that wrote the Code for Responsible Investing In South Africa (CRISA), the Committee that wrote King III and he is on the Task Team writing King IV.



René Kenosi

René Kenosi is a Chartered Accountant (CA (SA)) and currently a director of Fraudsmiths (Pty) Ltd. René's experience spans over banking, auditing and professional consulting industries with experience in corporate governance (with emphasis on Internal Audit and Risk Management), forensic investigations and Risk and Supply Chain Management training in the public sector. She is currently the Chairman of the Independent Regulatory Board for Auditors (IRBA) and a member of the Audit Committee and Chairperson of the Risk Committee at Company and Intellectual Property Commission (CIPC) and also lectures on a Municipal Development Programme at the Wits Business School.



Thelma Kganakga

Thelma Kganakga is the Head of Information Security Risk and Governance at Ubank. In her role she is responsible for driving the Cyber Security agenda of the bank, including the risk response strategies and plans. She has extensive experience in cyber security and risk management. Her experience spans over 12 years where she has run consulting businesses focusing on information security as well as been in leadership roles in corporate organisations such as Absa and KPMG. Thelma prides herself in implementing risk management capabilities that deliver value to the companies she works with and sustainably improving their risk profile.



Oliver Laloux

Oliver Laloux is the CEO of Mondial Consultants and a university graduate with over 20 years of experience in various aspects of Governance, Risk and Compliance (GRC), specialising in risk based governance, risk and compliance solutions, business continuity management/ business resilience as well as enterprise risk management, project risk management and the integration of sometimes disparate operational or health, safety, environmental and quality (HSEQ) management processes into a truly organisation wide ERM or IRM framework.

With International experience spanning across Africa, Australasia, Russia, Continental Europe, Canada, and South America, Oliver has been fortunate to experience what GRC looks like and how it works across many sectors, public and private organisations, from small enterprises to large multinational Corporates. Combined with his technical and social education and background, he provides risk process and risk content expertise and thought leadership at various forums ranging from student groups to Boards, Municipal Councils, executive committees and risk/audit committees amongst others.



Justice Malala

Justice Malala is a political commentator and newspaper columnist. Malala writes regular weekly columns for The Times newspaper and the Financial Mail magazine and a monthly column for DestinyMan magazine. He is the resident political analyst for e.tv and eNews Channel Africa. He also presents a weekly political talk show (The Justice Factor on eNCA and eTV, Mondays at 9.30pm). Between 2007 and September 2011 Malala was general manager of Avusa Media (now Times Media Group)'s stable of 44 magazines and, following that, general manager of the Sowetan and Sunday World newspapers.

Malala is a regular contributor to the Guardian in London and his work has been published internationally in newspapers such as The Wall Street Journal, Financial Times, The Telegraph, The Independent, Forbes, Institutional Investor, The Age, The Observer and the Toronto Globe and Mail. He has also contributed to BBC Online and Deutsche Welle.

He has given talks and rendered political advisory to international and local institutions such as JP Morgan, Liberty, Lehman Brothers, Old Mutual, Investec, Edcon, Nedbank and many others.

Malala is a judge on the country's most prestigious investigative journalism award, the Taco Kuiper Awards for Investigative Journalism. He was awarded the Foreign Correspondents Association Award for Courageous Journalism in 1997. He was named by the New Yorker magazine as one of the eight most fascinating Africans of 2012 along with Rwandan President Paul Kagame and Malawian president Joyce Banda. His collection of satirical Financial Mail columns, Let Them Eat Cake, is available at all good bookshops.



Adv. Kevin Malunga

Adv. Kevin Malunga has been Deputy Public Protector of the Republic of South Africa since December 2012. He holds a BA Law from the University of Swaziland. He also acquired an LLB degree from the University of Natal in South Africa and an LLM in International Law from Georgetown University Law Centre in Washington DC.

He is currently a candidate for Doctor of Juridical Science at the University of Wisconsin-Madison Law School in the US. His dissertation focuses on economic justice in South Africa, in particular the right to housing, assessing the ability of courts to effect social change. Adv. Malunga, is a member of several legal professional societies, his most recent contributions include serving as State Law Adviser to the Marikana Judicial Commission of Inquiry. Adv. Malunga also served as a State Law Adviser: Policy Co-ordination and Monitoring at the Department of Justice and Constitutional Development.

He has also served in the former and current Chief Justice's office, where he was also an interim Chief of Staff. Adv. Malunga was also a part-time researcher/consultant to UNAIDS on international and domestic laws affecting HIV vaccine trials in Ethiopia. In December 2010 he was appointed by the Minister of Higher Education and Training Dr Blade Nzimande to serve as a Board member of the South African Qualifications Authority (SAQA) for a period of five years.

His passion for human rights, fairness, equity and justice is well known by most who have interacted with him.



Lindsay Martin

Lindsay Martin is currently the Chief Director: Provincial & Local Government Infrastructure within National Treasury. He has worked for National Treasury for the last 9 years in various capacities. In his earlier roles he worked in the Budget Office as a Policy Analyst focussing on infrastructure financing and capital budgeting issues. He was then tasked to oversee provincial government infrastructure performance as the Director: Provincial Infrastructure. As part of his functions, he managed in the Infrastructure Grant to Provinces (roughly R11 billion) which funded infrastructure programmes in the education, health and roads sectors. He was also part of the programme management unit on the Infrastructure Delivery Improvement Programme which is a capacity building programme that seeks to improve provincial infrastructure performance. He is currently also working with the Office of the Chief Procurement Officer on reforms to improve value for money in public sector infrastructure delivery.



Millicent Mashamaite

Millicent Mashamaite is currently the Chief Risk Officer of Lepelle Northern Water for the past four years. Ms Mashamaite began her career from the banking sector and later joined the Big 4 to complete her CA articles, thereafter staying in the audit profession for almost another two years prior to holding her current position in LNW.

Ms Mashamaite holds a BCom, BCom Honours and a Post Graduate Diploma in Accounting Sciences degrees from the University of Limpopo and UNISA respectively.

She is also an Associate Member at the Institute of Risk Management South Africa (IRMSA).



Thulani Mkhungo

Thulani Mkhungo is a Senior Manager responsible for Capital Projects risks at Transnet Freight Rail, of which he successfully embedded enterprise risk management within Capital Projects execution through developing risk process and procedure to execute major and minor projects in all the phases of the projects from FEL1 to FEL4 (project gate stages). Trained and change management view of risk management to become the culture and language in decision making. Thulani formed and established the risk management committee to look after the project risks within the Capital Projects portfolio at Transnet Freight Rail and successfully developed a programme to monitor projects risks and benefit realisation to ensure delivery in accordance with the criteria agreed upon during the initiation of the business case.



Mavuso Msimang

Mavuso Msimang studied Biochemistry and Entomology and obtained an MBA at the US International University, San Diego. He spent his professional life in public sector and worked in agroforestry, environmental education and small-enterprise development. He also worked for the World Food Programme and Unicef. In South Africa he focused on turning around dysfunctional public sector organisations in the tourism, conservation and information technology sectors. Mavuso is credited with having led the successful turnaround of the department of home affairs.

Now retired, Mavuso works part time as CEO of the Oliver and Adelaide Tambo Foundation and consults on tourism and biodiversity management. He serves on several boards of state and listed companies.



Thokozile Ntshiq

Thokozile holds a Masters in Business Leadership and has 16 years' experience within the short-term insurance industry. She heads up the Customer Relations Management, Marketing & Communications and CSI divisions within Sasria. She is a transformational leader with key strengths in developing and implementing strategies that grow the business, reposition the brand, identify opportunities for future business development and strategic stakeholder management. Thokozile has been a member of the Sasria Executive Committee since 2007.



Dr Mzukisi Qobo

Dr Mzukisi Qobo is a political risk analyst and a public speaker. He advises organisations on mitigating political risks and help them to capture opportunities from regulation. He previously worked at the Department of Trade and Industry where he was chief director responsible for trade policy formulation. He directed research, advised on strategy, and led a team that drafted South Africa's trade policy. He currently provides corporate advice on mining regulation and policy; corporate strategies in Africa and emerging markets; and South Africa's political risk and investment climate. He has recently completed a benchmarking study for a global mining company on the role of the state in mining. He undertook a comparative field research in Australia, Botswana, Brazil, and Norway. As a public speaker he focuses on themes such as South Africa's macro-political trends; leadership and change; and emerging economies. He holds a part-time position as senior lecturer focusing on International Political Economy at the University of Pretoria. He is a regular contributor to national newspapers.



Reshma Ramkumar

Reshma Ramkumar, (BSc Chemical Engineering, MSc.) is a Chemical engineer who has vast experience in various aspects of the Mining industry, especially within the production and project management environment. Reshma has been a production manager at a world class base metals refinery and has managed numerous and diverse capital projects such as the design and implementation of an effluent treatments plant. Reshma brings this wealth of experience to the enterprise risk management function, with an intricate understanding of the mining industry and the associated business model.

As part of these experiences, Reshma has gained expertise in the development and pragmatic implementation of an enterprise risk management framework and model that focusses on adding value from a business perspective.



Anne Reed

Anne Reed is an independent business consultant in Johannesburg. She has work experience in both local and international markets; professional firms, corporates, medium sized and small businesses.

Anne's background includes accounting, risk management, and compliance. Her current focus is enabling business leaders to ask the right questions, so that they are strategically placed to lead a sustainable business. This also involves the transfer of knowledge to ensure that the staff are equipped with a "how to do" approach, and achieve goals within the prescribed timeframes.



Professor André Roux

André Roux has been the Director of the Institute for Futures Research (IFR) at the University of Stellenbosch since 1996. In this capacity he runs various workshops and other strategic interventions sessions with and for leaders and strategists in business and government. The IFR has more than 110 corporate and government department clients. André also lectures on economics and futures thinking on numerous programmes at MBA and executive education programmes in South Africa and, from time to time, in Australia, Belgium, Namibia, Swaziland, Tanzania, Ghana and Nigeria. He is a guest lecturer on post-graduate programmes at Dept of Economics (Stell), Dept of Industrial Psychology (Stell), School of Public Management (Stell) and Post-graduate diploma in Managing HIV and AIDS in the work-place. He is also the initiator and still academic manager of the MPhil (Futures Studies) programme, which has been presented since 1998. André holds a PhD in Economics (Stell) and is responsible for more than 100 popular publications; 1 book (10th edition); 3 chapters in scientific books; 9 publications in scientific journals; 20 papers presented at domestic and international conferences. He has supervised 1 PhD thesis; 80 postgraduate students, and is currently supervising 25 masters' students, and 2 PhD students. He is a member of the Management Committee of the Bureau of Economic Research, the Faculty Research Committee, and the Editorial Committee, of the South African Journal of Military Studies (Scientiae Militaria). He was awarded the Rector's award for excellence in teaching at the University of Stellenbosch in 1999, and gives more than 100 talks/presentations each year.



Querida Saal

Querida Saal is a human rights advocate and researcher at the South African Human Rights Commission (SAHRC), where she specialises in socio-economic rights. She completed her BA degree at Stellenbosch University, majoring in Political Science and Economics. Querida also completed an Honours degree and a Master's degree, both in Political Science. Querida has extensive experience in research, public policy analysis, and community development.



Nick Shutte

Nick Shutte is currently Head of Financial Lines at Zurich, delivering a number of specialist Financial Liability products since starting up this product line for Zurich in 2012. Recently Nick was also appointed to Regional Manager, Global Corporate, Cape Region in 2015 to expand this strategically important area for Global Corporate, Zurich SA. Prior to this, Nick was Managing Director at PI Financial Services, a specialist broker providing Professional Indemnity Schemes, Event Liability and General Liability covers to clients and intermediaries alike. Other former employers were Glenrand MIB, AIG SA and Mutual & Federal. He has been in the industry for 20 years, and has a mixture of general corporate & commercial as well as specialist experience in both insurance broking and underwriting disciplines.

Nick is a Fellow of the Insurance Institute of South Africa, has a Higher Diploma in Business Management through Damelin Management School, and has studies towards a BCompt degree.



Dr Whitey van der Linde

Dr Whitey van der Linde is a senior lecturer at the University of Johannesburg specialising in Strategic Management, Operational Management, Risk Management and Business Performance Measurement. He is the Author and Co-author of various peer reviewed articles and a contributor to text books. He is also a Honorary member of IRMSA.



Marinda van der Merwe

Marinda van der Merwe, Environmental Risk Management (ERM) South Africa's Managing Partner, has over 15 years of consulting and corporate experience in sustainable development, water and waste management, safety leadership improvement, and performance assurance and due diligence auditing. She holds a M.Sc in water management and is recognised as a leader in sustainable development, notably in the mining sector in Africa, where she has worked with global multinationals on projects ranging from early stage development through to operations and closure.



Professor Hermien Zaaiman

Associate professor and Manager of the Centre for Applied Risk Management (UARM) in the Faculty of Economic Sciences and IT at the North-West University Vaal Triangle Campus. Thirty plus years' experience in a number of sectors: academia and scientific research; trading, investment and financial risk systems – software developer, risk project and programme manager, head of risk change, business architect and project risk consultant.



Mdu Zakwe

Mdu Zakwe, a Chartered Accountant by profession holds an MBA (IT) and Certificate in Applied Cyber Security (Massachusetts Institute of Technology). He is currently pursuing his Masters in Science (Cyber Security) with the University of Maryland (Virginia). He took up a career in IT and was fascinated about IT governance and IT benefit realisation but with the emerging risks on the cyber space he is now focusing on cyber risk management and cyber security to help organisations put mitigating plans and protect their information assets to ensure that they remain available and protected with integrity. His professional skills include business analysis, systems integration, enterprise intelligence, enterprise risk management, information assurance audits, data analytics and cyber security. He has worked for multinationals in various senior roles, has served on various boards and also became chairperson of various board committees both in the private and public sector. His accolades include BBQ Business Man of the Year 2012 (Bronze) and Top 200 Young South Africans (Mail & Guardian 2013).



Silas Mzingeli Zimu

Silas Mzingeli Zimu obtained his B. Eng. Honours degree in Electrical and Electronic Engineering in 1991. He also holds an Msc in Engineering Management. Mr. Zimu started his career in the electricity industry when he joined Eskom in 1992 where he worked as an engineer in the generation group. Amongst areas that he was involved in is the normalisation of Soweto. He was also appointed as a contract manager for key projects like Alusaf and Matimba-Bulawayo. While still at Eskom, he was later appointed as a Key Customer Relations Manager looking after the mining industry.

He joined City Power as a General Manager - Planning and Technology and was soon promoted to Vice President, Customer Services. Because of the knowledge and passion he has for Engineering Operations, Silas was then appointed as a Vice President of Operations in December 2003 and served on Executive Management Committee, as well as a number of Board committees within the organisation. Silas has extensive experience in both business and strategic management. He acted in the CEO position since February 2006, until being appointed Managing Director of City Power. Mr. Zimu has held the position of CEO of Suzlon Wind Energy South Africa (Pty) Ltd since October 2011 and shares with us the vision for a greater tomorrow.

Mr Zimu has recently been appointed as the energy advisor to the RSA State President.



Lonmin

Lonmin is one of the world's largest primary producers of Platinum Group Metals (PGM's). The company is engaged in the discovery, extraction, refining and marketing of PGM's and they create value for their shareholders through a vertically integrated business model, as one of only four "Mine-to-Market" primary PGM producers.

Contributors:

Aubrey Julius (Group Environmental Manager)

Mark Maynard (Head of Engineering)

Brendan Maseti (Group Risk Manager)



Standard Bank Group

Standard Bank Group is the largest African bank by assets with a unique footprint across 20 African countries. Headquartered in Johannesburg, South Africa, Standard Bank is listed on the Johannesburg Stock Exchange. Standard Bank has a 153-year history in South Africa and started building a franchise outside Southern Africa in the early 1990s. Standard Bank's strategic position, which enables it to connect Africa to other select emerging markets as well as pools of capital in developed markets, and its balanced portfolio of businesses provide significant opportunities for growth. The group has nearly 49 000 employees and over 1 200 branches, which enable it to deliver a complete range of services across personal and business banking, corporate and investment banking and wealth management. In South Africa, Standard Bank provides the full spectrum of financial services. Standard Bank's corporate and investment banking expertise is focused on industry sectors that are most relevant to emerging markets. It has strong offerings in mining and metals; oil, gas and renewables; power and infrastructure; agribusiness; telecommunications and media; and financial institutions.

Headline earnings from continuing operations for 2014 were R21 billion (about USD 1.9 billion) and total assets were R1 907 billion (about USD 165 billion). Standard Bank's market capitalisation at 31 December 2014 was R232,2 billion (about USD20 billion).

The group's largest shareholder is Industrial and Commercial Bank of China (ICBC), the world's largest bank, with a 20,1% shareholding. In addition, Standard Bank Group and ICBC share a strategic partnership that facilitates trade and deal flow between Africa, China and select emerging markets.



Wolfpack Information Risk

Wolfpack Information Risk was established in June 2011. They are well respected for their independent thought leadership in the information and cyber security domains. They present at around 25 local and international events each year and are regular contributors to TV, radio and media interviews. They utilise the latest research, threat intelligence, high impact training, awareness and advisory solutions to assist a growing base of clients to manage their IT Governance, Information and Cyber Security and Privacy programmes more efficiently. Through their sense of community and genuine interest to make a difference in the fight against cybercrime they continuously drive strategic collaborative initiatives on the African continent.

Contributors:

Manuel Corregedor

Cobus Mentz

Bryce Watson



AIG

AIG is a world leading property-casualty and general insurance organisation serving more than 70 million clients around the world. With one of the industry's most extensive ranges of products and services, deep claims expertise and excellent financial strength, AIG enables its commercial and personal insurance clients alike to manage risk with confidence. For over 50 years AIG has been dedicated to servicing the South African insurance market. Their products are characterised by innovation, outstanding "value added" services and underpinned with their underwriting specialists, unparalleled global network and the expertise of our local claims team.



BarnOwl

BarnOwl is a fully integrated governance, enterprise risk management, compliance and audit software solution used by over 200 organisations in Africa, Europe and the UK. BarnOwl supports best practice risk management, compliance and audit frameworks (e.g. COSO, ISO31000, Compliance Institute's handbook, International Professional Practice Framework), whilst offering a highly flexible and configurable parameter-driven system allowing you to configure BarnOwl to meet your specific requirements.

BarnOwl is the preferred enterprise risk management (ERM) software solution in the South African public sector, endorsed by the Office of the Accounting General (OAG).

BarnOwl is developed, implemented and supported by IDI Technology Solutions (Pty) Limited (IDI). IDI is a well-established software development company based in Johannesburg, South Africa.



Future Risk

FutureRisk is a small independent company focusing on Risk Management and Financial Services, Consulting and Executive Coaching. Kay Darbourn has been involved in the corporate world for over 40 years and her aim is to support the development of South Africa's future leaders in business through her coaching and consulting practice. If you are not sure whether the advice you are being given is fair and reasonable, or if you need to talk through a project or proposal, then ask an independent, innovative expert to give you a view.



Marsh

Marsh is a global leader in insurance broking and risk management, and its success is driven by teaming up with clients to define, design, and deliver innovative industry-specific solutions. With an extensive footprint of more 130 countries worldwide, Marsh is able to service cross-industry clients of various sizes, in different geographical locations and varying risk exposures. Closer to home, Marsh Africa combines on-the-ground knowledge and experience with unparalleled access to global resources, supported by over 1,200 colleagues across the African continent.



Sasria SOC Limited Company Profile

Sasria SOC Limited is a short-term insurance company wholly owned by the state and is represented by the Minister of Finance. Their legislative mandate is to insure all the people and businesses that have assets in South Africa, as well as government entities, against special risks that may lead to the loss of or damage to their assets caused by events related to or following civil commotion, public disorder, strikes, riots and terrorism, which all have the potential to lead to possible catastrophic financial losses. They are also mandated to research and investigate coverage for any special peril considered to be of national interest.



Satarla

Satarla Pty Ltd is a risk management consulting company that enables its clients to make risk intelligent decisions to create and maintain their sustainable advantage. Satarla was started in 2014, by a group of individuals who believe in the benefits of good quality risk management. They operate a diverse network of individuals who are experts in their own field, with hands on industry experience in a wide range of sectors. Satarla has teams globally with offices in Europe and South Africa (BEE level 4).

Their services include, Risk Management, Knowledge Transfer and Training, Due Diligence and Assurance and Project and Process Management.



The Institute of Directors in Southern Africa (IoDSA)

The Institute of Directors in Southern Africa (IoDSA) supports business leaders and directors in reaching their full potential by ensuring they fully understand the latest governance practices and are empowered to discharge their duties effectively.

The IoDSA offers exclusive programmes to develop existing and aspiring directors through thought leadership and providing a platform for peer interaction. We are committed to fostering better directors, better boards and better business in SA.



The South African Institute of Chartered Accountants (SAICA)

The South African Institute of Chartered Accountants (SAICA) is widely recognised as one of the world's leading accounting institutes. As South Africa's pre-eminent accountancy body, the Institute provides a wide range of support services to more than 38 000 members who are chartered accountants and hold positions as CEOs, MDs, (board) directors, business owners, chief financial officers, auditors and other leaders in their chosen spheres of business operations and public life. Most of these members operate in commerce and industry, and play a significant role in the nation's highly dynamic business sector and economic development, but some are also employed in the public sector.

SAICA serves the interests not only of the chartered accountancy profession, but also of society in general through its key objective of upholding professional standards and integrity. The pre-eminence of South African Chartered Accountants [CAs(SA)] nationally and internationally attests to the successes achieved by SAICA on a broad global canvas. SAICA members serve on international accounting bodies including the Trustees of the International Financial Reporting (IFRS) Foundation, the International Accounting Standards Board (IASB), the IFRS Interpretations Committee, the IFRS Advisory Council, and the Council of the International Federation of Accountants (IFAC). SAICA is also a member of The Global Accounting Alliance (GAA), as well as a founder member of Chartered Accountants Worldwide (CAW).



The Institute of Internal Auditors South Africa (IIASA)

The Institute of Internal Auditors (IIA Inc.) is the leading professional body representing the interests of internal auditors worldwide. It is the internationally recognised authority, principal educator and acknowledged leader in certification, research and technological guidance for the profession. The Institute is creator and custodian of the International Standards for the Professional Practice of Internal Auditors, and the Code of Ethics to which all members must adhere. A global institute with headquarters in Florida, USA, the IIA Inc. has a network of affiliates serving members in more than 160 countries in the fields of internal auditing, risk management, governance, internal control, IT audit, education, security and management.

The Institute of Internal Auditors South Africa (IIASA), as part of this international network upholds and supports the profession by providing a wide range of services dedicated to the education and



UARM Centre for Applied Risk Management, Faculty of Economic Sciences and IT, North-West University, Vaal Triangle Campus

Ideally, business and risk managers play complementary roles in the process of setting and achieving an organisation's objectives. In practice however, a lack of knowledge and understanding of the interconnectedness of these roles can create misunderstanding and conflict between these role players. The resulting need for qualitative post-graduate risk management education and applied risk research led to the creation of the Centre for Applied Risk Management (UARM) in the Faculty of Economic Sciences and Information Technology of the Vaal Triangle Campus of the North-West University in 2012.



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