

INDUSTRIAL POLICY ACTION PLAN

IPAP 2016/17 – 2018/19

**Economic Sectors, Employment and
Infrastructure Development Cluster**

JOBS ... GROWTH ... EQUITY



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FOREWORD BY THE MINISTER OF TRADE AND INDUSTRY Dr Rob Davies MP

Situational and strategic overview

The launch of this year's eighth edition of the Industrial Policy Action Plan (IPAP 2016/17 – 2018/19) takes place in tough economic times, characterised by depressed global economic conditions and great uncertainty. The lingering effects of the great global recession continue to be felt worldwide; most obviously reflected by stagnant demand from developed and developing countries alike. The contraction and 'rebalancing' of the Chinese economy towards a greater focus on domestic demand has had significant and negative consequences for commodity-exporting countries. Growth projections for many African countries will most likely fall below expectations, mainly as a result of the collapse of the oil price and the wider slump in primary commodity demand.

The domestic economy has continued to be impacted by the lingering effects and successive 'after-shocks' of the global recession. The two most significant domestic casualties have been the mining and steel industries. The very sharp downturn in the former - a direct effect of the generalised slump in commodity demand and prices - carries with it significant knock-on effects for the domestic economy in general. Similarly, the crisis occasioned by massive over-capacity in the global steel industry has hit South African producers very hard, threatening the competitiveness and sustainability of many domestic producers and necessitating the deployment (both here and in other steel-producing countries) of a range of emergency trade and support measures.

In addition to these after-shocks, the prolonged and severe drought in many parts of the sub-region is having a severe impact on agricultural production of staple goods and will result in a significant increase in agricultural imports. This in turn will have significant repercussions for the broader economy in the year ahead.

In these difficult circumstances lower than projected GDP growth and continuing depressed domestic demand are likely, constituting a very significant barrier to economic growth – and in particular the *inclusive growth* that is the critical prerequisite for overcoming South Africa's persistent high levels of unemployment and inequality.

All of these adverse factors underline yet again the crucial point that the National Development Plan (NDP), the National Industrial Policy Framework (NIPF) and successive IPAP iterations have repeatedly emphasised (albeit with differing emphases): namely *the pressing need for structural change in the economy* to break out of commodity dependence and move to a more diversified base in which increasing value-addition and export-intensity come to define South Africa's growth trajectory.

If South Africa was unable to optimise the opportunity to effect structural changes that the commodity boom provided, the severe and negative domestic impact of the global recession and ensuing commodity slump only serve to *underline how urgent and inescapable this task is* - even as we recognise, unfortunately, that the challenges now have to be met under much more adverse circumstances, including very tight fiscal constraints.

In short, the strategic necessity to restructure requires nothing less than a massive national industrial effort. This must be built on four main pillars: (i) policy coherence and policy certainty across government; (ii) a close collaborative effort between government, business and labour; (iii) a commitment to ensure that the linkages between the primary and secondary productive sectors of the economy are maximised; and (iv) a combined and constructive drive to overcome the key constraints to manufacturing-led, value-adding growth, with special emphasis on labour-intensive sectors such as agro-processing and clothing and textiles.

We cannot underestimate the shift of direction this requires. The services sector of the economy has been growing at twice the rate of the production sectors, driven in the main by credit-fuelled consumption and import-intensity. This imbalanced growth model, which has increasingly run out of steam, has left the economy vulnerable. It is, quite simply, not sustainable.

Securing a sustainable growth trajectory will therefore require (amongst other things) intensely focused collaborative efforts by both government and business to redirect the strength of the financial sector to much more strongly support the productive (and especially the manufacturing) sectors, in order to marshal domestic resources for increasing investment in the real economy.

Government’s response to the serious economic challenges the economy is faced with is encapsulated in the President’s Nine-Point Plan. A *higher-impact IPAP* is one of the key pillars of this plan. Its objectives will not be achieved either by waving a magic industrial policy wand or through policy prescriptions that invoke an exclusive role for the private sector. What is required instead – in tandem with the collaborative commitments outlined above – is to build decisively on what we already have in place. This means expanding the scope and depth of all the interlocking (cross-cutting and sector-specific) programmes set out in the IPAP - and putting our combined efforts into ensuring their steady (practical, incremental) implementation.

Significant successes have been achieved in the Clothing, Textiles, Leather and Footwear (CTLF) and Automotive industries through collaboration between government and business, based on a commitment by all parties to invest in and grow these key sectors. There is potential to replicate these successes by progressively transferring the lessons learned from the CTLF and Auto interventions to further identified sectors where South Africa has and/or wishes to build globally competitive industrial and export capabilities. The next area identified for a similar mix of support measures and reciprocal commitments to supplier development and value chain integration is the rail and mining capital equipment sector.

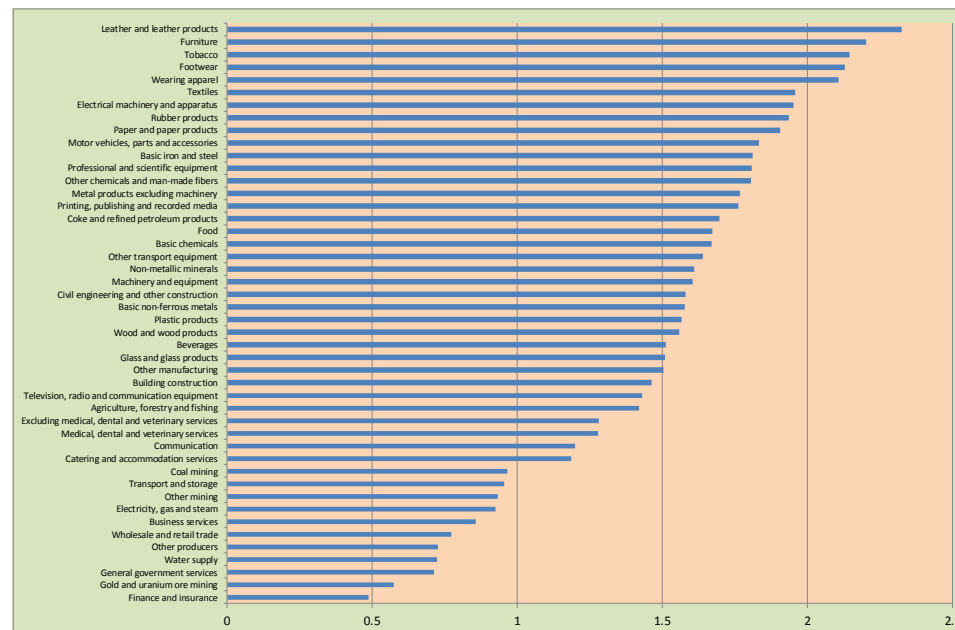
Further, the commitment to ‘higher impact’ requires an intensified focus on using the transversal (cross-cutting) policy levers that are already in place to fully support both the critical ‘spill-over’ sectors and the manufacturing sector in general - with a strong focus on labour intensive sectors and sub-sectors.

The labour intensive sectors and sub-sectors are principally: (i) the agro-processing sector (which also lends itself to economic decentralisation); (ii) clothing, textiles, leather and footwear; (iii) the component manufacturing and sub-assembly sub-sectors in automotives; (iv) rail, light manufacturing and engineering in the metals sector; (v) plastics and associated sub-sectors; (vi) electro-technical assembly, sub-

assembly and component manufacturing; (vii) downstream timber and pulp products, including furniture and boatbuilding.

As the following figure indicates, IPAP’s intensifying focus on labour intensive sectors is driven by an understanding of their employment multiplier effects across the economy.

Figure: Employment: Backward Indirect Impacts



Source: Quantec

In pursuit of its core growth and employment objectives, IPAP deploys a broad range of cross-cutting policy and support instruments – e.g. procurement; industrial financing, incentives and SEZs. These are complemented by targeted, sector-specific support measures which are being continuously refined and strengthened. Making all the instruments work effectively in tandem with one another requires focused inter-departmental and institutional effort to build the linkages between the primary (agriculture and mining) sectors and the services and manufacturing sectors. In addition, enabling economic and transport infrastructure must be

deployed to support these labour intensive sectors and to achieve a higher degree of economic and industrial decentralisation.

To expand a little further on some of the key cross-cutting instruments:

(i) Public procurement

IPAP has over the past few years developed a very strong emphasis on the deployment and strengthening of public procurement to support the local manufacturing sector and the growth of world class industries. Compliance across government and state-owned companies (SOCs) is now identified as the critical issue in ensuring that this policy instrument reaches full effectiveness.

Various tools have been designed to accommodate different procurement processes. These include Designation, the Competitive Supplier Development Programme (CSDP) and the localisation requirements of the Preferential Procurement Policy Framework Act (PPPFA). The core goal of these instruments is to raise aggregate domestic demand, in support of localisation, supplier development and enhanced competitiveness.

Much stricter compliance by public entities will be achieved by making their performance in meeting government's 75% procurement localisation target an integral component of the annual audit process. In addition, special mention must be made of the localisation requirements which are increasingly being embedded in the roll-out of the Presidential Infrastructure Co-Ordinating Committee's National Infrastructure Investment Programme.

(ii) Industrial financing and incentives

An expanded and refocused system of industrial financing and incentives will be a key requirement going ahead. It will include much stronger export credit and export credit insurance support, in combination with a wide range of sector-specific incentives – beginning, as noted above, with the rail and mining capital equipment sectors.

Importantly, this package of incentives includes the recently launched Black Industrialists Incentive, designed to ensure that broad-based black economic empowerment and inclusive growth characterise all-round efforts to secure and grow SA's manufacturing base.

(iii) Leveraging the devaluation of the Rand

Notwithstanding the problems and uncertainties associated with currency volatility, the weaker Rand should be a strong contributory factor in helping to make South African manufactured products more globally competitive. At the same it also opens up a range of opportunities for the expansion and further development of SA's domestic manufacturing capabilities.

In the national market, the increased cost of imported goods presents immediate opportunities for import substitution and the local production of far more cost-competitive, value-added products, both in the domestic economy and for export.

The decline of commodity prices has also led to dramatically increased synergies between the mining and manufacturing sectors. With the weakening Rand, mining companies have recognised that procuring from nationally-based manufacturers will provide them with significant cost and other competitive advantages, both now and into the future.

Most importantly, a weaker Rand provides the basis for a much more comprehensive and aggressive export focus that consciously seeks to optimise the competitive advantage that the devalued currency provides. This should apply in particular to the significant opportunities on offer across the African continent, in the context of SA's commitment to African regional industrialisation.

Growing exports

There are a number of benefits that accrue to a country as a result of increased exports. These include the ability to specialise in attractive sectors, to build dynamic cluster economies of scale and scope, to increase employment and to increase foreign exchange earnings that enable the importation of advanced technologies. However, there are also major obstacles to exporting manufactured products. These include the need for a complex discovery process to learn about customer requirements and competitor offerings in new markets. In addition, there are significant transaction complexities, costs and risks in doing business across different legal and financial systems.

Finally, it is often necessary to invest in logistics and service infrastructure in a new market before it is possible to market a product. Given the benefits of exporting, the state needs to play a critical role in supporting companies to manage the costs and risks of entering new markets.

The first pillar of our export strategy will involve building partnerships with global Original Equipment Manufacturers (OEMs) who already have global trade networks and associated infrastructure and who are interested to developing production hubs in South Africa. These partnerships will be focused on transferring technologies, either through direct investment or partnering, to build our national design and manufacturing capabilities in all relevant supply chains, as well as growing our exports in OEM value chains.

In addition, the state will partner with national export champions to catalyse increased national technology absorption for the development of high value exports and will provide a battery of export promotion incentives.

Three programmes have been developed to catalyse increased exports, in the context of these partnerships.

- (i) A programme to provide *better support for existing exporters*, designed to help them rapidly increase the quantity of their external sales. The biggest problem both export-orientated national companies and global OEMs have noted is *the (less than optimal) quality of our current export credit and insurance products; and the efficiency with which these products are delivered.*

Exporters from South Africa are placed at a significant disadvantage in relation to exporters from countries that provide a seamless export credit support service. In this context, it is worth noting that a number of global OEMs operating in South Africa have indicated that the provision of efficient export credit support is a condition precedent to their choosing South Africa as an export base. With these issues in mind, existing export credit processes are now being thoroughly reviewed, in conjunction with efforts to put in place more sharply focused, politically-supported missions dedicated both to expanding existing markets and capturing new ones.

Our key concern is to ensure that the capabilities built through the procurement and supplier development programmes can be leveraged and sustained through a focused export promotion drive.

- (ii) The recent turn-around of our clothing and textile sector has largely been a result of a company-by-company effort to build world class manufacturing capabilities. The second programme *therefore seeks to improve productivity along existing and potential export-orientated supply chains.* This relates to improving quality controls; re-engineering the design of production processes and plant layout (lean disciplines); improving supply chain management; and providing specialised skills development.

Certain global OEMs supplying SOCs have already initiated upgrading programmes in their South African supply chains to meet their Supplier Development Programme obligations.

the dti will be continuously developing its partnerships with these companies to deepen and broaden the upgrading processes that are needed to build and strengthen export-orientated supply chains. In this context, our manufacturing incentives will become more tightly targeted towards companies that have been through, or are going through, either a global OEM accreditation programme or an upgrading programme recognised by **the dti**.

- (iii) The third programme looks at how to build new export-competitive capabilities. This will require us to support a targeted process of technology acquisition, by a) attracting investors who own desirable technologies; b) facilitating technology transfers; and c) supporting focused national technology development efforts where appropriate and viable.

The support currently being given to component manufacturers in the rail supply chain by the Technology Localisation Unit of the Council for Scientific and Industrial Research (CSIR) is a clear example of what can and must be done.

Developing export-oriented production hubs

A number of international companies have either invested in or shown considerable interest in establishing facilities in South Africa that will contribute to setting South Africa up as a production hub into the rest of the continent. Whilst there have been some recent successes in landing these investments, there is still a good deal of room for improvement. We will therefore be focusing on areas where SA wishes to build globally competitive industrial capabilities, while at the same time closely examining ways in which the *Special Economic Zones and Clusters Programmes* can be positioned to help close the gaps.

As in previous years, **the dti** will also be working closely with the Department of Science and Technology and our technical infrastructure institutions to consolidate the required testing infrastructure and other incentives to support the technology transfer process. In addition to support for existing industry associations and export councils **the dti** will be putting in place an export council with a specific Africa focus, fully representative of both the public and private sectors.

Importantly, when considering the rest of Africa as an export market, companies also need to consider procurement of cost-competitive inputs from other African countries wherever appropriate - a developmental *quid pro quo* that should serve to bolster the growth of both our own and our neighbours' economies.

Industrial decentralisation

Industrial decentralisation, difficult under any circumstances, is particularly difficult in SA, given the deep-seated structural/spatial distortions inherited from apartheid. That said, the key instrument identified by IPAP to drive the necessary industrial re-balancing/decentralisation effort is the Special Economic Zones (SEZ) programme, supported by other initiatives such as agri-park development and industrial park revitalisation. It is critical that rail and port infrastructure investment and improved efficiencies are mobilised to support this effort.

Sustained growth of the manufacturing sector as a whole is best served by the efficiencies which stem from (i) proximity to markets and ports; (ii) efficient supply and logistics chains; (iii) agglomeration and clusters; and (iv) supportive economic infrastructure. Whilst these economic features have been historically centralised (at

great human cost in terms of uneven spatial development) the plain fact is that they are structurally entrenched and cannot now be rolled back in any simplistic manner.

Nevertheless, every effort is now being made - in circumstances of the need for complex intra-governmental co-ordination - to strengthen the instruments which will enable appropriate and viable economic and industrial decentralisation to take firm root in previously under-served regions - connecting them into the wider national economy and discovering potential new export opportunities - particularly through SEZs and regional economic clusters.

Beneficiation and resource diversification

A key priority of IPAP 2016 is to strengthen the *vital economic linkages between the primary agriculture, mining and manufacturing sectors of the economy* in order to secure much greater downstream beneficiation and maximise upstream linkages.

Important programmes arising from the Mining Phakisa increasingly reflect this approach, announced last year by the President and further set out in IPAP 2016.

In a parallel policy thrust, IPAP 2016 introduces a medium term programme to ensure that *gas-based industrialisation* increasingly develops into one of the spines of our industrial strategy - leveraging natural gas as both a source of power generation and a driver of industrial diversification. Scaling up from the preparatory work that has been in progress over the past year, the second quarter of 2016 will see the launch and initial implementation of the programme.

It will be based on three phases of natural gas supply:

- *Near term*: building the necessary distribution infrastructure to support bulk importation of liquefied natural gas (LNG) from international sources and begin supplying key industrial requirements such as fuel cell-generated energy and efficient smelters.
- *Medium term* (over the next decade): bulk LNG importation from Mozambique as the huge natural gas reserves located in the Rovuma Basin start coming on-stream - which will allow for further scaling-up of infrastructure and the establishment of gas as a viable broad-based alternative source of industrial energy.

- *Longer term:* (if this proves to be both commercially and ecologically viable), leveraging the very large indicative reserves of shale gas in the Karoo basin to transform South Africa into a significant producer of natural gas in its own right - with enormous potential effects for industrialisation.

Meeting the challenges of technological change

As we have said before, government seeks to work in an increasingly close collaborative effort with business and labour to restructure the economy and place it on a value-adding and export-intensive trajectory - a process characterised as government 'steering but not rowing'. In the current depressed and volatile global economic conditions, it will find itself doing this against a continuously shifting backdrop of both 'drag' and 'push' factors. As previous iterations of IPAP have suggested, the 'push' factors – becoming ever more intense - include:

- (i) *The 'Fourth Industrial Revolution' and the quantum technology leaps which accompany this phenomenon*

SA companies cannot be left behind by the huge advances in additive manufacturing, 'big data' access, advanced information technology and digitalisation capabilities - including the rapidly emerging 'Internet of Things'. Disruptive technologies are set to lead both to huge changes in production processes and – so it is widely predicted – very significant job losses.

It is imperative that fact is separated from fiction in order to understand both the potentially negative impacts and the opportunities this revolution will bring - and to ensure that industrial policy is designed in such a way as to minimise the negative social impacts and maximise the opportunities for 'leapfrogging' to new technologies. Some of this work is set out in this IPAP's chapter on Innovation and Technology, which is primarily the responsibility of the Department of Science and Technology.

- (ii) *Climate change and 'greening'*

The forms taken by our drive to industrialise will of necessity be strongly shaped by the responses we develop to meet the very real and considerable pressures all economies face to adopt far less energy- and carbon-intensive production processes.

Faced with the challenges of climate change, a number of policies and instruments have already been implemented to incentivise local industries to reduce their greenhouse gas emissions and to support the development of new green sectors. The achievements of the National Cleaner Production Centre, set out in IPAP 2016, demonstrate what can be achieved.

But more needs to be done to support domestic industries to adopt less carbon-intensive production processes, in addition to seizing the manufacturing opportunities available in the dynamic renewable energy and green industries space. Reduction of waste and/or its utilisation as an input for other industries is increasingly gaining ground through the process of 'Industrial Symbiosis'.

Minimising regulatory and red tape barriers

Strong efforts are already under way to open up space for more development-friendly governance processes. There is increasing alignment across government and private stakeholders around the importance of the industrialisation project.

The IPAP has become an accepted strategic compass for industrial development which guides government departments in their policy formulation. There are now increasing efforts across a range of fronts to improve the efficiency of administrative processes by eliminating red-tape bottlenecks that hinder investment and expansion.

In this regard, the President has announced an inter-Ministerial Committee (IMC) on Investment to tighten up the intra-governmental coordination required to underpin the new One-Stop Investment Centres, whose core purpose is to ease the process of doing business in South Africa.

An important first step, implemented in April 2016, was the launch of CIPC Online. The CIPC (Companies and Intellectual Property Commission) has partnered with all the major banks and in April I launched a partnership with Nedbank to provide business registration facilities within their branches. It is important to emphasise that it is no longer necessary to travel to CIPC offices to register a company. Company registration will now be able to be done at a rapidly growing number of bank branches and online through the partner banks, as well as at CIPC's self-service terminals - so far installed in four Provinces - or on-line through the CIPC website.

Already in the past year, 300,000 businesses were formally registered at the CIPC. 88% of these applications were received through online channels.

Overcoming constraints – moving forward

As government pushes ahead with the interventions summarised above - and set out in greater detail in the programmes and Key Action Plans of IPAP 2016 - we are very mindful of the work that still needs to be done to more adequately overcome various lingering and persistent constraints and obstacles to growth that still confront us. The main challenges are as follows:

- Overcoming electricity supply constraints and elevated prices - including creating an enabling environment for own- and co-generation, with a particular focus on renewable energy and the fuel cell technology opportunities that South Africa is playing a pioneering role in developing.
- A continuing effort to secure port and rail network reforms to overcome inefficiencies and associated high costs, with a particular emphasis on supporting export competitiveness. A first step along this road has been achieved through a starter commitment of R7 billion for new port facilities, following on from the adoption of a public-private partnership model for port infrastructure development by Transnet National Ports Authority (TNPA).
- Concerted efforts to address deep-seated and serious skills deficits and mismatches that impact on the capacity of the economy to grow faster and diversify more effectively.
- Careful and attentive management of the steel sector operational environment, to ensure stability and get the industry back on its feet across the entire value chain.

There are no quick-fix solutions to any of these problems; but incremental progress is being made. We have to emphasise again: all these (and all our other) industrial policy measures are having to be implemented in the most difficult of economic conditions. This context requires - if any further motivation were needed - an even greater commitment towards the serious and concerted collaborative effort we have been proposing: one which encompasses all national government departments; all other spheres of government; the private sector and labour, and all of our most important tertiary and research institutions.

To all those who are part of this effort and have contributed to this latest iteration of IPAP, I offer my deepest appreciation.



Dr Rob Davies MP
Minister: Trade and Industry



A MESSAGE FROM THE DIRECTOR GENERAL Lionel October

The Industrial Policy Action Plan is a product of the Economic Sectors, Employment and Infrastructure Development (ESEID) Cluster of the South African national government. Both its preparation and its implementation rest not just with **the dti** - although this department has a core responsibility in this regard - but with all the economic departments which are part of the cluster; and with many other outside contributors.

As you will have seen in Minister Rob Davies' Foreword, policy coherence and programme integration must lie at the heart of the national industrial effort. The overarching goal is to grow the economy; but to succeed in doing so we must ensure that all programmes and efforts in the primary and secondary economic sectors are aligned; and that this alignment is underpinned by close collaboration between government, business and labour. We need to work together as one to overcome existing barriers to growth and seize the opportunities that present themselves in 2016 and beyond. We all understand that we are on a long and difficult road towards the building of a diversified, growing economy with a robust industrial base.

The history of industrial development and economic growth amply demonstrate that there are no alternative 'quick-fix' solutions. The problems in our economy that IPAP describes and addresses are long-standing and structural in nature. Having identified them, the task becomes to work together more and more effectively to break free of their constraining hold and secure the strong, inclusive growth required to overcome unemployment and inequality in South Africa.

In this regard – and in addition to focused government-business-labour cooperation – there is also a special role for South Africa's state owned companies (SOCs) to play.

Many of the IPAP policy instruments – and in particular the lever of state procurement to promote local industrial development - have been designed in large measure for implementation by the SOCs – one good example being the Competitive Supplier Development Programme (CSDP).

Significant strides have already been made in aligning the work of the SOCs with the key policy thrusts of IPAP; but much more still needs to be done.

An important role is also assigned to South Africa's development finance institutions (DFIs): The Industrial Development Corporation (IDC), the Development Bank of South Africa (DBSA) and the Export Credit Insurance Company (ECIC). Significant progress has been achieved; but as this year's IPAP sets out to demonstrate, the work of these institutions must be particularly honed-in on getting secure long term investment into the productive sectors of the economy and strongly supporting SA's export drive.

IPAP 2016 exemplifies the spirit of constructive collaboration between many departments and institutions; but here I would like to make special mention of the Department of Science and Technology (DST), the Council for Scientific and Industrial Research (CSIR) and the Industrial Development Corporation (IDC). Their ongoing, committed support – which includes the preparation of specific chapters in IPAP 2016 - is invaluable, and greatly appreciated.

A special word of gratitude is extended to all **the dti** personnel who have worked tirelessly to produce this publication; and to the various departments, SOCs, DFIs and technical infrastructure institutions (SABS, NMISA, SANAS and NRCS). Thanks are also due to our partner research and tertiary institutions and to all those from business and labour who have made invaluable contributions to this iteration of IPAP. Their ongoing support is of great importance to the national industrial effort.

My profound appreciation to all concerned.

Lionel October
Director General
Department of Trade and Industry

IPAP IN CONTEXT: ECONOMIC ANALYSIS

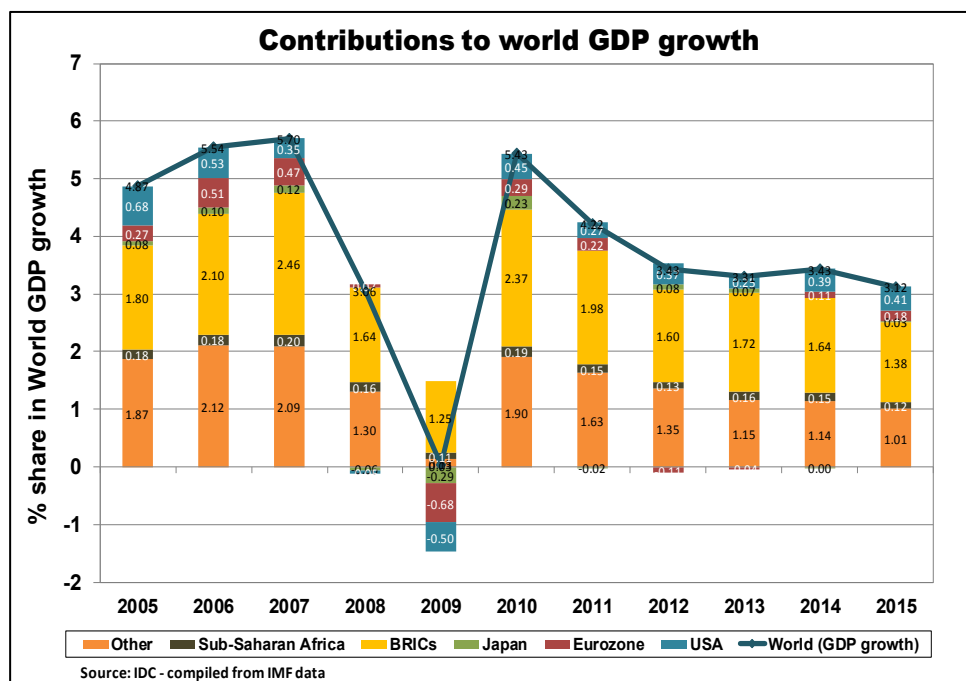
Global economy

The world economy has been performing substantially below its potential since the US financial crisis of 2007 and the ensuing Great Recession of 2008-09 - and continues to face considerable headwinds and uncertainty at the present time.

The developing economies have been supporting the global economic recovery since the Great Recession of 2009 through rapid expansion rates. More recently, however, they have experienced a decelerating growth momentum. The developed economies, which have flirted with recessionary conditions or subdued rates of growth post-crisis, are also being affected by increased instability in global markets.

World growth moderated further in 2015 towards an estimated 3.1%, the lowest level in the post-recession period.

Figure 1: World GDP growth: 2005-2015



The United States economy continues to expand at a sturdy pace and the economic recovery is proceeding steadily in Eurozone. However, the downside risks are still considerable in light of slowing world trade and fixed investment activity, highly inadequate employment creation and income distribution, as well as increased instability in global financial markets.

China’s slowdown has been largely in line with expectations. The world’s second largest economy is rebalancing its growth model to one more driven by domestic consumption instead of exports and fixed investment activity. However, this enormous structural change has been altering the country’s demand for mineral commodities, in the process affecting the performance of numerous emerging and developing economies.

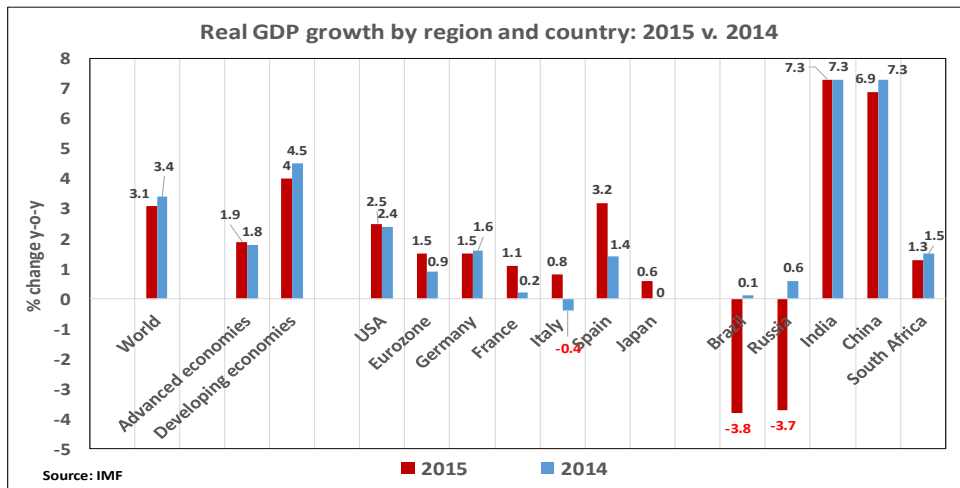
Most resource-based economies have been adversely affected by sharply lower and still downwardly trending industrial commodity prices and volume requirements. Trade imbalances have been widening, capital has been flowing outward in massive quantities and currencies have depreciated sharply. Facing larger fiscal deficits and rising inflationary pressures, many commodity-reliant economies have been forced to utilise policy instruments for stabilisation purposes, further compromising their growth performances.

Despite the growth moderation experienced in a number of emerging markets and developing economies, their relative contribution to world GDP growth is still rising, albeit at a slower pace. In 2015, the BRICS economies expanded at a combined rate of 4.7%, contributing 1.4 percentage points, or roughly 44% to the overall world growth of 3.1%.

This aggregate figure is, however, deceptive. In reality, the BRICS contribution can be attributed almost exclusively to continuing strong growth in India and China – the latter now beginning to fall off. Recessionary conditions persist in Russia and Brazil, while South Africa is recording substantially slower rates of economic growth.

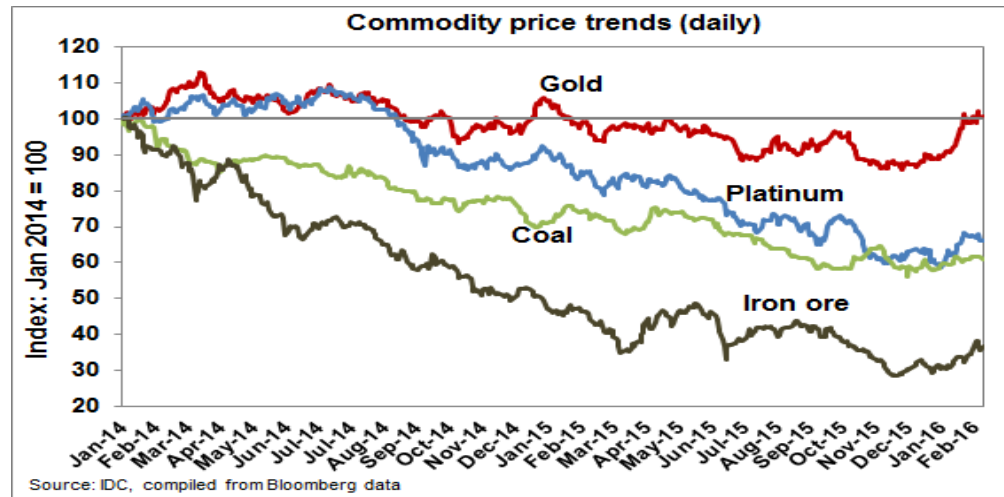
Falling commodity prices and export volumes, increased instability in financial and currency markets, investor uncertainty and lower foreign direct investment inflows, as well as fiscal constraints have weighed on Sub-Saharan Africa’s growth performance. Output growth in this region, which is a key market for South Africa’s exports, is estimated to have slowed to 3.5% in 2015, from an annual average of 5.6% from 2000 to 2014.

Figure 2: World GDP growth by region/country: 2014-2015



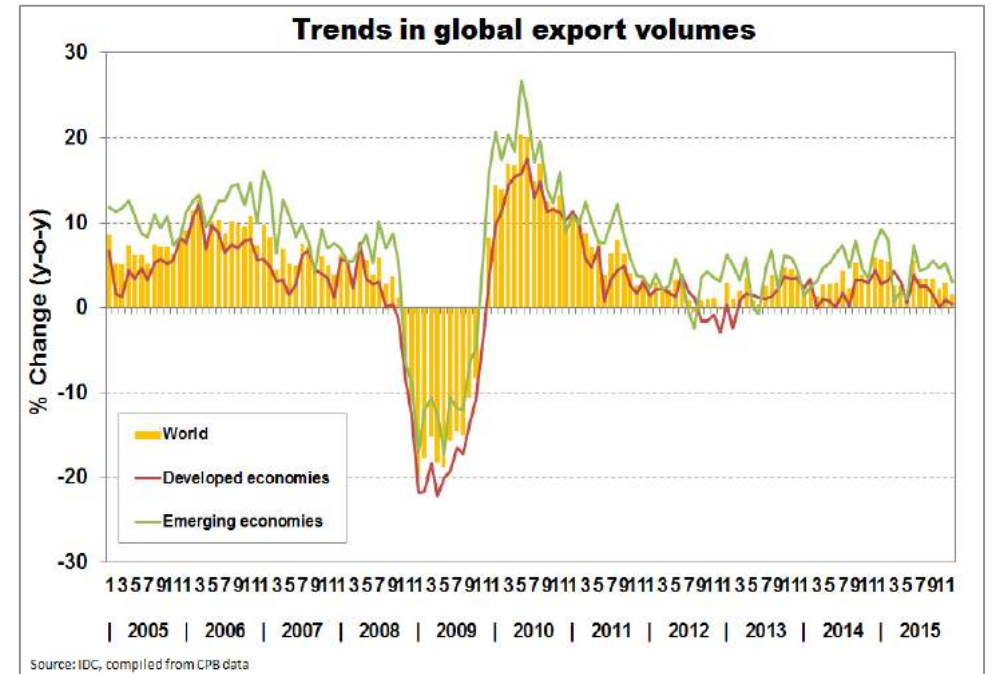
Sharply lower and still down-trending industrial commodity prices have not only been a reflection of softening demand globally, particularly from China, but also of over-supply by major producers in commodity markets including oil, industrial and base metals.

Figure 3: Commodity price trends: Jan 2014-Feb 2016



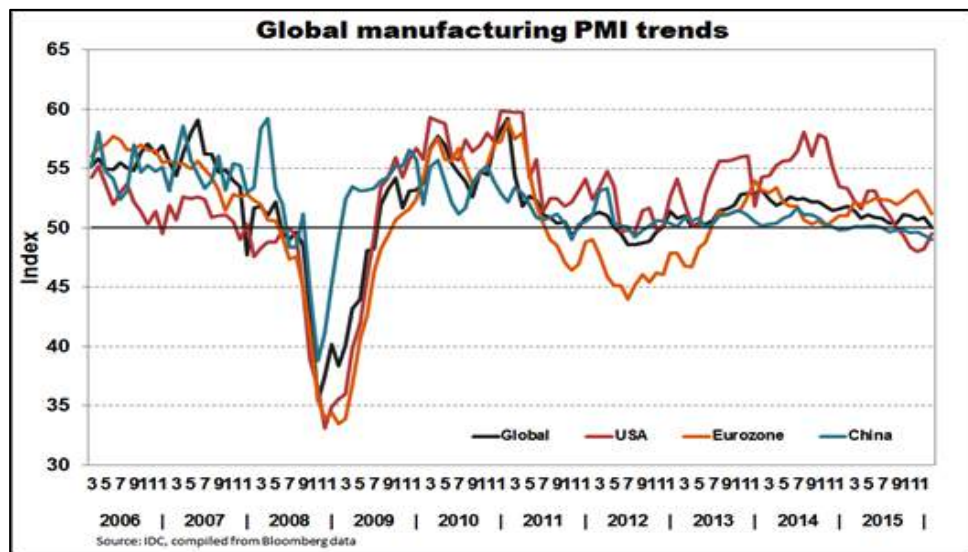
Global trade has slowed remarkably since the peak of the commodities' super-cycle around 2011. Subdued or weakening demand conditions in various regions of the world have contributed to this trend. Whereas global trade increased at roughly double the pace of world GDP in the 1990s and early 2000s, the two rates of expansion have been more or less in line in recent years.

Figure 4: Global export volumes: 2005-2015



World manufacturing output came under pressure during the course of 2015 as operating conditions deteriorated in many regions and countries around the globe. This was reflected in lower average readings for the purchasing managers' index (PMI) compared to the preceding two years.

Figure 5: Global manufacturing PMI by region/country: 2006-2015



In the United States, the PMI recently dipped below the crucial 50-point mark, indicating a contraction in manufacturing output, while employment creation also slowed. Contributing factors have included a very strong dollar, subdued global demand and lower levels of fixed investment, particularly in the oil sector. Manufacturing output in the Eurozone has expanded for 31 successive months, with the PMI reading towards the end of 2015 being the highest since April 2014. China's manufacturing sector is taking strain, with subdued rates of growth recorded over the past year. Weak demand, especially in external markets, is taking a toll on manufacturing activity.

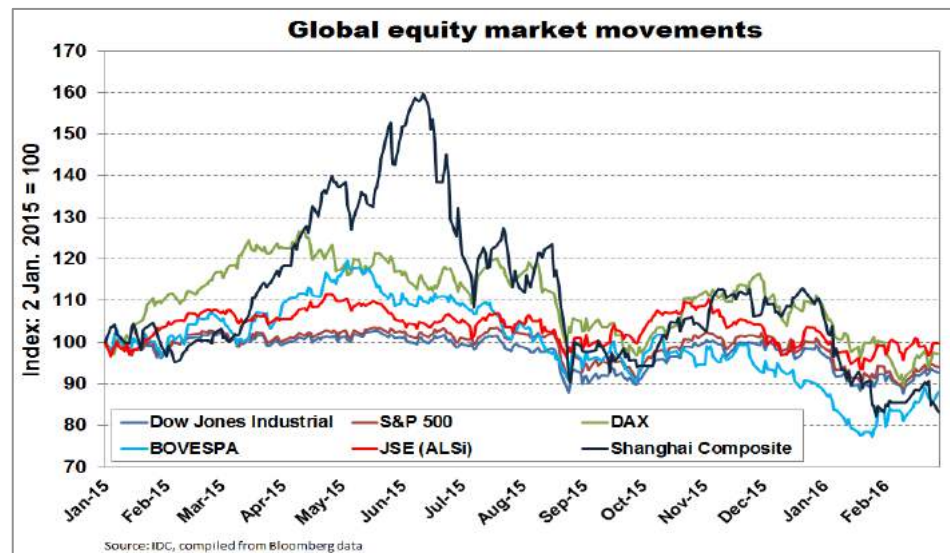
Fuelled by the massive liquidity injections and cheap credit associated with the quantitative easing programmes of advanced economies and record low interest rates, stock-market performances around the globe had long been completely out of line with the economic fundamentals. Inadequate regulation of global financial markets has amplified the volatility and dissociation from developments in the real economy.

Emerging market assets were expected to take the brunt of portfolio adjustments as the United States Federal Reserve eventually unwound its quantitative easing and started raising interest rates. As investor sentiment turned against assets perceived to be riskier, sharp stock-market corrections were widely anticipated to materialise, and emerging market currencies were expected to come under increasing pressure.

Net capital outflows from emerging markets have been estimated at USD735 billion in 2015 according to the Institute of International Finance, compared to outflows of USD111 billion in 2014. Total capital flows out of China were estimated at USD676 billion, underscored by concerns over a weakening currency and a slowing economy.

China's equity markets plummeted during the second semester of 2015 and, after a short-lived and mild recovery, the negative sentiment re-surfaced at the start of 2016, with spill-over effects onto other world markets, including the Johannesburg Stock Exchange. Bearish investor sentiment was driven by increasing apprehension over the outlook for the global economy, instability in currency markets, poor asset performance, commodity prices that have yet to bottom out – and which, according to the IMF, are likely to remain low until at least 2020 - as well as by heightening geopolitical risk.

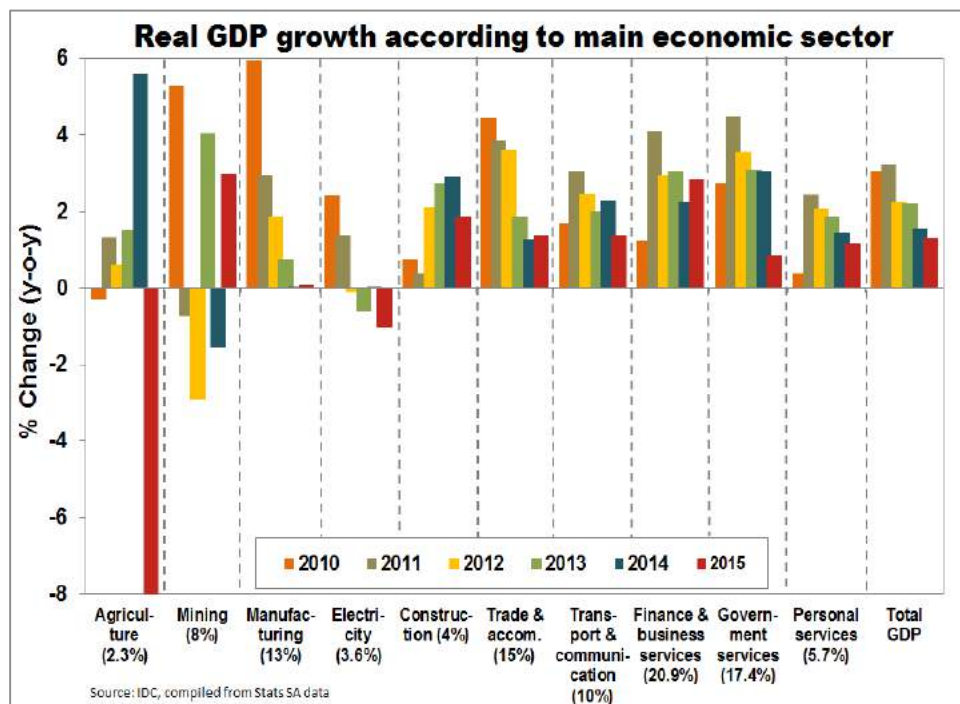
Figure 6: Global equity market movements Jan 2015-Feb 2016



South African economy

Successive “aftershocks” since the global recession, the high levels of uncertainty prevailing worldwide and several home-grown challenges have taken a toll on the South African economy. Growth slowed further in 2015 to 1.3%, with the weak performance being fairly broad-based at the sector level.

Figure 7: SA real GDP growth by sector: 2010-2015

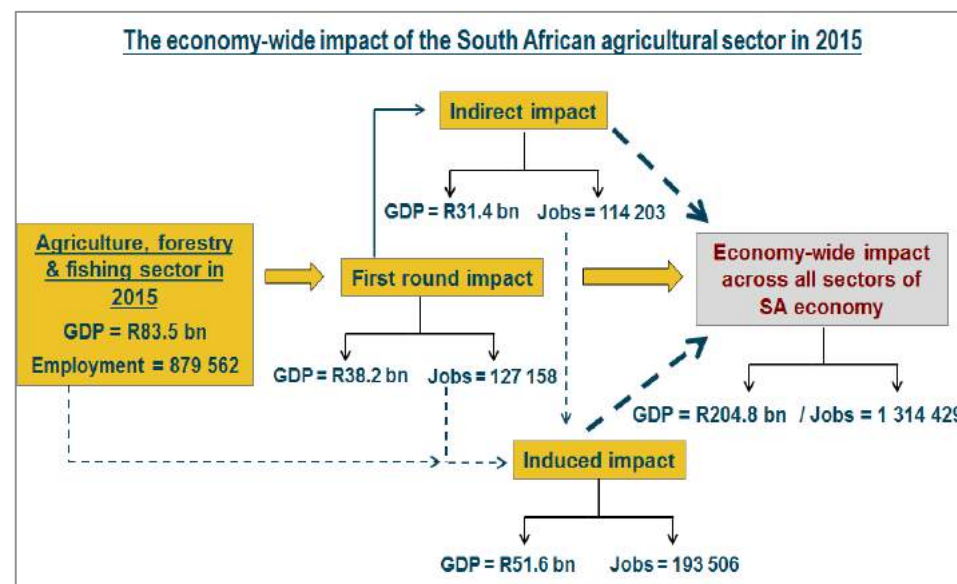


The worst drought on record (the average rainfall in 2015 was the lowest since 1904) has affected South Africa’s agricultural sector and rural populations particularly hard. The sector’s real GDP contracted by 8.4% in 2015. Decreases in the production of field crops such as maize, sunflower and sugar cane were the main contributors to the fall in the agricultural sector’s output.

Due to the strong linkages between agriculture and other sectors of the economy, the negative effects have extended beyond farming operations to downstream producers in a number of value chains (such as food processing) and many suppliers of goods and services.

Agriculture is a very important sector of the South African economy. It employed almost 880 000 people in 2015 and, through its linkages with other sectors of the economy, its overall contribution (direct and indirect) to national employment has been estimated at 1.35 million. In terms of gross domestic product, whereas its direct contribution amounted to R83.5 billion in 2015, the economy-wide impact was substantially larger at R204.8 billion.

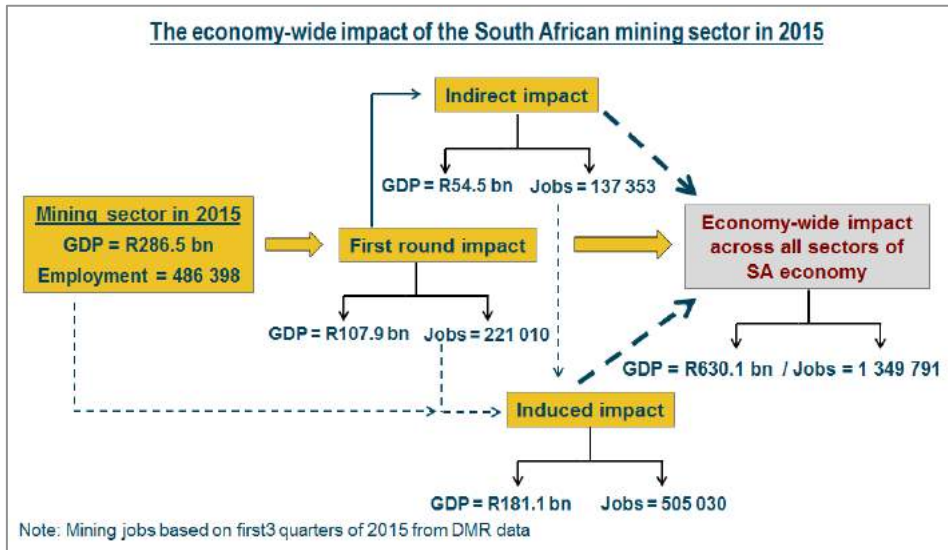
Figure 8: Agriculture in the SA economy: Direct, indirect and induced impacts



In the mining sector, the rebound in output recorded in 2015 was largely due to the recovery in the platinum group metals segment after the production stoppages due to industrial action in the first five months of 2014. Fixed investment in the mining sector declined by 2.3% in 2015, compared to a modest rise of 1.9% in 2014. Considering the depressed conditions in industrial commodity markets, further upheavals can be expected in the sector, with short- to medium term prospects remaining unfavourable.

The mining sector also plays an important role in the South African economy through its strong multiplier effects, with its overall contribution to national GDP and employment being substantially higher than its own direct impact, as illustrated in Figure 9 below.

Figure 9: Mining in the SA economy: Direct, indirect and induced impacts

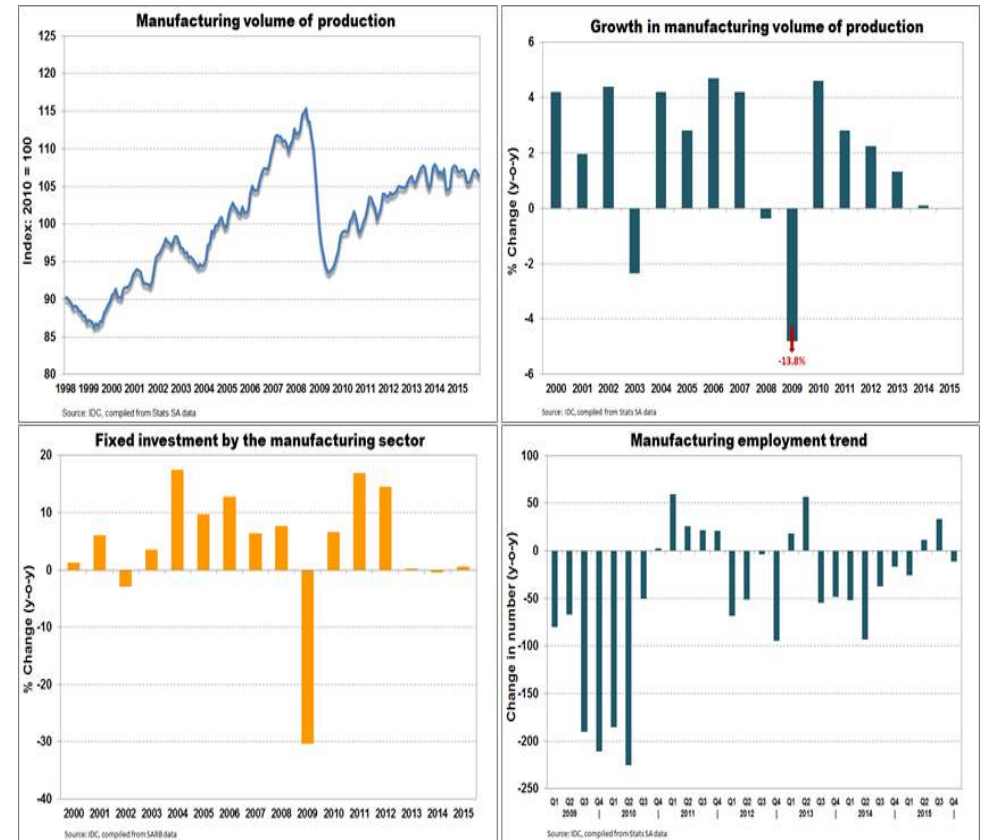


Difficult conditions in the mining sector are thus impacting on activity levels in several industries, specifically suppliers of goods (such as suppliers of machinery and equipment, chemicals, wood and wood products, fabricated metals and food products) and services (such as suppliers of transportation, logistics and catering services).

Manufacturing is a key sector of the South African economy. Over and above its direct contribution to overall economic activity (manufacturing accounted for 13.0% of the gross domestic product in 2015), the sector has strong linkages with the rest of the economy. The manufacturing sector is a critical supplier of intermediate and final consumption products, as well as an important source of demand for primary products (mineral and agricultural) and various services. Importantly, the manufacturing sector employs 1.74 million people and, through its relatively high multiplier effects, sustains a large number of indirect jobs throughout the economy. Furthermore, manufactured goods accounted for 60.5% of South Africa’s merchandise export basket in 2015.

The performance of the domestic manufacturing sector has been hindered in recent years by weak demand conditions in local and external markets, as well as by increased competition from imported products. The sector has experienced rising operational costs and its production activity has been negatively affected by infrastructure constraints (particularly electricity supply, transportation and logistics) and industrial action.

Figure 10: Manufacturing volumes, growth rates, investment and employment levels

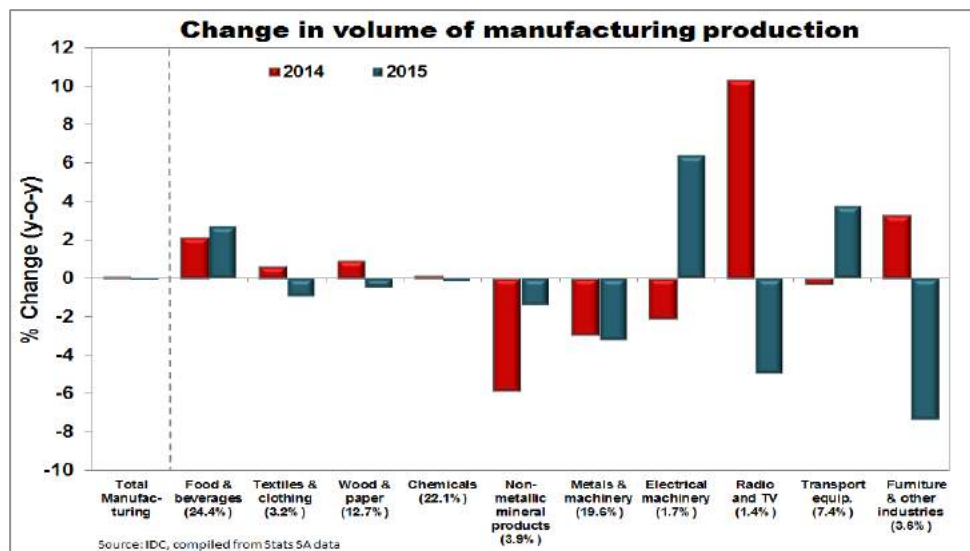


A weaker currency should, under normal circumstances, lead to an improved export performance as the external price competitiveness of locally manufactured products improves. However, with the Eurozone continuing to experience a very weak economic recovery, its import demand for SA manufactured goods has remained muted. In addition, important markets in Africa have been affected by the downturn in commodities, which has affected investment activity and overall import demand.

Growth in domestic demand has slowed considerably. South African households have had to curtail spending due to constrained budgets, high debt levels, rising interest rates and living costs, as well as difficult conditions in the labour market. The business sector, government and public enterprises have generally had to keep expenditure levels in check. As a result, growth in manufacturing output virtually ground to a halt in 2014 and 2015, and the sector remains under severe pressure. This is evidenced by a number of key indicators, as illustrated below. In light of a difficult operating environment, fixed investment activity in the manufacturing sector has recently declined in real terms.

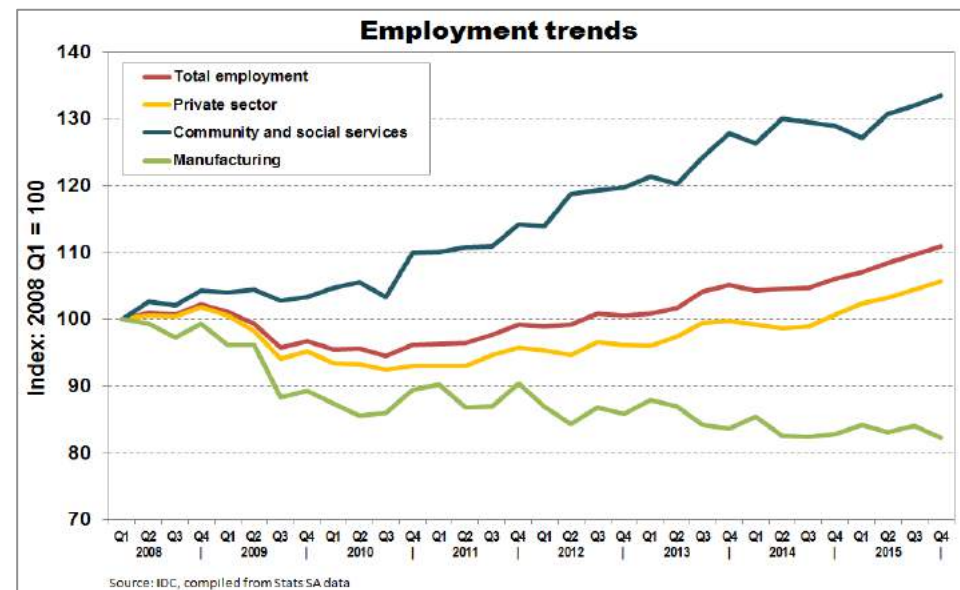
Several manufacturing sub-sectors are experiencing recessionary conditions (such as fabricated metal products, non-metallic mineral products, general purpose machinery, chemicals, furniture, footwear, textiles and clothing), while subdued rates of growth have been reported by many others.

Figure 11: Manufacturing sub-sectors' performance: 2014-2015



Considering these developments, the manufacturing sector shed 11,000 jobs during the course of 2015. Importantly, the declining employment trend appears to have been arrested. The sector presently accounts for 12.6% of formal employment in South Africa and, due to its strong linkages with numerous local suppliers of goods and services, supports a substantially larger number of job opportunities economy-wide.

Figure 12: Employment trends: 2008-2015

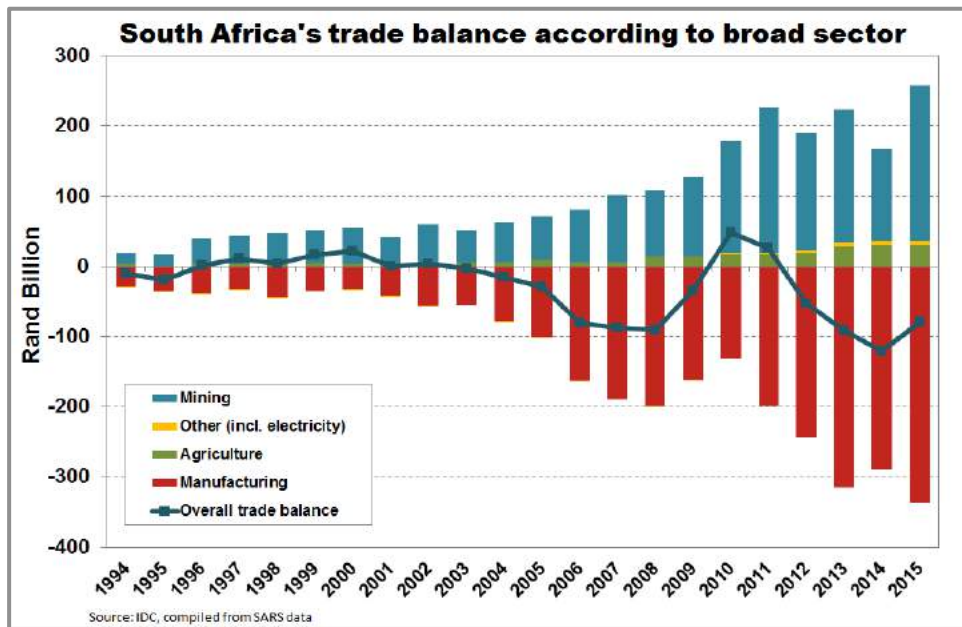


The difficult economic environment is being reflected in the manufacturing purchasing managers' index, which has been below the 50-point mark for six consecutive months and dropped to 43.5 points in January 2016.

Considering the short-term outlook for demand conditions both domestically and abroad, it is important for local manufacturers to expand their global reach beyond the traditional export markets. Diversification is imperative not only in terms of external markets but also in the composition of the manufactured export basket.

On the external trade front, South Africa recorded a trade deficit of R78.7 billion in 2015. This was an improvement on the R121 billion deficit recorded in the previous year.

Figure 13: Trade balance by broad sector: 1994-2015



Merchandise exports increased by a modest 5% in nominal value terms despite the significant depreciation of the rand. Weaker global demand, low commodity prices and adverse climatic conditions impacted on the country's export performance in 2015, although a weaker currency assisted in raising export revenues.

A lower overall trade deficit was mainly the result of a larger surplus in the mining category, as South Africa benefitted from the sharp drop in crude oil prices while import volumes declined by 8% in 2015. The import bill for crude oil decreased from R180 billion in 2014 to R102 billion in 2015. The agricultural category also made a positive contribution since its trade surplus remained virtually unchanged at R31 billion.

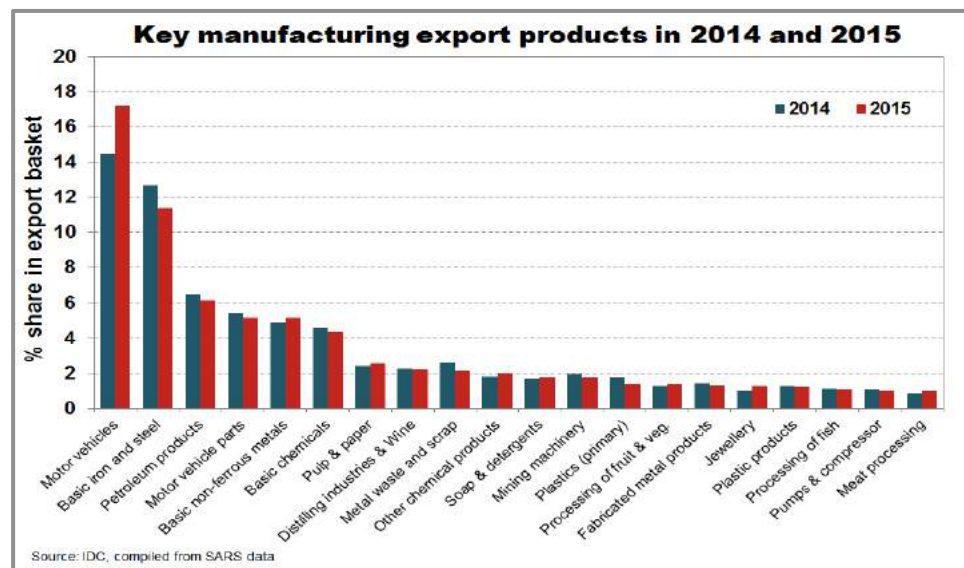
The manufacturing category, however, recorded an enormous trade deficit of about R340 billion, representing a R48 billion increase compared to 2014, as demand for imported products rose at a faster pace than exports of locally manufactured items.

Exports of motor vehicles and parts increased substantially to R140.4 billion, from R117.7 billion in 2014. Nevertheless, the automotive category still recorded a substantial trade deficit, with imports of motor vehicles and parts totalling R171 billion in 2015. In nominal value terms, exports of basic iron and steel, industrial chemicals, petroleum products (not crude) as well as fabricated metal products declined in 2015.

The top 10 manufactured export categories (out of a total of 120 categories) accounted for 58% of overall manufactured exports in 2015. Although this was an improvement on the 63% share recorded in 2014, it is still indicative of a high level of concentration. Manufactured exports were mainly destined for the rest of the African continent, the European Union and the United States.

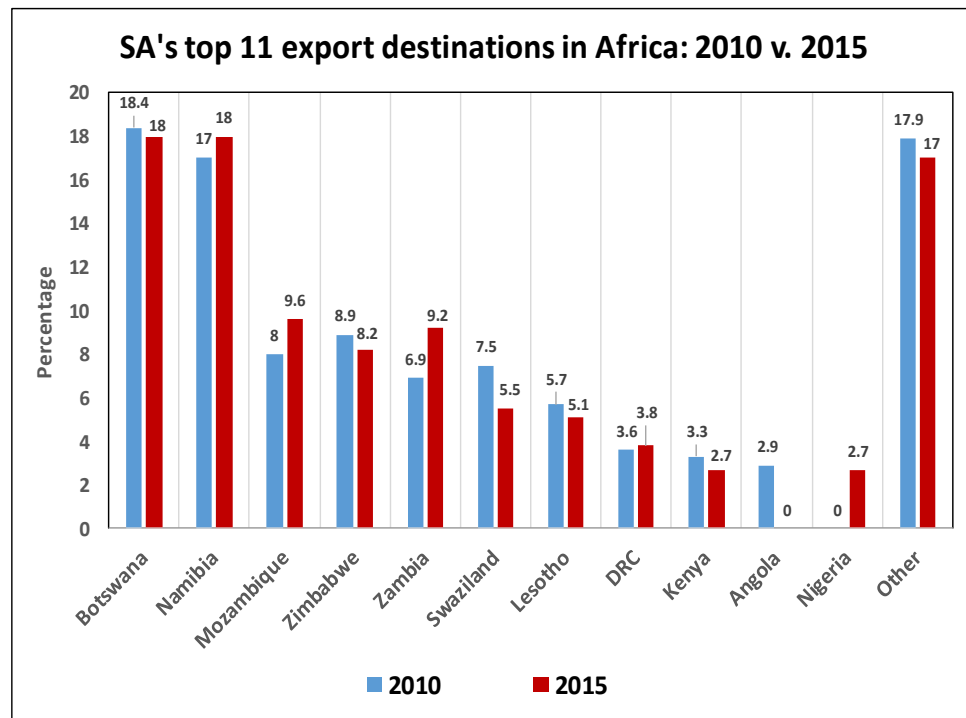
The manufactured export basket was dominated by motor vehicles with a 17.2% share of the total, as illustrated in the following chart. This highlights the positive impact of governmental support on the industry's development and export performance. Basic iron and steel (11.4%) and petroleum products (6.2%) followed as the second and third largest manufactured export categories in 2015. The lower share of the basic iron and steel category relative to 2014 is attributable to over-supplied global markets in the face of subdued demand.

Figure 14: Manufacturing exports by sub-sector: 2014-2015



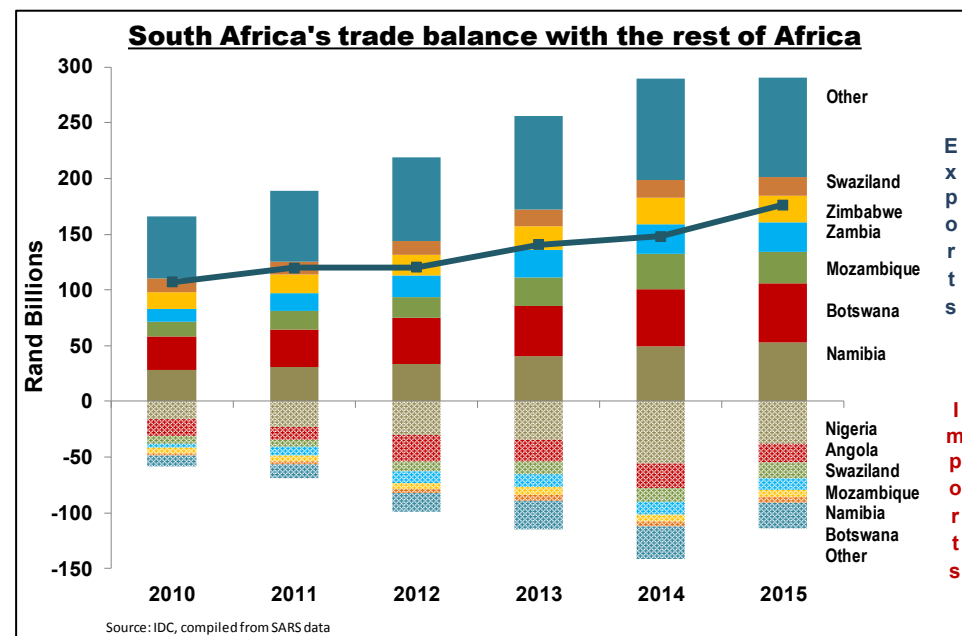
Almost 29% of South Africa’s merchandise exports in 2015 were sold in other African markets. The six leading African export markets – Botswana, Namibia, Mozambique, Zimbabwe, Zambia and Swaziland - accounted for 69% (R200 billion) of merchandise exports to the rest of the continent.

Figure 15: Major African export destinations: 2010 vs. 2015



South Africa has been running a substantial trade surplus in its trade with other African countries. This amounted to R176 billion in 2015, up from R107 billion in 2010. South Africa’s imports from other African economies totalled R113 billion in 2015, 80% of which having originated from the six African countries illustrated in Figure 16.

Figure 16: SA trade balance with Africa: 2010-2015



Manufactured products represented 87.4% (R254 billion) of South Africa’s merchandise exports to other African countries in 2015. These were quite diversified, with the leading export categories including non-electrical machinery and equipment (mostly agricultural and mining machinery and equipment); motor vehicles, parts and accessories; processed food; basic iron and steel products; chemicals and chemical products; fabricated metal products; petroleum and petroleum products; and electrical machinery and equipment.

The proportion claimed by manufactured goods in the export basket to the African continent is by far the largest relative share compared to other leading destinations for South African exports, as indicated in the following table.

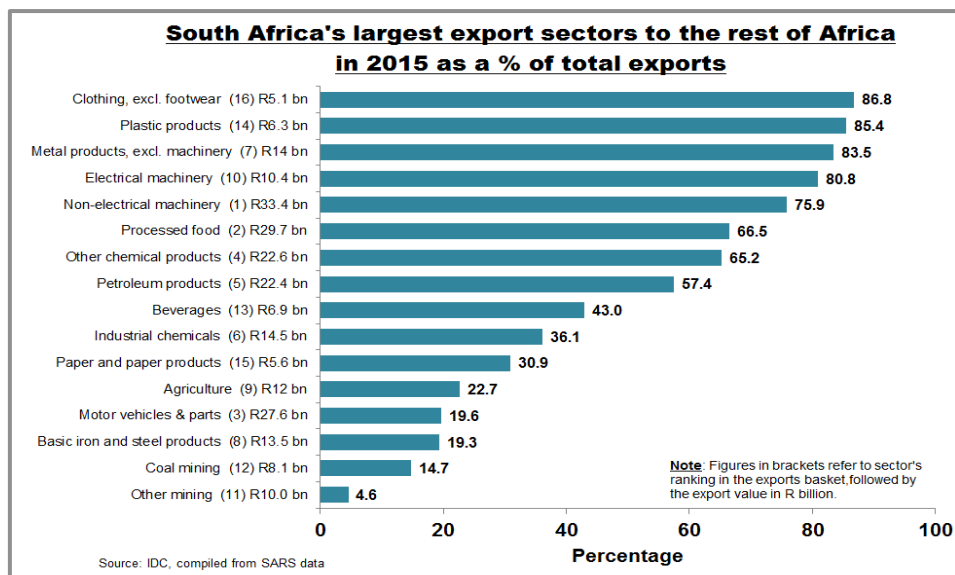
Table 1: SA export basket to selected regions/countries: 2015

South Africa's exports to selected countries/regions in 2015 (% share of exports)							
Broad sector	World (Total exports)	USA	European Union	Japan	China	Africa	Rest of World
Agriculture	5.2	2.5	8.9	1.6	3.5	4.1	5.6
Mining	33.3	29.2	27.1	59.9	62.2	6.2	52.2
Manufacturing	60.5	68.3	64.0	38.5	34.3	87.4	40.9
Other (incl. electricity)	1.0	0.0	0.0	0.0	0.0	2.3	1.2
Total exports	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: IDC

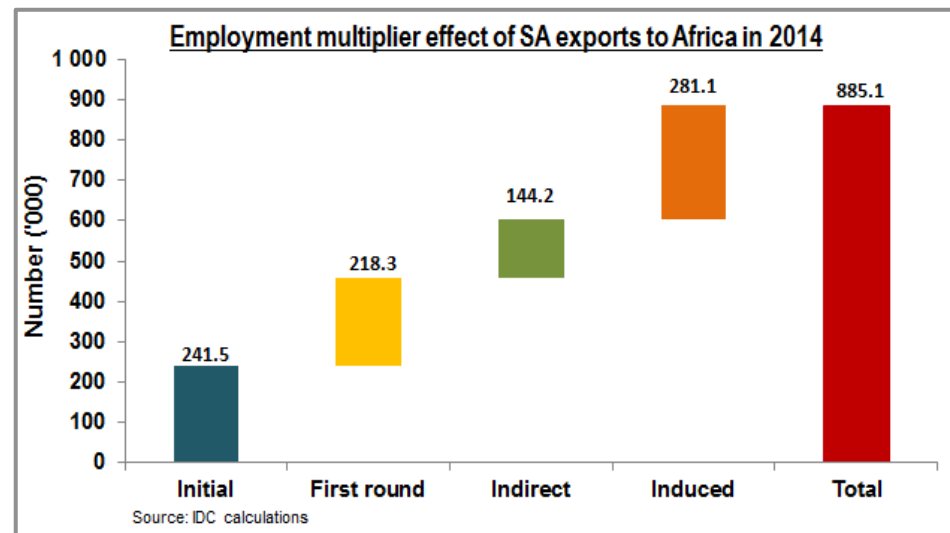
In addition, African markets accounted for 75.9%, (R33.4 bn) of South Africa's exports of non-electrical machinery and equipment in 2015. The continent is also an important market for exports of processed food (66.5% of all exports to the world), fabricated metal products (83.5%), electrical machinery and apparatus (80.8%) and petroleum products (57.4%). Although African markets accounted for 86.8% of SA's clothing exports in 2015, this sector only ranked in 16th place with R5.1 bn worth of exports.

Figure 17: SA exports to Africa as % of total exports – by sector in 2015



An estimated 241,500 direct jobs in South Africa were associated with exports to the African continent in 2014. Through inter-industry linkages (multiplier effects), the overall number of jobs associated with South African exports to other African markets has been estimated at around 885,000.

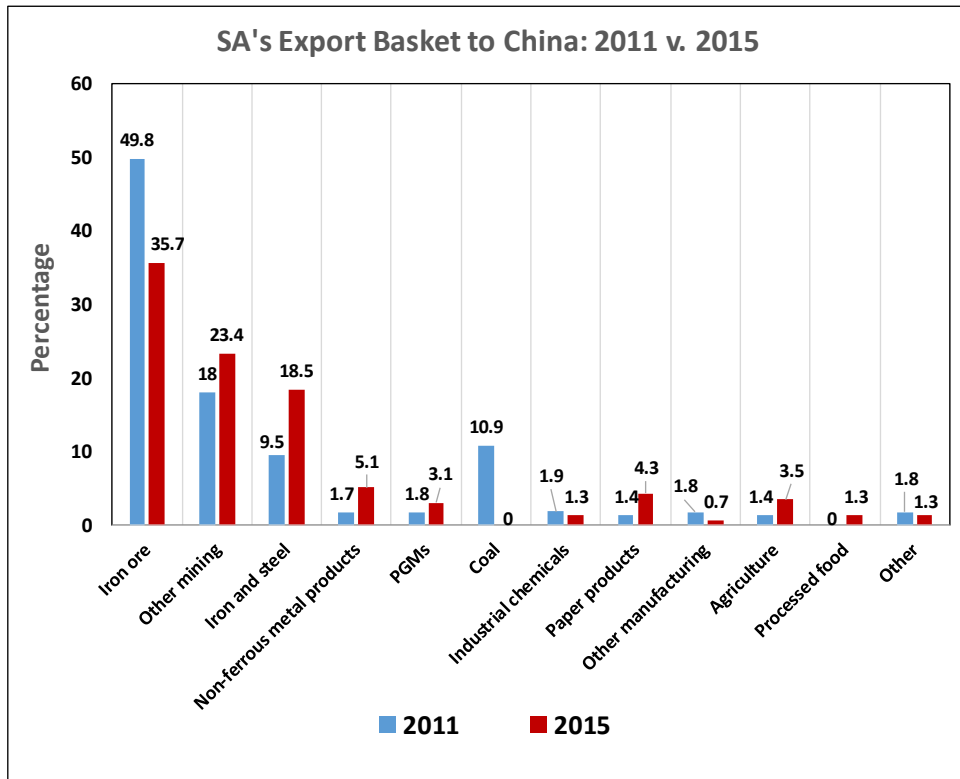
Figure 18: Employment multiplier effect of SA exports to Africa: 2014



Sub-Saharan Africa will remain one of the world's fastest growing regions in the foreseeable future. Accordingly, South Africa must promote its products in other African markets, thus enabling the expansion of local manufacturing production, raising fixed investment activity and creating employment opportunities.

At the individual country level, China is still the leading destination for South Africa's exports. The Chinese market accounted for 9.1% (R92.1 billion) of overall merchandise exports in 2015. However, the export basket to the world's second largest economy is overweight in commodities and base metals, with a combined contribution of almost 86% in 2015. Iron ore was the top export category with a 35.7% share of South Africa's export basket to China in 2015. This was followed by the "other" mining category (including chrome and manganese) with a 23.4% share, while iron and steel represented 18.5% of the export basket. Although 21% of South Africa's total non-gold mining exports were destined for China in 2015, this country claimed a mere 5.2% of overall manufactured exports.

Figure 19: Composition of SA's export basket to China: 2011 vs. 2015

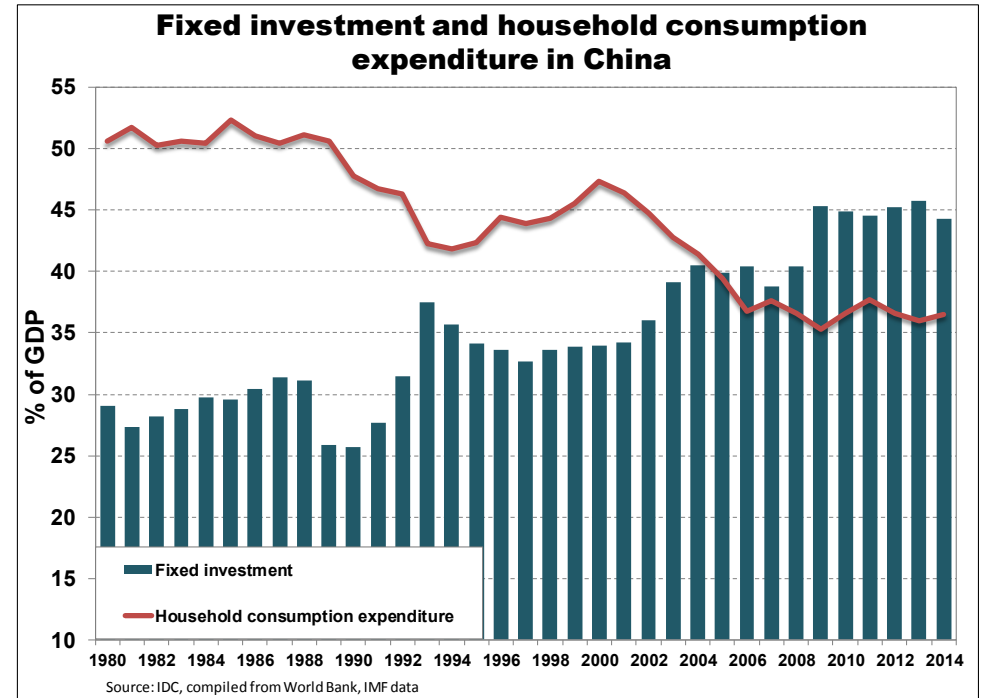


The effect of plummeting commodity prices and weaker Chinese import demand has been particularly detrimental for the domestic mining sector. The relative share of iron ore exports dropped from almost 50% in 2011 to 36% by 2015, with export values falling from R45 billion to R33 billion. The iron ore price fell by 67% in average annual terms over this period, from USD168 to USD55 per ton.

Fixed investment activity, largely infrastructure-related, has been a key driver of China's impressive growth over the past two decades. The relative contribution of fixed investment spending to overall GDP has thus risen over the years, peaking at around 45% more recently. The contribution made by household expenditure to China's GDP, on the other hand, declined from more than 50% in the 1980s to approximately 36% by 2014.

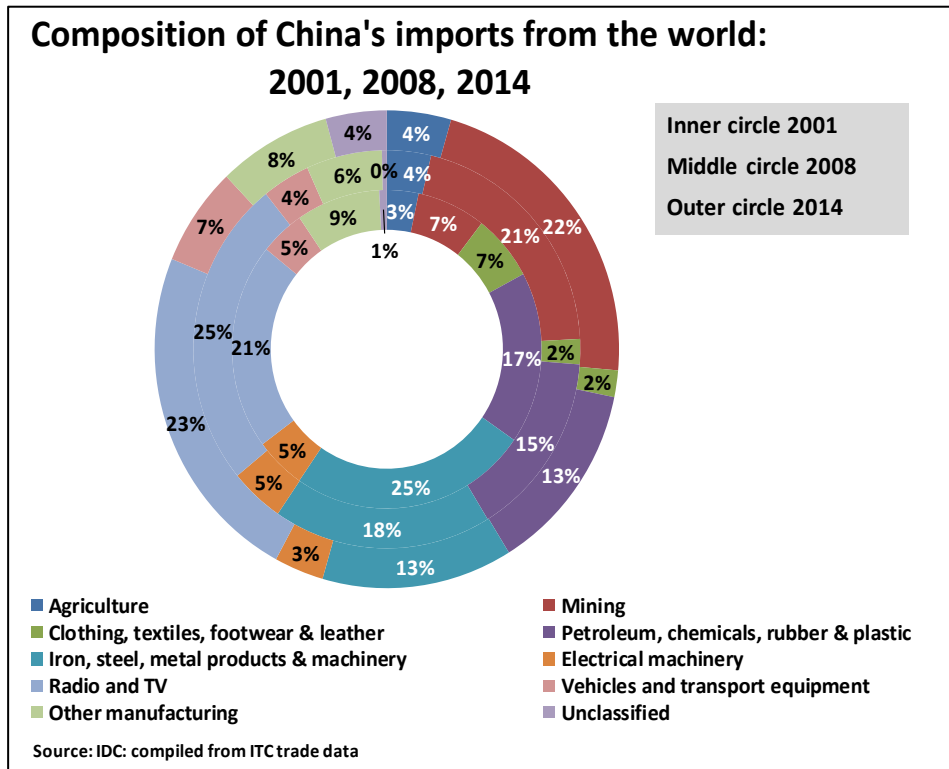
The reorientation of China's economic model towards domestic consumption is reflected in the stabilisation of the two individual trends over the past five years, as illustrated in the chart below.

Figure 20: Fixed investment and household consumption in China: 1980-2014



Despite the rising share of mining commodities within China's import basket from the world at large (refer to the chart below) since the turn of the millennium, a number of import categories recorded gradual gains. These include radio, TV and communications equipment; vehicles and transport equipment; and agricultural products. However, agricultural products and processed food represented very small shares of South Africa's export basket to China in 2015, at 3.5% and 1.3% respectively.

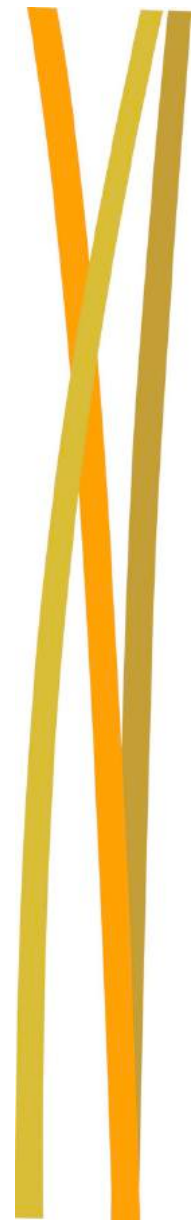
Figure 21: Composition of China's import basket: 2001 vs. 2008 vs. 2014



Looking ahead, China's changing growth model will radically alter its import requirements. This will provide opportunities for global producers to focus on the manufacturing of many consumer and intermediate products destined for this massive market. The quantum and composition of China's import demand for industrial commodities is also changing rapidly. Furthermore, the swift rise in production costs in China, traditionally referred to as the "workshop of the world", are opening up new opportunities for manufacturing capacity in other emerging or developing economies.

South Africa's business sector must gear itself to benefit from such developments and opportunities.

IPAP 2015 - 2016 ACHIEVEMENT HIGHLIGHTS



ACHIEVEMENT HIGHLIGHTS

The highlights listed below represent a cross-section of achievements, measured against a set of key indicators – investment, productivity improvements, domestic and global competitiveness, exports and employment (retention and creation).

What these highlights affirm and underline is the following: industrial policy can succeed (and has been demonstrated to succeed in South Africa) when adequately resourced, grounded in rigorous research and programme design and implemented through close collaboration between the public and private sector. The experience and lessons learned in securing these achievements should be consolidated and used as a basis for cascading the appropriate policy levers across other sectors of the manufacturing economy.

SECTORAL HIGHLIGHTS

1. Automotive

From the inception of IPAP to date, the SA government has invested more than R25 bn in the automotive industry.

The South African automotive industry's export earnings for 2014 increased by 12.7%, to a record R115.7-bn, compared with the R102.7-bn reported in 2013.

The year 2015 was notable for a steady stream of new investments by automotive OEMs in their South African plants, often with explicit acknowledgement being given to the encouragement received under the Automotive Production and Development Programme (APDP).

Highlights of the year included the following:

- In February 2016, German motor company **Daimler** announced its decision to make South Africa the regional base for its new global truck and bus strategy. This is expected to bring significant business to **Mercedes Benz SA** and ultimately result in new investments in its East London plant. The creation of the new Southern African Region will set South Africa up as the service base for all Daimler brands in SA, Namibia, Botswana, Swaziland, Lesotho, Mozambique, Zimbabwe, Zambia and Malawi.
- **Volkswagen Group (VWSA)** indicated that it will invest more than R4.5 billion by 2017 for new models and infrastructure at its Uitenhage vehicles factory.



Volkswagen production line, Uitenhage

- **BMW Group South Africa** has announced an investment of R6 billion into its Rosslyn Plant in Pretoria, earmarked for production of the next generation of the BMW X3, which will be sold locally and exported internationally.
- **An Iveco-Larimar** joint venture has started production of trucks and buses on its R600 million production plant in Rosslyn. This plant will assemble CKD kits of Iveco trucks and buses and will employ 1,000 workers.
- In March 2015, **Toyota Motor SA** started CKD production of the Quantum minibus in its Durban facility. The project cost was R500 million, with 270 direct jobs created and a further 50 new components to be sourced locally.
- **Nissan South Africa** announced that its Rosslyn assembly plant is to become the African manufacturing base for the new Datsun Go. The re-launch of Datsun in South Africa has created about 225 new jobs.
- On April 6, 2016, **the Ford Motor Company of SA** committed to invest R2.5 bn in further expansion of its Silverton, Pretoria plant – *this, on the back of a R699 million incentive provided by the APDP* - which will create a further 1,200 new jobs. The investment will lead to local production of the new Everest 7-seater SUV and expansion of the Ranger pickup programme, as part of Ford's overall growth strategy for Africa and the Middle East - in the words of Ford Executive

Vice President Jim Farley, “positioning SA as a strategic export base for the entire continental region”.

- **Goodyear South Africa** will invest R670-million to increase production of high-value-added (HVA) consumer tyres at its Uitenhage manufacturing plant, relocating the plant’s production of medium radial truck tyres to other plants across the company’s facilities in Europe, the Middle East and Africa.
- Japanese-listed company **Sumitomo Rubber Industries** announced the second and final phase of a R2 bn investment. Phase-two expansion is valued at an estimated R910 m and focuses on the manufacture of truck and bus tyres. The company received R300m through **the dti**’s Automotive Incentive Scheme (AIS). This latest tranche of investment will ensure that the Ladysmith factory retains its current 900 jobs and creates an additional 300 jobs.
- **Volvo** has invested R60 million in a regional parts and distribution centre in Benoni, Ekurhuleni. This facility will consolidate all their logistical operations in Sub-Saharan Africa.
- In December 2015, **Beijing Automobile International Corporation** announced an investment of R11 billion in a completely knocked down (CKD) vehicle manufacturing plant in South Africa. The investment will create about 2,500 direct jobs and 7,500 indirect jobs.

Since the implementation of local content regulations more than 700 bus bodies have been manufactured and buses assembled in South Africa as part of a drive to improve inner-city public transport. Beneficiaries to date includes:

- Busmark 2000: received an order to assemble 700 buses for the City of Cape Town;
- Mercedes-Benz SA: successful tender to provide 134 buses for phase 1B of Johannesburg’s Rea Vaya BRT system;
- Volvo SA: successful tender to provide 40 new vehicles to the City of Cape Town for its extended MyCiti bus routes, at a cost of R180m;
- MAN: supplying 80 new commuter buses to Great North Transport, Limpopo’s largest public transit operator.

2. Clothing, textiles, leather and footwear (CTLF)

the dti’s support for the sector since inception of the programme amounts to R3.5 billion in incentives, with strong reciprocal conditions. 67,000 jobs have been saved and an estimated 6,000 new decent, sustainable jobs have been created. Exports in the leather and footwear sector have begun to increase.



Companies participating in **the dti**’s Production Incentive Programme (PIP) have been enabled to substantially upgrade their production processes through the introduction of state-of-the-art new technologies and have demonstrated strongly improved competitiveness in local, regional and international markets. A study conducted through the Industrial Development Corporation demonstrates that companies in the programme have achieved significantly higher levels of production, productivity and competitiveness.

The grants made available by **the dti** under The Competitiveness Improvement Programme (CIP) have supported the development of scalable national cluster organisations and collaborative (vertical, sub-national) retail clusters. These have supported growing localisation and domestic supplier development. Two national and 5 sub-national clusters have been created.

Transversal tenders managed and awarded by the National Treasury increased from a total value of R237,9 million in the 2014/5 FY to R264,4 million from the 1 April to 31 Dec 2015 period. These tenders complied with local content requirements and were of substantial value, as indicated in the table below.

Table 2: Local content requirements

	Blankets	Footwear	Fabric & Towels	Clothing	Total
	RT26	RT59	RT60	RT64	Rand
2013	27,068,998	83,843,963	61,201,125	22,646,581	194,760,666
2014	18,392,182	99,407,033	52,955,501	67,200,398	237,955,114
2015	24,531,464	129,636,049	26,935,400	83,226,073	264,328,985

Other notable positives for the year included:

- Strong growth in Leather and Leather Goods exports - up by 60% from 2011 to 2014, with substantial improvements in productivity over the period. 22 new factories were opened in this sector in the 2014/15 financial year.
- Since Oct 2015, a further four new factories have been established: Ariana Footwear, Ezakeni, Ladysmith, KZN; Prizm Footwear, Durban; Safety Boys, Chatsworth, Durban; Mystic Eyes, Chatsworth, Durban.
- Recently a well-established local brand called Soviet has taken a 51% stake by investing R18 million in the Jaraf/Kayo Shoes (a footwear manufacturer with capacity to produce moccasins and vulcanized rubber fashion shoes).
- The Foschini Group's local supply chain development and Quick Response (QR) initiative - a prime example of a South African company applying world-class manufacturing principles with the support of **the dti**. This includes important in-house training at its Maitland facility for 560 workers.
- The opening of a R150 million eco-friendly blanket manufacturing factory in Boksburg, creating 1 000 direct jobs.

Summing up:

It was not long ago that the CTFL sector was labelled a 'sunset sector' which should be left to implode in the face of the very cold winds of global competition, especially from low-cost production centres enjoying enormous economy-of-scale advantages.

Instead, the industry has survived and expanded, as a direct result of the close collaborative effort between government and the private sector, underpinned by a range of procurement and incentive measures offered by **the dti**. The rebound of the CTFL sector is an object lesson in what can and must be done to embed sustainable competitiveness improvements along the entire value chain.

3. Metal fabrication, capital and rail transport equipment

- In March 2014 Transnet awarded a R50 billion contract for the building of 1064 locomotives to four global original equipment manufacturers (OEMs). The award of this tender had stringent local content, skills development and training commitments.
 - All the locomotives except 70 are to be built at Transnet Engineering's plants in Koedoespoort, Pretoria and Durban. The tender is split between the four major OEMs. This means that SA has begun the process to develop first, second and third tier suppliers in the locomotive and rolling stock supply chain and to rebuild its strategic industrial rail capabilities.
 - For example, a recent investor IEC Holden - part of the local supply chain - assembled the first South African-made AC traction motors for the TFR23E project, demonstrating that SA has developed significant capabilities in the rail sector.
- Grindrod Rail showcased its new SA-manufactured offering, the AC diesel-electric shunting locomotive at the 2015 Africa Rail Conference and Exhibition. Grindrod is a major exporter of rail equipment to Africa.
- The Gibela Rail Transport Consortium (Gibela) commenced



Grindrod AC locomotive

building a R1 billion factory complex at Dunnottar, Ekurhuleni, during the third quarter of 2015. The factory was established to manufacture trains for the State-owned Passenger Rail Agency of South Africa (PRASA), in line with a R51 billion contract for the supply of 600 new trains over 10 years.

- The Dunnottar facility will also accommodate local component suppliers and is expected to provide employment for at least 1,500 people. 19,000 artisans will be trained as part of the Gibela programme.
- South African cables manufacturer Aberdare Cables launched its new production line at its Pietermaritzburg manufacturing plant. The new line, supported by **the dti**'s Designation Programme, will produce cables for PRASA and Transnet's combined R100 billion locomotive build programmes.
- Product development interventions at the Duvha Foundry resulted in the foundry being awarded a large rail bogie castings supply contract by Transnet Engineering, under the China South Rail (CSR) work-packages. This black-owned ferrous foundry started up in 2012 and mainly supplies the rail and valves industry.
- Product development interventions at the Guestro Foundry resulted in the foundry being awarded a major contract for the supply of castings components to Knorr-Bremse, a braking system supplier to all 4 OEMs in the TRF 1064 locomotive project.
- Helio Microfinish Foundry was assisted with tooling for patterns and design simulation interventions that enabled the casting of a hollow steel tube instead of a solid rod that required drilling. The new casting process resulted in significant reduction in both material and operational costs (down by a third), while production yield improved from 40% to 80%. This NFTN intervention averted the closure of the foundry, saving 130 jobs.
- In August 2015 cutting tools manufacturer Renlaw announced a yearly growth increase of 35%, owing to reinvestment of funds granted under the MCEP - emphasising the potential for expansion in what is known to be an import-dominated sector.
- As a result of an obligation from the Gautrain tender, Bombardier Transportation made a loan of R60 million at prime less 5% for the term of the loan to DCD Ring-rollers, a local company based in Ekurhuleni that manufactures railway tyres, flanges and seamless rings. The investment enabled DCD Ring-rollers to expand

its existing heat treatment and machining facility by (i) moving the company's machine shop to a new site (ii) buying new machines and equipment and (iii) installing new normalising furnaces and heat treatment facilities in the existing building. This expansion has enabled the company to increase its output by 40% - of which 90% is for export markets.

- **the dti** launched a R100 million gold loan scheme to support large jewellery manufacturers.
- Other products designated during the financial year in the sector, pushing up aggregate demand, were: transformers and associated equipment; power pylons; line hardware; lattice towers and masts; street lighting poles and conveyance pipes.

Summing up:

Very significant progress has been registered this year in the rail sector, securing investment and scaling up industry capabilities using a range of policy measures. These include the Competitive Supplier Development Programme (CSDP) and the deployment of incentives, industrial financing and technology support through the DST.

In short, the difficult process of rebuilding SA's domestic rail production capacity is now well on the way towards putting SA in a strong position to become a regional rail production hub, with very significant benefits for the economy.

4. Agro-processing

AGRO-PROCESSING HIGHLIGHTS

Food processing: The food processing sub-sector has continued to show resilience through the hard times since the 2008 economic meltdown. It is one of the largest domestic manufacturing sectors by employment, providing an estimated of 252,189 jobs in 2014 (as compared to 207,893 in 2013). This is, however, against a backdrop of job losses in some sub-sectors. In terms of value added, the sector contributes 21% of total MVA, whilst also contributing 19% of total manufacturing employment.

Highlights of the year 2015 included the following:

- *Chicory production:* The Minister of Trade and Industry, Dr Rob Davies, together with a group of Eastern Cape MECs, signed a Memorandum of Understanding

with the Chief Executive Officer of Nestlé South Africa to establish self-sustainable and competitive businesses in the production of chicory in South Africa.

Nestlé has committed to help revive South Africa's chicory industry by committing to increase its local sourcing of the plant for use in its Nescafé Ricoffy (chicory-based) coffee brand, in a move that will create 870 new jobs by 2019. Nestlé has committed to buying chicory from local farmers at a competitive price and to providing them with technical support and lab-based testing services.

Through this MOU, Nestlé will work with national and provincial authorities to encourage more farmers to grow the plant, helping them to generate an income which will in turn play a part in helping to revitalise local rural economies.

- *Ice Cream:* A R600 million *Unilever* Ice Cream factory was opened in Midrand, supported by **the dti** to a value of R350 million. The factory will help to create more demand for local ingredients - and hence supplier inputs – and will open up significant new opportunities for smaller vendors to enter into the value chain.
- *Grain staples:* FABCOS was funded by **the dti** to establish and market the *Home Grown* brand. The brand (bread, mealie meal) has become well-established and has continued to be regularly stocked by leading retailers.
- *Fruit and veg:* **the dti** facilitated the sourcing of local supplies of fruit and vegetables for *Living Harvest* to process. It also assisted and continues to support Living Harvest to negotiate markets with the hospitality industry.
- *Cassava:* The Cassava Programme is a vehicle designed to improve the productivity, profitability and market access of small-scale and emerging farmers through support provided by the *Transfer of Technology Innovation Agency* (TIA). The aim is to create an enabling environment that can progressively close all the gaps in the value chain. The main government



agencies involved are **the dti**, the Department of Agriculture Forestry & Fisheries (DAFF) and the Department of Rural Development & Land Reform (DRDLR).

- *Aquaculture:* **the dti** collaborated with the Limpopo Department of Agriculture and the University of Venda to provide training to 33 small-scale aquaculture producers. The initiative was launched in response to *Operation Phakisa's* call to significantly ramp up production in both marine and freshwater aquaculture. The small companies were assisted with production techniques, value chain development and marketing standards, with a particular view to upping their scale of production on a long-term-sustainable basis.
- *Small enterprise development:* Through a partnership between DAFF and EDD, MoUs have been signed with Tiger Brands, Nestlé and Massmart for enterprise development from the grass-roots upward.
- *Norms and standards:* In terms of compliance and regulatory frameworks, DAFF signed a MoA with SABS to assist food processors to comply with production norms and standards for market requirements. The project was funded to a value of R 3 million.

Other agro-processing sub-sectors:

- *Wood:* G. Bison - the wood subsidiary of listed KAP International - is set to invest R600 million in increasing capacity at its Mpumalanga operation and creating a new state-of-the-art continuous production press.
- *Furniture design:* In partnership with SABS Design Institute, the IDC and Furntech, **the dti** held its 2nd annual National Furniture Design Competition on 18 February 2016. The competition forms part of the IPAP Furniture Design Programme - which includes the development of a furniture design qualification – and is seen as an immediate measure to promote and encourage interest in the furniture industry at large. The Minister was on hand to present the award to the winning designer of 2016 and to encourage all present to take the competition to higher levels in the coming years.

5. Business process services (BPS)

South Africa's Business Process Services (BPS) sector continues to maintain its status as a leading global outsourcing destination, whilst steadily moving up the value chain in terms of service offerings. BPS already accounts for 200,000 jobs nationally and is one of the country's fastest growing sectors, with double digit growth over the past five years.



By the end of 2015 a further 18,000 jobs had been created as a direct result of the BPS incentive, representing a growth rate of 26% per annum.

In addition, under the *Monyetla Work-Readiness Programme* - supported by the National Skills Fund and Jobs Fund - more than 13,000 unemployed youth have been put through sector-specific training by various operators countrywide.

Highlights for the sector include:

- Investment promotion initiatives have resulted in new brands entering South Africa such as Foxtell, Coles, Vodafone, Easyjet, N Power, Quatas and Royal Mail Group. Major new investments by American multinational EXL, CCI in KwaZulu-Natal, and from Webhelp, which is providing services to UK company Vodaphone.
- A full-service call centre established in Umhlanga, KwaZulu-Natal will create more than 1,000 jobs over 18 months.
- The EXL Cape Town delivery centre, which currently employs 60 people, was officially commissioned by Trade and Industry Minister Rob Davies in the past year. The centre is expected to create up to 3,000 jobs over the next three years.
- SA was again nominated as "Offshoring Destination of the Year" at the National Outsourcing Association (NOA) awards in the UK.

6. Film

- Between April and December 2015, 87 film and TV productions were supported by **the dti**, with an estimated total investment of R887 million, supporting 81 000 jobs along the value chain. This included significant support for emerging South African filmmakers
- With **the dti's** support, 8 productions were showcased at the 2015 Cannes Film Festival's Marche du Film (film market), which was held from 12 to 21 May 2015, including South African/Angolan action cop drama, *Dias Santana*, shot in Cape Town and Luanda.
- In conjunction with the National Film and Video Foundation, the Gauteng Film Commission and Africa Magic, **the dti** supported local feature films *Shushh* and *Ayanda* (which was screened at the 59th British Film Institute Festival in October 2015
- Other film projects funded by **the dti** were *Cuckold* (shot in Melville and supported by the South African Emerging Black Filmmakers Incentive Scheme) and *The Crash*, a 3D animation film project from Julia Smuts Louw (Sparks Flew Development Studio). This was accepted into the initial phase of the Triggerfish Story Lab, a script incubation programme launched in 2015 with the support of the Walt Disney Company and **the dti**.



Summing up:

Since **the dti's** introduction of its first film incentive programme in 2004, the film industry has spent R15.2 billion in South Africa.

Government support for these services sectors demonstrates the recognition that services sectors can and must play a role in growing the economy, linked as these sectors are to up and downstream manufacturing. Government support for both sectors has been a major contributory factor assisting these sub-sectors to become firmly entrenched on the global map for film production and business process services at the same time as providing strong support for local production, employment creation and high-grade training.

CASE STUDY: BIG PICTURE – OF KINGS AND PROPHETS



Renowned British Actor Ray Winstone in “Of Kings & Prophets”

Sue Blaine reports (Business Day, 29.02.16) – acknowledged with thanks:

“These people are fire-treated so they can go up in flames, says costume supervisor Stephen O’Rawe”.

There’s a battle tonight and O’Rawe is in the thick of it. He’s marshalling uniforms for three different tribes so that everything is ready when the 400-odd extras arrive to be dressed. The clothes of the various “soldiers” will catch alight in the midst of the fray — without the actors being crisped.

It’s dusty and hot in the bleached hills outside Durbanville in the Western Cape where **the American Broadcasting Corporation Studios’ (ABC’s) television series *Of Kings and Prophets*** is being filmed. It’s the largest ABC production yet to be filmed in SA.

Game of Thrones marked a new era in television drama: the TV spectacular. The Home Box Office (HBO) series has won 26 Primetime Emmy Awards and attracted record numbers of viewers and a broad international fan base.

Of Kings and Prophets, which traces the rise of a shepherd, David, to become the Israelites’ most famous king, is ABC’s answer to the rise of these superseries.

Ray Winstone stars as Saul, the battle-weary, paranoid and violent king of Israel,

The tale is told through the eyes of Samuel, a powerful and enigmatic, yet resentful, prophet who many years ago anointed Saul as king. The young, resourceful shepherd David, who has big aspirations, rounds out the trio of characters who are on a collision course with destiny, which will test their beliefs and leave Israel forever changed.

The series is being filmed at two Western Cape locations — interior scenes on sets built in an old brandy warehouse in Stellenbosch, and the city of Gibeah — the Israelites’ pre-Jerusalem capital — on the Durbanville hillside.

“It’s one of the biggest productions ever for SA,” says production designer Johnny Breedt, a South African who worked on the film adaptation of Nelson Mandela’s Long Walk to Freedom. “It’s by far one of the biggest sets built in SA, and it’s all built by South Africans,” he says of Gibeah. “I have never seen such an enormous crew,” says Chris Brancato, a Hollywood writer and producer of several films and television programmes, who is executive producer of the series. He has been floored by the “entire mix of races; camera, sound, transport”.

As well as the set building — South Africans were responsible for a lot of what was created in Stellenbosch too — the costume design and most other aspects of production have been done by South Africans.

That’s quite something, considering this is the first large ABC production filmed in SA — direct production spend in SA is R490m, of which R391m is expenditure that qualifies for a 20% rebate from the South African government. This is part of the Department of Trade and Industry’s plan to encourage the local film industry.

The filming experience has wowed Hollywood professionals. “You have here a country that’s gaining a reputation for production expertise,” says Brancato. “The crew was a plus — their work ethic and excitement for the show, their skills levels”. This is not “a common response” in the industry, he says.

ABC’s French says, “We couldn’t have done it without the South Africans who have come onto our show and become part of our family.”

[NOTE: For various reasons, ABC pulled the plug on the series after only 3 episodes. But this is very unlikely to have any retroactive effect on the growing reputation of the local industry, spreading by word of mouth in Hollywood]

7. Green industries

South Africa's Renewable Energy Independent Power Producer Procurement Programme (REIPPPP) has proved to be the fastest growing renewable energy programme in the world and is currently the leading infrastructure development programme in South Africa.

The actual local content spend as at 30 June 2015 was R21.7 billion, and the planned local content for the first 92 projects amounts to R65 billion. 37 projects with a generating capacity of 1,827 MW were already connected to the grid by end of June 2015. In the green economy, since the 2012/13 financial year, **the dti** has facilitated investments to the value of R1.7 billion in the manufacturing of equipment and components for the renewable energy industry



The DoE announced 13 projects, amounting to R23 billion for the fourth bidding window of the REIPPPP. These would contribute 1,121 MW of installed capacity to the national grid and are expected to create over 7,000 jobs during construction, followed on by 1,000 permanent operational jobs

Over the first three bid windows, the renewable energy sector committed investment of R120 billion, of which R40 billion was committed to local content.

The Global Climate Scope report 2015 ranks South Africa 4th out of 55 countries surveyed for its attractiveness as an investment location for clean technology.

The success of SA renewables projects is illustrated by the fact that the average lead time per project is now down to 1.6 years, while the portfolio price for electricity came down from R2.36/kWh in bid window 1 of the REIPPPP to R0.77/kWh in bid window 4.

Investments in renewable energy generation include:

- The Overseas Private Investment Corporation (OPIC - the US government development finance institution – provided funding for a \$400-million solar farm.

- New wind farms: Noupoort in the Northern Cape and Kouga (R2 bn), located at Oyster Bay in the Eastern Cape.
- Platinum producer Anglo American Platinum (Amplats), together with Vuselela Energy and H1 Holdings, unveiled its R150 million (\$10.677m) co-generation power plant at its Waterval Smelting Complex in Rustenburg;
- **the dti** provided a R30m infrastructure grant to support the development of a 5MW clean power plant by The Eternity Power Thermal Harvesting Project.
- The 335 MW Dedisa Peaking Power project in the Coega industrial development zone. This R3.5-billion project is being developed by a consortium comprising ENGIE (formerly GDF Suez), Legend Power Solutions and Mitsui.
- Technology group Abengoa announced a \$660-million investment in the 100 MW Xina Solar One project – a parabolic-trough concentrated solar power (CSP) project, with five hours of thermal energy storage capacity, being built in South Africa's Northern Cape.
- On 14 March 2016, Minister Rob Davies officially launched the R5 bn Bokpoort concentrated solar plant (CSP) in Groblershoop, Northern Cape, a major investment by ACWA Power, a Saudi Arabian company. Over R2.4 bn was spent on local content, with 1,200 jobs created during construction and 70 permanent jobs continuing into the operational phase.

Investments in renewable energy generation have created a strong associated dynamic for investment in component manufacturing and assembly, by both local and global companies. **the dti** won the Best Investment Project Award at the Annual Investment Meeting in Dubai for facilitating the Gestamp Renewables R300 m investment in a wind tower manufacturing facility in Atlantis, Western Cape, which will produce 100 wind towers per annum and create about 200 permanent jobs.

The 5.8 MW Adams and 5.8 MW Bellatrix solar projects, also in the Western Cape, have become the first projects under the programme to be locally developed, designed, funded, constructed and operated. The projects were sponsored by the Cape Town-based Aurora Power group.

In December 2014 SMA Solar Technology SA, the market leader in solar converters, launched its multimillion-rand manufacturing facility in Cape Town.

On the supply side the following important milestones have been achieved;

- The National Cleaner Production Centre, South Africa (NCPC-SA) - **the dti's** programme for Resource Efficiency and Cleaner Production - is aimed at promoting the greening of existing industry. In the past five years, the NCPC-SA has conducted assessments in 530 plants, identifying annualised potential savings of R615 million which could be realised by these companies whilst also contributing significantly to SA's carbon-mitigation requirements.
- During the same period (2011-2015), one of the projects of the NCPC-SA, the Industrial Energy Efficiency (IEE) Project, implemented a partnership with the United Nations Industrial Development Organisation (UNIDO) to assist 153 industrial plants to implement energy efficiency measures.

This has resulted in 1,800 GWh of energy saved (enough to electrify 250,000 mid-income homes for a year); R1.54 billion saved in energy costs; and a reduction in carbon emissions of 1.7 million tonnes of CO₂ eq. In addition, an estimated 5,700 jobs have been created and preserved from energy cost savings.

- Through other skills development programmes, the NCPC-SA has trained over 2,400 professionals in resource and energy efficiency since 2010. To date, 114 of these have gone on to complete expert level training. Whereas five years ago international experts were being used to train local professionals, 43 local trainers have thus far been developed, allowing replication of these skills in industry and independent training institutions.
- A Thermal Test Chamber (TTC) for refrigerated vehicles was established at the SABS in order to improve energy efficiency and reduce greenhouse gas emissions in the refrigerated transport sector. Project scope covers integrity testing capability for 100 existing vehicle types and 50 new vehicle types per annum

Summing up:

Although much more needs to be done to further develop a dynamic new technology-intensive sector, 'green industries' have clearly begun to take root in South Africa. Much has also been achieved with respect to cleaner production, again with significant room to move towards much less energy- and carbon-intensive production processes. On the back of what has already been achieved, much higher levels of local content are now required to push local green technology investment and production to higher levels.

8. Beneficiation

Fuel cell technology

- Working in conjunction with key industry stakeholders, government has made significant progress in accelerating the development of the fuel cell industry. Particularly worth noting are the following:
 - Support for the launch in March 2015 of a 100kW static fuel cell demonstration at the Chamber of Mines. This is currently operating at excellent utilisation rates.
 - Further plans for developing a 1.8MW hydrogen fuel cell project are at an advanced stage involving a collaborative project between **the dti**, IDC and Impala Platinum. This is expected to be the biggest such installation in the southern hemisphere.
 - An Anglo-American fuel cell project is powering the Naledi Trust Community in Kroonstad, supplying 34 households through a 60kVA peak power fuel cell system delivered via a mini grid.
 - A demonstration fuel cell forklift with on-board metal hydride storage was developed by the DST's HySA initiative for Impala Platinum Refineries. The forklift has been operating since October 2015 at very good utilisation rates (on average 2 shifts before refuelling) with zero emissions and a reduced noise level compared with standard diesel units. The systems were integrated and sub-assembled in SA by local engineering companies.
 - Isondo Precious Metals (IPM) has acquired the rights to manufacture, use, market and sell licensed fuel cell components worldwide, using a portfolio of membrane-electrode assembly and membrane design, formulation and manufacturing technology. The project will identify particular components that can be manufactured and assembled locally for fuel cell units. **the dti** has provided R15 million towards the feasibility phase of the project.
 - Plans are well under way for the development of an industrial park for fuel cell and battery production, linked to the current OR Tambo Gauteng Industrial Development Zone. Land and facilities have been secured from Impala for manufacturing around the PGM refineries in Springs. The location provides infrastructure, transport, logistics and other advantages.

Summing up:

All these ground-breaking initiatives place SA at the forefront of the technology development and pilot implementation of static and mobile fuel cell generation, placing the country in an optimal 'first mover' position to ensure that clean energy production with associated industrial benefits is secured.



Naledi Trust community fuel cell

9. Upstream oil and gas

- **the dti** supported the opening of the R660 million Burgan Terminals fuel storage project in Cape Town. This entails private sector investment of R660 million and will create 350 new jobs during the construction phase. The investment was supported by a total tax allowance of R234 million from government.
- Further significant investments include: Hunting PLC, a UK company established a new R300 million facility in Brackenfell in the Western Cape to supply the African oil and gas market;
- R650 million has been invested in Coega and Saldanha Bay for refining of used oil and/or recycling facilities. The investment is set to create 100-150 jobs.
- Construction work has commenced on Transnet National Ports Authority's new Off-Shore Supply Base (OSSB) at the Port of Saldanha to build a specialist hub for the oil and gas sector. It will consist of an OSSB and rig repair facility at berth 205, with a length of 380 metres and a depth of 21 metres, allowing it to accommodate two rigs at a time.
- Chevron South Africa invested a further R450 million in the construction of a multipoint ground flare in its 110,000 bl/d crude oil refinery in Milnerton, Cape Town. Allseas was awarded a contract by PetroSA – as part of Project Ikhwezi – which carried with it a NIP obligation. As part of fulfilling this obligations, it invested R7 million in a start-up company, One-Eighty Degrees, to establish a Materials Testing Laboratory in Cape Town.



These and other investments – together with the significant planning work already undertaken – place SA in a strong position to enable the incremental creation of a gas market in SA, ultimately leading to the implementation of a gas-based industrialisation strategy which is seen as becoming a central pillar of SA's efforts to reindustrialise.

10. Aerospace and defence

- South African defence, civil security and telecommunications company Saab Grintek has secured orders to the value of almost R1 bn for the installation of its integrated, defensive suite on the Dhruv advanced light helicopter of the Indian Army and Air Force.
- Denel Group has secured an order book of R35 billion, the state-owned entity's largest, which will be executed over the next five to 10 years.
- A ten-year multibillion-rand Armscor contract, which would see State-owned Denel produce over 200 armoured vehicles for the South African National Defence Force (SANDF) is expected to "significantly and permanently" change the South African defence industry. The production of the Badger is expected to create about 2,000 jobs during its production period.

11. Ship/boatbuilding and associated services industry

- TNPA had identified projects valued at R16.8-billion to facilitate the growth of the local ship repair, ship building and oil and gas sectors. These include new capacity creation at the ports of Saldanha Bay, Richards Bay and East London and a R30 million repair to its badly corroded outer caisson at Durban's ageing dry dock.
- Since the designation of working vessels for local procurement (60% local content) and the issuance of the instruction note by National Treasury, achievements have included the following:
 - Southern African Shipyards is currently in the process of building 9 tugboats as part of the tender of R1.4 billion awarded by TNPA in 2014. The contract to date has created approximately 200 additional jobs. More than 60 apprentice artisans are in training as well as three marine engineers. More than R700-million has been earmarked for the Supplier Development Plan entered into between Southern African Shipyards and Transnet's local suppliers, employees and graduates.
 - Southey Holdings and Nautic Africa have invested R289.9 million and R63.4 million respectively; both investments having been approved under the 12i tax incentive. It is expected that some 355 direct jobs will be created.

- Vee Craft was awarded a tender worth nearly R23 million to build workboat ferries for the Navy.

- Smit Amandla Marine partnered with Damen Shipyards Cape Town to build two new vessels valued at R150 million which will carry out supply and support work for the De Beers Group's offshore diamond mining activities in Port Nolloth. The vessels are part of Smit Amandla Marine's National Industrial Participation Programme (NIPP) obligations. Smit Amandla Marine was awarded a contract by PetroSA as part of Project Ikhwezi.



Smit Amandla support vessel

- In anticipation of a NIP obligation arising out of this contract, it then signed a strategic partnership agreement with **the dti** and started identifying projects towards meeting its obligation. Smit Amandla won a contract from De Beers to provide it with services requiring two Shoal Buster Vessels for its offshore diamond operations.
- Smit Amandla had previously imported all its vessels, but in line with its NIP commitments it decided to contract a local shipbuilding company, Damen Shipyards, to build the vessels. This amounted to an investment of R150m in the local economy.

Efforts to rebuild SA's capabilities in this sector are recent, but demonstrate what can be achieved in a short time-span with the deployment of appropriate levers. These achievements and platforms place the sector in a strong position for future growth, including with respect to export potential.

12. Chemicals, pharmaceuticals, plastic, and cosmetics

- A multi-million rand Unilever Khanyisa household care factory was launched in Boksburg. **the dti** supported the investment in the Khanyisa plant under the 12i Tax Allowance Incentive scheme, with a qualifying investment value of R1.2 billion, an investment allowance of R350 million and a training allowance of R7 million. In total, Unilever had invested about R40 billion in manufacturing plants in South Africa and has received nearly R1. 98 billion in **the dti's** incentives.
- Cipla will invest R800 million into a new facility for the cost-effective manufacture of biosimilars for supply into both public and private sector markets. The facility will implement state-of-the-art technology and will recruit approximately 300 high-skilled personnel in the fields of engineering, biotechnology, biochemistry and molecular biology.
- J&J Consumer have upgraded their manufacturing facility in Cape Town and have confirmed further upgrades over the next 3 years, with the intent to repatriate manufacturing back to SA. A substantial portion of what is manufactured in this facility is destined for export markets in Africa, Australia etc.
- Localisation by government – through Designation of specified product categories in health procurement - has led, amongst other things, to the award of a R2.7 billion Oral Solid Dosage (OSD) tender, with SA companies winning 61.1% of the total tender value (R1.6 billion). The 2015-2018 Anti-Tuberculosis Tender awarded to local companies was worth more than R940 million.
- European API manufacturer Sterling has confirmed an investment of €25 million (Euros) in the manufacture of low-volume, high-margin, niche APIs for the local and international markets. The project will be located in KZN at the Dube Trade Port.



Oral solids dosage

TRANSVERSAL HIGHLIGHTS

1. Black Industrialists Development Programme

In 2012, the financial services sector committed itself to spending R80 bn on various forms of black economic empowerment (BEE) over a period of five years (2012-2017). This has recently been amplified by a R42 bn commitment from the long-term insurance sector – giving a total of R122 bn - as well as initial funding specifically earmarked for the Black Industrialists Programme.

The Programme has received initial pledges in excess of R30 billion from development finance institutions, with R23 billion already set aside by the Industrial Development Corporation over the coming five years.

The Black Industrialists Programme provides key measures aimed at supporting majority black-owned manufacturing companies. These include access to finance, access to markets, skills development and standards/quality/productivity improvement. The scheme targets entities that have extensive experience and a strong operations track record in their respective or envisaged industrial sectors and value chains - seeking to develop them into serious players in domestic and/or global markets within 10 years.

In 2015, emerging black industrial enterprises of note included the following:

- Zig Enterprise, a black-owned incubator, won the tender for Ford's new vehicle personalisation centre located adjacent to the plant.
- Lawrence Global Manufacturing (LGM), the first 100% black-owned manufacturing and engineering company in Nelson Mandela Bay was launched, focused on providing design and precision engineering components to companies like VW and Mercedes-Benz.

It received financial support worth about R5 million from the Small Enterprise Finance Agency.
- Jonas Gutu, a Kwa-Zulu Natal-born engineer, will become the first manufacturer of hypodermic disposable syringes and needles in Southern Africa when his plant opens later this year. Gutu secured R75 million in funding to build a plant in Coega, Eastern Cape, where he plans to employ 300 people once the plant is operational.

2. Special economic zones and industrial development

SEZs

The designation of certain areas as Special Economic Zones (SEZs) is one of **the dti's** key strategies to stimulate economic growth and economic and industrial decentralization'. They include an ICT hub planned for Nasrec in Johannesburg, a renewable energy and clean technology park in Atlantis near Cape Town, a platinum group metals (PGMs) beneficiation hub in Rustenburg and a farming/mining centre in Musina for which R37 billion in pipeline investment has already been identified.

Two industrial development zones, namely the Dube Tradeport IDZ and Maluti-a-Phofung IDZ have been designated. Maluti-a-Phofung is aimed at bolstering logistics efficiency along the key trade routes such as the Gauteng-Durban port corridor and Bloemfontein–Cape Town corridor. The main industries it will serve include agriculture, agro-processing, automotive and logistics.

The 'location' mix of the IDZs and SEZs demonstrates an effort to leverage private sector investment into SEZs, which provide different and complementary competitive advantages according to their location. In most instances the SEZs are located in or near coastal ports, land ports or - in the case of Maluti-a-Phofung - at the intersection of key logistics corridors. In other cases, their location provides proximity to mining and agricultural supply chains and/or support for industrial decentralisation.

IDZs

- Government has increased the number of operating IDZs to five with Saldanha Bay and Dube Trade Port added over the last few years, in addition to IDZs in Coega, East London and Richards Bay.
- To date 73,000 jobs has been created in the IDZs, of which 6,896 (9.6%) were direct and 65,637 (90.4%) indirect. Future operational investments are expected to result in the creation of over 2,194 direct jobs in the zones. These are illustrated in the diagram below, indicating the contributions of the 4 designated IDZs.
- Coega IDZ has attracted 28 operational investors who have invested more than R151 billion since its inception.

- Ngqura Port, operated by transport and logistics SOC Transnet, officially unveiled two new berths and port operating equipment costing R2 billion, an investment that has scaled up the port's cargo handling capacity to 1.5 million TEUs from 800,000 TEUs.
- A R267 million Jewellery Manufacturing Precinct (JMP) was announced in 2015 and will be built within the OR Tambo International Airport industrial development zone (IDZ). This greenfield project aims to attract investors through a range of incentives, including dedicated customs support services, duty-free importation of production-related raw materials and inputs, reduced tax and exemptions for certain beneficiation activities. The sod-turning ceremony for the construction took place in September 2015.

3. Port charges

After considering the National Ports Authority's Tariff Application, together with submissions made by all stakeholders during the consultation period, the Ports Regulator declined the National Ports Authority's proposed average 5.9% tariff increase. After considering all the relevant information at its disposal, the Ports Regulator decided that an average tariff increase of 0%, for the tariff year 2016/17 is applicable - as follows:

- All cargo dues for 2016/17 will increase by 0%, except marine services and related tariffs (Sections 1-8 of the Tariff Book, excluding Section 7 that deals with cargo dues) which are to increase by 3.0%.
- In support of the SA manufacturing sector as a whole, full container export dues will *decrease* by 10%.
- Automotive volume discounts will be equalised for all users at the maximum 60% level discount; thus substantially levelling the playing field and significantly reducing the cost of doing business in the sector.

In a move to mitigate the negative impacts of the current regional drought (in particular staple food price inflation related to the shortfall in maize production) maize will receive a 50% discount on cargo dues, capped at 5 million tonnes, for the 2016/17 tariff year.

4. Infrastructure and industrial financing

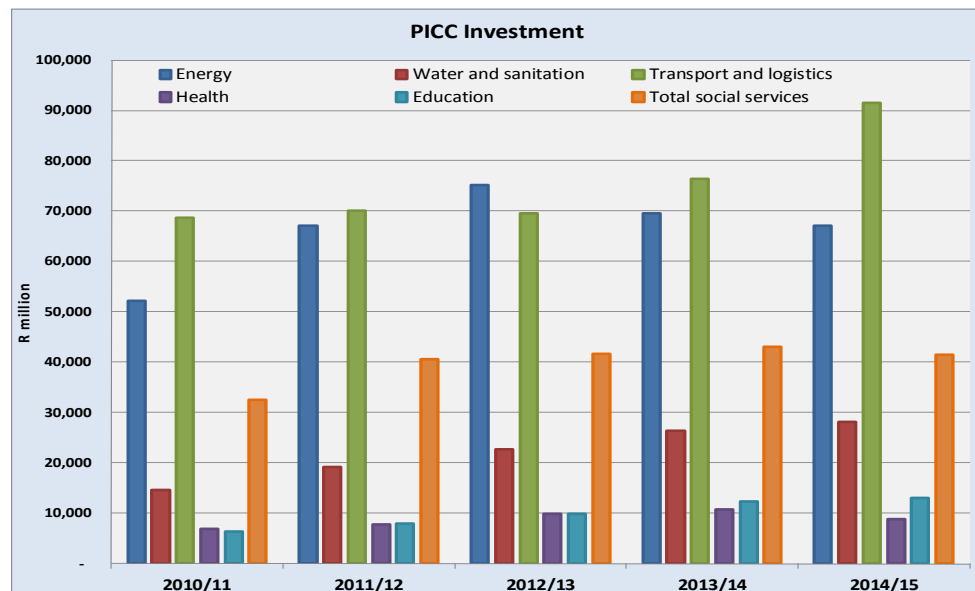
Infrastructure

Government invested R290 bn in the Public Infrastructure programme. Projects supported included installation of power transmission lines; rail fleet renewal and transport logistics; ten renewable energy plants, installation of solar water heaters; water pipelines; new fibre-optic cables etc.

These investments supported more than 200,000 workers now employed on the public infrastructure programme, as engineers, metal workers, plumbers, electricians, bricklayers, road-builders and construction workers.

The main sectoral investments – managed through the Presidential Infrastructure Coordinating Commission (PICC) - are shown in Figure 1 below. (The columns should be read as indicating R billions, ranging from about R6 billion to R91 billion for different sectors).

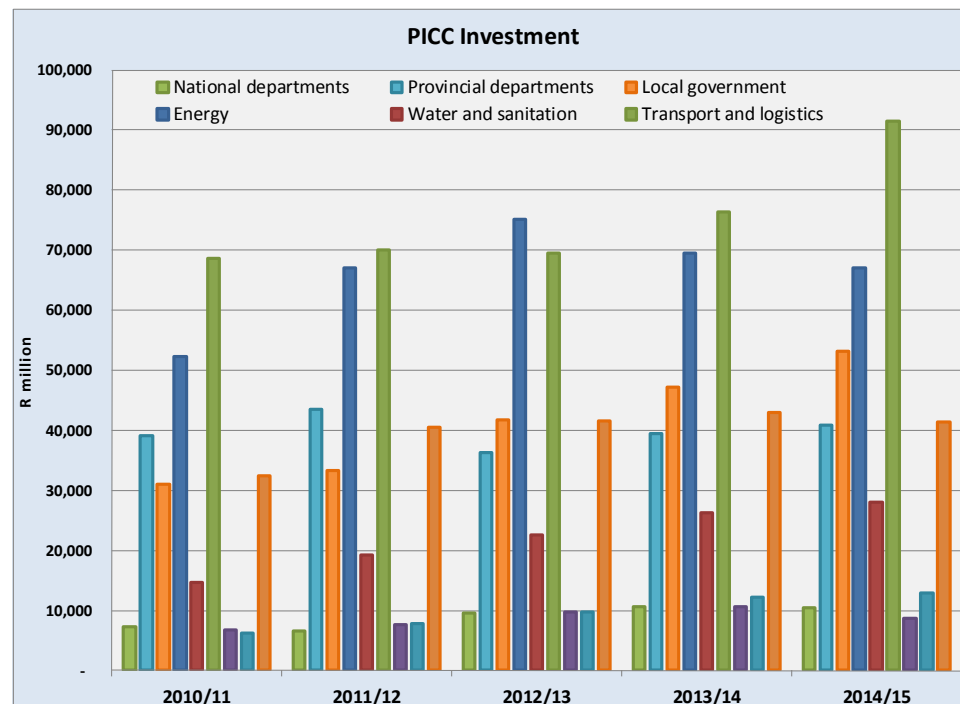
Figure 1: PICC Sectoral Investments: 2010-2015



Source: PICC

The sub-national breakdown of PICC infrastructure investments for the past five financial years was as follows:

Figure 2: PICC Sub-National Infrastructure Investments: 2010-2015



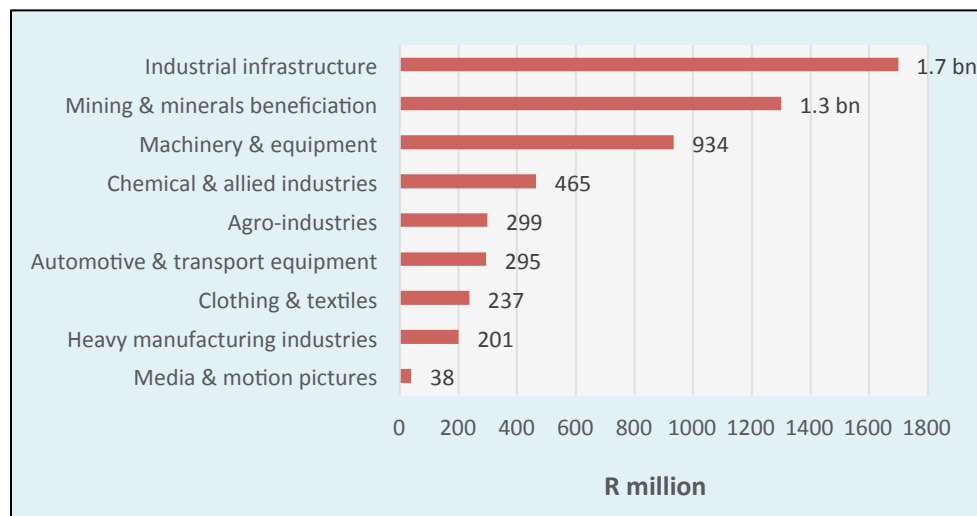
Source: PICC

Industrial financing

Industrial financing interventions have significantly contributed to rescue, revival and growth in a number of sectors.

The major source of dedicated industrial financing is the Industrial Development Corporation (IDC). Between April 2015 and November 2015 it disbursed R6 billion, with the following IPAP sectors benefiting from these disbursements:

Figure 3: IDC Industrial Funding Disbursements: Apr-Nov 2015



Source: IDC

In addition, the Development Bank of South Africa (DBSA) committed R21.4 billion to government's regional development programme and in support for municipalities, with R13.4 billion already disbursed and R6.4 billion prepared, mainly for renewable energy programmes.

5. Incentive schemes

5.1. Manufacturing Competitiveness Enhancement Programme (MCEP)

To date, **the dti** has supported more than 900 competitiveness-enhancement projects under MCEP.

In the period April to December 2015, MCEP approved funding for 232 entities, with R1.7 billion already committed in support of new manufacturing investments totalling R8.8 billion and helping to sustain 52,466 jobs.

Agro-processing received grants totalling R602 million; metals R300 million; plastics R226 million; chemicals R156 million; print R75 million and wood R47 million.

5.2. Automotive Investment Scheme (AIS)

In 2014 **the dti** amended the Automotive Investment Scheme (AIS) to enable component manufacturers to earn an additional 5% on all investments as part of deepening and strengthening local component manufacturing.

For the period April to December 2015, the AIS approved 39 projects with total incentives of R978 million and an estimated investment value of R3.7 billion. The support was provided to passenger and heavy vehicle manufacturers such as BMW, Hyundai, FAW; large tyre manufacturers such as Sumitomo and Bridgestone; and various foundry companies.

5.3. Enterprise Development Programme

the dti launched a R22 million two-year pilot programme aimed at upgrading South Africa's Industrial parks, establishing pilot specialised industrial facilities (SIFs) and supporting the integration of local economic development (LED) to bolster small business enterprises. This programme also helped to increase SMME access to technology.

the dti will spend more than R44 million during the first phase of the revitalisation and refurbishment of two state-owned industrial parks in the Eastern Cape. The revitalisation of the Vulindlela Heights Industrial Park and the Queenindustria Industrial Park form part of the department's Revitalisation of Industrial Parks Programme.

5.4. 12i Tax Allowance Incentive Scheme

Between April 2015 and January 2016, 26 projects with an investment value of R9.5 billion were approved. The support was extended to companies in a wide range of sectors such as steel, agro-processing, oil and gas, boatbuilding, chemicals, cement, paper, plastics and food and beverages.

5.5. Aquaculture Development and Enhancement Programme (ADEP)

Established to support and scale up production in the aquaculture sector, ADEP has supported 11 projects, with an incentive value of R49 million, for the period April 2015 to December 2015. Investment leveraged was R206 million, with the projects expected to create 291 new jobs. The majority of these investments are based in the Western Cape, closely followed by Limpopo Province.

Overall, **the dti's** current support in 2015/16 shows the value of approved projects to be R7.3 billion, with a projected investment of R30.6 billion and 132,130 projected jobs.

5.6. National Empowerment Fund

Since inception, the NEF has recorded the following achievements:

- Approvals: benefitted black entrepreneurs in 700 transactions worth more than R6.9 billion.
- Disbursement: approximately R4.8 billion has already been disbursed to these companies since inception.
- Employment effect: supporting in excess of 84,000 jobs.
- Industrialisation: 23 strategic industrial projects supported, worth R27 billion.

6. Foreign investment

2015 saw investment promotion becoming a critical area of focus for **the dti**, culminating in the creation of a dedicated division within the Department. The new division provides a service focused on investment promotion, facilitation and aftercare to all interested investors. As at 31 December 2015 a pipeline of R 60 billion of potential investment (domestic and foreign) had been achieved.

A number of multinationals have affirmed South Africa's growing status as a regional manufacturing hub, investing in new plant, machinery and technology and/or upgrading existing plant.¹ As noted elsewhere in this document, major new MNC investments have been forthcoming from, amongst others, Unilever, Nestlé, Kimberley Clark, 3M, Johnson & Johnson, Samsung and Hisense. The Hisense plant in Atlantis, Western Cape, is already exporting into Africa and is ranked as the company's second most productive plant outside of China.

Also gearing up for the African and wider global markets are domestic companies like Nampak, Mpact and Tiger Brands which have been aggressively investing in expanded production capacity.

7. Technology and innovation

The DST implemented the Technology Localisation Programme (TLP) in support of government's drive to increase the level of local production related to public procurement.

The TLP provides technological support to firms and sector, in order to improve their competitiveness and ability to qualify and secure contracts linked to public procurement – either directly with State Owned Companies (SOEs) or through contracting to the multinational firms who secured contracts with SOEs. The programme, implemented by the Technology Localisation Implementation Unit (TLIU) hosted by the CSIR, has achieved substantial success and is increasingly being recognised as the national nodal point for supplier development and technology assistance.

¹ These relatively strong FDI inflows stand in contrast to the bleak picture painted by some analysts; particularly those who look at 'Net FDI'. This results in their taking off inflows from outflows and then concluding that SA has been receiving no investment. The fact of the matter, however, is that (aside from the inflows noted above) significant outflows are (i) going into other African countries, thus contributing to growth in both SA and the region; and (ii) are part of the process of SA firms becoming global players.

The success to date and the need to scale up the programme has resulted in the programme being expanded to support increased local production, for example in the mining equipment manufacturing industry.

The TLP is based on a number of instruments:

- Firm-level Technology Assistance Packages (FTAPs) ensure that a third party (e.g. university or science council) provides technology assistance (skills, equipment, designs, manufacturing systems, etc.) to an approved firm to increase its competitiveness (new or improved processes, product, and skills).
- Sector-Wide Technology Assistance Package (SWTAP) provides technology assistance for a number of firms in a sector. As an example, a foundry casting simulation network was established at the Vaal University of Technology's Technology Station, with a number of related 'spokes' at the University of Stellenbosch, Durban University of Technology, NMMU and the University of Johannesburg.
- Technology Development Grants provide funding to mature local technologies that might be used in local procurement. The technology maturation of the Ultrasonic Broken Rail Detection System (UBRDS) was funded under this programme.
- Work-Integrated Learning Programme enables predominantly P1 and P2 students to complete their practical training, thereby enabling them to complete their qualifications.
- Firm Benchmarking assesses a firm's management and technological capability in order to define development areas, but also to transfer knowledge. There are currently in excess of 3,200 South African manufacturing firms in the database which is maintained and expanded with the aim of facilitating new supply chain relationships.

The TLP has been very successful in enabling firms to secure (or retain) contracts with SOCs, to develop new intellectual property (e.g. patents, technology demonstrators, manufacturing processes) and thereby either secure export orders or increase the level of components that are now manufactured in South Africa rather than imported.

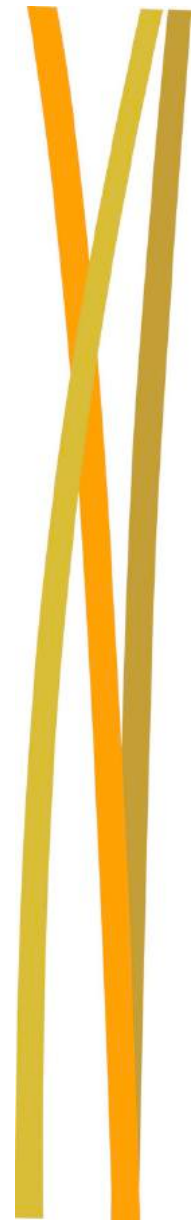
A summary overview of the outputs and impact (since the inception of the programme in 2012) is provided in the table below.

Table 1: Outputs and impacts of the TLP: 2012-2016

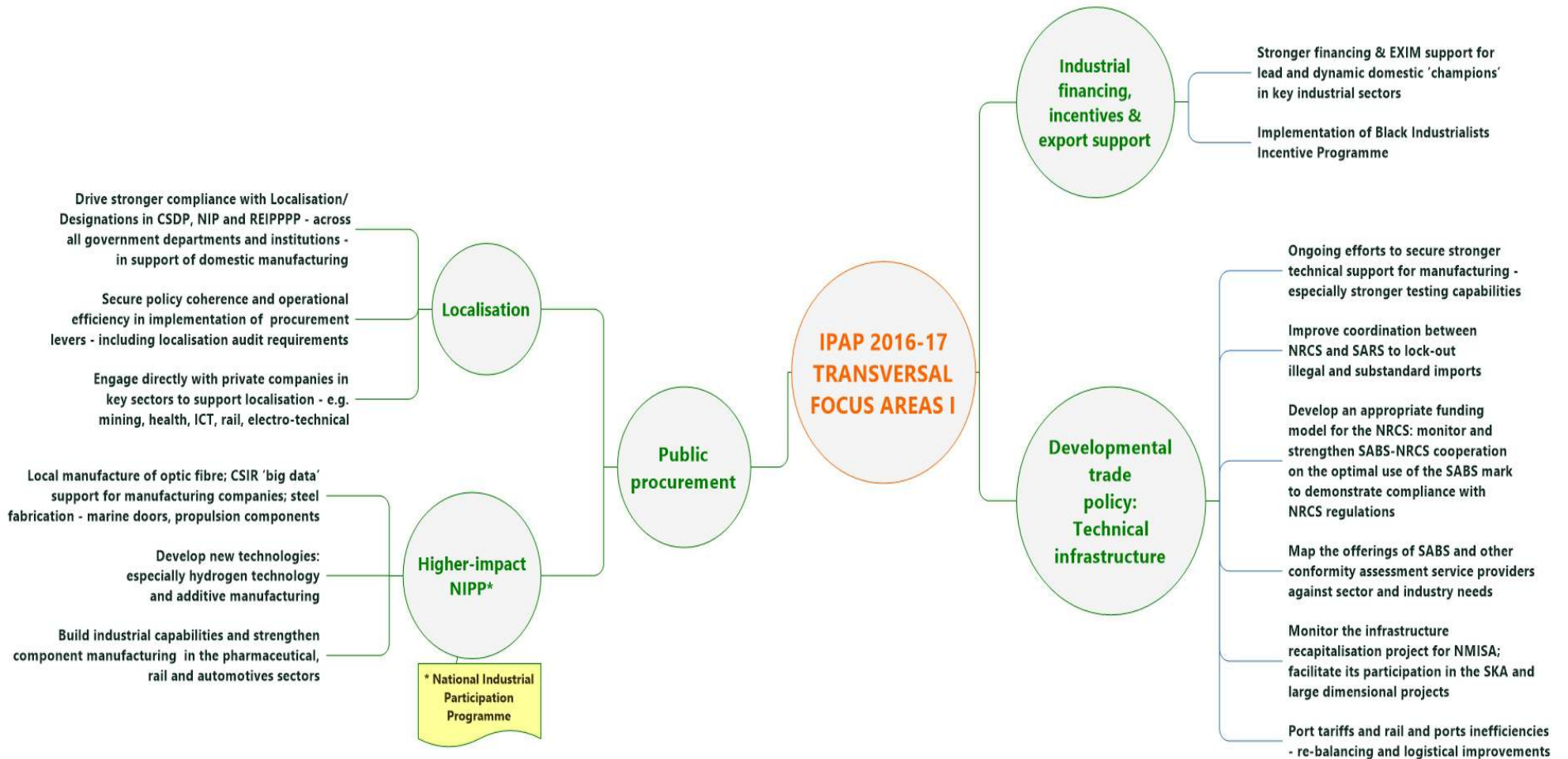
Number of companies supported towards the development of new products	14
Total direct jobs created due to the implementation of FTAPs	187
Number of companies where export capability was developed	20
Number of companies supported where import substitution was achieved	20
Number of companies that have gained work with SOCs	35
Percentage of SMEs supported through the FTAP programme	78%
Number of companies where there has been an improvement in manufacturing performance	60
Number of companies that have reported an increase in revenue due to the FTAP implementation	36
Percentage of companies supported that are black owned	60%
Percentage of companies supported that are black women owned	40%

KEY ACTION PROGRAMMES

IPAP TRANSVERSAL FOCUS



IPAP 2016/17 – 2018/19: TRANSVERSAL FOCUS



1. Public procurement

Public procurement can be a powerful industrial policy instrument for promoting economic growth, industrial development and innovation. Using public procurement to develop and disperse new technologies has direct bearing on industry development. The industrial sector is a major driver of economic growth, exercising strong backward and forward linkages.

Public procurement is also, of course, a subset of the country's public sector expenditure, including both current outlays for day-to-day operations and capital investments for the future. Governments everywhere are significant procurers of goods and services in their own right; but the emphasis we have been developing in South Africa on *domestic production and local content in the public procurement system* is specifically aimed at stimulating manufacturing productivity and competitiveness for sustainable and inclusive economic growth.

Public procurement in South Africa is focused on a number of key industrial sectors: e.g. rail rolling stock, bus fleets, transport infrastructure, automobiles, clothing, textiles, leather and footwear, local pharmaceutical production and renewable energy. It can also play a critical role in the promotion of strategic industry sectors such as advanced manufacturing, aerospace, defence and the information and communication technology sectors.

Government seeks specific contributions from particular sectors to achieve its economic policy goals. For example, infrastructure investment targets the government has set in the Medium Term Expenditure Framework (MTEF) cannot be delivered without a major contribution from the construction industry – whilst the sourcing of locally manufactured building and construction materials is equally important.

Using public procurement policy can spur industrialisation by increasing market size, fostering economies of scale and reducing unit costs over time. However, diffusing public procurement for industrial development requires policy coherence and high levels of implementation capacity across all spheres of government.

Despite its potential strengths, the public procurement system in South Africa has a number of weaknesses – chiefly non-compliance on local content requirements as required by the amended regulations of the Preferential Procurement Policy Framework Act (PPPFA) of 2011 – but also lack of institutional alignment and widespread instances of malpractice and unethical conduct.

Localisation: Challenges

It must also be noted that the government has set itself a target of 75% for local procurement in the Medium Term Strategic Framework (MTSF). Regulation 9.3 of the PPPFA regulations enables local procurement of non-designated and/or yet to be designated products/commodities. In the meantime – and whilst waiting for the circulation of the specific directives for implementation of Regulation 9.3 – **the dti** is closely engaging with procuring entities in all three spheres of government, including state owned companies and public entities listed in the Public Finance Management Act (PFMA) and the Municipal Finance Management Act (MFMA). Regulation 9.3 has been used successfully in the procurement of transformers (before they were designated), pipes and antennae; the specific directives of Regulation 9.3 will go a long way towards facilitating achievement of the 75% local procurement target.

Another major challenge within the public procurement system is that individual procuring entities currently tend to procure for similar goods and services independently. Transversal contracts would assist if the purchases of goods and services could be aggregated. This would result in economies of scale, price discounts and better coordinated Supplier Development Programmes. Current practice does not sufficiently assist in realising government objectives if, for example, smaller municipalities are expected to purchase some of the designated commodities on their own (e.g. valves, transformers, cables).

In implementing transversal contracts, there needs to be agreement on the standardisation of specifications and the coordination of joint contracting wherever appropriate and beneficial to the parties involved. Economies of scale will encourage domestic manufacturers to invest in plant and equipment; and government can then use its buying power to drive other key procurement objectives like black economic empowerment and supplier development.

In summary:

Research shows that public procurement strongly fosters industrial development, provided that compliance on local content is stringently enforced, public procurement levers are fully aligned and a cadre of well-trained supply chain practitioners is built up – professionals who can navigate the complex space of tender specifications and contractual obligations in a transparent, fair, and efficient manner.

Key action programmes

1. Monitoring expenditure and implementation of local content

Nature and purpose of the intervention

Compliance with local content regulations and requirements is a major challenge, requiring focused attention. Non-compliance happens on the procuring entities' and suppliers' sides. The following areas have been identified as particularly problematic:

- The advertising phase: tenders being advertised without local content requirements;
- Tender evaluation and award phase: inadequate consideration given to minimum thresholds for local production;
- Execution of the contract: compliance with local content requirements, monitoring and remedial action for non-compliance.

Failure to comply with the local content requirement is a violation of the PPPFA and its regulations, and should have serious consequences. If there is non-compliance, there must be tough remedies, including penalties through conditions of contracts, non-admissibility of bids, cancellation of contracts, recouping of monies spent and black-listing of suppliers in the public sector procurement system. Procurement compliance audits and other local content-related monitoring systems will assist in strengthening the effective implementation of local content requirements.

the dti will therefore be ramping up this area of work by working closely with the National Treasury, Auditor-General's Office, the South African Bureau of Standards, Industry Associations and procuring entities to ensure compliance in terms of advertising, evaluation and awarding of tenders designated for local production.

The Compliance Programme will consist of (at least) the following initiatives:

- Working with the National Treasury on procurement regulations aimed at tightening areas dealing with compliance. Institutional powers and remedies to deal with non-compliance will have to be clearly specified in the PPPFA regulations.
- Working closely with the National Leader of Audit Services in the Auditor-General's office on prioritised tenders for auditing, as well as referring non-compliant tenders for further scrutiny.

- Continuous training of supply-chain practitioners on the implementation of local content across all three spheres of government, with a particular focus on local government.

Targeted outcomes

Improved compliance through better coordination and enhanced capabilities for procurement leverage.

Key milestones

- 2016/17 Q1: Work closely with National Leader of Audit Services in the Auditor-General's office to scope and agree on designated tenders and products to be prioritised for auditing.
- 2016/17 Q2: Submit proposals to the National Treasury on regulations aimed at tightening areas dealing with compliance on local content.
- 2016/17 Q1-Q4: Conduct spot checks on local companies awarded tenders designated for local production to verify that local production does take place.
- 2016/17 Q1-Q4: Work closely with the SABS on (i) review of the technical specifications for the calculation and measurement of local content; (ii) the funding model for local content verification; and (iii) periodic reports and interventions on local content.
- 2016/17 Q1-Q4: Develop an import monitoring system based on trade import data to assist with establishing whether designations in particular sectors are being complied with.
- 2016/17 Q1-Q4: Finalise work on harnessing government's buying power: measuring the extent to which local versus non-local purchasing still make sense.

Lead departments/agencies: the dti and SABS

Supporting departments/agencies: NT, EDD, National, Provincial and local Departments, ITAC, SARS and AG

2. Increasing aggregate demand through 'Buy Local' campaigns

Buy Local campaigns can help to increase demand in ways that allow local businesses to plan better for potential growth and future opportunities. An increase in both public and private spending on local goods and services can increase overall economic demand. The purchasing decisions made by major players like government departments, institutions of higher learning and public and private sector hospitals have the potential to make a significant impact on local economies. Transversal and term contracts for locally manufactured clothing and textiles, furniture and pharmaceutical products can have an incremental effect in promoting local economic development.

Key milestones

- 2016/17 Q1-Q4: Support the Economic Development Department (EDD) to promote measures to support local procurement in the private sector. Priority commodities are furniture, uniforms, other apparel and pharmaceutical products.
- 2016/17 Q1-Q4: Support *Proudly SA* on aligning its work to ensure that its logo becomes the first 'mark' of local manufacturing. For off-the-shelf purchases there needs to be a promotion of bar codes of all locally manufactured and packaged consumer goods.

Lead departments/agencies: the dti, Proudly SA, EDD

Supporting departments /agencies:

3. Designation of further sectors for local procurement

Further 'waves' of designation will follow, in keeping with the priorities of the IPAP:

- Work with the Presidential Infrastructure Coordinating Commission (PICC) and Industry Associations to identify localisation opportunities in big ticket items defined in government's strategic infrastructure projects at all levels of government.
- Finalise the review of the canned and processed food instruction note to include the entire food sector.
- Continue to scan for opportunities for further designation in the metal fabrication, capital and rail transport equipment sector.

- Create scope for further localisation of manufacturing in the green industries brought about by investments in the renewable energy generation build programme.

Key milestones

- 2016/17 Q1-Q4: Review of research work done by Sector Desks for further designation of sectors/sub-sectors for local procurement.
- 2016/17 Q1-Q4: Issue procurement instruction notes for designated sectors.
- 2016/17-2017/18: Work with the PICC and Industry Associations to identify opportunities for further designation.
- 2016/17 Q1-Q4: Deepen localisation by utilising Regulation 9.3 of the PPPFA for the procurement of non-designated products / commodities. This will be done in consultation with other government departments and state owned companies. This will go a long way towards meeting the local procurement target of 75% set by government in the Medium Term Strategic Framework.
- 2016/17 Q1 – Q4: Provide training on local content to supply-chain practitioners in all spheres of government and state owned companies.

Lead departments/agencies: the dti

Supporting departments/agencies: NT, DPE, EDD, SABS, PALAMA, SASTAC

1.1. National Industrial Participation Programme (NIPP)

The Industrial Participation Secretariat of **the dti** is currently managing outstanding obligations estimated at R15.3 billion, as at the end of January 2016. These consist of obligations signed between 2003 and 2012 amounting to R8.6bn and those signed between 2013 and 2016, amounting to R6.7 bn.

The unit is currently in the process of negotiating obligation agreements estimated at R9.2 billion emanating mainly from backlogs in the ICT, pharmaceuticals and oil and gas procurements. The obligation values equate to the aggregate value of economic activities that must be undertaken by the obligors and not just the investment required. These economic activities include investment, research and development (R&D), technology transfer, sales (both export and local), outsourcing to SMMEs, BEE shareholding and training.

The outstanding obligations arise from purchases spread across the various sectors, mainly consisting of energy (22%), automotive (26%), rail (17%) and oil and gas (13%) – with the remainder coming from defence, aerospace and ICT.

A total of 50 companies are participating in the NIP programme; with a further potential 39 companies currently in discussions with the unit to sign obligation agreements. The main participant companies have since 2013 also been supporting 30 smaller local companies in a number of ways – ranging from investment to market access to joint work on programme development and to technology transfer – as well as on manufacturing of components developed by obligors under licence.

The NIP guidelines place emphasis on companies with obligations to focus and direct their NIP activities on their core areas of business, or on areas within the value-chains of their businesses, thus providing for more sustainable projects and greater cooperation between international and South African companies. Typical areas of cooperation between international and South African companies include:

- Investment into projects initiated by local companies. This translates into transfer of skills, providing market access and positioning local companies within the global-value supply chains of international companies
- Partnerships in Research and Development (R&D) activities as well as transfers of innovation and technology to local companies

- Providing support to local companies to help them position themselves in global value supply chains. The support could be in the form of assisting them to meet international quality standards and certification and accreditation thresholds.

The Direct NIP approach enables NIP projects to identify partnerships between local and international companies in areas like innovation and technology, research and development and identifying international market opportunities for local companies not only with obligors and their sister companies but also with suppliers and partners of the obligors.

This approach has been explored successfully between South African aerospace and defence companies and Original Equipment Manufacturers (OEM's) in the aerospace and defence industries. The current implementation of Direct NIP has relied on obligors bringing projects for consideration for approval as NIP projects as well as through informal approaches by the Industrial Participation Secretariat (IPS) unit, referring proposals to obligors for consideration. This methodology needs to be further strengthened by proactively identifying areas within the various industries/sectors where there are opportunities for involvement of obligors to support further economic growth.

A number of local companies have products that have export market potential, but have not so far been able to exploit this potential. Partnering with international companies that have obligors can open up these opportunities. In some cases, the inability to exploit potential markets is due to the fact that in a number of cases the products or production processes do not meet the stringent standards of either the OEMs or the relevant regulatory bodies in markets such as aerospace, oil and gas, rail equipment, pharmaceuticals etc. The NIP programme needs to play a more supportive role in getting local companies geared up to meet international standards in order to increase the export potential of their products.

In terms of the NIP policy, products or components that are designated for a minimum local content level are exempt from NIP. In this regard, there is a need for better alignment of NIP with the designation regime and better support for the work of the sectors in getting obligors committed to meet the local content requirements in designated products. The NIP programme, by working closely with the sector desks and the industrial procurement unit can play a proactive role in helping companies to meet designation requirements rather than them applying for exemptions.

Key opportunities

With the exception of pharmaceuticals and information and communication technologies, the most opportunities lie in getting the obligors to support local companies to establish themselves within the global supply value chains of OEM's by (1) providing support to meet international standards in terms of processes, accreditation, certification etc. in situations where companies are struggling to acquire these and (2) technology transfer to help manufacture products that they would not have been able to manufacture or they would not have manufactured within the required standards.

Key constraints

- Limited opportunities for large contracts.
- Information about tenders sometimes available only after the tender has been awarded.

Progress highlights

A number of successful projects have been implemented in the past two years in a number of sectors including aerospace, rail, information and communication technologies (ICT), energy and automotive. More recently, there have been successful projects in software development, oil and gas as well as shipbuilding. The following are some of the projects.

Key action programmes

1.1.1 Marine component manufacturing support programme

Nature and purpose of the intervention

The purpose of this intervention is to (i) ensure that the local ship building industry increase local value addition in the ship building industry, (ii) Secondly, where certification and accreditation of locally produced vessel components are hindrances in securing international contracts for production and supply of vessel components to international ship building houses, the IPS will identify local component manufacturers and, (iii) together, with NIP obligors, tailor-made support measures to address specific constraints and challenges that inhibit higher local content in the boat building sector, with specific emphasis on component manufacturing. Where necessary, local component manufacturers will be offered support in obtaining the necessary accreditation and certification to meet international standards. The complete intervention to achieve the targeted outcome is a multi-year programme

Targeted outcomes

- Increased local capacity and local content in the marine industry
- Export Promotion
- Job creation

Key milestones

- | | |
|-----------------|---|
| 2016/17: Q1- Q2 | Develop a programme to provide support for local component manufacturers to meet accreditation and certification standards that are required to supply international OEM's. |
| 2016/17: Q3 | Negotiate with potential NIP obligors and other relevant stakeholders on possible support measures for the local component manufacturers. |
| 2016/17: Q4 | Start the implementation of the support measures. |

Lead departments: the dti

Supporting departments/Agencies: Department of Defence, Armscor, Environmental Affairs, Transnet

1.1.2. Support programme for local design and development of mobile applications

Nature and purpose of the intervention

Mobile application is one of the fastest developing sub-sectors of the software development sector in the world. These software solutions range from applications for mobile commerce to applications for social, health, education etc. South Africa is no exception due to the high growth of internet usage and mobile communication, especially data communication.

This trend presents an opportunity for the local industry to grow the sector through development of mobile applications that address the country's unique challenges as well as positioning South Africa in the global market. Through discussions with obligors in the Information and Communication Technology Sector, it emerged that there is an interest in the use of NIP obligations to develop mobile applications in South Africa. This is essentially suited for the creation and growth of small and medium sized enterprises (SMMEs), as it provides an opportunity for skills development and transfer of technology to the local industry.

It is for these reasons that the IPS adopted this particular intervention; with an eye also to its future potential to penetrate export markets,

Targeted outcomes

Capacity building; technology transfer; introduction of new and innovative applications; export potential; job creation

Key milestones

2016/17 Q1-Q2	Develop a support programme to enable companies participating in the sector to link with obligors with the aim of joint development of certain applications or to develop certain modules for some of the applications.
2016/17 Q3	Negotiate and agree with NIP obligors the nature and scope of interventions to be implemented.
2016/17 Q4	Implement the agreed interventions.

Lead department: the dti

Supporting departments: SITA, SOCs, Provincial Departments

1.1.3 Defence component manufacturing support programme

Nature and purpose of the intervention

The Department of Defence (DoD) has identified a need for the renewal of much of its existing arms, ammunitions and defence equipment. This process needs to include the acquisition of additional necessary state-of-the-art defence equipment to ensure that the country's defence forces at all levels are adequately resourced to perform their duties. It is important that the componentry needs identified be locally sourced wherever possible, in order to help develop and strengthen key local industrial sectors, reduce dependence on foreign suppliers and create new job opportunities.

The IPS is aiming to work closely with defence stakeholders, local component manufacturers and original equipment manufacturers (OEMs) to explore the possibility of using obligations arising out of various defence procurement programmes to support local manufacturers in acquiring the technology and equipment that are necessary to enable them to supply to the major OEMs.

Targeted outcomes

- Increase local capacity and develop higher value-added products
- Increase exports
- Contribute to job creation

Key milestones

2016/17 Q1-Q2	Assessment of the current obligors' supplier requirements, future programmes they will be participating in and the potential for local suppliers.
2016/17 Q3-Q4	Negotiate and agree with obligors on the nature and scope of intervention.

Lead departments: the dti

Supporting departments: Department of Defence, Armscor

1.1.4 Rail Sector Components Manufacturing Support Programme

Nature and purpose of the intervention

Through Transnet's locomotive contracts, the Competitive Supplier Development Programme has developed certain capabilities for local manufacturers in the rail sector. These have been specifically developed to help them participate effectively in the supply of key sub-components of the locomotives purchased by Transnet. In order to sustainably increase growth beyond reliance on Transnet, the NIP program can help to support the integration of local components into OEM supply chains, in the context of strategic partnership agreements. This also carries with it significant potential for the development of value-added exports in the rail sector.

A recent analysis of constraints within the rail sector recognised that integrating into global supply chains requires meeting international quality standards for certification that most South African producers in this sector have not yet achieved. This intervention seeks to identify particular components and suppliers in the rail sector that can most readily be integrated into global OEM supply chains; especially those of the OEMs which are already supplying the Transnet and PRASA expansion programmes. Once local suppliers and components have been clearly identified, quality and process challenges that have so far inhibited their integration will be need to be speedily addressed. The initial step will be to provide intensified support for the certification of SA suppliers.

Targeted outcomes

Integrate local manufacturers into global OEM value supply chains; build up sustainable local suppliers; Increase job creation.

Key milestones

2016/17 Q1 – Q2	Develop a programme to provide support for component manufacturers to acquire accreditation and certification standards that are required to supply international OEMs.
2016/17 Q3	Negotiate with potential NIP obligors and other stakeholders on possible support measures for the local component manufacturers.
2016/17 Q4	Start implementation of the support measures.

Lead department: the dti

Supporting departments: DPE, DoT, PRASA, Transnet

1.1.5. Aerospace Development Programme by supporting the integration into the global supply chains

Nature and purpose of intervention

The aerospace industry has been reasonably successful in supplying the global aerospace industry with structural components, although the volumes are still low by international standards. These components are, however, mostly low-value-added components and suffer from exchange rate volatility (in particular the current Rand depreciation) since most of the input materials are imported.

With the exception of satellite antennae supplied to both Boeing and Airbus aircraft (*see Case Study below*) there have only been low levels of penetration into international markets with high-value added manufactured products and services - e.g. maintenance, repair and overhaul (MRO) services. One of the key challenges in this area is (once again) the need to put in place the necessary process to satisfy the standards required by regulatory agencies in aviation and hence begin to break into high-value added export markets.

An important secondary goal is to support local companies providing MRO services to provide more high value added services *locally* rather than sending products for repairs to international companies.

Targeted outcomes

Increased exports; technology transfer; job creation

Key milestones

2016/17 Q1	Assessment of processes required to supply international markets with high value-added products for both MRO services and aircraft component manufacturing.
2016/17 Q2–Q3	Develop a support programme to enable local companies to meet standards required to supply international markets.
2016/17 Q4	Start implementation of the programme.

Lead department: the dti

Supporting departments/agencies: DST, CSIR, DPE

CASE STUDY: SATELLITE COMMUNICATIONS ANTENNAE

In today's globalised aerospace industry, the Original Equipment Manufacturers (OEMs) as the prime contractors, take the strategic decisions regarding the composition and organisation of their value supply chains when embarking on new aircraft programmes or improved methods for producing current aircraft.

In making these decisions, OEMs consider, on one hand, the risk, capability and capacity of potential suppliers and work-share partners and, on the other, the potential and real strategic value that relationships with them would offer.

South African Airways fleet renewal, which was launched in 2002, resulted in the NIP programme's utilisation to enhance the South African aerospace industry's effective penetration into various value chains. This included the nation's expertise and capability in developing sophisticated, robust, state-of-the-art and unique communications technology, including world-class satellite-communications (satcoms) equipment.

In 2005 a South African company called **Omnipless** was identified by **the dti** and Airbus (the OEM selected by SAA to equip it with a modern, competitive aircraft fleet), as a possible partner for manufacturing and supplying satcoms antennae. At that time, although Omnipless was able to produce the equipment, it was largely unknown beyond a small, limited niche market. **The dti** registered the development of this business as a possible NIP project. Airbus worked closely with Omnipless, assisting and guiding it to its full aerospace certification and recognition of its quality systems and processes, which were achieved in 2006.

As a result of these efforts Omnipless successfully bid for and secured contracts to provide satcoms equipment across the entire range of Airbus civil aircraft and flagship military aircraft programmes, i.e.:

- A320 Family (a series of 124-200 seater, twin-engined airliners)
- A330 (twin-engined, wide-body long range jetliners)
- A350XWB (extra-wide-body, twin-engined ultra-long range airliners)
- A380 (four-engined superjumbo airliners)
- A400M (military transport aircraft)

Omnipless's successes attracted foreign direct investment in the form of Cobham, which also resulted in more business coming into South Africa. Omnipless was subsequently re-branded as **Cobham South Africa**.

To date, the company has realised exports to the value of \$20.55 billion (approx. ZAR328 billion at January 2015 exchange rates). This economic contribution continues to increase as Airbus steadily raises the tempo of its output (with similar impact on its suppliers) to meet the increased demand for its range of modern, fuel-efficient, environmentally friendly and passenger-appealing aircraft. By the end of 2015, Airbus had an industry-record backlog for almost 6,800 new aircraft, representing 10 years of sustained production at current output, which currently runs to over 60 aircraft a month.

Cobham South Africa's satcom operation employs about 230 people including 50 engineers.

In October 2015 Cobham South Africa was named as **Airbus's best in class supplier**, an award in recognition of outstanding contribution by selected partners in the areas of aerostructures & material systems, cabin equipment, propulsion and general procurement.

This fruitful industrial relationship is a prime example of the NIP at work in identifying and enabling sustainable, high-tech manufacturing and new export revenue streams for South Africa as a result of the leveraging power of public procurement.



2. Industrial financing

The shortage of medium to long term funding for the manufacturing sector has long been a problem in South Africa, as noted in previous IPAP iterations. Briefly stated, SA requires a system of industrial financing, incentives and export support which is better able to support the manufacturing sector to raise competitiveness, output and exports.

In this year's IPAP we address a number of the issues head-on:

1. Working with private sector financiers to create and deliver new financial packages appropriate to manufacturers' needs.
2. Developing new sector-specific packages and tailoring existing sector-specific support measures, especially in support of labour intensive sectors and sub-sectors.
3. Providing decisive support measures to emerging majority black-owned companies with a proven and demonstrable track record to become major players in the SA manufacturing sector, capable of competing effectively in global export markets.
4. Continuously monitoring and evaluating the performance of all existing (and forthcoming) incentive packages to ensure that they are indeed fulfilling the purposes for which they were designed.

In addition to these actions, **the dti** will be working in ever-closer collaboration with the Department of Science and Technology (DST) on financial and non-financial support measures for technology acquisition and diffusion that spurs innovation in the most dynamic (often still emergent and fragile) sub-sectors of manufacturing.

Key action programmes

1. Working with private sector financiers on a win-win basis to make available appropriate financial products for the manufacturing sector

Nature and purpose of the intervention

This will involve dialogue with private sector financing institutions to develop appropriate products with the right combination between grants, loans and rebates that will benefit the manufacturing sector and achieve the objectives of the state in supporting enhanced investment and growth in manufacturing.

The manufacturing sector is faced with the challenges of high cost of capital, scarcity of readily available working capital and short average terms of financing. This acts as a brake on the operational performance of many firms, particularly in the start-up, new technology commercialisation and systems-building phases. An approach is needed to achieve a better mix of public and private sector funding to continue supporting the growth and diversification of the manufacturing sector in the light of the continuing global recession.

Targeted outcomes

Syndicated financing between **the dti** and private sector financing institutions, leading to enhanced levels of firm competitiveness – built on much better access to appropriate funding – particularly with regard to terms of interest rates and loan repayment periods.

Key milestones

- 2016/17 Q2: Initiate engagements between **the dti** and private sector financiers to explore syndicated financing options to support the manufacturing sector.
- 2016/17 Q3: Proposed syndicated funding product to support the manufacturing sector with a better mix of public and private sector funding and improved conditionalities.

Lead department: the dti

Supporting departments/agencies: National Treasury, EDD

2. Developing new sector-specific packages and tailoring existing sector-specific support measures

Nature and purpose of the intervention

Given the demonstrable successes of sector-based incentives – e.g. in Clothing and Textiles, Automotive, Business Process Services and Film – a number of existing incentives will be repackaged into new sector-specific programmes. The focus will be on the labour intensive sectors with an emphasis on components in the rail and mining capital goods and agro-processing sectors.

- (i) The mining, transport and rail component sub-sectors are both labour intensive and play a critical role in developing local supply chains for OEMs and domestic assembly and production companies.

- (ii) Agro-processing provides critical value-adding support to agricultural production. It is also characterised by high labour-intensity, while at the same time playing an important role in sustaining food security.

Targeted outcomes

Appropriate support measures and/or sector specific incentives to encourage manufacturers to invest in new production facilities – and/or upgrade existing facilities - in a manner that promotes employment and maximises value addition.

Key milestones

2016/17 Q2-3: Scoping appropriate support which will include securing funding from the fiscus and cross departmental technical partnerships.

2016/17 Q4: Draft funding guidelines developed in consultation with Industry and potential funders to support investments in labour intensive sectors.

Lead department: the dti

Supporting departments/agencies: NT, EDD and DAFF

3. Roll-out of the Black Industrialist Programme

Nature and purpose of the intervention

Within the larger manufacturing and related services focus of **the dti's** current incentive offering, the Black Industrialist Incentive Programme is specifically dedicated to supporting the growth and building the global competitiveness of majority black- owned and managed businesses in the manufacturing sector. The intention is to contribute towards shifting the demographic composition of South Africa's industrial sector by engaging with and nurturing emerging black industrialists to tap into a currently massively under-utilised reservoir of potential jobs, revenue, taxes and innovation.

The Black Industrialists Policy is a key part of government's broad industrialisation initiatives to expand the industrial base and inject new entrepreneurial dynamism into the economy, based on clear recognition of the fact that more equal societies tend to grow faster than those that are unequal.

Targeted outcomes

Accelerated growth in the number of Black Industrialists actively participating in the national economy, selected industrial sectors and value chains, as reflected by their contribution to growth, investment, exports and employment.

Key milestones

2016/17 Q1: Roll out of the incentive programme in collaboration with Development Finance Institutions.

Lead department: the dti

Supporting departments/agencies: NT, DFIs, EDD

4. Evaluation of selected Incentive programmes

Monitoring and Evaluation (M&E) is critical to ensuring that incentive programmes achieve the objectives for which they were created. Hence the importance of the thorough and comprehensive review process that **the dti** is engaged with.

Key milestones

2016/17 Q2: MCEP review - Final report.

2016/17 Q2: Annual Incentive report finalised.

2016/17 Q3: ADEP Rapid Appraisal – Final Report.

2016/17 Q4: Film and TV Implementation Evaluation – Final Report.

2016/17 Q3: Progress report on Black Industrialist programme produced.

Lead department: the dti

Supporting departments/agencies: DPME

3. Developmental trade policy

Technical infrastructure

Global economic integration, increased consumer awareness of quality, safety and health risks and intensifying environmental concerns are putting pressure on all countries to ensure that they have a sound technical infrastructure framework in place. This term refers to all fields of standardisation, testing, metrology, accreditation, certification and conformity assessment.

Technical infrastructure or quality infrastructure in South Africa is based on a network of closely related and interlinked entities - the South African National Accreditation System (SANAS), the National Regulator for Compulsory Specifications (NRCS), the South African Bureau of Standards (SABS) and the National Metrology Institute of South Africa (NMISA) – all attempting to working together in a coordinated manner.

Technical infrastructure support has assisted many small and medium enterprises (SMEs) to improve the standard of local manufacturing processes, promoting competitiveness in the market, expanding the participation of such enterprises in international trade and creating new job opportunities.

Stronger compliance and monitoring programmes have opened doors to domestic and global markets as well as protecting domestic markets from substandard products which may pose risks to health, safety and fair trade.

The new WTO Trade Facilitation Agreement (TFA), which will soon come into effect, has renewed focus on foreign direct investment opportunities, diversification of exports and participation in global value chains. One of the determining factors that foreign investors consider when investing or trading with a country is the presence of a strong national technical infrastructure.

Quality infrastructure ensures reliable measurements and ease of trade, standardisation around international standards, a strong regulatory environment and an accreditation system that ensures test results will be internationally accepted. In South Africa, successfully boosting trade is going to require a more efficient and co-ordinated approach between SARS (Customs Modernisation Programme), SABS, ITAC and the NRCS, using all available levers – including the new Customs Duty and Customs Control Acts – to meet the challenges presented by the WTO Trade Facilitation Agreement.

During tough economic conditions it is imperative that the national network is on par with international requirements in order for international trading and exchange of

services to continue with ease. This requires continuously updating new trade standards and acquiring the capability to conform to new regulations as advances are made in various fields. In the business environment, all market-based transactions centre around assurance that a product or service will meet the agreed requirements. The 10-year strategic plan for the South African Technical Infrastructure will therefore focus on tapping into global developments in the various sectors and working on high-impact projects to strengthen the national technical infrastructure going forward.

In line with the approach adopted in the previous IPAP iteration, the technical infrastructure institutions as a collective developed a framework for the appraisal of existing national policies applicable to each IPAP sector, based on core IPAP objectives. This resulted in synchronised Action Plans in the following sectors: green industries, agro-processing, metal fabrication, capital and rail transport equipment, advanced manufacturing, advanced materials and ICT, clothing, textiles leather and footwear, plastics, pharmaceuticals, chemicals and cosmetics, automotive products and components and the nuclear industry. The key milestones in the identified sectors reflect targeted responses to the gaps that were identified during this process.

Key opportunities

The key opportunities that Technical Infrastructure policies and institutions will exploit over the next three years include:

- Raising awareness of technical infrastructure entities and their offerings during stakeholder engagements; promoting their programmes; and developing brand awareness to expand the footprint of technical infrastructure entities beyond South Africa.
- Addressing the growing global demand for technical infrastructure support which has been ignited by the shift towards green economies, regional integration initiatives and the requirements of international regulatory sectors.
- Playing a leading role in the quality infrastructure support required for the envisioned Continental Free Trade Area currently under discussion.
- Supporting the conformity assessment needs of IPAP priority sectors and providing internationally recognised technical infrastructure services.
- Taking a leading role in promoting technical infrastructure across all the SADC countries, so as to better equip emerging industries in the region to compete in domestic and international markets.

- Supporting quality infrastructure development in Africa that will facilitate the acceptance of accredited certification, inspection and testing in many African markets based on single accreditation.
- Facilitating food trade, supporting agro-processing, food and feed safety and working in close alignment with growth strategies and trade agreements like AGOA (Africa Growth and Opportunity Act), SA-EU Development and Cooperation Agreement (TDCA) and the Trade, Investment and Development Cooperation Agreement (TIDCA).
- Updating legislative mandates to provide long-term strategic direction and ensure that technical infrastructure entities are able to respond to the future needs of the country.
- Stronger enforcement of regulated products to protect consumer health and safety and the environment.
- Investing more funds into R&D activities, measurement capabilities, voluntary and mandatory standards and accreditation programmes.
- Actively support SMMEs to improve their design capabilities through targeted design interventions, thus enabling the translation of new ideas into sustainable businesses.

Key action programmes

1. Realignment of technical infrastructure activities with IPAP sectors

Nature and purpose of the intervention

This intervention seeks to align technical infrastructure activities with IPAP imperatives. IPAP focuses on the importance of a firm, sustainable and adaptable technical infrastructure to respond to the needs of global markets, emerging businesses and new technological developments through the development of accurate measurement and testing capabilities, standards, compulsory specifications and accreditation programmes that serve identified priority areas within each sector.

Targeted outcomes

Re-aligned and synchronised technical infrastructure institutions' activities, better able to support IPAP priorities.

1.1. Green industries

Key milestones

- 2016/17 Q1: Conduct a feasibility study for the development of a new Compulsory Specification for thermal insulation products for buildings.
- 2016/17 Q4: Revise the standard on energy efficiency in buildings.
- 2016/17 Q4: Establish a laboratory to test air conditioners in support of NRCS regulations on energy efficiency labelling.
- 2016/17 Q1: Finalise the amendment of VC 9006, the Compulsory Specification for hot water storage tanks - upgrading of energy-efficiency requirements and labelling.
- 2016/17 Q4: Second phase upgrade of the electrical power and energy measurement standards by NMISA to support measurements required by ESKOM and municipalities for the maintenance of the national power grid and the monitoring of its distribution systems.
- 2016/17 Q4: Develop capability to accurately determine the size of dust particles (in support of Air pollution monitoring).
- 2016/17–2017/18: Improve the measurement accuracy for electrical power and energy by developing primary national measurement standards

Lead departments/ agencies: NMISA, NRCS, SABS

1.2. Agro-processing

Key milestones

- 2016/17 Q4: Provide reference measurement capability for pesticides and inorganic elements in environmental and food matrices including fish in support of food safety.
- 2016/17 Q4: Provide reference measurement capability for dioxins, furans and dioxin-like toxic substances in environmental and food matrices in support of food safety.

- 2016/17 Q4: Start project to revise the current standard on canned meat products.
- 2016/17 Q4: Amend VC 8014, the Compulsory Specification for canned fish products.
- 2016/17 Q1 – 2017/18 Q4: Provide reference measurement capability for persistent organic pollutants including dioxins, per-fluorinated compounds, brominated and chlorinated contaminants as well as dioxin-like toxic substances in environmental and food matrices.
- 2016/17 Q4 – 2017/18 Q4: Provide reference materials for mycotoxins and inorganic elements in food matrices in support of food safety.
- 2016/17 Q1 – 2017/18 Q4: Develop reference measurement capability for amino-acids in food in support of food labelling regulation.
- 2016/17 Q1 – 2017/18 Q4: Provide reference measurement capability and continue to develop new, appropriate measurements for toxic substances, including but not limited to pesticides, polycyclic aromatic hydrocarbons and inorganic elements in environmental and food matrices.
- 2017/18 Q4: Continue to develop new reference measurements for pesticides and inorganic elements in environmental and food matrices in support of food safety.
- 2017/18 Q4: Amend VC 8019, the Compulsory Specification for canned meat products.
- 2017/18 Q4: Develop a Compulsory specification for live Bivalves molluscs

Lead departments/ agencies: NMISA, NRCS, SABS

1.3. Metal fabrication, capital and transport equipment

Key milestones

- 2016/17 Q4: Finalise the amendment of Compulsory Specifications, VC 8022, 8023, 8024 and 8025, to add further safety features to automotive vehicles and align SA requirements with the latest UN (ECE) requirements.
- 2017/18 Q4: Establish reference measurements for alloy compositions using XPS in support of metals industry.
- 2016/17 Q4: Benchmarking capability with other NMI.
- 2016/17 Q3: Upgrade the laser tracker dimensional facility at NMISA for traceability for large dimensional measurements for locomotives and coaches.
- 2016/17 Q4: Conduct a benchmark study to investigate how accreditation can support the rail industry.
- 2016/17 Q4: Develop an accreditation programme for fusion welding of metallic materials.
- 2017/18 Q4: Declaration of mineral exports: SABS to conduct the verification of qualities and quantities of coal and other minerals (SABS and Department of Mineral Resources project).

Lead departments/ agencies: NMISA, SANAS, SABS

1.4. Automotive products and components

Key milestones

- 2016/17 Q4: Develop a Compulsory Specification for re-treaded tyres for commercial and passenger vehicles and their tyres.
- 2016/17: Conduct a feasibility study for a regulation for part-worn (used) tyres.
- 2017/18 Q4: Upgrade of the national measurement laboratories for Force in support of transport, manufacturing and the automotive sector.
- 2017/18 Q4: Recapitalisation of national dimensional and torque measurement Calibration and traceability methods.

2016/17 Q4: Finalise the amendment of Compulsory Specifications, VC 8022, 8023, 8024 and 8025, to add further safety features to automotive vehicles and align SA requirements with the latest UN (ECE) requirements.

Lead departments/ agencies: NMISA, NRCS

1.5. Biofuels

Key milestones

2016/17 Q4: Develop reference measurements in support of accurate measurement standards for biofuels.

2016/17 Q4: Conduct a feasibility study for the regulation of ethanol gel for cooking and other gel burning appliances.

2017/18 Q4: Initiate project on new standards for biomass.

Lead departments/ agencies: NMISA, NRCS, SABS

1.6. Plastics, pharmaceuticals, chemicals, cosmetics

Key milestones

2016/17 Q2: Finalise the development of a Compulsory Specification for polymer film for damp-proofing and waterproofing in buildings.

2016/17 Q4: Project to revise the standard on detonators, relays and initiating devices for commercial applications.

2016/17 Q4: Develop analytical capabilities for monitoring of hazardous substances in polymers, plastics and packaging materials.

2016/17 Q4: Provide analytical reference measurement traceability for pharmaceutical, personal care and cosmetic products; specifically, to analyse for toxic elements.

2016/17 Q4: Provide analytical reference measurement traceability for residual solvents in pharmaceutical products.

2016/17 Q4: Project on conformity assessment specification for African traditional medicine preparations.

2016/17 Q4: Project on new standards for medical devices.

2016/17 Q4: Project on new standard for surgical drapes, gowns and clean air suits, used as medical devices for patients, clinical staff and equipment - general requirements for manufacturers, processors and products; test methods, performance requirements and performance levels.

2016/17 - 2017/18 Q4: Capability to perform traceable diagnostic measurements from blood samples in support of clinical and diagnostics.

2016/17 - 2018/19 Q4: Build capability to assign purity to peptides in support of biopharma, and protein quantification to support clinical diagnostic measurements.

Lead departments/ agencies: NMISA, NRCS, SABS

1.7. Clothing, textiles and footwear

Key milestones

2016/17 Q4: Refurbishment of textiles laboratory to continue supporting the consignment inspection services.

2016/17 Q4: Conduct a feasibility study for developing a regulation for Laundry processes and management.

2016/17 Q4: Conduct a feasibility study for developing a regulation for body armour (ballistic vests).

2018/19 Q4: Project on new standard for natural dyes/vegetable dyes for leather.

Lead departments/ agencies: SABS, NRCS

1.8. Advanced materials

Key milestones

- 2016/17 Q4: Establish advanced microscope that can provide 3D reference measurements for advanced material manufacturing.
- 2016/17 Q4: In support of the local metal industry, establish surface reference measurement capability.
- 2016/17 Q4: Conduct a feasibility study for the development of an accreditation programme for medical devices and IVDs.
- 2016/17 Q4: Project on new standards for nanotechnologies (various parts).

Lead departments/ agencies: NMISA, SABS

1.9. Electro-technical

Key milestones

- 2016/17 – 2017/18 Q4: Conduct a feasibility study to establish the market requirement for national measurement standards for high voltage direct current and the findings will be instigated.
- 2016/17 Q1: Develop a new Compulsory Specification for Power Tools.
- 2016/17 Q2: Amend VC 8011 for Lamp holders.
- 2016/17 Q4: Project for the revision of safety standards on household and similar electrical appliances.
- 2016/17 Q4: Project for new standards on communication networks and systems for power utility automation (various parts).

Lead departments/ agencies: NMISA, NRCS, SABS

1.10. Information communications technology

- 2016/17 Q4: Upgrade the national measurement standards required to perform diagnostic network tests on fibre-optic and wireless telecommunication systems.
- 2016/17 Q4: Develop and roll out accreditation programmes for Information Security Management System and Information Technology Service Management.

Lead departments/ agencies: NMISA, SANAS

1.11. Nuclear energy

Key milestones

- 2017/18: Q4: Research Project on the requirements for national standards for nuclear technology.
- 2016/17 - 2018/19 Q4: Support the South African nuclear regulatory bodies (DOH and NNR) in fulfilling their mandate through traceable measurements and technical expertise.
- 2016/17 - 2018/19 Q4: Support the SABS through traceable measurements in monitoring radiation workers in the country.
- 2017/18 Q4: Develop and roll out an Accreditation Programme for nuclear pressure equipment and component inspection and facility management system certification.
- 2017/18 Q4: Identify technical experts and train SANAS technical assessors.

Lead departments/ agencies: NMISA, SANAS, SABS

1.12. Strengthen SA's technical infrastructure to support industrial development

1.12.1. Updating of the National Building Regulations and Building Standards Act

Key milestones

- 2016/17 Q4: New NBR Part XB for water efficient building regulations.
- 2016/17 Q3: Conduct a feasibility study for the development of a Compulsory Specification for lintels in construction.
- 2016/17 Q4: Develop a new Compulsory Specification for plumbing components.
- 2016/17 Q4: Conduct a feasibility study for the development of a Compulsory Specification for timber roof-trusses and punched metal fasteners.
- 2017/18 Q4: Conduct a Feasibility study for the need for an accreditation programme on Construction Management.
- 2016/17 Q4 - 2017/18 Q4: National Building Regulations and Building Standards Bill drafted and Parliamentary legislative process.
- 2017/18 Q2: Amendment of relevant National Building Regulations to include plumbing requirements as per the Water Act.

Lead departments/ agencies: the dti, NRCS, SANAS

1.12.2. Strategic direction of the South African technical infrastructure

Key milestones

- 2016/17 Q4: 10-year strategic plan for South African technical infrastructure.
- 2016/17 Q4: Strategy to assist industry to comply with sector specific standards, certification and accreditation in sectors such as Oil and Gas, Boatbuilding and Rail.
- 2017/18 Q4: Legislative review of technical infrastructure – an investigation into the effectiveness of the 4 Acts and recommendations for amendments.

Lead departments/ agencies: the dti

Supporting departments/ agencies: NMISA, NRCS, SABS, SANAS

1.12.3. Strengthening the enforcement system of NRCS

Key milestones

- 2017/18 Q2: Finalise gap analysis research report to inform the NRCS risk-based strategy aimed at improving NRCS coverage of the higher-risk industries; draft appropriate regulations.

Lead departments/ agencies: NRCS.

1.12.4. Consumer protection initiatives

Key milestones

- 2016/17 Q4: Project implementation for Standards on consumer warranties to support Consumer Protection Act.
- 2016/17 Q2: Project Implementation for Standards on Consumer Contact Centres to support Consumer Protection Act.
- 2017/18 Q2: Revision of the Legal Metrology Technical Regulation for liquid fuel dispensers to include Technical Regulations for all dynamic measuring systems for liquids other than water.
- 2016/17 Q3: The Development of a new Compulsory Specification for safety of toys.
- 2017/18 Q2: Revision of the Legal Metrology Technical Regulation for water meters for cold potable water to include Technical Regulation for water meters for hot water.
- 2017/18 Q2: Develop a Legal Metrology Technical Regulation for road and rail tankers with level gauging.
- 2017/18 Q2: New Legal Metrology Technical Regulation for multi-dimensional measuring instruments and gas meters.

Lead departments/ agencies: NRCS, SABS

1.12.5. Accreditation programme rollout

Key milestones

- 2017/18 Q4: Conduct a feasibility study on an Accreditation Programme for Asset Management.

Lead departments/ agencies: SANAS

1.12.6. SMME support

2016/17 Q4: 50 SMMEs including new and existing entrepreneurs for which design, innovation and entrepreneurship interventions are implemented by the SABS Design Institute.

Lead departments/ agencies: SABS

1.12.7. Public Procurement

2016/17 Q4: Review technical specifications on the calculation and measurement of local content.

Lead departments/ agencies: SABS

1.13. Regional integration

Co-operation on standards, quality assurance, metrology and accreditation (technical infrastructure)

Nature and purpose of the intervention

Developing African capacity for technical infrastructure activities can be viewed as a long term intervention involving the co-ordination and cooperation of technical infrastructure activities such as standards, metrology and accreditation and conformity assessment services within African countries.

The capacity to comply with international standards, norms and technical regulations underpins the potential for regional economic and industrial growth. And is a precondition for industrialisation efforts - particularly with respect to metrology, standards, accreditation and conformity assessment and compliance.

The dumping of cheap, sub-standard manufactured goods on African markets has sometimes led to the collapse of local industries and acted as a major barrier to industrial development. Tightened standards and conformity assessment are therefore of great importance in preventing the influx of sub-standard and injurious products into African markets.

Targeted outcome

Support regional integration through Improved quality and enhanced potential access of African products to export markets.

Key milestones

2016/17 Q4: SABS to put forward proposals for harmonisation of South African Indigenous Knowledge System standards in ARSO and SADC.

2016/ 17 Q4: AFRAC's internal audit in preparation for the ILAC and IAF peer evaluation, pre peer evaluation of MAURITAS, AFRAC e-learning programme developed

2017/18 Q4: Develop comparison programme within AFRIMETS to compare National Measurement Standards of all countries participating in the CIPM Mutual Recognition Arrangement.

2017/18 Q4: Identify relevant ARSO standards for harmonisation by SABS.

Lead departments/ agencies: the dti, NMISA SABS, SANAS

1.14. Ongoing developmental tariff reform

Nature and purpose of the intervention

Tariffs are used as trade and industrial policy instruments whose key objective is to promote, in a complementary manner, domestic production, job retention and creation, as well as international competitiveness. In light of the pressing challenge of unemployment, the criteria for adjudicating tariff applications are applied in a manner that is sensitive to employment outcomes. Tariff investigations are done on a case-by-case basis and take into account the specific circumstances of the sector involved, and are conducted in accordance with policy, domestic law and regulations consistent with World Trade Organisation (WTO) rules.

Targeted outcomes

Reduced input costs for downstream value-adding manufacturers, leading to improved competitiveness through further downstream value-addition and increased manufacturing sector employment.

Key milestones

- 2016/17 – 2018/19 ongoing: Scope for industries to apply to ITAC for selective tariff increases on products with significant potential for the creation and retention of sustainable jobs, import replacement and “water” between bound and applied rates.
- 2016/17 – 2018/19 ongoing: Scope for further selected decreases in tariffs, particularly in monopolistic sectors that supply intermediate inputs into manufacturing and other productive sectors, in order to support downstream value-addition.
- 2016/17 – 2018/19 ongoing: Scope for selective creation of rebates for manufacturing products that attract duties, particularly where these are intermediate products in manufacturing, in support of the value-adding manufacturing sectors.

Lead departments/agencies: the dti, ITAC

Supporting departments/agencies: EDD

1.15. Clampdown on customs fraud, illegal imports and sub-standard products

Introduction

The South African economy continues to face increasing growth of illicit trade and illegal imports which have a negative impact as they erode the country’s manufacturing capacity and revenue. The South African Revenue Services is actively involved in updating the existing legislative framework with the dual purpose of facilitating trade and combatting customs fraud and illegal imports. To date gains have been secured through two important new pieces of legislation that were gazetted in 2014 (Customs Duty Act and Customs Control Act). These allow for much harsher penalties for customs offenders, through measures such as higher fines; naming-and-shaming of offenders; holding individuals (natural persons and not simply juristic persons) responsible for fraud; and levying new forms of penalties on offenders. They also allow for:

- Rescinding the import licences of repeat offenders;

- Stemming the flow of illegally imported goods into the local market;
- Creating additional customs capacity so as to achieve higher rates of inspection.

These gains provide considerable leverage for strategic interventions in customs-related challenges.

Nature and purpose of the intervention

Ongoing interventions in customs fraud-related issues, illegal imports and sub-standard products, including strengthened enforcement of the legislative framework.

Targeted outcomes

Stronger integrated and co-ordinated programmes in the clampdown on customs fraud, illegal imports and sub-standard products; such programmes to combine border enforcement and post-border compliance with enforcement extended to the points of distribution and sale.

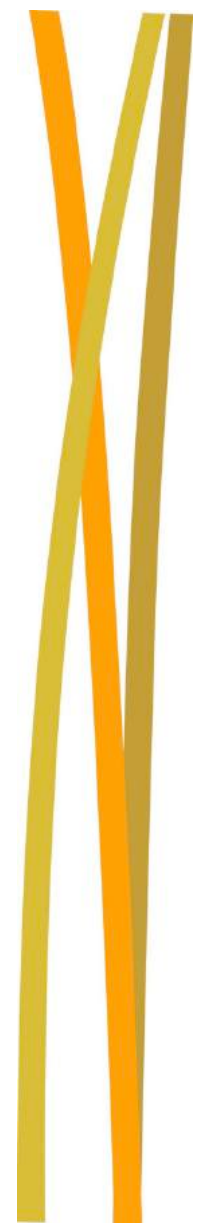
Key milestones

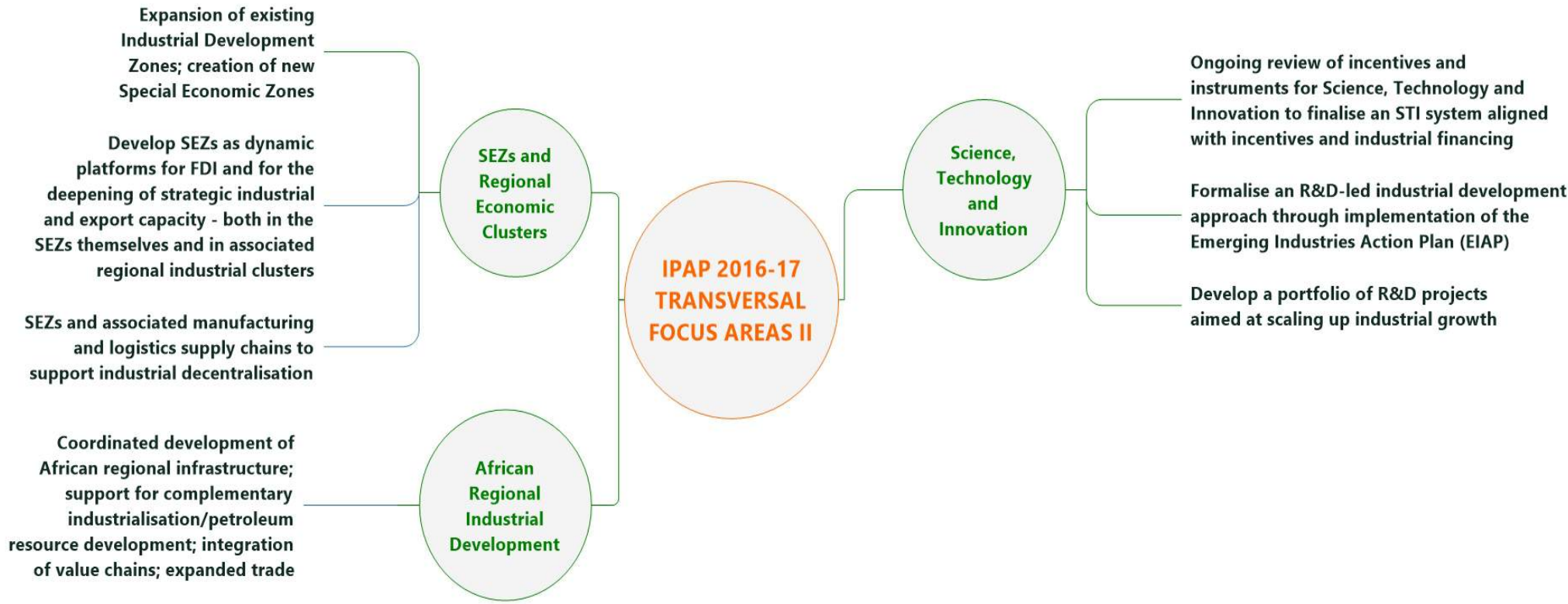
- 2016/17– 2018/19: Strengthening of a range of measures – including closer collaboration between **the dti**, industry, NCRS, SABS, CIPC (on counterfeit goods) and SARS – through multi-sectoral forums such as the Ports of Entry Control Centre that targets SA border posts.
- 2016/17– 2018/19: Extend application of the Indicative Reference Price System to other vulnerable sectors to provide an increasingly effective early warning system.
- 2016/17– 2018/19: Ongoing development of programmes aimed at improving compliance within industry and contributing to the formulation of best practice in the facilitation of trade, in accordance with all the Acts administered by SARS.
- 2016/17– 2018/19: Conduct continuous targeted investigations and raids, on non-compliant products; confiscation of substandard and illegal products of individuals and companies that are in breach of the law; search and seizure missions to include goods for export.

Lead departments/agencies: NT/SARS

Supporting departments /agencies: **the dti**, NCRS, SABS, CIPC, ITAC, EDD

**IPAP 2016/17 – 2018/19: TRANSVERSAL FOCUS
AREAS 2**





4. Special economic zones and regional industrial clusters

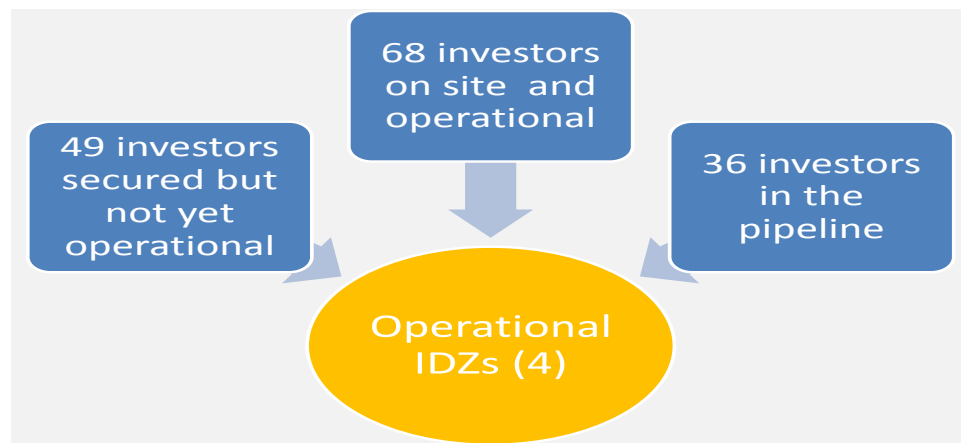
Situation analysis

The Special Economic Zones Programme is aimed at accelerating economic growth and development in designated regions of the country to secure industrial decentralisation. The key measures of performance for the Programme include increasing the stock of foreign and domestic direct investments, increasing value added exports, creating jobs, building industrial clusters and regional industrial hubs.

The SEZ Act of 2014 cemented a new approach to the planning and development of special economic zones and introduced a new incentives package for special economic zones. The new incentives package includes a corporate tax rate of 15% for qualifying investments in SEZs. This has significantly improved the competitiveness of South African SEZs with respect to FDI attractiveness.

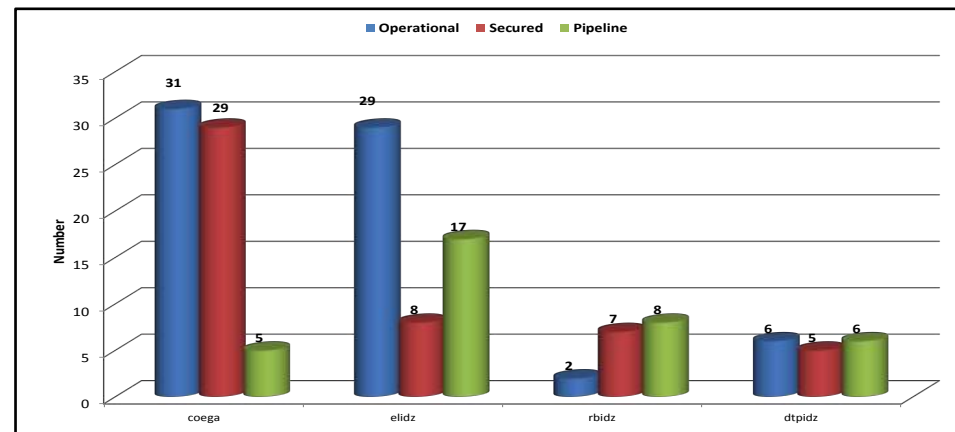
There is a marked shift in the performance of operational IDZs with respect to number of investors (operational, secured but not yet operational, and pipeline) as reflected in figures 1, 2 and 3 below:

Figure 1: Number of operational, secured and pipeline investors in 4 operational IDZs as at end of Q2 2015/16 (Coega, DTP, ELIDZ and RBIDZ)



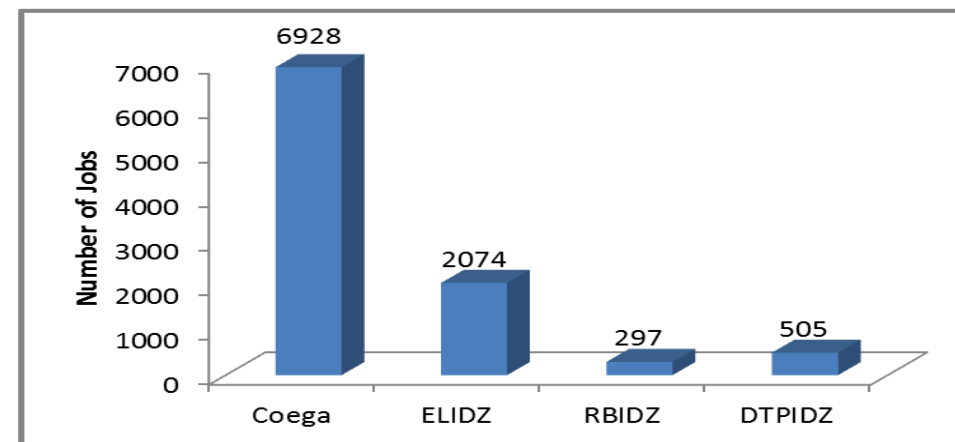
Source: the dti

Figure 2: Value of operational, secured and pipeline investments in 4 operational IDZs as at end of Q2 2015/16 (Coega, DTP, ELIDZ and RBIDZ)



Source: the dti

Figure 3: Employment performance of 4 operational IDZs as at end of Q2 2015/16



Source: the dti

The overall goal going forward is to ensure continuous increase in investment, employment and export performance. In pursuit of this goal, the special economic zones have to anchor the development of key industrial clusters.

Key industry clusters emerging through the SEZs include the following:

- Oil and Gas: Saldanha Bay, Western Cape
- Oil and Gas: Richards Bay
- Metallurgical: Musina, Limpopo
- Fuel cells: City of Ekurhuleni, Gauteng

Constraints

- The number of designated zones (industrial parks) per region is too small to make any rapid and large scale industrial development impact on targeted regions
- Cumbersome and tedious designation process
- Fiscal constraints limiting potential developments
- Weak systems to support industrialisations in many regions
- Non-existent or weak education and training infrastructure and systems
- Energy, water and sanitation infrastructure
- Research and development institutions
- Health facilities
- Dynamics in provinces create too much instability for project management

Opportunities

- Public-private partnerships in SEZ infrastructure development and operations
- Partnerships with the Chinese and other development partners
- Translating the significantly huge investment pipeline into secured and operational investments
- Development of high-potential and high-impact clusters in selected regions
- Off-grid energy solutions for industrial parks and other energy users

In the previous financial year progress highlights included the Induction of the SEZ Advisory Board and finalisation and approval of SEZ regulations. With respect to designation of SEZs, two industrial development zones, namely the Dube Tradeport IDZ and Maluti-a-Phofung IDZ have been designated. In addition, two applications for designation have been received, with two more expected by June 2016.

To date, the collective investment performance of the 4 operational IDZs (as set out in the graphics above) can be summarised as follows:

- Number and value of operational investments: 68
- Total operational investment value: R9, 5 billion
- Number of secured but not operational investments: 49
- Total value of secured but not operational investors: R21, 5 billion
- Number of pipeline investments: 36
- Value of projected pipeline investments: R337. 8 billion

Key action programmes

1. Quarterly SEZ performance report

Nature and purpose of the intervention

This will entail monitoring and reporting on progress in all designated zones with special focus on investment attraction and potential jobs created as a result.

Targeted outcomes

Improved performance of designated zones through the provision of detailed and timely information and data on trends in investments performance.

Key milestones

2016/17 Q1-Q4: Four Quarterly Reports

Lead departments/agencies: the dti

Support departments/agencies: Designated IDZs/SEZs entities

2. Marketing and promotion of SEZs

Nature of intervention

Targeted international marketing of the South African Special Economic Zones. This intervention will consist of marketing and promotional campaigns in key FDI markets and engagements with key investors.

Targeted outcomes

Increased investment and employment creation opportunities.

Key milestones

2016/17 Q1- Q4: Four targeted international marketing campaigns.

Lead departments/agencies: the dti and IDZ/SEZ entities

Support departments/agencies: Investment promotion agencies

3. Development of priority clusters

3.1 Saldanha Bay Oil and Gas Cluster

Nature and purpose of the intervention

Development and implementation of an integrated plan for the Saldanha Bay Oil and Gas Cluster.

Targeted outcomes

Development of infrastructure, increased investments, exports and jobs.

Key milestones

2016/17 Q2: Development Plan developed and approved.

2016/17 Q3: 1st Implementation Report.

2016/17 Q4: 2nd Implementation Report.

Lead departments/agencies: Saldanha Bay IDZ, the dti, DPE, Ports Authority

Support departments/agencies: Wesgro, WC Economic Development

3.2 Musina Metallurgical Cluster

Nature and purpose of the intervention

Development and implementation of an integrated plan for the metallurgical cluster in Musina.

Targeted outcomes

Increased investments and jobs.

Key milestones

2016/17 Q2: Development Plan developed and approved.

2016/17 Q3: 1st Implementation Report.

2016/17 Q4: 2nd Implementation Report.

Lead departments/agencies: the dti, Limpopo Economic Development Agency, LEDET,

Support departments/agencies: DSBD, EDD, NT, DCG, DTA, Musina Local Municipality and Vhembe District Municipality

3.3 Fuel Cells Cluster

Nature of intervention

Development and implementation of an integrated plan for the fuel cells cluster in Ekurhuleni.

Targeted outcomes

Increased demand for fuel cells, localisation of fuel cells manufacturing, platinum beneficiation, investments and jobs.

Key milestones

2016/17 Q1: Approved Development Plan.

2016/17 Q2: 1st Implementation Report.

2016/17 Q3: 2nd Implementation Report.

2016/17 Q4: 3rd Implementation Report.

Lead departments/agencies: the dti, DST, Gauteng Growth and Development Agency, Gauteng Department of Economic Development

Support departments/agencies: DOE, DOT, NT, EDD, IDC, City of Ekurhuleni

Cluster development and industrial parks revitalisation for enhanced competitiveness

Introduction

Cluster development in 2015 served as a platform for the finalisation of the Cluster Development Framework and the development and finalisation of the Cluster Development Program (CDP) guidelines. The piloting of the CDP had the objective of creating at least one pilot project per province.

Cluster projects involve different methods of implementation – either by **the dti's** officials as direct implementation managers or through the use of implementation agencies and consultants. Although the cluster projects are currently at different stages of implementation, progress has so far been promising, with a series of further supportive workshops and road-shows in the pipeline.

In line with the President's call to work towards full-scale industrialisation and inclusive growth, a structured programme for the revitalisation of industrial parks located in old industrial areas across the country has been initiated. The programme has identified 10 state-owned industrial parks to be revitalised. The focus of the programme is on both the physical infrastructure and other support requirements. **the dti** has forged strategic partnerships for the implementation of the programme on a national scale.

Key opportunities

Experience in 2015 demonstrated clear opportunities for a broader implementation strategy that would allow for delivery of an increased number of clusters across all provinces – particularly certain (currently) lagging regions with the highest economic potential. The programme to revitalise South Africa's old industrial parks provides an opportunity for broader economic and industrial development in host regions such as townships and rural areas.

Given the comparatively low cost structure attached to the CDP, the strategic roll-out of cluster projects will prove to be both economical and effective as an economic development instrument. To this end the successful implementation of CDP would achieve significant impact over a relatively short period of time. Job creation and skills development would be natural project outcomes. It is therefore clear that the incremental roll-out of CDP in strategic regions of the country will prove vital to the economy.

Key constraints

Given prevailing global dynamics and a volatile local economy, South Africa's industrial capability in general has not begun to realise its full potential.

The constraints particular to economic development instruments such as CDP include:

- Mistrust between companies;
- Apprehension from companies work with Government;
- Limited cluster oriented management and administration capabilities;
- Limited access to markets;
- Limited and out dated equipment and infrastructure;
- Limited knowledge about strategy;
- Lagging incorporation and use of technology;
- Limited knowledge on the effect of cluster development.

Key action programmes

4. Cluster development for enhanced competitiveness

The effective implementation of the Cluster Program requires an approach that is in line with Government's broader strategic programmes – the NDP, NGP, NIPF and IPAP itself. In this strategic context, the following action programmes have been identified:

- Inter-firm collaboration support;
- Support for shared infrastructure;
- Enterprise and supplier development;
- Supporting platforms and forums for knowledge-sharing;
- Benchmarking for productivity enhancement.

Nature and purpose of intervention

The CDP is a cost-sharing grant capped at R10 million, with a mixed group of benefits available to member companies. A cluster project would typically involve 5 or more member companies which are linked together within one or more value chains. The value chain(s) forms the basis upon which the case for enhanced competitiveness is made.



The application will therefore comprise a business plan that spells out the CDP support needed to achieve on the envisaged competitiveness strategy. Inherent in the CDP is enhanced cooperation between cluster members involving strong trust, sharing of resources and joint implementation of projects.

The CDP is therefore an intervention that leverages off communication, shared equipment and infrastructure and a strategic approach to global competitiveness, with a strong view to skills development and job creation.

Targeted outcomes

- Increased inter-firm collaboration.
- Enhanced productivity.
- Increased capacity and capability.
- Increased tacit knowledge amongst cluster firms.

Key milestones

- 2016/17 Q1-Q4: Five clusters formed.
- 2016/17 Q1-Q4: Launch and implementation of Phase 1 of the upgrade of identified industrial parks: security infrastructure upgrade, fencing, street lighting, top structures and critical electricity requirements).
- 2016/17 Q1- Q4: Five applications processed.
- 2016/17 Q1- Q4: Four knowledge Forums established.

2016/17 Q1- Q4: Two benchmarking Interventions undertaken.

Lead departments/agencies: the dti, Provincial Departments, National Government Departments, DFIs, GTAC, TIPS

5. African regional industrial development

Following the adoption of the Industrialisation Strategy and Roadmap by the SADC Council of Ministers in April 2015, the focus on industrialisation as one of the three central pillars for Africa's transformation has intensified. The main thrust of the industrialisation drive is to transform and modernise economies, to diversify out of dependence on commodities and to create the ladder for large scale employment creation.



The industrialisation pillar is dependent on the other two pillars of the Regional Indicative Strategic Development Plan 2063 (RISDP), which are regional integration and infrastructure development. In combination, the three pillars provide the necessary framework to allow for a balanced growth trajectory to unfold. If any one of the pillars is not properly implemented, the other two are not going to be able to deliver.

As an example, a vital condition for industrialisation to proceed will be for the region to move ahead with trade integration that will allow access to a far wider regional market (although being cognisant of the negative impact on certain sectors of cheap products undercutting local firms). This will allow firms to develop the economies of scale that should allow them to be more competitive. This in turn will be premised on resolving the border and logistics constraints that currently impose prohibitively high costs on transporting goods competitively to market.

On the infrastructure side, access to competitively priced road, rail, port, water and power infrastructure would enable greater levels of investment and development. The RISDP and Industrialisation strategy therefore point to the critical importance of the "sequencing" of development efforts.

South Africa has failed to take full advantage of its geographic position in terms of economic engagements with the rest of Africa. While exports increased from R46 billion in 2005 to R299 billion in 2014, 88.7% of these have been absorbed into SADC, with 52.6% going into the top 4 trading partners of Botswana, Namibia, Mozambique and Zambia.

Meanwhile, South Africa's share of Rest of Africa imports has *declined* over this same time period, and inter-African trade has slumped to 7% of total trade, on the back of a dominant outward-oriented commodity growth path up to 2014. As the major player in the sub-continent, South Africa will also need to play a more significant role in *importing* goods from the rest of Africa, providing a potentially powerful shared growth impetus.

Summarising Key Data Trends, 2005-2014:

- Increase in exports to RoA from R46 billion – R299 billion.
- SADC's share of SA total Africa exports up from 68% – 88.7% of total.
- Driven largely by Top 4: (Botswana, Namibia, Mozambique, Zambia) – 61.4% of SADC exports, 52,6% of total Africa exports by SA.
- Increase in share of Africa in terms of SA's total export basket: up from 18% to 34% (now largest trading bloc).
- But *decrease* in SA's share of RoA total imports.

The Industrialisation impetus across Africa would require South Africa's support in terms of technological capability, firm-level organisational capacity, investments/financial resources and access to the South African market. It also provides South Africa with an opportunity to lead in Africa's industrialisation drive and to provide exports of both manufactured products and value-adding services. To achieve this, **the dti** needs to provide research and information to the private sector in terms of value-chain opportunities and project information as to where the priorities or opportunities lie.

Another critical task is to capture and analyse all available data, sectoral information, value-chain research and industrial research from across the continent. Central to this task will be developing an active network of researchers and academics which will be formalised into an industrial policy research platform called the *African Industrial Research Network* (the AIRN).

Work will also be undertaken to develop a "bid book" of potential projects, as a means towards facilitating the interplay between project proponents and financiers that will support an agenda of industrial development across Africa. It has become evident that

the inhibiting factor is not so much a lack of capital, but rather the extreme paucity of bankable industrial projects. Towards this end, **the dti** will be investigating the financial and incentives offering, with a view to determining the competitiveness of the package, relative to other global players.

This will entail developing strong relationships with private sector financiers, domestic Direct Financial Intermediaries (DFIs) and multi-lateral players. One of South Africa's undoubted advantages is having a strong financial hub that services much of Southern Africa. This could be harnessed more effectively to support development across the continent.

It is evident that if South Africa is going to succeed through mutually beneficial industrial development across the continent, in a period characterised by an exceptionally tight fiscal envelope, it will be necessary to focus resources on clearly-agreed priorities and targets. There appears to be some frustration within the private sector that the South African government's approach to the continent is hobbled by policy incoherence and fragmentation of effort.

There is similarly criticism that South African companies "go it alone", without working with other players, often earning the reputation as "predators" rather than partners across the continent. Collaborative partnerships across value chains and firms – allowing, for example, trucks delivering products to other African States to come back full rather than empty – could obviously significantly lower transport costs for all.

To overcome these challenges, a Ministerial-mandated strategic process will be developed, with clear priorities and targets, that can act as an 'aggregator' for both the private and the public sector. **the dti** will co-ordinate this strategy with a number of other key departments, with the input and support of the private sector and state-owned enterprises.



Key action programmes

1. Work programme of the regional economic communities

Nature and purpose of the intervention

Implementation of the work programme with Regional Economic Communities as agreed by member states, and support for the development and roll-out of the SADC and AU Industrial Strategy and Roadmap. In addition, to provide specific support to the development and realisation of sectoral plans, such as the AU's Mining Vision, the Regional Agricultural Plan and the Pharmaceutical Manufacturing Plan.

In pursuit of deeper industrial development South Africa must continue to upscale its work with fellow African states to implement agreed priorities, particularly through mutually beneficial projects and programmes. This should include an improved understanding of regional linkages and value-chains and the provision of technical support to critical enabling infrastructure and institutions.

Targeted outcome

Increased co-operation between South Africa and the regional economic communities, and an increase in the number of technical and institutional projects embarked on.

Key milestones

2016/17 - Q2. Work with fellow member states to complete the draft SADC Industrial Development Action Plan.

2016/17 – Q4 Build on the Action Plan, giving particular attention to prioritising agro-processing, mineral beneficiation and pharmaceuticals as initial sectors of focus.

Actively provide technical guidance to 3 projects that include sector-supporting infrastructure or institutional capacity building.

Lead departments/ agencies: the dti, DIRCO, IDC, DBSA, PIC

2. Build an African industrial development knowledge repository, manage value chain research and support capacity-building across the continent

Nature and purpose of the intervention

This intervention seeks to build on existing research and knowledge across the region and will actively seek to build new, stronger collaborative networks out of the existing academic and research networks on the continent. Through the identification of key opportunities and gaps, research will be commissioned into value chains, as well as critical issues pertaining to the development of regional industrial development. It will also actively promote sharing of best practice and capacity-building across the continent, through the establishment of a research network facilitated by TIPS.

Data scarcity across the African continent is a significant challenge. To enable effective policy development, it is important to build the knowledge resource within South Africa, and to complement this with targeted research projects aimed at high opportunity projects and value-chains.

Targeted outcome metrics

The number of partnerships developed with leading researcher bodies across the continent; the number of research projects initiated; and success achieved in holding a Regional African Industrial Development Conference.

Key milestones

2016/17 – Q1 Identification of key research institutions across the continent, and initial contact made.

Gap analysis and agreement with key role-players in SA and with the relevant member states as to the priority research opportunities.

2016/17 – Q2 3 research projects initiated into value-chains/industrial policy issues.

2016/17 – Q4 Formal network of African industrial policy experts established – the African Industrial Research Network (AIRN).

Lead departments/ agencies: the dti, EDD, TIPS, IDC, DBSA, NT

3. Cross-border industrial projects

Nature and purpose of the intervention

A key challenge facing African governments is the lack of available bankable industrial development projects for consideration by local or international financiers, industrial corporations or project developers. There is not necessarily a lack of finance, but rather the lack of means to identify and then get potentially viable projects through to pre-feasibility and feasibility stage. This means that many potential projects do not progress through to initiation. Much stronger co-ordination between the financial community, the Development Finance Institutions and **the dti** will thus be critical in identifying specific blockages early on, and then developing the capacity to address these constraints proactively.

This intervention seeks to promote catalytic industrial projects across the continent that either have South African involvement and investment, or through which South African suppliers can benefit. The intervention will build up a “bid-book” of potential projects that can be taken forward through diplomatic channels to bankable feasibility, using all available instruments at a national or multi-lateral level. Once projects have reached bankability, to use South Africa’s position as a financial hub to facilitate fast-tracking of high-potential projects and to unblock constraints.

Targeted outcome metrics

Number of projects at either pre-feasibility or bankability stage. Facilitation of industrial projects through to inception.

Key milestones

- | | |
|--------------|---|
| 2016/17 – Q4 | 10 catalytic industrial projects scoped for project preparation or feasibility studies. |
| 2017/18 – Q4 | Facilitate investment by SA-based companies into 10 industrial projects across the continent. |

Lead departments/ agencies: the dti, EDD, DPE, IDC, DBSA, NT

4. Strengthen industrial financing and incentive facilities

Nature and purpose of the intervention

This intervention seeks to carry out research into the range of industrial financing and incentives available at a national, as well as an international level for the funding of industrial projects. To identify critical gaps in the South African offering, and to propose recommendations for addressing them.

South Africa’s financial offering for investors, project developers and exporters is not viewed as being competitive relative to many of our developed economy competitors looking at accessing projects across the continent. This includes those countries that have strong EXIM banks, and access to “soft” subsidised project-preparation facilities for commercial interests to invest in and develop new markets in other African countries.

Targeted outcome

Finalisation of a report that identifies South Africa’s current offering, the range of international support that can be feasibly accessed, and potential gaps in the financial or incentives offering.

Key milestone

- | | |
|---------------|--|
| 2016/17 – Q3: | Completion of a research report into South Africa’s financing offering. |
| 2016/17 – Q4: | Publication of a brochure into financing possibilities for investors, project developers and exporters across the continent. |

Lead departments/ agencies: the dti, EDD, IDC, DBSA, NT, PIC



5. Facilitation of an African economic strategy for South Africa

Nature and purpose of the intervention

South Africa lacks a clear economic strategy or framework in its approach towards the rest of Africa. This is evident in the lack of co-ordination across and between different national departments, across the many state-owned or funded institutions at its disposal, and between the private and the public sectors. The common line often mentioned is that whereas many of our competitors go into a country together, South Africa lacks the “SA Inc” approach that is so important in competing successfully on the continent.

There is also little sense of what might be priority markets, with a scattershot approach towards African opportunities and the alignment of exports, new market development, investments and value chains.

Targeted outcome

The development of an aligned and co-ordinated strategy that provides a clear direction to SA government departments, the private sector and state-owned enterprises as to the critical priorities.

Key milestones

2016/17 Q2: Obtain buy-in from the political leadership at a Ministerial level as to the urgent need for a strong, coherent African Economic Strategy, and the provision of coordinated support for its modalities - exactly where the responsibilities (and accountability) will lie for how it is managed and implemented.

Formation of an inter-departmental task team to drive the process.

2016/17 Q4: Completion of the strategy.

2017/18 Q1: Launch of the strategy.

Lead departments/ agencies: the dti, EDD, DPE, DST, IDC, DBSA, NT, the Presidency

6. Science, technology and innovation

Leveraging science, technology and innovation for industrial growth and development

Situational analysis

Science, Technology and Innovation (STI) are recognised as key drivers of long-term economic growth, which today is increasingly led by knowledge production and dissemination of knowledge [i.e. knowledge utilisation], for the enrichment of all fields of human endeavour. STI becomes a major source of competitive advantage, wealth creation and improvements in the quality of life², if it is properly coordinated, disseminated and utilised in the national innovation system (NSI). Crucial to this is the capacity to absorb and quickly adapt to new knowledge and translate it into new capabilities.

Governments are therefore increasingly elevating innovation as one of the key issues on policy agendas, recognising its potential to promote economic growth and address social and environmental challenges³.



² E.g. Ten Year Innovation Plan (TYIP) 2008-2018, Department of Science and Technology, South Africa (source: <http://www.dst.gov.za/index.php/resource-center/strategies-and-reports/143-the-ten-year-plan-for-science-and-technology> Accessed on 4 February 2014).

OECD Policy Brief: Science, Technology and Innovation in the New Economy, September 2002 (source: <http://www.oecd.org/science/sci-tech/1918259.pdf> Accessed on 4 February 2014).

³ <http://innovationpolicyplatform.org/content/innovation-definitions-and-fundamentals?topic-filters=11377> Accessed on 4 February 2014

In South Africa, the centrality of STI to national development has been firmly highlighted in the National Development Plan (NDP Vision 2030). The NDP notes that the developments in STI are fundamentally altering the way people live, connect, communicate and transact, with profound effects on economic growth and development (NDP, 2012).

STIs are key to equitable economic growth because technological and scientific revolutions underpin economic advances, improvements in health systems, education and infrastructure.

In addition, the NDP further recognises that investments in STIs are the differentiators between countries that are able to tackle poverty effectively by growing and developing their economies, and those that cannot. The extent to which developing countries emerge as economic powerhouses depends on their ability to grasp and apply insights from STI and use them creatively (NDP, 2012).

In order to realise national potential, STI investments are essential for the country's transformation to a Knowledge Economy – again, as emphasised in the NDP, White Paper and other policy documents.

The growing focus on STI can, in part, be attributed to the following factors:

- Substantial increases in global science, engineering and technology (SET) efforts, leading to enhanced capability and knowledge potential;
- Increasing participation of developing countries in global SET activities;
- Ever-increasing complexity and technological capability embedded in components/products, leading to an associated reduction in the lifespan of the products;
- Significant growth in higher technology and advanced manufacturing goods, indicative of changing global exports and markets;
- The fact that technology has a time-bound value, implying that continuous knowledge reinvestment is required, irrespective of the type of the industrial sector.

Science and technology innovation (STI) and economic growth: SA policy context and coordination

South Africa's STI policy package⁴ provides a sound basis for further improvement and up-scaling of the country's industrial development interventions as spelled out in the National Industrial Policy Framework (NIPF), and as driven by the Industrial Policy Action Plan (IPAP).

The DST's focus, in support of economic and industrial development, is structured as follows over the next five years:

- a) Expand research capacity (knowledge generation/production) for increased efficiency gains in the economy. The target is a substantial increase in the R&D effort above the current value of 0.76% of Gross Expenditure on R&D (GERD) as a percentage of Gross Domestic Product (GDP).
- b) Knowledge utilisation for increased economic development; in particular:
 - (i) New industrial development and diversification of the economy;
 - (ii) Enabling increased innovation activities;
 - (iii) Improved ability to commercialise new knowledge;
 - (iv) Enhanced competitiveness, including a specific focus on small and medium enterprises;
 - (v) Inclusive social development.
- c) Deepen bilateral engagement, on research, development and innovation (RD&I), between South Africa and the rest of the African continent. The Science, Technology and Innovation Strategy for Africa (STISA - 2024), adopted by the African Union Heads of State in June 2014, outlines this approach.
- d) Strengthen the linkages between R&D and Industry, with greater involvement of industry in R&D agenda-setting, plus increased funding of R&D. This is reflected in the 'Using knowledge for economic development' Proxy Indicators outlined in the DST's Strategic Plan (2015 – 2020). The indicators are as follows:

⁴ As articulated in, amongst others, the White Paper on Science and Technology (1996), the National Research and Development Strategy (2002), as well as, the Ten Year Innovation Plan (2008 to 2018).

- Proxy Indicator 1: By 2019, new commercial and industrial financing of R2 billion secured for a portfolio of R&D-led industrial development initiatives funded by the DST.
 - Proxy Indicator 2: By 2019, additional revenue of R500 million generated from firms and companies supported from DST-funded instruments since 2010.
 - Proxy Indicator 3: By 2019, performance of 10,000 SMEs improved through technology interventions.
- e) Improved coordination of the R&D agenda and activities across all government departments.

The STI interventions started in FY 2015/16 will continue to be emphasised in order to create and build a sound knowledge base that will help realise the broader objectives of the NIPF, as part of the implementation of the eighth annual iteration of the IPAP 2016/17 to 2017/18:

- a) Study and identify the underlying linkages between knowledge production (R&D), knowledge utilisation (innovation, new technology maturation), industrial activity and economic growth in South Africa. This broad study will be achieved through continued analytical studies of the available data on knowledge production (e.g. the National R&D Survey), knowledge utilisation (e.g. South African innovation surveys), industrial activity, economic data, and studies on linkages (e.g. clusters, Centres of Competence (CoCs) and innovation networks, etc.). Where appropriate, policy briefs will be produced and disseminated.
- b) Continued implementation of the Emerging Industries Action Plan (EIAP), which is a mechanism to help create an enabling environment for maturing technology-intensive projects which have the potential to create new industries. The enabling environment will establish partnerships across government, with local industrial partners, in order to increase market access (local and foreign), and to improve funding certainty through leveraging commitments from development finance institutions, (such as the Technology Innovation Agency (TIA) and the Industrial Development Corporation (IDC)).
- c) Ongoing harmonisation of innovation support initiatives. The environmental scan of RD&I support initiatives will be continued, with an expanded focus to include instruments that exist in the private sector, in order to maintain a comprehensive

understanding of the offerings already in existence, as well as the possible mechanisms required to create the linkages between them.

Further enhancements will be developed and proposed to address areas where innovation support gaps and / or needs are identified. Particular emphasis will be placed on maximising the DST's technological support instruments aimed at helping SMEs to increase their participation in the economy, especially local production, by reviewing the STI support instruments for innovators, entrepreneurs and SMEs. The web based platform for innovation instruments will also be expanded to serve as an interactive vehicle to foster continuous engagement between the various actors within the technology innovation and commercialisation landscape. It is intended that the portal also act as a channel through which government, can communicate with stakeholders.

- d) Continuing development of a technology commercialisation strategy, championed by **the dti**. The implementation of the DST Commercialisation Framework, which guides the commercialisation activities of the department, commenced in Q3 in 2015 and will continue throughout the 2016/17 financial year.

Lessons learnt from its implementation will further support the refinement and implementation of the Technology Commercialisation Strategy in order to crystallise an inter-departmental policy framework that will facilitate, improve and, where possible, accelerate the translation of publicly funded research outputs into commercially viable products and services.

Specific STI intensive initiatives

DST is funding R&D through various approaches including, for example, parliamentary grants to the Science Councils (SCs) (e.g. CSIR and HSRC), which are aimed at high-risk R&D and specific R&D projects and networks, such as the Advanced Metals Initiative (AMI), which has R&D networks in light, precious, ferrous and nuclear metals.

In an effort to build the science system, part of the DST funding is also used to provide postgraduate bursaries to build the capacity to perform research; to replace and upgrade the scientific infrastructure at laboratory, national, and international level, in addition to ensuring that pilot plants are available to help mature technology development. The bench-scale pilot plant scaling up the CSIR's technology for the production of titanium metal powder is an example of project-specific, high-end infrastructure equipment.

Within the South African context, while it is recognised that innovation does not stem solely from formalised R&D, the national knowledge generation and utilisation effort is broadly assessed in terms of national and international investments in R&D. In this regard, information from the 2012/13 National R&D survey⁵ indicates that government investment in R&D is 18% larger than the business investment of R9.152 billion. Business, however, performs actual R&D activities to the amount of R10.571 billion; but this is still 7.5% less in value terms than the R&D activities carried out by the Higher Education Institutions (HEIs) and SCs.

In short, government investment in R&D has continuously exceeded investment by business since FY 2006/07; and the trend shows no immediate sign of being reversed.

7. Advanced manufacturing

The DST's manufacturing interventions in the 2000s focused on technology development in support of key sub-sectors as identified by **the dti**. The objective was to achieve higher growth rates via higher value-added manufacturing activities, increased exports of manufactured goods and downstream value-addition relating to SA's finite natural resources.

The technology focus areas were: advanced materials, product technologies, production technologies, logistics, cleaner production technologies and ICT in manufacturing. The priority industry sectors were automotive and transport, cultural and craft, clothing and textiles, metals and minerals, chemicals, aerospace and capital goods.



After extensive consultation, implementation of the DST's Advanced Manufacturing Technology Strategy (AMTS) took the form of three flagship innovation and R&D programmes, viz. Advanced Lightweight Materials, Advanced Electronics and Advanced Production Technologies.

The flagship technology development programme approach continued into the early 2010s with standalone RDI programmes in the fields of aerospace/UAVs, fibre composites, titanium processing and additive manufacturing.

The Advanced Manufacturing Technology RDI plan is being developed through a strategy development process known as technology road mapping by focusing on discrete technical areas, namely advanced electronics; affordable and smart automation; aerostructures; advanced photonics and additive manufacturing (3D printing). These roadmaps will be prioritised, according to economic and competitiveness impact and implementation of a number of these will commence in FY 2016/17.

The DST, in partnership with key departments, government agencies and industry associations, is also funding cross-cutting and specific technology development programmes aimed at improving and ensuring that manufacturing in South Africa improves its technological competitiveness, via the concepts of advanced manufacturing and the Next Industrial Revolution.

Advanced manufacturing is an approach to manufacturing that is increasingly being recognised globally as a potentially important avenue towards reversing de-industrialisation and creating decent, productive, well-paying jobs.

In essence, advanced manufacturing is an approach that:



⁵ South African National Survey of Research and Experimental Development, Statistical Report, 2012/13

- depends on the use and integration of information, knowledge, state-of-the-art equipment, precision tooling, automation, computation, software, sensing and networking;
- makes use of cutting-edge materials and new industrial platform technologies that have multiple commercial applications (e.g. composite materials) while also delivering strong spill-over effects;
- dynamically exploits emerging physical and biological scientific capabilities (e.g. nanotechnology, biotechnology, chemistry and biology) and incorporates green manufacturing philosophies;
- mobilises high-level design methods and creates highly developed multi-disciplinary skills teams and networks.

Simply put, advanced manufacturing differs from conventional manufacturing in that it is knowledge and technology-intensive. Advanced manufacturing companies typically make high-value products, participate in global supply chains, exhibit a high proportion of export sales, pay higher wages and are globally competitive.

The Next Industrial Revolution (NIR) (or Fourth Industrial Revolution) is about making 'things' with greater precision, at ever higher speeds, and at lower costs, at a molecular/biological scale. Central to the NIR are the concepts of cyber-physical systems, the industrial 'Internet of Things' and cloud computing. As such, the notion of the NIR embraces several contemporary automation, data exchange and manufacturing technologies (e.g. direct machining in mass production, additive manufacturing and safe human-robot cooperation).

This emerging paradigm is also poised to rapidly transform entire systems of production, distribution and consumption. Unlike earlier industrial revolutions (1st: mechanisation, 2nd: mass production and 3rd: automation) the NIR is not geographically constrained, enabling developing countries to enjoy rapid changes in production technologies.



3-D Printer

Earlier R&D investments by the DST have established strong capabilities in a number of these enabling technologies, namely

cloud computing, 3D printing (additive manufacturing), advanced composites, biotechnology and nano-technology.

South Africa is also set to become a world leader in big data and related fields due to sizable investments in cyber infrastructure and human competencies within the Square Kilometre Array programme. In order to fully participate in the NIR, South Africa needs to initiate projects whereby the abovementioned technologies and competencies are utilised in an integrated manner not only to manufacture high-value components but also to assist in transforming South Africa's manufacturing sector into a world-class sector via improving its competitiveness through innovation and advanced technologies.

SA STI economic and industrial development context: Coordination through streamlining and harmonisation

The effective improvement and up-scaling of the country's industrial development objectives – i.e. towards diversifying the economy through movement towards a knowledge economy and into non-traditional tradable goods and services – requires the effective dovetailing of South Africa's STI, economic and industrial policy objectives. Efforts directed to address this requirement are demonstrated in the implementation of the 2015/16 IPAP, in particular through enhanced collaborative efforts between the DST and **the dti**. The existing instruments and support mechanisms in South Africa's NSI seek to maximise opportunities for innovation, derived from market and business needs.

The development and leveraging of STI is ideally achieved through partnerships between government, academia (including science councils) and industry (large, medium, and SMMEs).

The harmonisation and coordination of the DST's, **the dti's**, and other government departments', incentives, initiatives and instruments is essential to unlocking maximum value from the national investment in STI. This will be achieved through enhanced coordination of the design and implementation of various developmental interventions.

An important intervention that was launched in 2015 was the Innovation Bridge Showcase and Matchmaking (IB) event. The IB event is a new initiative of the DST that is aimed at enabling and enhancing linkages between innovators, industry and public and private technology development and commercialisation funding partners.

The inaugural IB was held at the CSIR International Convention Centre on 2nd and 3rd February 2015. The focus of the event was to encourage and accelerate the utilisation and commercialisation of new knowledge and technologies that have been developed in

South African research and technology development organisations, supported by public funds.

It is this focus on publicly funded research and technology development that essentially differentiates the 2015 IB from other innovation and technology conferences and exhibitions that have been hosted in the country to date.

The 2015 IB is deemed to have been a great success, showcasing over 90 innovations from 35 publicly funded organisations. It included the latest technologies from 16 universities, 14 TIA-supported companies, 6 science councils, and the South African National Space Agency (SANSA).

Of the 753 participants in the event, 331 were representatives from large companies and SMMEs, 78 financiers and venture capitalists, 121 representatives from local, provincial and national government, 24 international participants, and 199 representatives from public and private R&D organisations.

Survey feedback from participants confirms that the 2015 IB was considered a success, with over 60% of respondents agreeing that the event exhibitions and sessions were of high quality and 30% strongly agreeing that the exhibitions were of high quality. The survey feedback also indicates that at least 227 new networks / contacts were initiated, with 58 unique organisational leads and new collaborations resulting from participation at the IB.

The DST operates and oversees a broad array of instruments and mechanisms within the NSI. The Department is involved at all stages along the R&D value chain and oversees through its agencies the operation of a multitude of programmes, interventions and instruments aimed at achieving the Departmental mandate.

In 2010, the DST launched its Centres of Competence (CoC) Framework. The Framework articulates that “CoC’s are collaborative entities established and preferably led by industry, for the benefit of industry and the economy at large.”

It states that “tomorrow’s successful companies will be those that focus on innovation and translating R&D outcomes into new marketable, competitive and profitable technological products and services.”

CoC’s are also seen as “a contribution to establishing innovation communities which will ultimately help South African industry gain competitive advantage”. More specifically they are seen as delivering programmes characterised by “a formal, and as far as possible, contractually-secure physical or virtual platform upon which to establish

collective technology development partnerships between government, industry, higher education and research institutions, with the explicit aim of technology commercialisation.”

During 2015 the DST commissioned a study to stress test the explicit and implicit assumptions underlying the CoC Framework; i.e. testing the applicability and appropriateness of the Framework in the current South African (industry and academic) context, to ascertain the likelihood that the Framework will deliver the anticipated outcomes.

Among the findings in the Report, it was noted that there is lack of clarity and agreement as to the role and function of a CoC. This may further contribute to unnecessary and avoidable policy duplication in respect of other knowledge generation, technology innovation and commercialisation initiatives. Cases in point, among others, are the Centres of Excellence (CoEs), the Sector Innovation Fund (SIF), as well as the Technology and Human Capital for Industry Programme (THRIP) - which was also recently reviewed and is currently being reconfigured.

Additional technology innovation policy landscape and impact assessments are therefore required to assess the extent to which the DST CoCs, as provided for in the 2010 Framework, serve to positively complement and/or unnecessarily duplicate other publicly funded technology commercialisation policy instruments and initiatives in South Africa, as well as related international partnership and funding opportunities. These requirements will be addressed as part of the broader system landscape study.

Technology Stations Programme

The Technology Stations Programme (TSP) was initiated in 2002 as the Tshumisano Programme and is based on the German Steinbeis system whereby mainly Universities of Technology establish a centre that is aimed at disseminating its knowledge to industry through helping to solving industry problems. In the process of solving industry problems, the university staff and students remain current with industry problems and technologies, which is in turn incorporated into the formal (and informal) teaching programmes and research topics for graduate and postgraduate students.

The TSP hosting function was transferred in 2008 to the Technology Innovation Agency (TIA), and still receives funding from the DST. There are currently 18 technology stations, geographically distributed across the country, with respective sectoral focus areas, as depicted in the table below.

The DST view the role of the Technology Stations within the NSI to be:

- Provider of specialised infrastructure, aligned to the sectoral focus of the technology station,
- Provider of specialist knowledge and skills to help improve innovation and develop new products and processes,
- Able and relevant to solving industry problems and to ensure that the industry requirements are incorporated into the curriculum, to help ensure students are trained to meet the relevant needs from industry,
- A sustainable platform from where other government initiatives (e.g. incubators, science parks) can be launched and/or hosted to provide a broader support to SMEs and industry,
- A partner in the DST's Technology Localisation Programme (TLP) whereby third parties (e.g. universities, universities of technology, technology stations, etc.) provides technology support to approved firms, and
- An entity for Human Capital Development (HCD) where interns in a work-integrated-learning programme can be placed to complete their qualifications, but also to apply their knowledge and gain exposure to industry problems.

The TSPs is therefore an important and effective conduit for knowledge and technology transfer between the hosts (Universities of Technology) and the target groups (private industry, including SMEs), by providing access to specialist skills, knowledge and equipment.

An example of such broad technology upgrading is the Casting Simulation Network (a Sector Wide Technology Assistance Package – mentioned under 'Technology Localisation Programme') hosted by the Materials Processing Technologies Technology Station at the Vaal University of Technology, with three connected centres at the UJ, SUN and MUT.

TSP support for firms is discounted, based on a sliding scale, which benefits smaller firms.

The TSP is one of the main interventions to provide broad based technology support to SMMEs and approximately 2000 SMEs and potential entrepreneurs receives support from the Technology Stations on an annual basis.

Table 1: Focus areas of technology stations and their locations

HOST INSTITUTION	TECHNOLOGY STATION FOCUS AREA	LOCATION
Walter Sisulu University	Design: Tooling Dies, Mould Making	East London
Cape Peninsula University of Technology	Agri-Food Processing	Cape Town
	Clothing and Textile Technologies	
	Adaptronics	
Central University of Technology	Product Development (incl. 3D printing)	PDTS
Durban University of Technology	Fibrous Reinforced and Moulded Plastics	RMP TS
Limpopo Agri-food Processing Technology Station	Limpopo Agri-food Processing - Indigene	
Mangosuthu University of Technology	Chemistry and Chemicals Engineering	Durban
Vaal University of Technology	Materials and Processing Technologies (incl. 3D printing)	Sebokeng
	Rural Sustainable Development	Upington
Nelson Mandela Metropolitan University	Mechanical System Technologies & Automotive Components ACTS (eNtsa)	Port Elizabeth
	Downstream chemicals (incl. Petrochemicals)	Port Elizabeth
Stellenbosch University	TDM Design & Analysis and Advanced Manufacturing (incl. 3D printing)	Stellenbosch
Tshwane University of Technology	Chemistry and Chemical Engineering	Garankuwa
	TDM Transfer and Training, and Advanced Manufacturing	Soshanguve
	Electronics and Electrical Engineering, Complimented by ICT	Pretoria West
University of Johannesburg	Metals Casting and Foundry Technology	Johannesburg
	Process Engineering, Environmental & Energy	

Key action programmes

1. Strengthening linkages between knowledge production, utilisation and innovation and industrial growth

Nature and purpose of the intervention

In line with global best practice, the DST formally commissions STI surveys to enable the measurement and tracking of changes in STI in South Africa. In addition to the stated intention of government to increase the level of R&D, (both public and privately funded) there is an urgent need for increased industrial activity and economic growth. In addition to realising the benefits of increased R&D, an improved linkage between R&D effort and industrial growth is also essential. The approach to quantifying these linkages were found to be more complex than envisaged, and this led to a delay in the completion of the study.

Investment in STI has a positive relationship with increased competitiveness and economic growth. South Africa has a stated intent to increase the level of R&D, to increase human capacity and skills, knowledge production (patents, publications, etc.) and utilisation (e.g. technology demonstrators, new innovations, etc.).

An exploratory study and analysis will be initiated to map, analyse and explore the linkages between the investment in R&D, technology, innovation and industrial growth.

Targeted outcomes

Improved understanding of the linkages between knowledge production, utilisation and industrial growth, helping to maximise R&D investment and enhance its contribution to industrial activity and economic growth

Key milestones:

- 2016/17 Q1: Finalise the Terms of Reference for the study and the data sources.
- 2016/17 Q3: Complete Phase 1 of the study and policy recommendations for FY 2017/18 R&D investment programmes.
- 2016/17 Q4: Complete Phase 2 of the study and recommendations for enhancements to science, technology and innovation policy in the context of South Africa's industrial policy.

Lead departments / agencies: DST

Supporting departments / agencies: the dti, NIPMO, TIA, IDC, Offices of Technology Transfer, SCs, universities, and private sector organisations as relevant

2. Large R&D programmes in knowledge intensive areas

Nature and purpose of the intervention

South African researchers, engineers and innovators continue to develop potentially disruptive new technologies - i.e. innovations that help create substantially new technologies, markets and value networks, in a manner that eventually disrupt and displace existing technologies, markets and value networks over a period of time⁶.

The DST is currently funding a number of potential high impact⁷ programmes that are cross-cutting (requiring close integration and support from other departments); have the potential to renew or establish new industries; make a substantial contribution to longer term, sustainable competitiveness and the ability to penetrate new markets.

Examples of 'R&D-led industry development' programmes are:

- Titanium metal powder manufacturing development
- Fuel cell development
- Additive manufacturing.

Such programmes are knowledge-intensive and based on proprietary know-how, with corresponding markets often not yet established. This implies that, in view of the technical and market risks, development funding is difficult to secure. Besides the financial aspects, the speed of the technical and market development that can be achieved is deemed key to success.

In order to help mitigate the risks, and to ensure interdepartmental (and, where appropriate, industry) support and buy-in, the Emerging Industries Action Plan (EIAP) was devised and incorporated into government's Medium Term Strategic Framework (MTSF).

⁶ The term is deemed to have been originally coined by Prof. Clayton Christensen, Professor of Business Administration at the Harvard Business School (HBS). See also: <http://www.christenseninstitute.org/key-concepts/>

⁷ From the perspective of economic growth, competitiveness and local value addition

The establishment of an EIAP is aimed at providing a formal platform that will elevate and reflect government-led technological programmes supporting new industrial development, in part by securing better formal inter-departmental coordination and positioning of the respective programmes.

Targeted outcomes

The EIAP will serve as a mechanism to increase market access (local and foreign) and will improve investment certainty throughout the project life-cycle, both by getting firm commitments from developmental finance institutions (such as the TIA and the IDC) and by providing clear value propositions to potential local and foreign funding and industry partners.

Key milestones:

- 2015/16 Q1: Secure stakeholder support for the EIAP concept, Terms of Reference and proposed implementation modalities
- 2015/16 Q2: Secured stakeholder support and commitment for the evaluation of the first EIAP flagship projects
- 2015/16 Q4: First techno-economic evaluation completed and EIAP project(s) selected and finalised.

Lead departments / agencies: DST

Supporting departments / agencies: the dti, NT, EDD, DoE, DoH, DMR, TIA, IDC, provincial government departments, science councils, universities, and private sector organisations as relevant.

3. Commercialisation framework

Nature and purpose of the intervention

Technology commercialisation is understood as the process, or processes, of introducing a new product or production method into the market. This can include new-to-the-world, as well as new-to-the-market (i.e. something new in a given context and not in absolute terms⁸), innovations that have demonstrably captured economic and/or social value.

⁸ World Bank. (2010) Innovation Policy: A Guide for Developing Countries. The World Bank, Washington DC.

The DST is finalising the implementation modalities for its Commercialisation Framework, which is intended to guide all its commercialisation activities. It is envisaged that the lessons learnt from the implementation and testing of the DST's Commercialisation Framework will in turn support the work towards the development of a Technology Commercialisation Strategy being championed by **the dti**.

The Technology Commercialisation Strategy will seek to accelerate the journey between research, development and commercialisation, so as to assist start-ups and other players in the commercialisation space, overcome the 'valley of death' (i.e. the gap between R&D and the creation of successful products, processes and services).

The Commercialisation Framework constitutes an overarching policy guideline for the procedures to be followed in respect of the commercialisation activities of the DST. In most instances such activities are performed on behalf of the Department as a function of budget allocations to entities, namely the Technology Innovation Agency (TIA) in particular, and supported through the work of the National Intellectual Property Management Office (NIPMO).

The Department may also have a more direct role in driving commercial activities as a result of its mission oriented research and development (R&D) funding programmes and/or industry support initiatives - cases in point being the HySA Strategy; the SKA and space science programmes; the Sector Innovation Fund (SIF); and the Emerging Industry Action Plan (EIAP). It is envisaged that the Framework will accelerate the inclusion of commercialisation requirements during the conceptualisation of DST projects and programmes.

The Framework will therefore provide guidance with respect to investment strategies and deal with the inherent complexity of innovation exploitation. The Framework is particularly crucial, given the large share of national research carried out in public institutions and funded by government. Increasing awareness of commercialisation challenges and the involvement of partners with a commercial understanding in research decisions is important to assessing and responding to market needs. The commercialisation of technology presents significant challenges; the Framework, therefore, seeks to identify areas where support could be tailored to commercialise technology developed either by the public research institutions or by the private sector, taking into consideration the individual needs of the stakeholders at all the different stages along the commercialisation pathway.

Targeted outcomes

To bridge the gap between the pre-production prototype stage and commercialisation in order to enhance the probability of successfully commercialising a new technology.

Key milestones

- 2016/17 Q1: Consultation workshops with stakeholders.
- 2016/17 Q2: Methodology identification, development and assessment.
- 2016/17 Q3: Assessment of test programmed / projects.
- 2016/17 Q4: Establishment of permanent advisory committee.

Leading department/agency: the DST and the CSIR

Supporting departments/agencies: the dti, DSBD, NT, EDD, IDC, TIA, NRF, NIPMO, Universities, Science Councils, SOEs, private sector organisations

4. Harmonisation of innovation support programmes

Nature and purpose of the intervention

Concern has been expressed at the inadequate levels of coherence and coordination in prioritisation and agenda-setting for science and technology innovation by, and between, government, business, academia⁹ and civil society¹⁰. Strengthening the system is required to address the need for improved coordination and coherence in the use of R&D in promoting innovation for the purposes of social and economic development in the country.

Numerous innovation support initiatives are currently being implemented by government departments and their agencies. Actual and potential overlap, duplication and dispersion of efforts exist. Access to, and utilisation of, support mechanisms is not optimal; information on the various innovation support programmes is not readily

⁹ Academia in this context is extended to include other research technology organisations, such as science councils

¹⁰ Department of Science and Technology Ministerial Review Committee on the Science, Technology and Innovation Landscape in South Africa
<http://www.dst.gov.za/index.php/resource-center/strategies-and-report>

available to/accessible by stakeholders. In addition, there may exist innovation support gaps and/or needs that are not currently being addressed.

Targeted outcomes

To facilitate harmonisation and ensure synergies between existing and future innovation support programmes across departments and entities.

Key milestones

- 2016/17 Q1: Ecosystem analysis of RDI support initiatives and launch of the Innovation Bridge Portal.
- 2016/17 Q2: Identification of gaps.
- 2016/17 Q1-Q4: Maintenance of the inter-departmental Government/Agency Commercialisation Forum.
- 2016/17 Q4: Motivation and justification for additional instruments and funding to fill the gap.

Leading department/agency: the dti, DST

Supporting departments/agencies: the dti, DSBD, EDD, NT, IDC, TIA, NRF, NIPMO

CASE STUDY: AGRI-BIOTECH - Mabu Casing Soils

MABU Casing Soils (Pty) Ltd is a technology start-up company located in Bapsfontein, Gauteng Province. Since 2010 the company has been involved in the further development of the University of Pretoria's Intellectual Property (converting sugarcane bagasse waste to pith casing soil, under an exclusive commercial license).

This is a greener alternative casing soil for the button mushroom farming industry, with the potential to displace the imported non-renewable pith casing. The technology was formulated and initially funded at UP, by the South African Mushroom Farmers' Association (SAMFA).

MABU is owned by two female scientists: Dr Linda Meyer, who was part of the technology development team at UP, and Anne van Heerden. Starting from November 2013, the Technology Innovation Agency (TIA) invested in two funding rounds to de-risk the opportunity through demonstration, market testing and validation of the technology.

By September 2014, the company had successfully completed all funding objectives and started shipping their first commercial product to mushroom farmers. This was possible because the company secured funding from AFGRI to finance acquisition of the Bapsfontein property. To sustain sales growth, MABU approached the IDC and in April 2015 secured support for working capital and equipment finance. Since the commercial launch, MABU has started working on its new product - seedling medium - that will be marketed to nurseries.



CASE STUDY: ENERGY - Tiisetso Development Solutions

The Technology Innovation Agency (TIA) has invested in Tiisetso Development Solutions, a company which has developed a product that gives the user immediate feedback on instantaneous power being consumed.

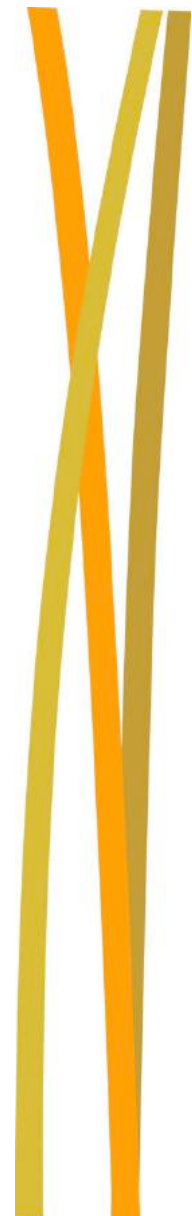
Research has revealed that people still use electricity in a manner that results in electrical circuits being overloaded, often giving rise to electrical fires. TDS developed a patented SABS/NRCS-compliant and authorised product, the eSentry, which is an addition to existing ready-boards and provides an LED above each plug point that gives an indication of the power consumed by way of a varying flash periods.

The company won a **dti Technology Award** for the product. The market validation of the eSentry pilot project - conducted in one of the townships within the City of Tshwane - revealed behavioural changes that resulted in users avoiding the overloading of electrical circuits. The eSentry is available to new installations as an already-added fixture to boards prior to installation, or as retrofit to existing installed ready-boards.



KEY ACTION PROGRAMMES

IPAP SECTORAL FOCUS AREAS



IPAP 2016/17 – 2018/19 SECTORAL FOCUS AREAS 1



1. Clothing, textiles, leather and footwear

Situational analysis

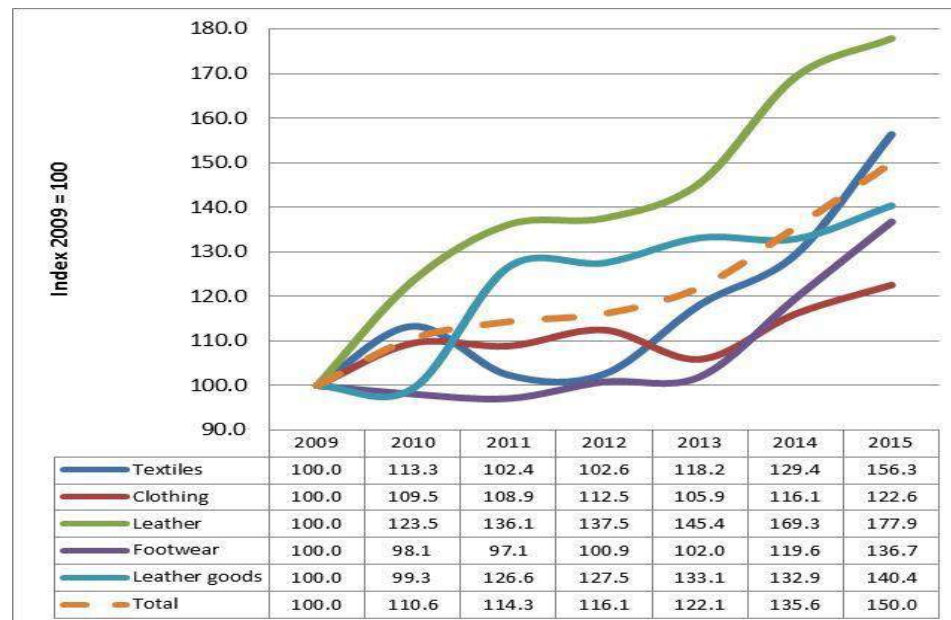
The Clothing, Textiles, Leather and Footwear (CTLF) sectors have benefitted substantially from the Textiles and Clothing Competitiveness Programme (CTCP) which was introduced in 2009 by Government as an answer to the pressures which the sectors were suffering from cheap and illegal imports - especially from the Far East in the early 2000's - which saw many manufacturing companies closing their operations due to this unfair competition.

The CTCP programme - subdivided into the Production Incentive Programme (PIP) and the Competitive Improvement Programme (CIP) - have seen stability being achieved in the four sectors. As at 1 December 2015, a total of R3.621 bn had been approved in PIP and R 2.72 bn already disbursed to the industry. CIP had a total of R720 m approvals, of which R416 m had been disbursed to the different clusters participating in the programme.

From the R3.138 bn disbursed to industry, manufacturing value addition (MVA) of R4.4 bn has been achieved and 3,200 additional decent, sustainable jobs created. The achievement of on-time, in-full deliveries (OTIF) is one of the most important indicators of operational efficiency and customer service; and this increased in all sectors indicating steadily improving delivery reliability on the part of all companies participating in the CTCP.

The Monitoring and Evaluation results to date indicate that the CTCP is consistently and effectively helping beneficiaries in upgrading processes, products and people as well as marketing.

Figure 1: Analysis of manufacturing value add per employee



Source: the dti

The revised Preferential Public Procurement Framework Act (PPPFA) - which in July 2012 set a 100% local content requirement for the CTLF sector - has enhanced the re-introduction of products which were no longer manufactured in the country. These include some technical fabrics, protective footwear, protective fabrics and chambray fabrics. Whilst localisation is already having a positive impact, much greater benefits for production volumes, exports and employment can still be achieved with a stronger commitment to localisation.

Transversal public procurements from TCLF sectors by the National Treasury have increased by 82% from R264 m in 2013/14 to R479 m in 2015/16.

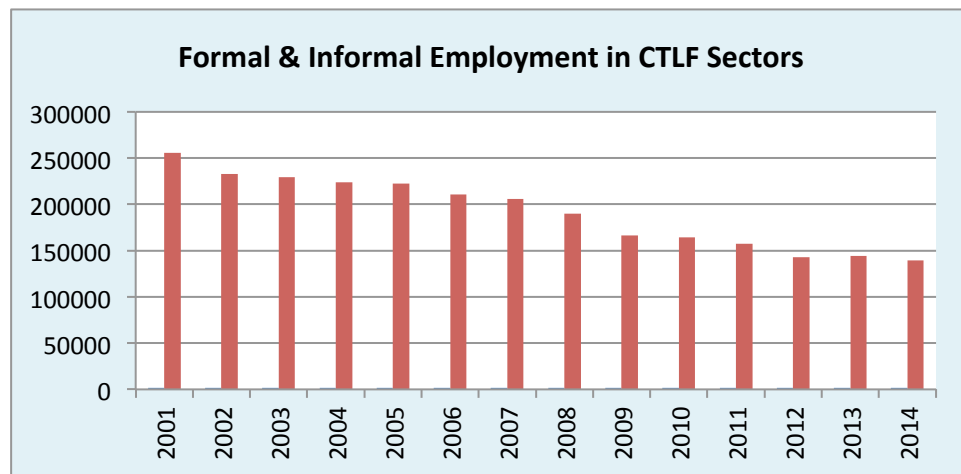
These interventions have seen the securing of over 67,000 jobs and the creation of over 7,000 new jobs – approximately 2,000 of which are in the footwear sector.

Table 1: Sector economic data

Variable	% of Manufacturing
□ CTLF GDP	4.36%
□ CTLF Employment	10.34 %
□ CTLF Output	6.58 %
□ CTLF Wages	5.35 %

Source: Quantec

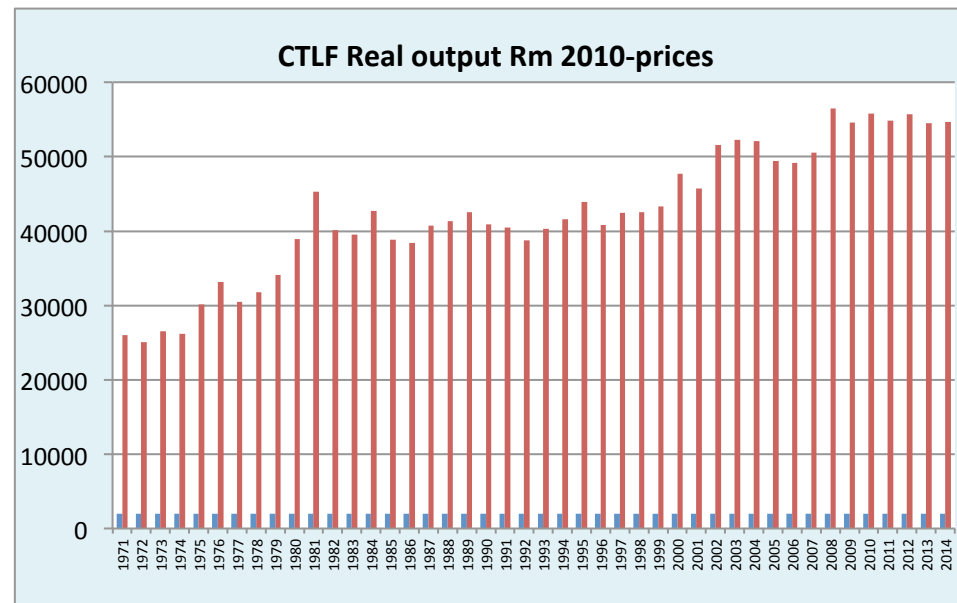
Figure 2: Employment: Formal and informal in CTLF from 2001 to 2014



Source: Quantec

Employment in the sector decreased from 2002 under the pressure from cheap imports; but job losses had been stabilised by 2012. The trend indicated above confirms a slight increase in employment from 148,228 people in 2012 to 150,959 in 2013; followed by a slight decline in 2014.

Figure 3: Growth in CTLF annual real output from 1971 to 2014



Source: Quantec

Real output grew by 13.93% from R24.4 billion in 2010 to R27.8 billion in 2013. The increase in real output can largely be attributed to the ongoing impact designation and the support provided under the CTCP. As pointed out earlier (in the Achievement Highlights section) there has been a steady upward trend in leather and leather goods, with the footwear sector seeing the establishment of 26 new factories over the past year.

Key action programmes

1. CTCP impact monitoring

Nature and Purpose of the intervention

The Monitoring and Evaluation Tool was developed by the IDC CTCP Desk in 2015. It is used to monitor progress of the CTCP in terms of MVA, new jobs being created, global competitiveness and sub-sectoral growth trends.

Targeted outcomes

Reports will be generated on the increased impact on job creation, growth, stability and global competitiveness.

Key milestone

2016/17 Q2 and Q4: The Reports will analyse the impact of CTCP in terms of the indicators set out above, and will be released bi-annually in order to establish reasonable tracking data in alignment with the approval of applications and funds disbursed to the industry.

Lead departments/agencies: the dti

Supporting department/agencies: IDC, EDD

2. Support programmes

Nature and purpose of the intervention

- To enhance the work of the Compliance Centre under the Textiles and Clothing Development Council. This new body, established in 2016, will work in close collaboration with SARS to combat illegal imports. The Compliance Centre was established through the South African Sustainable Textiles and Apparel Cluster (SASTAC). SASTAC will be discontinued in the new financial year and will be replaced with the Textiles and Clothing Development Council and the Sustainable Cotton Cluster.
- Collaboration with SARS will be tightened with respect to the implementation of the Customs Risk Engine (CRE) and will extend Valuation-Based Targeting through Reference Pricing to a wider range of product lines.

Targeted outcomes

Reduction of illegal imports.

Key milestone

2016/17: Ongoing and targeted campaigns against under-invoicing and other illegal activities in the sector. Quarterly reports will be generated after each meeting of the Clothing Textiles Footwear and Leather Illegal Imports Forum which is chaired by SARS.

Lead departments/agencies: SARS, National Treasury, and the dti

Supporting departments/agencies: ITAC

3. Beneficiation of local raw materials

Nature and purpose of the intervention

This intervention seeks to enhance the beneficiation of local raw materials such as flax fibre, mohair, crocodile and ostrich leather and cotton lint. In this regard work will continue on the 3-year pilot programme for the commercialisation of cottonised flax fibre, funded through the Employment Creation Fund.

the dti will be working closely with the Mohair Cluster and with the Sub-National Exotic Leather Cluster, which focuses on crocodile and ostrich leather. The Sub-National Sustainable Cotton Cluster will champion the further growth of cotton sector beneficiation, including flax cottonisation, spinning of flax yarn and yarn-based knitting. The project will be brought up to full scope in the current financial year.

Targeted outcomes

- Development of the linen industry as a local substitute to imported linen goods.
- Diversion of mohair fibre from exports to local beneficiation.
- Bringing more hectares under cotton cultivation.
- Enhancing the traceability of lint to finished products. This will assist in the policing of apparel goods sold to government entities through PPPFA tender programmes.

Key milestones

- 2016/17 Q1: Knitting of fabrics using cottonised flax yarns and having the fabrics dyed and finished; establishment of the Sustainable Cotton Cluster.
- 2016/17 Q2: Finalisation of the traceability of cotton lint from the ginneries to the finished products.
- 2016/17 Q3: Garments manufactured using fabrics manufactured under the linen-from-flax project, with local retailers brought on-board.
- 2016/17 Q4: Beneficiation strategy for mohair fibre formulated and implemented.

Lead departments/agencies: the dti, National Treasury, TCCoE-CSIR, ELC-UP,

Supporting departments/agencies: IDC, FP&M SETA, TEI's DAFF

4. Establishment of Centres of Leather and Footwear Entrepreneurship

Nature and purpose of the intervention

To establish Centres of Leather and Footwear Entrepreneurship at Further Education and Training Colleges (FETCs) as public-private partnerships, in collaboration with the Fibre Processing and Manufacturing Sector Education and Training Authority (PF&M SETA), the National Footwear and Leather Cluster, Vaal University of Technology and the University of Pretoria. The pilot centre was established at Durban University of Technology and was launched on 27 November 2015.

Targeted outcomes

Award of qualifications recognised by the Centre of Entrepreneurship which can provide a springboard for students to progress to university-recognised qualifications.

Key milestones

- 2016/17 Q1: Finalise funding through, FP&M SETA, SANF&LC, VUT, ELC, UP.
- 2016/17 Q4: Implementation of established Centres of Leather and Footwear Entrepreneurship in the Eastern Cape Province.

Lead departments/agencies: the dti, FETC's, FP&M SETA, SANF&LC, VUT, ELC, UP

Supporting departments/agencies: DHET, NSF

5. Communal Hides Commercialisation Pilot Project

Nature and purpose of the intervention

The Communal Hides Commercialisation pilot will be established in KwaZulu-Natal in collaboration with the KZN Department of Economic Development and Tourism and the IDC's Local Economic Development Business Unit. The site has been identified in Pietermaritzburg, next to Sutherland Tannery.

Targeted outcomes

The main outcome of the programme will be the establishment of a Communal Hides Commercialisation Pilot and the subsequent transformation of communal leather off-take through a joint venture between leather industry, a communal skills-development facilitator and local communities. The main impact of this intervention will be better slaughtering practices by communal farmers, generating better quality hides which fetch higher market prices.

Key milestones

- 2016/17 Q1- Procurement of the identified land by the KwaZulu-Natal Department of Economic Department and Tourism.
- 2016/17 Q2 and Q3: Building of the infrastructure in Pietermaritzburg, utilising funds made available by the KZN Department of Economic Development and Tourism and the Industrial Development Corporation.
- 2017/17 Q4: Establishment of the pilot plant.

Lead departments/agencies: the dti, IDC – LED, KZNDED

Supporting departments/agencies: SANF&LC-VUT, EDD

2. Automotives

Light motor vehicles, medium and heavy commercial vehicles, and components

Introduction

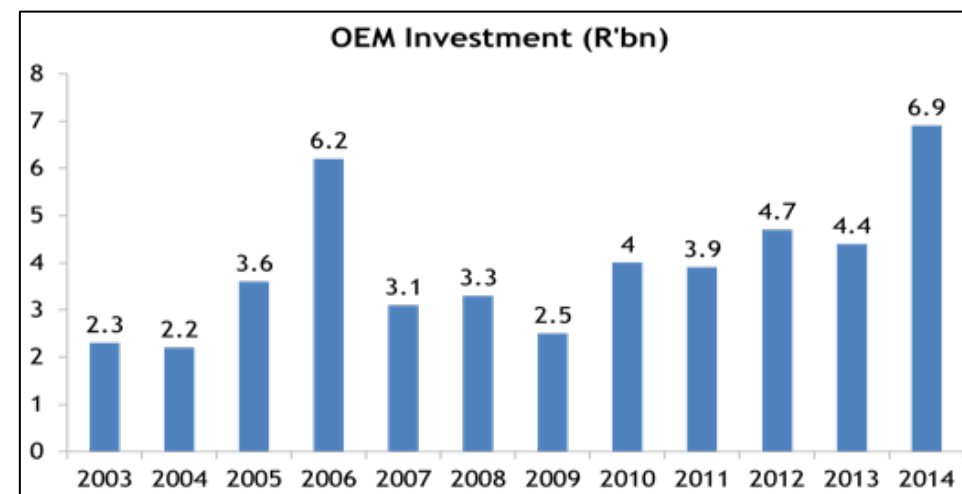
The automotive sector in South Africa remains a key driver of the country's manufacturing economy. State support for the sector in post-democratic South Africa has been through the Motor Industry Development Programme (MIDP: 1995 to 2012) and more recently the Automotive Production and Development Programme (APDP: 2013-2020). The sector's value chain provides significant economic growth and development opportunities; hence a number of other countries on the African continent are now developing policies to support a degree of local automotive production.

Table 1: Key performance data in MIDP period

Activity	1995	2012
Capital expenditure by OEMs	R847 million	R4.7 billion
Export value (vehicles and components)	R4.2 billion	R86.9 billion
Total vehicles exported (units)	15 764	277 893
Top vehicle export destinations	1. China 2. Zimbabwe 3. Malawi	1. USA 2. UK 3. Algeria
Top automotive components exported	1. Stitched leather seat parts 2. Catalytic converters 3. Tyres	1. Catalytic converters 2. Engine parts 3. Silencers/exhaust pipes
Top vehicle countries of origin: imports	1. Germany 2. Japan 3. UK	1. Germany 2. India 3. Japan
Productivity (avg. no. of vehicles produced per employee)	10.0	18.5
Automotive industry contribution to GDP	6.5%	7.0%
No. of passenger car model derivatives	356	2 159
Export destinations for vehicles and components	62	152
Total vehicles produced (units)	389 392	539 538
Total new vehicle sales (units)	399 967	624 035
No. of model platforms	41	13
Models with production volumes > 40 000 units	0	5

Source: the dti

Figure 1: Recent SA OEM investment levels



Source: the dti

It is worth noting that the outlook for SA's automotive industry is currently very positive given the high recent levels of investment made by OEMs. The last two years have seen record levels of OEM reinvestment in SA and this can be expected to continue, with this confidence being driven by the value proposition offered by SA and underpinned by the APDP.

This is indeed a significant success for SA Industrial Policy; but it needs to be seen in the wider context part of a re-emerging global trend towards state support of the sector in one form or another - with has a decisive impact on OEM investment and production decisions. High levels of state support can be found in significant emerging competitor economies such as Thailand, Mexico, India and Turkey. The demise of the automotive manufacturing industry in Australia is a counter-example of how quickly production can be shifted to other locations where enabling policy environments exist. The final closure of all automotive manufacturing plants in Australia by 2017 will result in the loss of approximately 30,000 direct jobs and many thousands more indirect jobs.

It should also be noted that whilst the automotive sector in South Africa has in the past twenty years grown from being an inward-looking to a globally integrated industry, some significant challenges remain.

The recent review of the APDP has confirmed the difficulties faced by the industry in reaching the set objectives of high production volumes and increased local value-addition under current and future economic conditions. It is on this understanding that minor adjustments to the APDP have been made to accommodate new and relatively lower-volume vehicle producers. In addition to this, ongoing policy development work is being undertaken to look at a much wider industry development Master Plan. This is expected to include, amongst others things, details of a fresh package of incentives to serve the industry in the post-APDP period.

Competitiveness improvement initiatives will continue to be implemented under the Automotive Supply Chain Competitiveness Initiative (ASCCI) which is positioned as the central coordinating point for efforts aimed at growing local value addition along the value chain.

Medium term action programmes

The focus of policy interventions in the medium term will be on providing direction for the period post-2020, including intensification of efforts to encourage further localisation of truck and bus manufacturing, the motor body repair industry, vehicle logistics services and lower tier suppliers; and will be supplemented by transformation at the level of dealerships.

Targeted outcomes and impacts

Whilst the local automotive manufacturing industry is still recovering from the effects of the 2008/9 global economic crisis, almost 100,000 people are still employed in vehicle assembly and component production as at the end 2014. The Australian example cited above is a clear indication that South Africa has to continue supporting the automotive industry especially since there is overcapacity in other regions from which global demand can be serviced.

The APDP and its predecessor the MIDP have successfully positioned South Africa as a global participant in automotive production. The wider automotive sector has regularly contributed between 6 and 7% to the country's GDP in recent years, underpinning the employment numbers.

Key opportunities

- Preferential procurement by the state;
- Cooperation with emerging automotive production locations across the continent;
- Global collaboration in supplier development;
- Localisation of selected automotive segments.

Key constraints

- Cost and reliability of inputs such as energy and raw materials;
- General competitiveness gap between SA and other competing locations;
- Relatively small domestic market.

Key action programmes

1. Competitiveness improvement initiatives

The second Phase of the programme which began in the previous IPAP period aimed at improving the operational efficiencies of suppliers will be implemented under the auspices of the Automotive Supply Chain Competitiveness Improvement Initiative (ASCCI), itself a previously implemented IPAP deliverable.

Nature and purpose of the intervention

This intervention will extend support to suppliers in prioritised value chains provided under Phase One of the programme, with this based on the methodologies successfully trialled under Phase One.

Targeted outcomes and impacts

The adoption of best practices and technologies by these automotive suppliers – which will be monitored at both a supplier project level as well as at an industry programme level, with enhanced supplier competitiveness expected to support localisation, exports and ultimately employment.

Key milestones

- 2016/17 Q1: Supplier enrolment complete.
- 2016/17 Q2: Assessments report and projects identified.
- 2016/17 Q3: Implementation progress report.
- 2016/17 Q4: Final assessment report.

Lead departments/agencies: the dti, ASCCI

Supporting departments/agencies: IDC, EDD, Provincial and Local Governments

2. Automotive Supply Chain Competitiveness Initiative (ASCCI) localisation

Nature and purpose of the intervention

This ASCCI-driven intervention involves the advancement of localisation in the automotive polymer value chain through the localisation automotive specific polymer compounding.

Targeted outcomes and impacts

Facilitate investment in local compounding capability, with the ultimate objective of positioning the downstream Tier 1 and Tier 2 automotive suppliers of plastics components to benefit from the availability of local upstream raw materials.

Key milestones

- 2016/17 Q1: Creation of joint stakeholder reference committee and development of terms of reference.
- 2016/17 Q2: Appointment of specialist service provider and submission of inception note.
- 2016/17 Q3: Draft business case.
- 2016/17 Q3: Approved business case and action plans to support localisation.

Lead departments/agencies: the dti, ASCCI, EDD, IDC

CASE STUDY: MAHLE Behr SA

MAHLE Behr South Africa is an automotive component manufacturer, specialising in air conditioning and engine cooling products for both passenger and commercial vehicles. The firm manufactures engine cooling radiators and module heater radiators, oil coolers, air conditioner condensers and evaporators, air conditioner/heater system assemblies and pipes and hoses.

2014 saw Stuttgart-based MAHLE GmbH increasing its shareholding in Behr GmbH from 36.85% to a majority 51%. The local subsidiary, which is now known as MAHLE Behr South Africa, employs over 800 workers at its Durban and Port Elizabeth plants.

AIS Investment

Since early 2011, MAHLE Behr South Africa has made a number of major investments into its Durban and Port Elizabeth plants. Over R130 million has been spent in upgrading projects that give the firm the capability and technology to both meet the complex needs of local OEM customers and compete in international export markets.

the dti's Automotive Investment Scheme (AIS) has greatly assisted in enabling these investments, with MAHLE Behr accruing nearly R30 million of benefit towards a number of projects. Between 2011 and 2015, a total of 26 projects each received between 20% and 30% approved AIS benefit, greatly improving the feasibility of these projects for MAHLE Behr. Collectively these projects have assisted the company in advancing its competitiveness and driving enhanced growth which has generated an additional 155 jobs.

CASE STUDY: MA AUTOMOTIVE

MA Automotive is a subsidiary of the CLN Group Company, a multinational supplier of steel products. As a tier-1 supplier, the company specialises in producing and assembling steel automotive structural parts, components, subassemblies and modules. It has facilities in Italy, Europe, South America, Africa and Asia and manages twenty-six production plants and three Research and Development Centres. Of its production plants, four are located in Rosslyn, one in Port Elizabeth, and one in Berlin (near East London). The firm also has a tool room in Uitenhage. In total the business employs 1,650 people in South Africa. Locally MA specialises in stamping, roll-forming and assembly of structural parts, components, modules and subassemblies in steel for the automotive industry, including passenger cars, light and heavy commercial vehicles.

As a strategically important supplier in the pressed metal parts sub-sector, MA's Port Elizabeth plant was nominated to benefit from ASCCI's WCM intervention, designed to assist the firm in further maximising its competitiveness.

An assessment of MA's operation identified enhanced productivity as a particular opportunity. In this regard, a project was launched to optimise the deployment of people within the firm's assembly operation and identify opportunities for low cost automation. The overall objective was to free up 5% of existing manpower to focus on additional value adding opportunities.

Phase 1 of the project focused on undertaking robust shop-floor assessments to define current efficiency levels and identify meaningful opportunities for productivity improvement. The outcomes were:

- AREA A - Average manpower loading improved from 68% to 81%.
- AREA B - 22% volume increase without adding resources. Labour productivity up from 1.7 to 2.1. Manpower loading up from 68 % to 84%.
- Company able to support 20% volume growth from OEM customer with no additional increase in resources because of savings achieved.



CASE STUDY: SUMITOMO

Headquartered in Japan, Sumitomo Rubber Industries (SRI) is the fifth largest tyre manufacturing company in the world and is responsible for producing and distributing the Dunlop, Falken and Sumitomo tyre brand, amongst other products. SRI operates plants in Japan, China, Thailand, Indonesia, USA, Brazil, Turkey and South Africa, and has sales offices in 16 countries. The company acquired the automobile tyre assets of Dunlop, including the right to use the Dunlop brand on tyres. Sumitomo Rubber South Africa (SRSA) is the company's local subsidiary. It is headquartered in Durban and has a manufacturing plant in Ladysmith.

As a key strategic supplier, SRI-SA was nominated by Nissan to benefit from ASCCI's World Class Manufacturing (WCM) programme.

The complexity of its logistics function motivated SRSA's management team to initiate a project to restructure the company's national warehousing and distribution function to eliminate cost from its logistics value chain. In this regard, ASCCI's support of the project focused on supporting SRSA in 3 areas:

- Reviewing and validating the operating and costing models associated with consolidating its Durban warehouse facility and transport routes and frequencies;
- Performing a readiness review and prioritisation of all activities critical for transitioning to the optimised logistics function and infrastructure;
- Project managing the implementation of the defined solution.

The project experienced some initial set-backs with the preferred warehousing option falling through at the last minute. An alternative site was identified and occupation is scheduled for June 2016. In the absence of an identified warehouse, the project focused on restructuring the distribution elements of the firm's value chain and validating its costing model.

In restructuring its distribution function, SRI-SA reduced its logistics and distribution costs by over 10% per tyre, fundamentally reducing tyre costs to both its OEM and aftermarket customers. **Sumitomo Corporation**

3. Metal fabrication, capital and rail transport equipment

Situational analysis

The metal fabrication, capital and rail transport equipment cluster of sectors includes the following sub-sectors:

1. Ferrous metals

The Ferrous Metals sector is classified into the upstream and downstream sectors. Upstream sector consists of the primary iron and steel (carbon and stainless) industry (flat-rolled products: coil; sheets, plate; long products: reinforcement bars; wire rod) and scrap metals. The downstream sector includes fabricated metal products (e.g. tube and pipes; structural steel; extrusions; wire products; castings etc.)

South Africa's primary steelmakers are Arcelor Mittal South Africa, Evraz Highveld Steel & Vanadium, Cape Gate, Scaw Metals and Columbus Stainless. Primary steel production capacity is approximately 9 million tonnes per annum and the industry currently employs about 20,000 people. South Africa has an established downstream value-adding industry that is prominent in various sub-sectors including mining, packaging, tube and pipe, plate and sheet metal works, roofing and cold forming, agricultural, automotive, electrical appliances and white goods, wire products, fasteners, hardware, furniture, railroad, building and construction. Downstream industry is relatively labour-intensive.

The performance of the metals and engineering sector – and, in particular, the revival of the foundry industry - is of great significance for the overall health of the manufacturing sector. The foundry industry is critical for South Africa's industrialisation agenda as castings typically form the first value-adding step in the manufacturing process of components utilised in various high-MVA industrial applications – e.g. automobiles, machinery, plumbing fixtures, locomotives, aircraft etc.

There are about 170 foundries in South Africa, employing around 12,000 people, with an annual production capacity of around 300,000 tonnes.

2. Non-ferrous metals

The SA non-ferrous metals sector is mainly dominated by the aluminium and copper sub-sectors with the following products across the value chains:

- Primary: slabs, billets and ingots of aluminium, copper, brass, lead, nickel, tin and zinc;
- Midstream and downstream: flat and long products, extrusions, castings and foil.

High quality standards are maintained throughout each process in the manufacture of non-ferrous metal products, from validation of raw material to the final manufactured product. The SA aluminium industry is characterised by two primary aluminium smelters, Hillside and Bayside smelters, both of which are located in the KwaZulu-Natal town of Richards Bay. The Bayside smelting facility has been mothballed since the end of 2014; however, the cast-house is still operating. The rolling slab from Bayside is supplied to local semi-fabricators. The SA aluminium industry also comprises secondary smelters - producing casting alloys and other special metal industry alloys in ingot and powder form – and semi-fabricators who produce extrusions, plate, sheet and foil.

There are four semi-fabricators who produce for various downstream fabricators and manufacturers as well as for export purposes. All the semi-fabricators are extruders supplying both the building and engineering downstream industries. Hulamin and Wispeco have their own billet-casting capability using scrap as feedstock.

On the copper side, Palabora Mining Company is the only primary copper producer. The mine produces cathode for its rod casting plant and manufactures 8mm rod for electrical cable producers. Mined production in South Africa was recorded at about 40,000 tonnes in 2015. Most of the country's major downstream manufacturers use recycled copper for their production processes or otherwise import cathode from other countries – e.g. Germany and Zambia. Downstream manufacturers also produce globally competitive export products such as copper tubing and bus bars. The Electrical industry is the major user of locally produced copper, accounting for approximately 70% of total copper used in South Africa.

Copalcop is South Africa's largest producer of copper, brass and other copper alloys. Copalcop produces a range of products which includes rolled, extruded and forged non-ferrous metal products for the local and global markets. The company takes the lead in supplying copper products to various industries and continues to grow as a global exporter.

3. Capital equipment

The Capital Equipment and Allied Services sector is defined as an intermediary sector that manufactures and supplies components used in materials handling, environmental control, manufacturing processes, drilling, digging, earthmoving and complete plant. It is complemented by the capital equipment services industry which provides the design, construction, servicing and repairs solutions.

The Capital Equipment sector is further supported by the ferrous and non-ferrous metal sectors which play a critical role in the manufacturing processes for capital equipment-related components. In addition, the Capital Equipment sector uses fabricated metal products such as castings and forgings as raw materials during the manufacturing processes. Fabricated metal products include, amongst other things: machine tools, tooling, pressure vessels, cyclones, pumps and valves. All these products have sophisticated value-addition processes which entail design, product development, manufacturing, testing and certification for specialised applications.

The Capital Equipment sector is one of the sectors within MFCRT that has products earmarked for designation; hence it is imperative to provide adequate support to the industry (both locally-owned and multinationals) to enable it to meet the local content requirements set out in the relevant Instruction Notes. It is worth highlighting that, within the existing localisation framework, valves, actuators and transformers have already been designated; and that the sector desk is currently carrying out industry analysis on various other components – e.g. pumps, heat exchanges, pressure vessels etc. – with a view to further designations.

4. Rail transport equipment

The South African rail industry has been in existence for over 100 years and it is one of SA's major manufacturing sectors. The Rail Transport Equipment (RTE) sector consists of the following sub-sectors:

- Rail infrastructure sub-sector: permanent way, civil engineering, power supply, signalling, engineering and consulting services;
- Rail rolling stock sub-sector: manufacturing and assembly of locomotives, wagons, electric multiple units and coaches for the movement of passengers and freight.

Activities within the rail transport equipment sector are accounted for in SIC 3850, with companies involved in the design, manufacturing and maintenance of equipment for the efficient operation of transport services.

Transport operators such as PRASA, Transnet Freight Rail, Gautrain and others rely heavily on the RTE sector for timely delivery of quality components and systems at relatively competitive prices. The rail transport equipment sector comprises a relatively small number of companies, and is sub-divided into:

- **Car builders:** companies involved in the design, maintenance and manufacture of passenger cars, including the assembly of major systems (e.g. car body parts);
- **Locomotive builders:** companies involved in the manufacturing of diesel and electric locomotives;
- **Component suppliers:** companies involved in the design, engineer and manufacture of components;
- **Material suppliers:** companies involved in the supply of all related materials such as sheet metal, castings, plastic, etc.
- **Signalling equipment suppliers:** companies involved in the design and manufacturing of electrical, mechanical and electronic parts and components for railway signals;
- **Rail and track equipment supplies:** companies involved in the design and manufacture of overhead traction equipment, rail and associated equipment (e.g. fasteners, fishplates) as well as trackside substations;
- **Maintenance and repair:** companies involved in the maintenance and rebuilding of all forms of rail transport equipment;
- **Leasing firms:** companies involved in the leasing of locomotives and play a crucial role in the export market.

One of the major priorities of the State is the commitment of investments geared towards recapitalising the country's ageing rail infrastructure. In order to ensure that crucial associated capabilities are created in the local sector, rail rolling stock is designated with varying local content thresholds (i.e. diesel locomotives: 55%; electric locomotives: 60%; wagons: 80%; and electric multiple units: 65%). Work on the possible designation of signalling is progressing and the sector desk continues to review other products within the infrastructure space for further possible localisation.

The rail sector is currently involved in the implementation of the TFR 1064 locomotive contracts, the PRASA Electric Multiple Units (coaches) and rail signalling projects with an estimated value of R110 billion for over a 10-year period.

Currently, these projects are in different phases of implementation, with local content commitments varying from 40% to 65%. The global Original Equipment Manufacturers (OEMs) involved in these contracts are under obligation to meet defined technology-transfer targets through their supplier development programmes. To date a number of local companies have benefited directly and indirectly from these large contracts; and there are good prospects for steadily accelerating local manufacturing value-add in rail transport equipment.

Table 1: Sector economic data

Variable	Contribution in 2014
Manufacturing Value-Add (% of GDP)	
□ Basic Iron and Steel and Non-Ferrous Metals ¹¹	R32. 0 billion (1.06%)
□ Metal Fabrication, Capital and other Transport equipment ¹²	R54.5 billion (1.81%)
Manufacturing Employment (% of Manufacturing)	
□ Basic Iron and Steel and Non-Ferrous Metals	53 689 (3.97%)
□ Metal Fabrication, Capital and other Transport equipment	328 086 (24.31%)
Trade Balance	
□ Basic Iron and Steel and Basic Non-Ferrous Metals	R100.4 billion
□ Metal Fabrication, Capital and other Transport equipment	-R77.3 billion

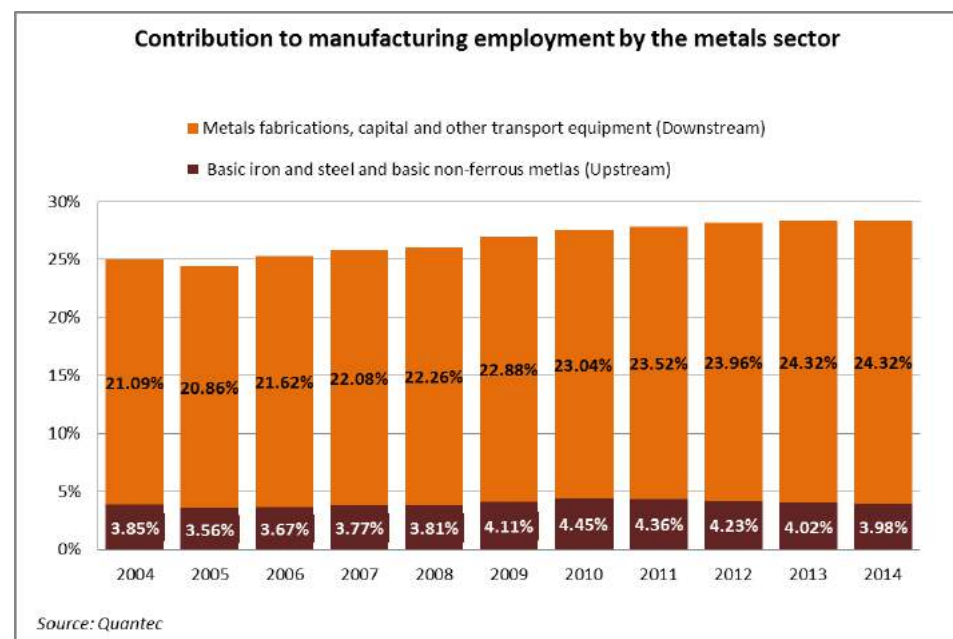
Source: Quantec

The contribution to manufacturing employment by the metals industries remained stagnant for both the upstream and downstream sector(s) with the sectors contributing 4.0% and 24.3% respectively to manufacturing employment in 2014.

¹¹ Data for basic iron and steel and basic non-ferrous metals was abstracted from SIC 351 and 352 respectively

¹² Data for Metal Fabrication, capital and other transport was abstracted from the following SIC codes: Metal products excluding machinery: SIC 353-355, Machinery and equipment: SIC 356-359, Electrical machinery and apparatus: SIC 361-366, Other transport equipment: SIC 384-387 (Source: Quantec)

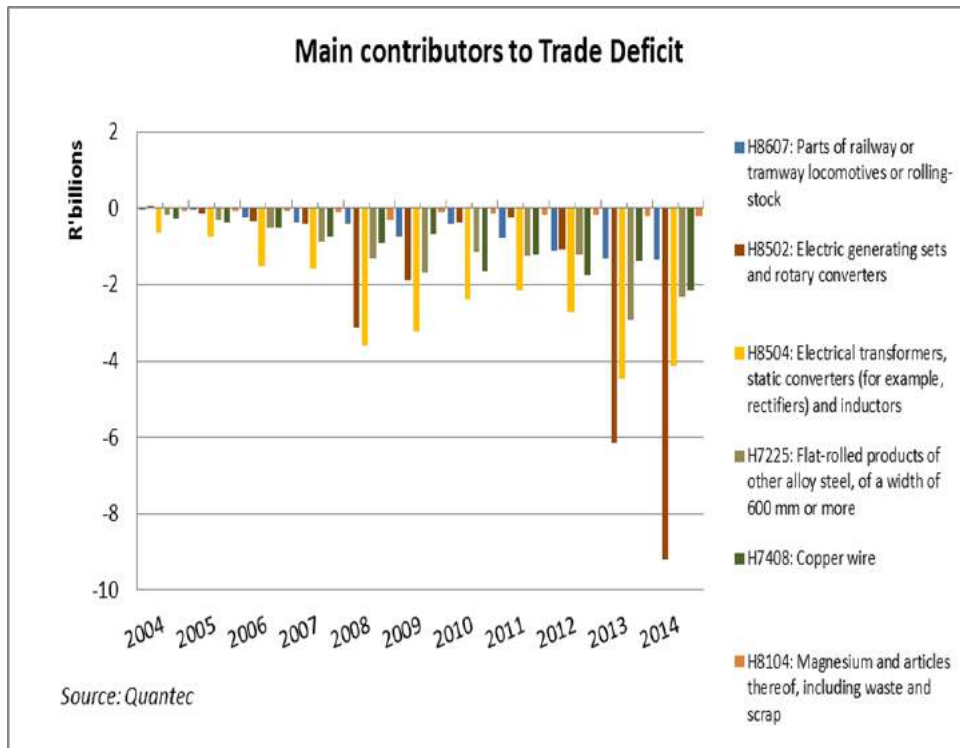
Figure 1: Contribution to manufacturing employment



The trade deficit in the downstream industries continues to worsen while the upstream industries have lost some competitive advantage in export markets. This is particularly prominent in the steel sector as the global industry is confronted by overcapacity challenges and low steel prices.

The contributors to the downstream industries' trade deficit are mainly electrical systems such as generators, rotary converters and transformers associated with the Eskom build programme. While there is a clear government commitment to reducing import leakage in the rail manufacturing industry, imports of components and systems in the ongoing rail recapitalisation programme continue to remain too high from an optimum localisation perspective.

Figure 2: Trade deficit



Constraints

1. While Government has prioritised localisation, the following impediments continue to persist:

- Inconsistency in the implementation of the localisation programme and continuous increase in import of key components within the infrastructure build programme, particularly in the designated products/sectors.
- Rolling stock industry suppliers are faced with working capital challenges, often obsolescent technologies and inadequate plant; thus impacting on their ability to meet OEM quality requirements and delivery times.

- Lack of standardisation in key products undermines localisation and the ability of the local industry to achieve economies of scope and scale.

2. Uncompetitive input costs (electricity, logistics and raw materials):

- Escalating electricity prices have rendered many firms - especially high energy consumers - uncompetitive. This problem is likely to be further exacerbated by the 16% proposed Eskom tariff increase over the next 5 years, compounded by additional municipal levies.
- Unavailability of certain grades and inconsistent supply of quality primary steel.
- Despite the price preference system implemented by ITAC, access to quality scrap at affordable pricing levels remains a serious challenge for foundries and steel mini-mills in particular.
- Inefficiencies and high costs of port handling, road and rail transport (particularly the slow pace in the implementation of the branch line rehabilitation programme) continue to undermine the competitiveness of the downstream industry.

3. Technological inefficiencies across the entire value chain:

- Inadequate capital investment due to three decades of low demand has led to plant, machinery and equipment not being continuously upgraded or replaced.
- Variable and often out-of-date production and technological capabilities have resulted in the industry losing ground in maintaining local content and being unable to best capture new opportunities offered by both private and public capital expenditure programmes.
- There are skills shortages at artisan, technical, engineering and project management levels.

4. Unequal trading platforms:

- Rising (protectionist) tariffs and non-tariff barriers in potential export markets, further exacerbated by the slow pace of recovery in global markets.
- Downward tariff pressures on a number of value-added products resulting in a surge of imports, particularly in low-value and high-volume manufactured goods.
- The global steel surplus – which continues to depress steel prices across the entire value chain, seriously threatening the survival prospects of the downstream industry.

Key opportunities

Key areas of opportunity for growing the sector or achieving higher impact include:

- The SA infrastructure-build programme (including the Strategic Integrated Projects) presents the largest single opportunity to stimulate the industry on the back of localisation requirements and focused supplier development programmes.
- Significant investments in rail network and infrastructure projects on the African continent will increase the demand for locomotives and wagons. In addition, the African Union's declaration of SA as a rail Centre of Excellence for the African continent provides a crucial platform for deepening our rail manufacturing capabilities.
- Outcomes of the Mining Phakisa are expected to unlock growth and development opportunities in the mining cluster.
- Strong ongoing moves in the development of the green economy present an opportunity to implement substantial energy-saving measures in the energy-intensive industries.

CASE STUDY: Progress with rail rolling stock localisation

Following the designation of rail rolling stock sector in 2011, both PRASA and Transnet Freight Rail (TFR) awarded five contracts to a total value of over R100 billion for the procurement of locomotives and Electric Multiple Units (EMU).



The **PRASA contract** was awarded to the Alstom-led Gibela joint venture for the supply of 3,600 electric multiple-unit cars. These will form part of the 600 train-sets to be delivered in 2015-2025. Gibela will also provide technical support and spare parts over an 18-year period (2015-2033). To date, PRASA has received two of the first trains. These trains form part of the first 20 to be manufactured in Brazil and included about 38 components from South African suppliers.

The **TFR contract** for supplying 1,064 locomotives was awarded to four international Original Equipment Manufacturers (OEMs) with local content of 55% diesel locomotives and 60% on the electric locomotives:

- **GE Transportation** for supplying 233 diesel locomotives (Class 44) of which the first 6 were delivered in 2015. The assembly of the remaining units has commenced at the TE Koedoespoort facility.
- **China CSR Zhuzhou Electric Locomotive Co** for supplying 359 dual-voltage electric locomotives (Class 22E) of which the first 40 were delivered in 2015. Assembly of the remaining units has commenced at TE Koedoespoort facility.
- **Bombardier Transportation South Africa** for supplying 240 electric locomotives (Class 23E). Assembly of the units has commenced at TE Durban facility.
- **CNR Dalian** for supplying 232 diesel-electric locomotives.

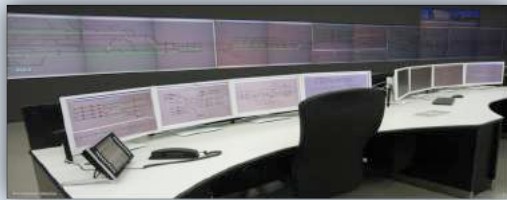
CASE STUDY: Progress with rail infrastructure localisation

Apart from the normal supply of components for the maintenance of permanent ways and traction substations, the rail infrastructure sector is implementing a multibillion Rand project for the re-signalling of the PRASA rail network.

Three contracts - awarded to Bombardier, Thales and Siemens - include replacing all existing signalling interlocking, which consisted mainly of obsolete mechanical and electromechanical systems, with electronic interlocking technology.

To-date, local suppliers such as ERB Technologies, Basil Read, Bakara Engineering, R&H Railway Consultants, SIMS and Tractionel, Mehleketo, Actom, and others are benefiting through the supply of signalling components such as points-machine, cable and materials. The envisaged local content in these contracts is over 40%, with other parts being imported. The imported parts are those that are solely made and assembled by OEMs at a scale beyond the current capabilities of local producers. These parts are also protected by intellectual property rights.

In 2015, Siemens completed a new state-of-the-art control centre for centralised rail traffic management called the Gauteng Nerve Centre (GNC). This will monitor over 600 trains and up to 500,000 passengers every day. As part of the project, Siemens will also be localising its Interlocking System known as Sicas S7. Siemens have invested in an Interlocking Testing Facility in North Riding. The capability created at this facility will help Siemens to service new clients across Africa.



Gauteng Rail Nerve Centre in Kaalfontein, Tembisa

All these contracts are at different stages of implementation, with the earliest expected delivery time being 2019 for the locomotives.

Key action programmes

1. Response to target of 75% local content across government procurement: Designation and Localisation

Nature and purpose of the intervention

The current administration has committed to achieving 75% local content across public procurement. This strategic intent can only be achieved through leveraging current and future state capital and operational expenditure programmes facilitating standardisation and designation of fleets within the programmes.

This KAP will reinforce, complement and re-evaluate localisation programmes, including designation of fleets. During 2015/16 the necessary technical work was completed on pumps and Medium Voltage (MV) motors and fabricated structural steel.

Targeted outcomes

- Optimised localisation opportunities as presented by the state infrastructure programmes;
- Reduction of import leakages;
- Increased investments in key manufacturing processes and activities for supply into the domestic market;
- Capture of after-market opportunities;
- Support for the revitalisation of the lost manufacturing capacity;
- Increase employment and exports.

Key milestones

- 2016/17 Q1: Finalise the instruction note on rail signalling with National Treasury.
- 2016/17 Q2: Finalise possible designation process for fabricated structural steel.
- 2016/17 Q3: Finalise industry analysis for possible designation process for Pumps and Medium Voltage (MV) motors.
- 2016/17 Q1-Q4: Continuous support and monitoring of the designated rolling stock components.
- 2017/18 Q2: Industry analysis for possible designation of port equipment: stackers, reclaimers, ship-loaders and tippers.

- 2017/18 Q4: Industry analysis for the possible designation of aluminium castings.
- 2018/19 Q1: Develop a strategy to leverage on ferrous and non-ferrous scrap metals produced by and belonging to the state (national, provincial and local) and State Owned Companies, in order to enhance local manufacturing.
- 2018/19 Q2: Review the rail rolling stock Instruction Note for streamlining and maximisation of local content thresholds.

Lead department: the dti

Supporting departments/agencies: NT, EDD, DST, IDC and SOCs

2. Continued competitiveness enhancements programmes deployed at company-level, together with dedicated training

2.1 National Tooling Initiative (NTI) Programme

Nature and purpose of the intervention

Over the past 30 years the South African Tool, Die and Mould (TDM) sector has lost significant competitiveness due to the critical skills shortage that resulted from the abolition of apprenticeship programmes. This dire situation compelled **the dti** and the industry to embark on an urgent skills and enterprise development programme.

The primary outcome of the multi-stakeholder engagement was **the National Tooling Initiative (NTI)** programme. The main aim of the NTI is to raise the competitiveness of the TDM sector through critical skills development and job creation programmes, technology development and adoption, enterprise development and export promotion.

In 2015, the new Toolmaker Trade Test for the occupational qualification 'Toolmaking' (SAQA ID 91796) was accepted by the National Artisan Moderation Body (NAMB). Meanwhile, the Nuclear Energy Corporation of South Africa (NECSA) is in the process of being accredited as a toolmaker trade test centre.

In this IPAP, we will build systematically on the foundations laid and the successes achieved thus far. These included:

- The launch of first Tooling Centre of Excellence at NECSA;
- The accreditation of the Trade Test Centre for the new Toolmaker Trade test (NQF level 5).

Targeted outcomes

This KAP will reduce import leakage, enhance capacity in South Africa's tooling industry skills upgrading, increase local content, promote investment in tool manufacturing, increase employment and exports and enhance manufacturing competitiveness.

Key milestones

- 2016/17 Q2: Accreditation of Necsa's Trade Test Centre for the new toolmaker trade test.
- 2016/17 Q3: 73 Students enrolled on the apprenticeship level III.
- 2016/17 Q4: 200 students enrolled on the apprenticeship level III.
- 2017/18 Q3: **the dti**-NTI Artisan Skills Development Partnership Programme project closeout report.

Lead department(s): the dti, NSF

Supporting departments/agencies: NT, DST, DHET and NTIP, QCTO, merSETA, NAMB

2.2 National Foundry Technology Network

Nature and purpose of the intervention

The National Foundry Technology Network (NFTN) is an initiative of **the dti** and the industry that aims at revitalising the foundry industry through skills development and enterprise development. Furthermore, the NFTN programme aims at *reversing* the erosion of the foundry industry, which has over the years negatively impacted on the competitiveness of the broader manufacturing sector.

Targeted outcomes

The NFTN is mandated to facilitate the development of a globally competitive South African foundry industry through appropriate skills training, technology transfer and diffusion of state-of-the-art technologies.

Key milestones

2016/17 Q1-Q4:	20 foundries assisted under the CII programme. CII programme will prioritise product development, energy saving measures as well as addressing environmental and waste management needs.
2016/17 Q1-Q4:	15 young foundry men/women enrolled on Year 1 of the New Foundry Generation Programme aimed at developing future managers and overcoming the 'ageing skill' challenge within the sector.
2016/17 Q2:	15 young foundry men/women enrolled on the Year 2 of the New Foundry Generation Programme.
2017/18 Q1-Q4:	20 foundries assisted under the CII programme. The CII programme will prioritise product development, energy-saving measures and environmental and waste management needs.
2017/18 Q3:	the dti -NTI Artisan Skills Development Partnership Programme project closeout report produced and presented.

Lead department: the dti

Supporting departments/agencies: NT, CSIR, NFTN, DST

4. Agro-processing

Situational analysis

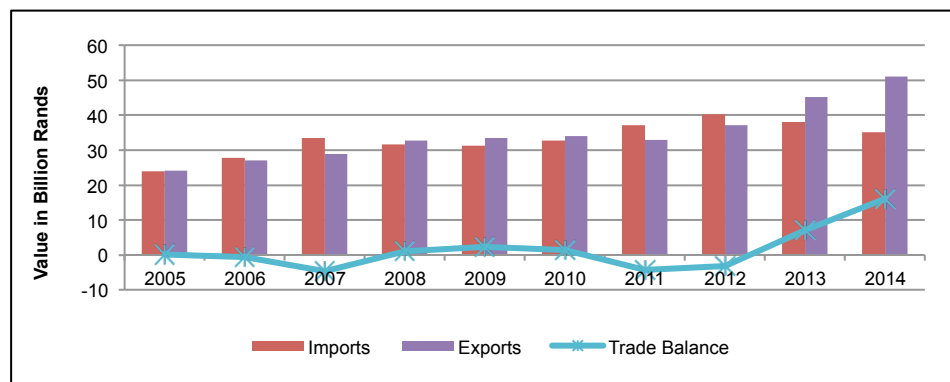
A recent report commissioned by **the dti** highlights the complexity and challenges of the South African agro-processing sector (*"Opportunities for Strategic Intervention in the Agro-processing sector"*). The sector has the opportunity to make a significant contribution to the country's export earnings and employment record. It is however a highly diverse and complex industry, with an indistinct boundary between agriculture and agro-processing.

On the other hand, food systems are increasingly detached from agriculture, and being industrial in nature, are dominated by large firms that benefit from economies of scale. One of the implications is that it is increasingly difficult to distinguish between processed and unprocessed primary products in terms of technological sophistication, scale, cold chain management and advanced logistics.

The paper goes on to present the many challenges that the sector faces. The most critical is a *serious under-investment in areas fundamental to any modern agricultural sector*. This includes water and irrigation (where the inability to deal with the current drought has led to wide-spread crop failure), energy and transport infrastructure, freight handling infrastructure, agricultural research and development and sanitary and phytosanitary monitoring. The evidence behind this is a decline in crops under irrigation, from 1.5 million hectares in 1990 to under 1 million in 2010. The impact of the drought on the balance of payments will reduce the growth prospects of not just the agro-processing sector but the economy as a whole.

A further challenge has been the opening up of the economy to food imports, which has led to an extremely volatile trade balance.

Figure 1: SA trade balance 2005-2014



Source: Quantec

The report also remarked on the constraints on employment generation imposed by a slow and often unresponsive bureaucracy, and by the uncertainties of land reform policy. Uncoordinated rural development projects in the agro-processing space also lead to high levels of failure, with few positive results in terms of employment generation, new production and transformation.

Table 1: Agro-processing employment trends

Year	Employment
2005	259,261
2006	251,455
2007	248,956
2008	254,030
2009	248,586
2010	247,828
2011	245,208
2012	240,037
2013	251,271
2014	252,189

Source: Quantec

The policy implications arising from the above analysis are threefold:

- (i) The fundamental need is for far greater coordination between government departments - particularly the Departments of Agriculture, Forestry and Fishing (DAFF), Rural Development & Land Reform (DRDLR), Department of Small Business Development, the Economic Development Department EDD) and **the dti**. Policies and programmes across departments, between the various spheres of government, and between the private and the public sector need to be improved and aligned. Clear areas of responsibility need to be demarcated among these various actors.
- (ii) The emphasis must shift to a focus on export agribusiness and demand-driven import replacement as a priority target of industrial policy. Within this focus area an understanding of the national and global retailer-driven value-chains is critical, and strong relationships should be built between the leading retailers and targeted producers around common developmental objectives.

At the same time the structure of agro-processing and food production must be addressed, and new entrants and diversification should be promoted to increase the competition and dynamism in the system. In addition, the critical constraints preventing the development of the various value chains should be systematically tackled and resolved. The Value-Chain Round Tables (VCRTs) and *Agricultural Phakisa* led by DAFF will be important in obtaining collective understanding of the priority constraints, and agreeing the details of specific sectoral action plans.

Table 2: Key sectors (2014)

Key sectors based on export performance	Key Sectors based on gross value added	Key sectors based on the multiplier effect
1. Fruit (grapes, citrus, apples, pears, avocados, etc.)	1. Maize	1. Soybean and Maize (feed, food, beverage, starch, etc.)
2. Wine	2. Sugar	2. Sugar
3. Sugar	3. Soybean	3. Milk
4. Maize	4. Wheat	4. Fruit and Vegetables
5. Macadamia	5. Fruit and Vegetables	5. Livestock - Red meat
	6. Livestock (Poultry & Cattle)	6. Forestry

(iii) The paper points to two paths to transformation. The first path involves the evolution of current transformation and empowerment policies, improved governance rules for joint ventures in farming, access to water and land rights etc. Along this path, the role of supplier development programmes (SDPs) and demand-driven opportunities within the Agri-Parks Programme will provide important opportunities for employment-generating activities, and a locus of support by a co-ordinated government.

The second path is through the targeting of, and support for, commercial agribusiness investments that can provide employment growth and exports within a specified period of time. This should include clearer assurances to those agribusinesses and commercial farmers who meet the requirements, in terms of issues such as land rights, incentives and co-operation from all levels of the state. In general terms, the objective of **the dti** should be to improve the competitiveness and diversity in the agro-processing and food production systems.

In line with the 'second path' in the analysis presented above - and in view of the Phakisa and Value-Chain Round Tables – there should be a strong shift to a more strategic set of interventions in agro-processing. Rather than focus on project-based local rural development interventions, **the dti** will therefore focus on *strengthening the over-arching governance framework* and guiding the relationships and capabilities of the myriad of actors involved in the agro-processing sector at all levels. This is a necessary realignment in order to sharpen policy focus and to leverage limited public sector resources.

Above all, **the dti**, DAFF and other key organs of state will be improving the system of support towards the agricultural and agro-processing sectors, where the boundaries between the two sectors can begin to be punctured, and a more co-operative governance approach adopted. Significant progress towards this has already been made through the Value-Chain Round Tables and the levels of co-operation should deepen through the Phakisa process.

the dti will concentrate on defining (and refining) its role within the agro-processing system more clearly, leveraging its knowledge base and using all the instruments at its disposal. These instruments are both internal to **the dti** - in terms of direct policy levers like targeted incentive programmes – and more indirect, touching on the different forms of leadership that it can provide to the private sector.

This role for **the dti** will not only entail a far deeper understanding of the statistical data relating to production and trade, but will also require the development of comprehensive databases of firms, with a particular eye to identifying the large, lead and dynamic (LLD) players within the sector and building close relationships with them. Various market failures caused by asymmetrical information, adverse selection and high search and coordination costs must be targeted.

In conclusion, given the co-ordination initiatives underway, the year should be seen as one of transition to a higher policy-oriented approach, underpinned by concerted relationship-building across government and between the public and private sectors.

Table 3: Sector economic data

Variables	Contribution in 2014
Agro-processing value add (% of GDP in manufacturing)	R77.8bn (21%)
Agro-processing employment (% of Manufacturing)	252,189 (19%)
Trade balance	R16 bn

Sources: Quantec and StatsSA

Key action programmes

1. Systemic Alignment Programme (SAP)

Nature and purpose of the intervention

The programme will be focused on overcoming the fragmentation across and between the various spheres of government and between government and the private sectors.

Targeted outcomes

1. A well aligned system, whereby the various spheres of government and key role-players supporting the sector have clearly defined roles and responsibilities. From a national perspective, to ensure that the key role-players supporting the agro-processing sector (DAFF, **the dti** and DRDLR) have aligned strategies and work-plans supported by structured co-ordination of implementation, with a strong focus on strengthening economic and industrial decentralisation.
2. Well supported provincial players empowered to deal with on-the-ground projects – thus freeing up national government to play a more strategic and policy-oriented role.
3. Strengthened private sector engagements through structured fora that ensure strong co-operation across the system. Where gaps exist in terms of stakeholders or marginalised interest groups, active support for their inclusion on a systemic basis.

Key milestones

- 2016/17 Q1: In co-operation with DAFF, develop a database of provincial agro-processing capacity and resources identifying critical weaknesses and instituting programmes of capacity-building where required.
- 2016/17 Q4: Provide a template to the provinces for the mapping of provincial agro-processing systems. To use the technical MINMECs as a mechanism to share knowledge and best-practice on improving the provincial agro-processing systems.

Lead departments/agencies: **the dti**, DAFF

Supporting departments/agencies: IDC, NEF, EDD, DSB

2. Value Chain Programme to Unblock Critical Constraints

Nature and purpose of the intervention

Led by DAFF - and reflecting the requirements of the APAP - to support the work of the Value Chain Round Table (VCRT) working groups and the planned *Agricultural Phakisa*, through the identification of critical constraints that fall within the power of **the dti**. To utilise the policy levers available to **the dti** in terms of regulation, financing and incentives, tariffs, investment attraction, competition, transformation and designation to support transformation, growth and investment in all the critical value chains, built on a much deeper understanding of the common constraints holding back the development of the sector as a whole.

Targeted outcomes

1. Identification of the 4 value-chains in which the interventions of **the dti** have the potential to generate the biggest structural and transformative impacts on employment, investment and exports.
2. Engagement with the key stakeholders in each of the high-level value chains; identification of the critical constraints over which **the dti** has some influence, either directly or indirectly. This means being sharply selective in the determination of which value chains **the dti** can (or cannot) play a significant role, understanding that one of the underpinnings of industrial policy is that choices and trade-off around resource allocation always have to be made.
3. Selection of at least 4 priority value-chains, together with the resolution of at least 1 critical constraint in each by end of year.

Key milestones

- 2016/17 Q1: To undertake a review with DAFF of the financing, and incentives currently available for the sector, and to make recommendations as to changes to existing programmes or the development of new instruments. To complete a brochure outlining the various financial and non-financial resources available to agro-processing firms.
- 2016/17 Q3: Determine a set of potential interventions in key value chains for **the dti** in at least 4 VCs.
- 2016/17 Q4: To have resolved at least 1 constraint or intervention in each of the 4 VCs.

Lead departments/agencies: the dti, DAFF

Supporting departments/agencies: EDD, DWAS, DRDLA

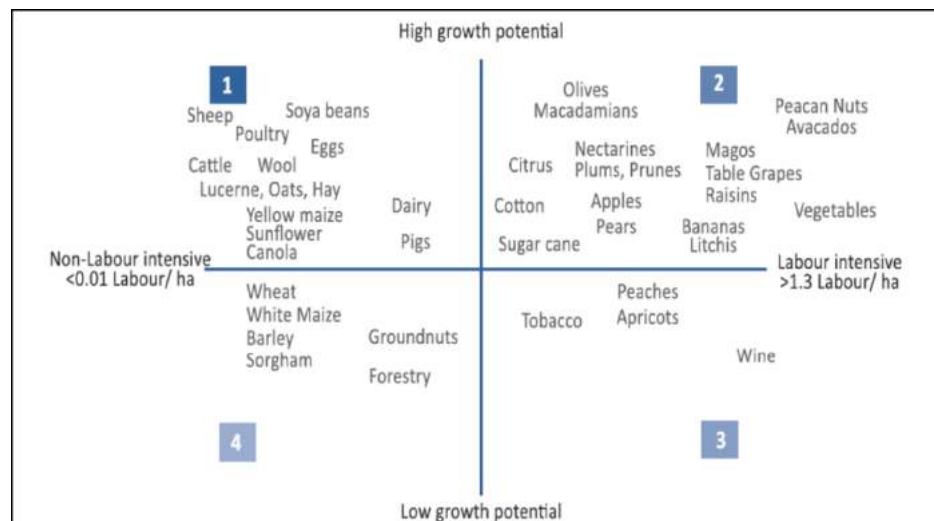
3. Niche Opportunity Programme

Nature and purpose of the intervention

To identify high-growth niche and emergent opportunities for support and development, in either export-oriented products in which SA can build a competitive proposition, or in import-replacement products where a competitive position can be developed. This will entail the development of a strong statistical analysis of key trade and sectoral data, and the development of partnerships with top agricultural and trade researchers across the public, private and academic sectors. It will also require the development of strong partnerships with large lead players in the agricultural, agro-processing and retail sectors to provide the demand impulses for new niche opportunities. These new opportunities also provide important opportunities for new black entrants into the market, where it is not a zero-sum game in terms of transformation.

Using various techniques, methodologies such as the one below, aim at identifying high growth opportunities that can be prioritised.

Table 4: High growth opportunities



Key opportunities

A significant range of opportunities exist in both new niche product areas, as well as in import-replacement opportunities. These include:

- The exploitation of a wide range of natural and indigenous resources for food, cosmetics, flavourants, oils and medicines.
- New agro-opportunities in a range of advanced materials and industrial products (such as flax into linen, hemp into a range of materials and products, cassava into starch).
- The transformation of industrial by-products into processed outputs or new energy sources, driven by industrial symbiosis analysis.
- Determining import-replacement demand through statistical analysis and engagement with lead players like Nestlé (on chicory import replacement) and the dairy project with Clover.
- Understanding changing demand patterns from our large markets (such as the production of blueberries, high value vegetables, different fruit varieties).
- Supporting the development of new, innovative products that can help change the balance in domestic and export markets (such as convenience foods and demand arising from advances in innovative packaging).
- Development of energy crops and bio-fuels (but with due consideration for the economic, environmental and food security impact of such opportunities).
- Beneficiation of existing raw agricultural products into high growth dairy-based products (through interventions like the “Surplus milk into Milk-Powder Project”).
- Intensified focus on highly versatile agricultural products like hemp, guar and bamboo, which have multiple applications.

Targeted outcome

30 niche opportunities will be scoped over the year, with the objective that at least 10 of these will be prioritised in coordination with DAFF in the medium term (3 years) for commercialisation or intensive support to optimise job creation opportunities.

Key milestones

- 2016/17 Q3: Develop a long-list of 30 niche sectors, and complete private sector engagements with each.
- 2016/17 -Q4: Agreement within **the dti**, DAFF and key industry partners as to 10 niche opportunities with proven demand for commercialisation.

Lead departments/agencies: the dti, DAFF

Supporting departments/agencies: TIA, DST, CSIR, ARC, EDD, Provinces, Industry associations

4. Critical Agro-processing Infrastructure Support Programme

Nature and purpose of the intervention

To engage with stakeholders around critical enabling infra-structure for small-holder farmers, producers and processors. This will feed into support for planned initiatives around the agri-parks, SEZs and other projects that (i) strengthen the rural economy as a whole and ii) advance economic and industrial decentralisation, particularly in the labour intensive agro-processing sector. The focus will be on market-enabling facilities, particularly for marginalised economic actors. Critical agri-infra-structure includes:

- Facilities for aggregation and processing of supply to market (packing sheds, cold-chain facilities and logistical facilities);
- Food testing laboratories;
- Access to appropriate packaging facilities;
- Incubation centres.

Targeted outcome

Increased participation, competitiveness and integration of marginalised processors into the agricultural value chain, and a reversal of under-investment in the support structure for agricultural exports.

Key milestones:

- 2016/17 Q1: Identify options for critical market-enabling agro-processing infra-structure.
- 2016/17 Q2: Engage with agri-parks and SEZs based on demonstrable market demand. Identification of critical enabling infra-structure for 5 agri-parks.
- 2016/17 Q4: Facilitate the financing of critical infrastructure for at least 3 of the agri-parks.

Lead department: the dti, DAFF.

Supporting Departments/agencies: DRDLA; EDD, IDC; NT, the DBSA

5. Agro-processing Supplier Development Programme (Agri-SDP)

Nature and purpose of the intervention

- To build proactive partnerships between government, the private sector and donors to ramp up the support offered by large retailers and large agri-producers for emerging and marginalised producers and farmers, as well as for medium sized players (following up the learnings from the Massmart SDP and other existing initiatives).
- To secure and strengthen economic and industrial decentralisation programmes.
- To move beyond standard Corporate Social Initiatives (CSI) supplier development programmes, and to mainstream the support for marginalised players into the formal supply chains. This will entail substantial investment by both the public and private sector into upgrading programmes in partnership with and guided by the retailers and large producers.
- To work with the retailers to identify potential exporters, and to package support around these companies in terms of upgrading support and other available government assistance.
- To identify suitable participants for inclusion in the Black Industrialist Programme.

Targeted outcome

A significant upscaling of support by the major retailers and large agri-processors. This should see a doubling of procurement from emerging producers and farmers within a three-year period. This will require the crowding-in of financing towards the upgrading of emerging producers in terms of support around issues like improved phyto-sanitary standards, productivity, lean manufacturing methods, investment in capital equipment, IT systems and marketing. At least 1,000 suppliers should have undergone upgrading or be supported by the end of a three-year period.

Key milestones

- 2016/17 Q2: Open up relationships with 3 of the mainstream retailers and 3 large agri-producers to define their level of support for emerging players, and seek consensus on how to overcome the challenges of bringing them into the major supply chains.
- 2016/17 Q2: Develop a costed “average” package of support per supplier, and establish a matching-grant upgrading fund, funded by retailers, international donor agencies, provincial governments and **the dti**.
- 2016/17 Q3: Embark on a national supplier selection roadshow across each of the provinces in collaboration with the leading partner companies, DFIs and other support entities. Identify 100 emerging suppliers, through provinces and local government, food associations, IPAs, export councils and the donor community.
- 2016/17 Q4: Select 50 suppliers from the 100 above for intensive upgrading support in Phase I of a 3-year programme.

Lead departments/agencies: the dti, DAFF

Supporting departments/agencies: EDD, TIA, IPA’s, the CSIR, PSA

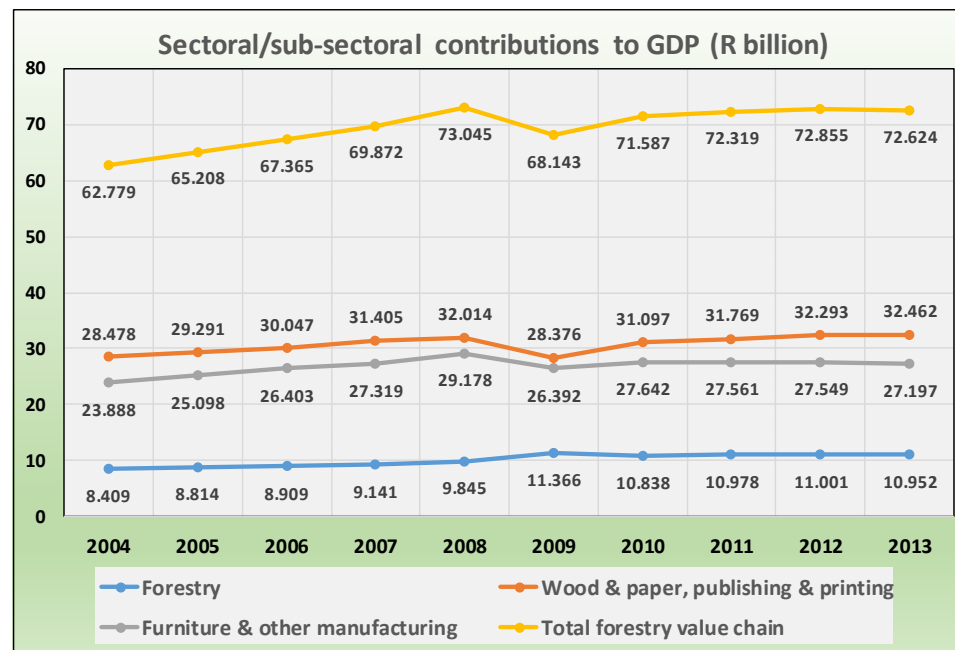
5. Forestry, timber, paper, pulp and furniture

Situational analysis

Forestry, pulp, paper and furniture is one of the lead sectors identified as part of the National Industrial Policy Framework (NIPF) due to its potential for growth and employment-creation - especially in rural areas - and for its potential to strengthen economic and industrial decentralisation.

The sector - especially sawmilling and the activities further down the value chain - is one of the most labour-intensive in the economy. Despite its potential, the sector faces major structural challenges around access to raw materials, especially for small scale saw millers.

Table 1: Forestry, timber pulp, paper and furniture contribution to GDP (R’ billion)

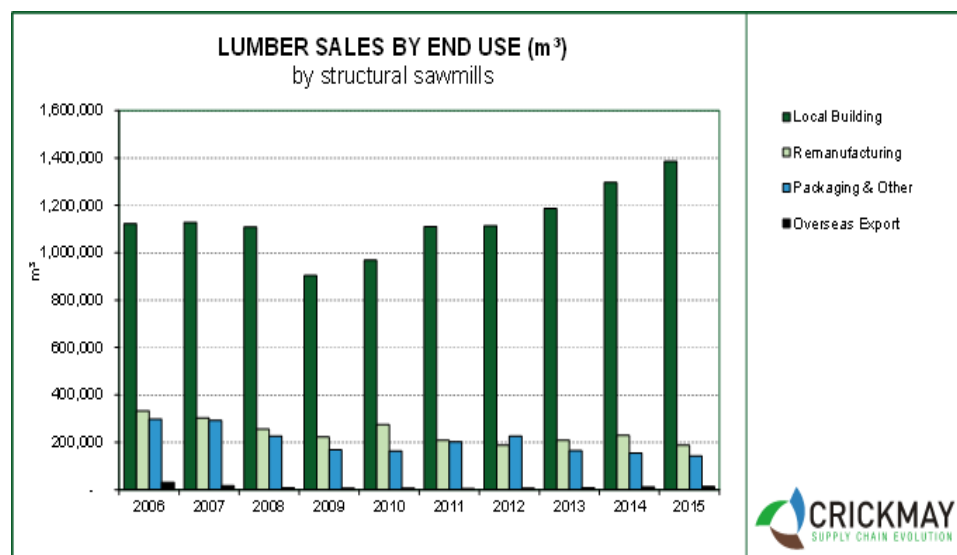


Source: Statistics South Africa

The combined forestry and forest products industry contributed R72.6 billion to GDP in 2013. The timber industry contributes 12.2% to manufacturing GDP. The sector provides the raw material for beneficiation in subsectors such as pulp and paper, sawmilling, particle boards for furniture manufacturing, mining timber, construction and poles.

South Africa has approximately 1.26 million ha under plantation with the total value of timber produced in South Africa being R 10.9 billion; with associated value-adding sectors contributing a further R32.4 billion, and sales to processing plants adding a further R27.2 billion for the furniture industry. Demand for timber and timber products has increased steadily; but supply has declined over the past decade.

Figure 1: Lumber Sales 2005 to 2015



Source: Sawmilling South Africa

The supply of timber for the lumber industry and the supply of fibre for the paper and pulp industry remain the major constraints for the entire downstream processing industry. There has been a marked decline in both softwood and hardwood plantation since the mid-1990s. There has also been a marked increase in hectares under cultivation for pulpwood purposes, as opposed to hectares for sawlogs and mining.

South Africa (and the SADC region) is endowed with high quality indigenous forests which if used properly could lead to growth in the region’s forestry value chain. Currently, most of the timber harvested is exported to Asian countries with very little beneficiation. A key objective must therefore be to create and integrate regional value chains that move products between countries in the region and add value wherever realistically possible. This initiative needs to be complemented by a comprehensive long term approach towards dealing with foreseen and foreseeable shortages in the near to medium term.

This is very important because the vertically integrated nature of the industry means that the small businesses in sawmilling and furniture manufacturing are most vulnerable to and worst affected by scarcity and rising costs of timber supply as the larger, more integrated producers lock out the smaller players.

Sawmilling sector

Situational analysis

The sawmilling industry’s socio-economic role is strongly characterised by its traditional labour-intensive processes, which, by their nature, are employment drivers. The sawmilling industry supplies feedstock to building and construction, furniture and joinery and packaging. Timber is a renewable raw material resource which is capable of generating its own energy requirements.

Plantation forestry is an important element in the forestry value chain owing to its contribution as the main raw material for processing industries such as sawmilling, pulp and paper and furniture. The profitability of the sawmilling industry per m³ has declined since 2007 - from R282 per cubic metre to R150 per cubic metre as at December 2015. The current level of the South African industry’s processing recovery rate per log currently stands at 39% - well below the global average of 60%.

Sawmilling sector constraints and opportunities

Table 1: Opportunities and challenges in the sawmilling industry

Sector Constraints	Sector Opportunities
<ul style="list-style-type: none"> <input type="checkbox"/> Shortage of raw material supply 	<ul style="list-style-type: none"> <input type="checkbox"/> Space to improve recovery rate through recapitalisation and efficient use of resources <input type="checkbox"/> Regional integration for sustainable supply of raw materials
<p>Declining Competitiveness due to:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Poor infrastructure <input type="checkbox"/> Escalating electricity tariffs and transportation costs <input type="checkbox"/> Prolonged depressed construction industry and unsustainable use of sawmill waste material <input type="checkbox"/> Local industry has not kept abreast with global technological advances 	<p>Competitiveness Enhancement</p> <ul style="list-style-type: none"> <input type="checkbox"/> Infrastructure upgrade: road, rail and ports infrastructure <input type="checkbox"/> Productivity enhancement to improve recovery rates <input type="checkbox"/> Recapitalisation - new equipment <input type="checkbox"/> Innovation and technology
<p>Limited market access</p> <ul style="list-style-type: none"> <input type="checkbox"/> Few opportunities for value-added products – industry only producing one product <input type="checkbox"/> The lack of funding for forward integration into value-added products 	<p>New Market Development</p> <ul style="list-style-type: none"> <input type="checkbox"/> New product development – packaging; producing cranes and board manufacturing for furniture industry <input type="checkbox"/> Green building – use of renewable resources <input type="checkbox"/> Export promotion - outbound trade missions
<p>Skills shortages</p> <ul style="list-style-type: none"> <input type="checkbox"/> Shortage of technical skills 	<p>Skills Development</p> <ul style="list-style-type: none"> <input type="checkbox"/> Technical skills development programmes <input type="checkbox"/> Business management skills development for small saw millers <input type="checkbox"/> Cluster and hub development opportunities

Furniture manufacturing

Situational analysis

The furniture industry currently comprises 2,200 registered firms involved in manufacturing of furniture, bedding and upholstery and employs approximately 26,400 people. It is labour-intensive and contributes about 1% to manufacturing GDP and 1.1% to manufacturing employment.

South Africa's exports of furniture were worth USD 4.29 bn in 2014. Seven out of the top ten South African export destination markets for furniture are other African countries: namely Namibia, Botswana, Swaziland, Lesotho, Zambia, Mozambique and Zimbabwe.

The top-growing export product from 2009 to 2013 was mattresses with springs (60.4%) followed by stuffed articles of bedding or furnishings (51.2%). High medium-term growth of above 50% can mainly be seen in bedroom furniture, specifically related to bedding (WESGRO, 2014). From 1970 onwards the nature of furniture sales has changed from ready-assembled pieces to more ready-to-assemble (RTA) pieces – largely driven by the expansion of IKEA (WESGRO, 2014).

Furniture sector constraints and opportunities

Table 2: Opportunities and constraints in the furniture industry

Sector constraints	Sector opportunities
<p>Declining competitiveness</p> <ul style="list-style-type: none"> <input type="checkbox"/> Wood raw material supply shortages <input type="checkbox"/> Tooling, utility and input costs very high <input type="checkbox"/> Technological innovation lagging behind - low levels of efficiency <input type="checkbox"/> Lack of research and development <input type="checkbox"/> Shortage of skills: more specifically, furniture designers, wood machinists, upholstery and machine operators <input type="checkbox"/> Influx of cheap imports 	<p>Improved competitiveness</p> <ul style="list-style-type: none"> <input type="checkbox"/> Improve productivity and through recapitalisation and innovation <input type="checkbox"/> Skills development and enhance design skills, tooling and apprenticeship programmes <input type="checkbox"/> Industrial infrastructure development furniture manufacturing hubs <input type="checkbox"/> Raw material supply- backward integration with saw millers <input type="checkbox"/> Recapitalisation and design skills.
<p>Access to the furniture retail market</p> <ul style="list-style-type: none"> <input type="checkbox"/> Market failure: oligopoly - four big players have 80% market share 	<p>Market development</p> <ul style="list-style-type: none"> <input type="checkbox"/> Low income market development – durable products mass production for this market <input type="checkbox"/> High income market development – seek unique high quality niche markets <input type="checkbox"/> Export Market – grow regional markets; retain existing areas of global market access <input type="checkbox"/> School and office furniture market
<p>Access to finance</p> <ul style="list-style-type: none"> <input type="checkbox"/> Industry is highly fragmented, with small to medium owner-managed firms having very little resources to apply for development funding <input type="checkbox"/> Volatility & Seasonality of the industry <input type="checkbox"/> Company strategies fail to respond to dynamic changes in the market 	<p>Improve access to funding</p> <ul style="list-style-type: none"> <input type="checkbox"/> Capacitate the companies to enable them to access funding <input type="checkbox"/> Cluster development <input type="checkbox"/> Private sector to assist the function of access to funding <input type="checkbox"/> Market development Intra Sector Cluster Development
	<p>Regulatory</p> <ul style="list-style-type: none"> <input type="checkbox"/> Enforce the Public Procurement Preferential Framework Act; enforce designation <input type="checkbox"/> Use Consumer Protection Act to promote awareness of high quality products

Pulp and paper manufacturing

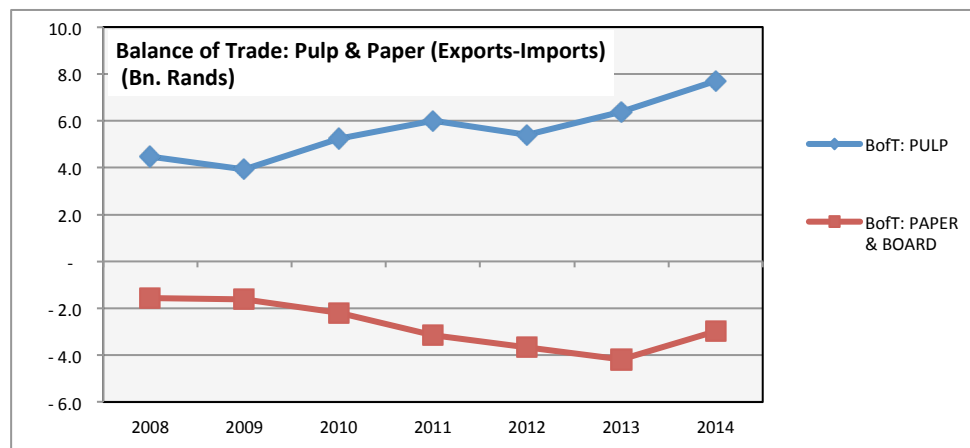
Situational analysis

The South African pulp and paper manufacturing sector is a robust, well-regulated and highly developed industry, which ranks amongst the top 20 pulp producers in the world. Over 80% of South African plantations comply with the Forest Stewardship Council’s stringent environmental management standards and South Africa has the distinction of having been awarded the highest level of international certification in the world.

Annually, 9% of a total area of 762,000 ha is harvested for pulp and paper manufacturing purposes. All harvested trees are replaced with saplings within the same year. The South African paper recycling industry is well developed. The paper value chain generates a substantial number of jobs. It is estimated that 260,000 trees are planted daily. South Africa’s indigenous forests are protected and, as such, play no role in the local paper manufacturing industry.

According to the latest figures released by the Paper Manufacturers’ Association of South Africa (PAMSA) in June 2014, total paper production fell to 2,318,000 tonnes in 2013, with the Printing and Writing Papers segment and the Packaging segment declining to 740,000 tonnes and 1,356,000 tonnes respectively. The Tissue Paper segment delivered a marginally stronger performance, increasing to 222,000 tonnes.

Figure 2: Pulp and Paper Industry Balance of Trade: 2006-2014



Source: PAMSA

There has been significant growth in the pulp subsector compared with the growth in the paper sector over the past ten years as a result of socio economic growth and more growth of the middle to upper income class.

Pulp and paper constraints and opportunities

Table 3: Opportunities and constraints in the pulp and paper industry

Sector constraints	Sector opportunities
Raw material supply <ul style="list-style-type: none"> <input type="checkbox"/> Demand for virgin fibre is increasingly high and rate of afforestation is slow 	Improve Raw Material supply <ul style="list-style-type: none"> <input type="checkbox"/> Re afforestation and new afforestation <input type="checkbox"/> Increasing the recovery of recyclable paper to meet local and global demand <input type="checkbox"/> Regional integration
Skills shortage <ul style="list-style-type: none"> <input type="checkbox"/> Shortage of artisans 	Skills development <ul style="list-style-type: none"> <input type="checkbox"/> Increased enrolment of chemical engineers and technicians <input type="checkbox"/> Artisan training and apprenticeship
Under-developed Infrastructure <ul style="list-style-type: none"> <input type="checkbox"/> High transport costs due to use of road instead of rail. 	Infrastructure development <ul style="list-style-type: none"> <input type="checkbox"/> Investment in rail network closer to the plantations
Misperception of the industry’s environmental impact Digitalisation leading to the decline in printed publications	New Market Development <ul style="list-style-type: none"> <input type="checkbox"/> the development of sustainable and renewable energy technologies <input type="checkbox"/> Opportunities offered by co-generation in the pulp and paper industry <input type="checkbox"/> New product development for nano-cellulose applications and green chemicals
Regulation NEMBA AIS regulations and amendments to water licensing regulations that may lead to reduced area under forestry.	Growth in demand for packaging , and tissue paper products in African and Asian markets, driven by population growth, urbanisation and rising living standards
Cheap imports of paper continue to hamper competitiveness of locally produced products	

Key action programmes

1. Forestry Beneficiation Framework

Nature and purpose of the intervention

To develop a Long Term Strategic Framework to leverage the opportunities presented by advances in innovation and technology in the use of tree-dissolved wood cellulose into various applications like composites and the bio-economy.

The forestry-based manufacturing industries include the primary processing sub-sectors - timber processing, charcoal, saw milling; the secondary processing sub-sectors - board manufacturing, pulp and paper, dissolved wood pulp; and the tertiary processing sub-sectors - furniture and cellulose applications manufacturing. As demands for a paperless society gain momentum, paper and printed publications continue to lose ground to digital media. Paper manufacturing remains a sector under intense pressure.

Targeted outcomes

The Programme will allow a systemic approach to promoting growth in the sector and maximising the multiplier effects of developments within the industry. The strategy will consider various forestry value chains including primary timber processing, charcoal and sawmilling; secondary processing (including board manufacturing, pulp and paper and dissolved wood pulp); and tertiary processing (including furniture and cellulose applications). The aim is to create deepening backward, forward and lateral linkages across these chains - domestically, regionally and internationally.

Key milestones

- 2016/17 Q2: Draft Report/Strategy: the establishment of a Working Group made up of key government departments and industry stakeholders to spearhead industry research, benchmarking and policy development.
- 2016/17 Q4: Development of the strategy with industry consultation; designing programmes that can be implemented to practically and sustainably improve industry competitiveness.

Lead departments/agencies: the dti

Supporting departments/agencies: DST, DAFF, CSIR, Fibre Processing and Manufacturing SETA, PAMSA, SSA, FSA, SAFI, EDD

2. Furniture Competitiveness Programme

Nature and purpose of the intervention

To improve competitiveness in the furniture manufacturing sector through organisation of manufacturers located in the same geographical areas, linking up with previously trained furniture manufacturers not currently in operation - e.g. former Furntech incubates and small scale furniture manufactures.

Like most SMMEs, these companies face size-related competitiveness challenges – primarily, ability to access markets and reduce input costs. This calls for systematic collaboration in the furniture industry, especially amongst small and newly established manufacturers. A number of industries have successfully organised their players in manufacturing hubs, clusters or industrial parks. The current situation with SMMEs presents an opportunity to further capacitate and organise trained manufactures, and thus improve productivity and competitiveness.

Targeted outcomes

Competitive furniture manufacturers with improved productivity and manufacturing value added; maintenance of current employment levels and an annual increase of 2% in jobs created.

Key milestones

- 2016/17 Q2: Develop and implement the Furniture Industry Competitiveness Enhancement Programme to improve the competitiveness of the furniture manufacturing sector.
- 2016/17 Q4: Implement the prioritised Action Plans in the Programme.

Lead departments/agencies: the dti

Supporting departments/agencies: SAFI, Provincial Departments, SEDA, Fibre Processing and Manufacturing SETA, EDD

3. Product development and market access for small scale sawmillers

Nature and purpose of the intervention

This programme is intended to assist small- and medium-scale sawmills to improve their profitability through value-addition to their end products. Eastern Cape and KZN are characterised by small-scale sawmills which do not add value to their products. Although the formal sawmilling sector is mainly characterised by large and medium sized sawmills, the informal sector is dominated mainly by a large number of small-scale sawmills most of which can be classified as “bush-mills”.

Targeted outcomes

The value addition centre will focus on: (i) resolving the challenges of *access to raw materials*, recapitalisation and *access to new markets*; (ii) developing new products, especially in packaging; (iii) increased employment; (iv) improved recovery rate and value-addition and competitiveness. The Eastern Cape will be the pilot area for these interventions, serving as a model for roll-out to other provinces where there is a similar concentration of small-scale sawmills.

Key milestones

2016/17 Q2: Develop a market access and new product development programme for small-scale sawmills.

2016/17 Q4: Implement the market access and new product development programme.

Lead departments/agencies: the dti

Supporting departments/agencies: Provincial Government, ECRDA, SSA, DAFF, SEDA, Fibre Processing and Manufacturing SETA, DRDLR

4. Regional Development Programme in the forestry value chain

Nature and purpose of the intervention

Over the past few years, **the dti** has assisted various South African companies to explore opportunities for investments in, and imports of, timber from Mozambique. Sufficient work has been done and a good foundation laid for companies to explore further cross-border opportunities.

Therefore, while **the dti** will continue to assist and finalise outstanding issues with the Mozambique authorities, in the current financial year opportunities in other parts of the region will start to be explored, with a particular emphasis on hardwood imports

Targeted outcomes

- Timber importation to be matched by focused investments into the countries of timber origin and by targeted export promotion activities in neighbouring countries, led by **the dti**, through TISA’s regional offices.
- Improved recovery rates, value-added products and the increased competitiveness of the sawmilling industry.

Key milestones

2016/17 Q4: Undertake a Trade and Investment Mission with one of the priority countries.

Lead departments/agencies: the dti

Supporting departments/agencies: DAFF, PAMSA, SSA, FSA, SAFI

6. Plastics, pharmaceuticals, chemicals and cosmetics

Plastics sector

Situational analysis

The plastics industry is a significant contributor to the economy with a turnover of R50.4 billion in 2014, representing about 1.6% of GDP and approximately 14.2% of the manufacturing sector. The industry employs around 60,000 people (both formal and informal) with almost 1,800 companies spread across the plastics supply chain. The export value of plastic products in 2014 was R17.18 bn, compared to the import value of R27.77 bn. This led to a trade deficit of R10.59 bn, an increase of R0.03 bn on the 2013 deficit.

Figure 1: Trade balance 2004-2014



Recycled input material in 2014 was 315,600 tonnes – an increase of 9% compared to 2013. The diversion from landfill rate was 22.5%, increasing from 20% in 2013. Of the 316 500 tonnes of recycled material, 284,520 tonnes were mechanically recycled in South Africa and 31,087 tonnes (9.8%) exported for recycling elsewhere. In 2014, formal employment in the plastics recycling sector increased by 34% to 6,037 workers, whilst informal employment increased to 47,420 workers - bringing the total number of jobs through plastics recycling to 53,457 – an increase of 11.4% on 2013.

Table 1: Sector economic data

Variable	Contribution in 2014
Manufacturing value-add	R50 billion
Manufacturing employment	60, 000
Trade balance	-R10.59 billion

Source: the dti

Figure 2: Key numbers - South African plastics industry

The South African plastics industry includes plastics raw material producers, compounders, plastics converters and recyclers.



Constraints

Plastics converter plants are generally small to medium-sized, with an average size of 130 employees. Many plants have fewer than 50 employees; those with 400 or more employees are generally considered to be large. Constraints faced by the plastics sector include import parity pricing of polymers and other key inputs, as well as:

- Pricing of raw materials;
- Relatively small local and regional markets;
- Lack of advanced manufacturing practices;
- Lack of downstream focus on R&D effort; and
- South Africa's geographic position and resultant logistics costs.

Key opportunities

- Automotive interior products such as carpets and dashboards and exterior products such as bumpers and mirror casings;
- Packaging;
- Medical devices and test toolkits;
- Buildings: pipes, flooring, building sheet, sanitation and woven/netted polypropylene;
- Electrical and electronics cables, appliances and casing components; and
- Boatbuilding materials

Key action programmes

1. Plastic Exporter Development Programme

Nature and purpose of the intervention

The export sector is dependent on product performance and market factors, both at home and in the broader global supply chain. There are always potentially dynamic gains associated with exports mainly driven by greater competition, greater economies of scale, better use of capacity, dissemination of knowledge and know-how, and technological progress.

The focus on increasing exports is important given the constraints already mentioned with regard to local/regional market size, geographical distance from larger developed markets and the absence of a strong drive from consumers to buy locally manufactured plastic. It therefore makes eminently good sense to focus strongly on increasing exports into Africa as part of South Africa's broader regional integration drive. It is envisaged that an increase in exports of value added plastic products and services will stimulate the sector as a whole, building greater local capacity and capabilities and contributing significantly to employment creation.

Targeted outcomes

- Clearly identified regional market opportunities and technical barriers to be overcome;
- Increased exports of value-added plastic products.
- A reduced trade deficit.

Key milestones

- 2016/17 Q1 and Q2: Targeted Industry survey to determine market intelligence and export markets for niche plastic products into Africa.
- 2016/17 Q3: Develop an exporter programme to assist companies to be export-ready and overcome technical barriers to entry in identified regional countries.
- 2016/17 Q4: Implementation of Exporter Development Programme.

Lead departments/agencies: the dti, Plastics SA.

Supporting departments/agencies: EDD, IDC, SABS, DST, SARS

2. Trade policy measures

Nature and purpose of the intervention

The plastics industry recently highlighted customs fraud as a major concern for the sector. If monitored effectively and decisively acted against, there should be strong positive effects for local production and job creation. Hence, this intervention seeks to monitor imports of plastics products that impede local production and ultimately address challenges (such as mis-declaration and wrongful use of tariff codes) through intervention in the tariff book.

Targeted outcomes

Greatly reduced mis-declaration and under-invoicing of imported products, complemented by enhanced support for local industrial capability and sustainable job creation.

Key milestones

2016/17 Q1-Q2: Analysis of imported plastic products; identify illegal products that impede local production.

2016/17 Q3 ongoing: In consultation with the industry, build awareness of the remedial trade policy mechanisms available (including unpacking of the category 'other' through the SARS Risk Engine Programme).

Lead departments/agencies: the dti, Plastics SA, ITAC, SARS

Supporting departments/agencies: EDD

3. Plastics Innovation Programme

Nature and purpose of the intervention

This intervention seeks to support the development of an innovation platform intended to increase investment in research and development, and to better convert research into improved goods, services, or processes for the market. It is commonly assumed that innovation is the main driver for economic growth in macroeconomic terms, since it strengthens the competitiveness of individual companies and the sector as a whole.

Continuous efforts to strengthen and renew company product lines, processes and organisation models will naturally contribute to increased turnover, profitability, sustainability and employment creation.

Targeted outcomes

- Establishment of Plastics Innovation Platform to improve the interface between Higher Education Institutions (HEIs) and Business;
- Improved access by plastics companies to SPII (Support Program for Industrial Innovation).

Key milestones

2016/17 Q1-Q2: Establishment of a Plastics Innovation Platform with key government departments, industry and academia.

2016/17 Q3: Platform to identify innovation gaps and challenges to assist companies to innovate and penetrate local and global markets.

2016/17 Q4 ongoing: Identify and implement solutions and levers to assist companies to overcome innovation barriers in the local plastics industry.

Lead departments/agencies: the dti, DST, EDD, Plastics SA, CSIR, IDC, tertiary Institutions

Support departments/agencies: Metropolitans, Municipalities and Provincial Departments of Economic Development

4. Plastics Cluster Programme

Nature and purpose of the intervention

The intervention will enable converters to develop economies of scale based on shared infrastructure, equipment and knowledge resources, and thereby strengthening capacity to access existing and new markets. Clustering enables companies to operate at higher levels of efficiency, drawing on more specialised assets and suppliers and achieving shorter reaction times than are possible acting in isolation. It also enables companies and research institutions to achieve higher levels of innovation, with knowledge spill-

overs and close interactions with other companies and customers generating new ideas in a cluster environment that lowers the cost and risk of experimenting.

Targeted outcomes

- Converters develop economies of scale based on shared infrastructure, equipment and knowledge,
- improved productivity and operational efficiency through linkages, spill-overs and synergies across firms and associated institutions, and through efficient access to public goods, better coordination, and the diffusion of best practices.

Key milestones

- 2016/17 Q1: Provincial campaigns with plastic companies on the structuring of the Cluster Development Programme.
- 2016/17 Q2: Identify and form cluster membership base; facilitate registration of the cluster as a non-profit company.
- 2016/17 Q3: Assist in developing and evolving cluster business plans.
- 2016/17 Q4: Determine and implement the cluster funding model.

Lead departments/agencies: the dti

Supporting departments/agencies: EDD, IDC, Plastics SA

5. Landfill Plastic Diversion Programme

Nature and purpose of the intervention

Plastic waste should be seen and used as a valuable resource and should not end up in landfills. Plastic is often recycled to make items such as clothes, carpets, containers, bottles, plastic lumber, films, grocery bags, moulding materials and lawn and garden products, to name a few.

Engagement in actions that drive forward recycling activities will save resources and costs, deliver a lower environmental footprint and bring associated corporate social responsibility benefits.

At the moment, however, an overwhelming 72% of plastic packaging is not recovered at all: 40% is landfilled and 32% leaks out of the collection system – that is, either it is not collected at all, or it is collected but then illegally dumped. This initiative is in line with the DEA and Plastics SA broader vision of zero waste to landfill by 2030.

Targeted outcomes

Increased separation of plastics at source, allowing for more efficient sorting, processing and recycling and providing increased and diversified job opportunities for converters.

Key milestones

- 2016/17 Q1-Q4: Develop a strategy and programme inclusive of appropriate policy levers, working with Plastics SA and municipalities to increase separation at source to increase recovery rates of plastic products for recycling.

Lead departments/agencies: the dti, Plastics SA, DEA, Municipalities

Supporting departments/agencies: EDD

Pharmaceuticals and medical devices sector

Situational analysis: Pharmaceuticals

The pharmaceutical industry contributed approximately 1% to the South African GDP in the 2013 financial year. South Africa’s pharmaceutical market, the largest in Sub-Saharan Africa with a total estimated R39.79bn (USD3.67bn). South Africa has a two-tier pharmaceutical market structure, divided into private and public. According to the National Association of Pharmaceutical Manufacturers (NAPM), total pharmaceutical sales in the South African private as at June 2014 amounted to around R20-R30 bn (US\$2-3 bn). The country spent 8.7% of its GDP on healthcare in 2014, surpassing the 5% recommended by WHO. The pharmaceutical industry is the fifth largest contributor to South Africa’s trade deficit.

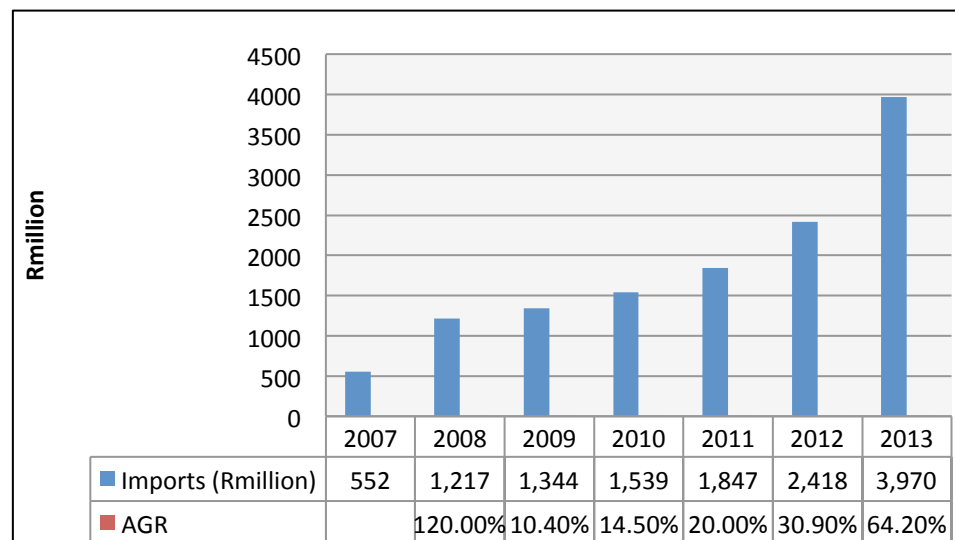
The industry employed an estimated 9,625 full-time staff in 2010 (Deloitte). However, it must be noted that the nature of the industry is not inherently labour-intensive as it is characterised as a high-precision, closely regulated and technology-intensive sector, requiring skilled employees from a range of disciplines.

Pharmaceutical spending includes prescription (generic and patented) and over-the-counter drugs (OTC). In 2014 spending on prescription drugs was worth R34.97 bn (USD3.22 bn); patented drugs R22.12 bn (USD2.04 bn); and generic drugs R12.85 bn (USD1.18 bn).

Pharmaceutical exports - mainly to other African countries, although local firms are increasingly targeting other emerging markets - are expected to rise in value from R4.12 bn (USD380 m) in 2014 to R6.7 bn (USD 429m) by 2019.

Medicine imports - mostly sourced from India, the US, Germany, France and Italy - will increase from R20.63 bn (USD1.9 bn) in 2014 to R31.72 bn (USD2.04bn) by 2019 (BMI, South Africa Pharmaceuticals & Healthcare, Report Q4 2015).

Figure 3: India imports for period 2007 to 2013



Source: the dti

There are several local generic manufacturers in South Africa, including Aspen, Adcock Ingram, Ranbaxy, BioTech and Cipla. The very large market for ARVs and Active Pharmaceutical Ingredients (APIs) is, however almost entirely import-dominated. (i.e. While South Africa is the world’s largest consumer of ARVs, it still imports around 95% of all its APIs).

Table 1: Sector economic data

Variable	Contribution in 2014/15
Pharmaceuticals – SA market	Approximately ZAR 44 bn (US\$ 3.5 bn)
Contribution to GDP	Approximately 1.1% (2014), decline noted over last 6 years
Pharmaceuticals sales: % of GDP	1.05% (2014) BMI, 2015
Pharmaceutical sector employment	9,500 in the industry (incl. admin staff) 25,000 downstream (specialized logistics, retail and hospital pharmacies)
Pharmaceuticals - Trade balance	- ZAR 20.4 billion (Chapter 30 - Pharmaceuticals), incl. – ZAR 16.2 billion (TH 30.04 – finished pharm. products) Active pharm. ingredients (APIs) est. - R 5 billion
Biologics – SA market	ZAR 2.9 bn (including insulin and vaccines)
Medical devices – SA market	ZAR 13.4 bn (US\$ 1.22 bn), expected to grow at a CAGR of 7.6% over the next 5 years in local currency terms
Medical devices – trade balance	ZAR 9.98 bn
Medical devices - employment	Total 20,000 including manufacturing, marketing and sales, servicing, providing specialized laboratory and diagnostics services.

Source: the dti, Quantec

SWOT analysis: Pharmaceuticals sector in SA

<p>STRENGTHS</p> <ul style="list-style-type: none"> ❑ Largest drug market in Africa, with the fifth-highest expenditure on pharmaceuticals per capita. ❑ Well-established local manufacturing industry, supported by foreign investment. ❑ Rapid urbanisation, sedentary lifestyles and dietary trends to ensure long-term demand for pharmaceuticals that target chronic, lifestyle-related diseases. ❑ High disease burden ensures a high demand for drugs, especially anti-retroviral drugs 	<p>OPPORTUNITIES</p> <ul style="list-style-type: none"> ❑ Potential for marked generic sector growth, in line with cost containment and the tiered-pricing structure for pharmacists. ❑ Huge market for HIV/AIDS drugs given disease's epidemic levels, tenders favour local companies with high Black Economic Empowerment (BEE) ratings. ❑ Rising demand for diabetes and other chronic disease management treatments. ❑ Regulatory conditions to improve with new drug registration agency SAHPRA. ❑ Growing market for clinical trials due to the country's high infectious disease burden and high number of treatment-naïve patients. ❑ An attractive export base into less politically stable Southern African nations, particularly with new Pharmaceutical Inspection Convention and Pharmaceutical Inspection Cooperation Scheme (PIC/S) membership.
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<p>WEAKNESSES</p> <ul style="list-style-type: none"> ❑ Ambiguous parallel trade regulations open to abuse ❑ Funding shortcomings in the public healthcare system. Lack of universal healthcare insurance, with major portion of population not covered by any insurance schemes. ❑ Slow drug approvals process, inefficiencies in the regulatory system Vast inequality between infrastructure and provision of care in the public and private sectors. 	<p>THREATS</p> <ul style="list-style-type: none"> ❑ Some firms may struggle to comply with BEE guidelines in the South African ❑ Healthcare charter. ❑ Failure to expand and revise medicines reimbursement. ❑ Modernisation costs to potentially prohibit harmonisation of domestic regulation with international norms. ❑ Price restrictions and proposed benchmarking are likely to lead to a reduction in foreign investment and even result in some companies exiting the market. ❑ Rising private health costs threatening to put private health insurance further out of reach of the majority of the population. ❑ Rand depreciation to raise cost of imports and worsen profitability of overseas manufacturers.
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Source: Adapted from BMI International, 2015

Key Action Programmes

1. Pharmaceuticals Industry Development Plan

Nature and purpose of the intervention

The Trade deficit continues to grow in the pharma sector, with Asian exports into SA showing unprecedented growth, while at the same time the domestic sector continues to contract. The situation is further exacerbated by exchange rate volatility, lack of API security, regulatory inefficiencies and an unpredictable tendering process. These factors have impacted both supply security and competitiveness and diminished the confidence of domestic investors.

In order to further develop this industry, from a domestic supply perspective, serious interventions are required to expand the current manufacturing base and provide an attractive and conducive environment to attract new investment into the sector - whilst at the same developing a suite of support measures to create an enabling environment for investment in low-volume, high-value products like biologics/biosimilars and vaccines. Current support for this type of investment will be dealt with on a case-by-case basis, depending on the number of economic priorities the project will meet.

The objective of this intervention is to draft an Industry Development Plan/Strategy that would outline support measures required to grow the pharma industry, achieve economies of scale sufficient to sustain the industry, outline corrective measures to address challenges and highlight key opportunities locally and globally that the SA pharma industry would be able to capitalise on.

Targeted outcomes

A broadened manufacturing base in SA; import substitution; technology and skills upgrading; value-added exports; employment creation; reduction of the negative trade deficit – all in support of the increased long term competitiveness of the pharma industry.

Key milestones

2016/17 Q1:	Finalise ToR for drafting the Plan and constitute the Technical Working Group to lead the development of the Plan.
2016/17 Q2:	Develop the structure on which the Plan would be anchored - i.e. overall policy framework, skills development, export development etc.

2016/17 Q3-Q4: First draft of Industry Development Plan/Strategy ready for stakeholder consultation.

2016/17 Q1- Q4: Comprehensive study on the global biologics environment - the outcomes of which will highlight key opportunities and interventions required to facilitate the growth of this industry in SA.

Lead departments/agencies: the dti, NT, DoH, EDD, Industry

Supporting departments/agencies: DST, IDC, EDD, TIA, PIC, DBSA, NEDLAC, CSIR, Provinces

2. Establishment of an industry upgrading and operational excellence in pharmaceutical manufacturing programme

Nature and purpose of the intervention

The South African pharmaceutical sector continues to contribute to economic growth, job creation, skills and technology diffusion within the industry. Hence this intervention is geared to support local manufacturers to upgrade their competitiveness and enhance their ability to meet the continuously evolving new standards and requirements necessary for effective participation in this sector.

Targeted outcomes

A broadened manufacturing base in SA; import substitution; technology and skills upgrading; value-added exports; employment creation; reduction of the negative trade deficit – all in support of the increased process efficiencies and the long term competitiveness of the pharma industry.

Key milestones

2016/17 Q1:	Evaluate the feedback on the initial assessment phase to establish the practicality of establishing the programme/intervention
2016/17 Q2-Q3:	Develop business case for establishing a programme to support industry with upgrading and achieving operational excellence
2016/17 Q4:	Draft business case presented to the dti EXbo for consideration

Lead departments/agencies: the dti, NT, Industry

Supporting departments/agencies: EDD, IDC, PIC, DBSA

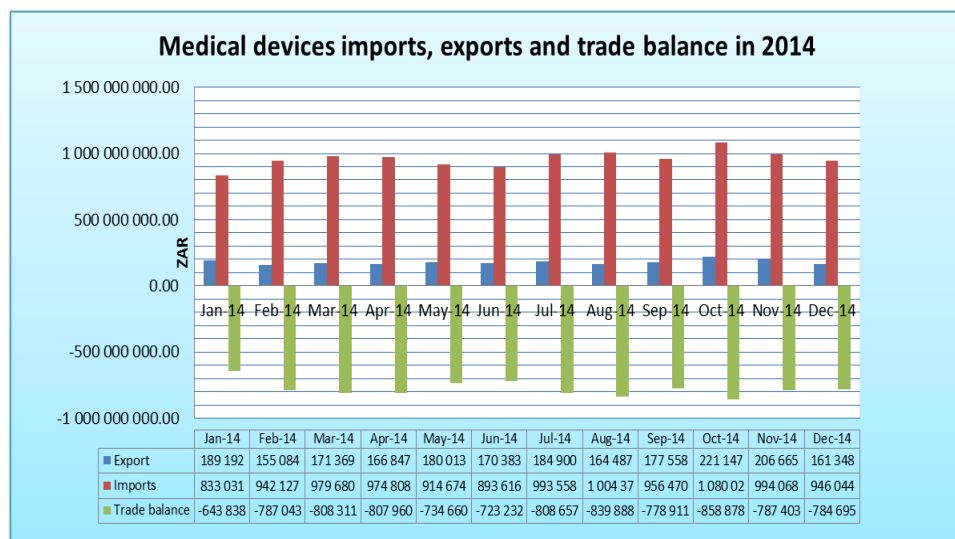
Medical devices sector

Situational analysis

The SA medical device market was valued at R12.9 bn in 2014, making it one of the largest markets in the Middle East & Africa (MEA) region. BMI Research forecast the South African industry to grow at 7.6% CAGR between 2014 and 2019, which is lower than the 2009-2014 CAGR of 10.4%. This reflects subdued economic growth at the start of the forecast period. Medical device imports, valued at more than R 11.8 bn in 2014, supply over 90% of the South African market, hence contributing to the expanding trade deficit.

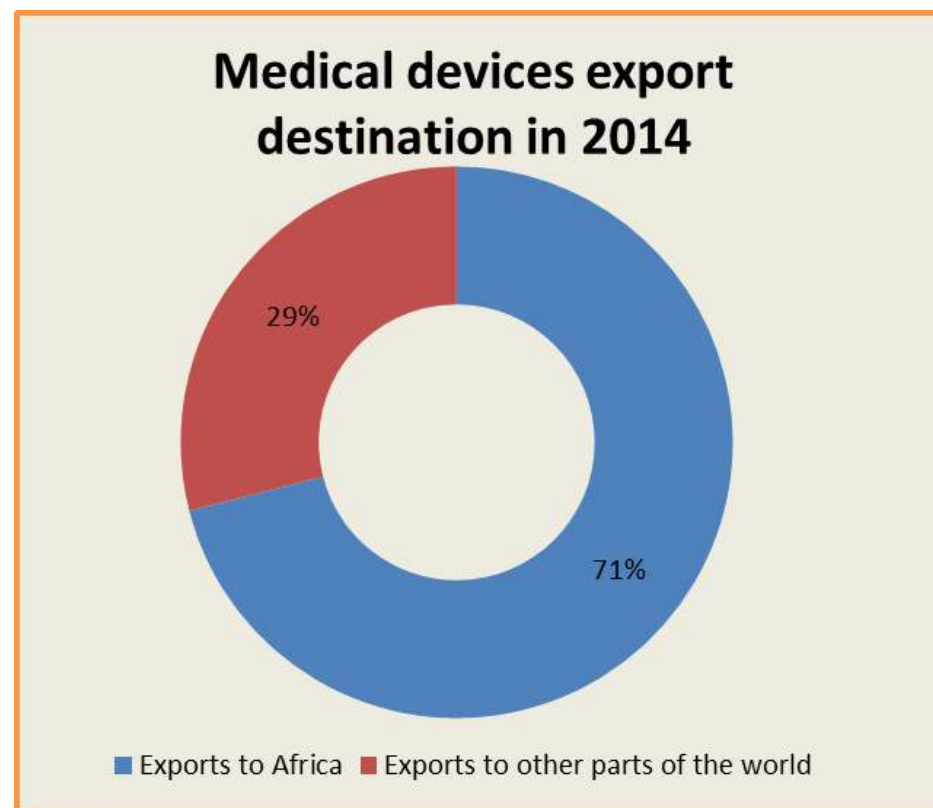
Domestic production of medical devices was estimated at around R2.7 billion in 2014, of which more than R2.1 billion is exported, mainly to other African countries. The African market is vital for South African medical device exports, accounting for more than R1.5 billion out of more than R2.1 billion total exports.

Figure 5: Medical devices imports, exports and trade balance (2014)



Source: the dti

Figure 6: Medical devices export destination in 2014



Source: the dti

SWOT analysis: Medical devices sector in SA

<p>STRENGTHS</p> <ul style="list-style-type: none"> ❑ National public and private healthcare system linked to local supply base ❑ Strong, sizeable private sector 	<p>OPPORTUNITIES</p> <ul style="list-style-type: none"> ❑ Public-private partnership growth ❑ Imports account for around 95% of market ❑ Emergence of a Black middle class ❑ Proposed national health insurance scheme, prompting further investment in the public healthcare system ❑ Steady expansion of HIV treatment programme should help reduce pressures on public healthcare system ❑ Emergent introduction of SAHPRA ❑ Preferential Public Procurement
<p>WEAKNESSES</p> <ul style="list-style-type: none"> ❑ Poor infrastructure, particularly in rural areas, limits healthcare delivery; as does the chronic shortage of medical personnel ❑ Many rural facilities grossly under-used or lying idle due to poor organisation ❑ HIV/AIDS patients overburdening the system ❑ Private sector out of reach for most of the Black population ❑ Purchasing procedures complex and fragmented ❑ Lack of Regulatory Standards and Certification to enable exports of products 	<p>THREATS</p> <ul style="list-style-type: none"> ❑ No solution in sight to increasing the number of doctors in public sector and preventing them from working in private sector or abroad ❑ Depreciating Rand is making imports less affordable ❑ Launch of market inquiry into pricing in the private healthcare sector could negatively impact its future development ❑ Government moves to centralise certain functions within the National

Source: Adapted from BMI, 2015

Key action programmes

1. Facilitate the development of regulatory standards and support for certification in SA

Nature and purpose of the intervention

The intervention will seek to address key challenges and opportunities within the sector, including quality systems and standards, public and private procurement. It will seek to enable exports and substitute imports wherever possible, thereby strengthening capacity to access existing and new markets and promoting further investment in manufacture in South Africa.

Targeted outcomes

- ❑ A conducive environment for the growth of this sector that would lead to the development of a competitive and sustainable industry.
- ❑ Facilitated import substitution;
- ❑ Increased exports of high-value, quality-tested, functional products.

Key milestones

- 2016/17 Q1: Establish stakeholder engagement Forum between **the dti**, DoH, SABS, MCC/SAHPRA and industry and identify key gaps in standards and certification w.r.t medical device quality and functionality testing.
- 2016/17 Q2: Map a plan of action to outline corrective measures to within the standards and certification space.
- 2016/17 Q2-4: Facilitate the development of regulatory standards for the industry, capacity for performing the standards and possible support mechanisms to subsidise the costs of testing, certification and compliance.

Lead departments/agencies: the dti, DST, DoH, SABS, CSIR, SEZs

Supporting departments/agencies: EDD, MCC, TIA, IDC

2. Facilitate the development of a support mechanism to subsidise access compliance to regulatory requirements to ISO13485

Nature and purpose of the intervention

The intervention will seek to address key challenges and opportunities within the sector, including adherence to internationally recognised quality and performance regulatory requirements. The costs of acquisition and compliance with these regulatory requirements is becoming prohibitive for the sustainability of the local industry - hence mechanisms to subsidise/support this industry needs to be urgently developed with **the dti** Product Development Team.

Targeted outcomes

- A conducive environment for the growth of this sector that would lead to the development of a competitive and sustainable industry.
- Facilitated import substitution;
- Increased exports of high-value, quality-tested, functional products to ensure the reputability of the local manufacturing industry.

Key milestones

- 2016/17 Q1: Evaluate the feedback on the initial assessment phase to establish the practicality of establishing the programme / intervention.
- 2016/17 Q2 and Q3: Develop business case for establishing a programme to support industry with compliance with relevant certification for supply of product into the domestic and international markets.
- 2016/17 Q4: Draft business case presented to **the dti** EXbo for consideration.

Lead departments/agencies: the dti, DoH, SABS, CSIR, ITAC

Supporting departments/agencies: EDD, MCC, TIA, IDC, DST

Chemicals sector

Situational analysis

The chemical value chain is made up of the manufacture of basic chemicals, coke and refined/synthesised petroleum products, man-made fibres and other chemicals. Chemicals are purchased as inputs for agriculture, mining and manufacturing and economic activities in these productive industries have impact on the performance of the chemical sector.

Globally, the demand for chemicals is shifting - in line with shrinking North American and Western European demand - to emerging markets, which now represent roughly half of the \$5 trillion market worldwide. The emerging markets are dominated by the Asia-Pacific region, especially China. Linked to this demand shift, there is a global focus to identify growth opportunities in emerging markets, where future economic growth is likely to range from 6% to 10%, as compared with 2% to 3% in developed economies and South Africa.

There is an international drive to combat global warming and climate change through elimination of greenhouse gases and chemicals that cause ozone depletion. The South African chemical industry has to design products and processes that minimise the use and generation of hazardous substances or face climate change-related global barriers to trade (e.g. carbon levies aimed at punishing greenhouse gas emitters).

The South African chemical industry faces volatile and difficult-to-forecast developments in global markets. This situation requires an understanding of demand trends, each company's position with respect to its competitors, 'next breakthroughs' in technology and how the global regulatory environment can be expected to change. The globalised market offers opportunities in practising economies of scale that promote competitiveness and exports. To succeed in realising these opportunities, policies should embrace partnerships and stakeholder management for information sharing, plus focused alignment of goals and strategic interventions between government and the private sector.

The South African chemical industry is dominated by commodity chemicals, making it very sensitive to the performance of the wider economy and vulnerable to cyclical phases. It is a policy imperative to drive the sector towards manufacturing of those chemicals that are able to cope during the down-phases of the cycle and to begin transitioning to greener products and production techniques in line with changes in global markets.

This will not only ensure the survival of the domestic industry but will provide it with possible first-mover advantages. To facilitate success of this policy, **the dti** will utilise policy tools such as financial incentives and tariffs and will form partnerships with relevant chemical manufacturers.

Challenges and opportunities

Domestic chemical firms face challenges on multiple levels. Cross-cutting issues similar to those experienced in other manufacturing sectors have been identified as obstacles to growth by the chemical industry association body, CAIA. These include poor and costly logistical service levels; electricity supply shortages and costs; skills shortages; access to appropriately priced feedstock; and, finally, the continuing impact of cheap imports.

In terms of opportunities, the first relates to strong and growing, sustainable demand for basic chemical products driven by growth in Africa. This derived demand growth is being driven by three dynamics:

1. Increased sales of South African consumer goods made possible by rising middle class incomes in neighbouring countries and the expansion of SA retailers into regional markets.
2. Strong mining sector growth in Africa.
3. Increased demand for agro chemicals and fertilisers as demand for agricultural inputs into processed foods increases due to increased urbanisation across Africa.

All of these opportunities will increase the demand for chemical inputs and support chemical sector growth in output and employment. For this strong demand growth to translate into increased output, exports and job creation, the domestic chemical sector has to invest in expanding its local production capacity.

2014 annual performance and trade data

In 2013 the chemical sector contributed 5.8% to national GDP, 21% to manufacturing GDP and employed 96,201 people. In 2014 there was a decline in GDP contribution but an increase in employment - see figures below:

Table 1: Sector economic data

SIC Classification	% Contribution to GDP	% Contribution to Manufacturing	No. of Employees
Coke and refined petroleum products	1.3%	9.7%	26 956
Industry trends: Basic chemicals	0.6%	4.1%	24 230
Other chemicals and man-made fibres	1.0%	6.9%	53 109
Total	2.9%	20.7%	104 295

Source: Quantec

The sector continues to import more than it exports with petroleum products the biggest contributor to the trade deficit, followed by other chemicals. The strongest exports are in basic chemicals, which also shows the smallest trade deficit - see figures below:

Table 2: Sector economic data

SIC Classification	Exports R'bn	Imports R'bn	Trade balance R'bn
Coke and refined petroleum products	20.73	67.33	- 46.60
Industry trends: Basic chemicals	41.75	51.44	-9.69
Other chemicals and man-made fibres	19.96	59.17	-39.21
Total	82.44	177.94	-95.50

Source: Quantec

Key action programmes

1. Improving access to key fertiliser inputs

Nature and purpose of the intervention

To identify, invest and develop a source of gas feedstock for local fertiliser producers at competitive prices so as to decrease the price volatility of fertiliser and its adverse impact on food inflation and food security; and to position local producers to be able to increase exports to meet growing continental demand for fertiliser.

The project will be a partnership between the public sector and the private sector with the public sector focusing on the provision of reliable gas-based, competitively priced feedstock (input); while the private sector will focus on investments necessary to increase fertiliser final goods production volumes (output). In addition, **the dti** will need to actively support the industry's export drive.

The provision of access to appropriate local feedstock will support the substitution of locally-produced ammonia and urea for dollar-based imported ammonia and urea. This will decrease fertiliser price volatility, which has a negative impact on the agricultural sector and food security. The project will also contribute to improving the competitiveness of the domestic fertiliser industry, thereby allowing it to compete more aggressively for the expanding continental fertiliser market.

Targeted outcome

The project will result in increased fertiliser production, increased fertiliser exports, and fertiliser prices which are less vulnerable to negative impacts of the depreciation of the Rand. Increased production will result in up to 1,500 jobs being created (excluding construction jobs) and a reduction in the trade deficit of up to 1.7%.

Milestones

- 2016 /17 Q 1: Prefeasibility and feasibility study to Identify partners and investors.
- 2016 /17 Q2-Q4: Development of a product cycle to secure investment.

Lead departments/agencies: the dti, IDC

Supporting departments and agencies: DST, EDD, NT, DMR

2. Development of biochemical regional value chain

Nature and purpose of the intervention

To negotiate and facilitate regional co-operation and a legislative framework to support the accumulation of competitively priced biomass and biofuel inputs of sufficient volume so as to support two South African-based pilot projects in the nascent biochemical (green chemicals) sector. The most viable pilot schemes are likely to be in the production of white fuels and ethylene.

Although the intervention is project-orientated, the nature of the intervention is to take the first steps in creating a conducive domestic environment to allow local chemical companies to begin transitioning to greener products and production techniques in line with changes in global chemical demand. This will not only ensure the survival of the domestic industry but will provide it with possible first-mover advantage.

Final good manufacturers who purchase chemicals from domestic chemical companies are increasingly being put under pressure by their consumers to increase the green credentials and environmental friendliness of their products. This pressure is passed down the value chain to input producers. This is particularly true with respect to basic chemicals used in the production of food, packaging materials and home products. With demand for biochemicals from SA-based MNCs and local consumer goods firms growing, it is crucial to ensure that local chemical firms are in a position to meet this demand - otherwise they will be vulnerable to losing market share to green imports.

There is also a direct need to create an enabling environment which supports local chemical firms to 'green up' their existing production processes, given the cost implications of meeting new environmental standards and proposed carbon taxes for fossil fuel-based feedstock.

Targeted outcomes

- Creation of the physical and legislative environment to enable chemical producers to transition to greener products and production techniques, thus ensuring their continued market relevance, international competitiveness and ability to supply appropriate inputs to the domestic manufacturing sector.
- New upstream and downstream industries, market opportunities, export and job creation opportunities.

- Growth and increased employment in agricultural co-operatives in South Africa and the SSA region as a whole.

Milestones

- 2016 / 17 Q1: Creation of an industry-government collaborative group to scope and spec the input requirements to support a biochemical industry in general - and the two pilots in particular.
- 2016 / 17 Q2: **the dti** submission and framework for a biomass and biofuel strategy for the industrial sector as opposed to the fuel sector.
- 2016/17 Q3-Q4: Negotiation and facilitation of a biomass and biofuel raw material acquisition strategy for SA industrial players (Feedstock Strategy).

Lead departments/agencies: the dti, DST, IDC, industry

Supporting departments and agencies: DAFF, NT, EDD

3. Chemical SEZ

Nature and purpose of the intervention

The South African chemical sector will most likely come under increasing pressure over time if it is unable to transition from a coal to a gas-based industry. Although the 'transition to gas' narrative is linked to the energy debate the need to fast-track the transition to gas of key manufacturing industries is crucial for the competitiveness of the local industrial base. The notion of a flagship Chemical SEZ with incremental steps to import a variety of gas - including in the longer term from Mozambique's enormous Rovuma Basin reserves - serviced by sector-specific transport and storage infrastructure - is a credible vision of a game-changing intervention which will support the required transition to gas.

The intervention is a proven industrial policy approach in which the public sector provides sector-specific infrastructure and access to inputs in support of sectoral agglomeration. In this instance the intervention will not only allow for the growth of the chemical sector and fundamentally increase the composition and volume of its exports, but will simultaneously support the transition of the sector to a greener and more sustainable growth trajectory which will positively impact all downstream manufacturing activity.

The gas debate in South Africa focuses on the utilisation of gas for power, heating energy generation and up and downstream industrialisation. Access to gas, is, however, also a crucial issue for the international competitiveness and environmental sustainability of the entire domestic industrial base.

The majority of South Africa's basic chemicals use coal as their feedstock. This reliance on a fossil fuel limits the product range of chemicals which can be produced domestically, and it negatively impacts the cost competitiveness of the domestic sector compared to chemical companies using gas and crude oil as a feedstock. It also ties the industry into environmentally unfriendly processes thereby exposing it to carbon taxes and emissions control expenses which are unavoidable and which further compromise the industry's international competitiveness.

Currently all of SA's largest basic chemical firms are seeking expansion opportunities outside South Africa. The most significant variable responsible for this behavioural change is access to competitively priced feedstock. Secondary drivers are the limited size of the domestic market, transversal business environment issues such as high transport and labour costs; and ambiguous legislative frameworks in key areas.

An SEZ specifically engineered for the chemical sector will address many of the transversal issues. The location of the SEZ will allow the private sector to build and operate plant of sufficient size to reap economies of scale, as the strategic location will support a massive and cost-effective export drive.

Targeted outcomes

A Chemical SEZ will increase gross domestic fixed investment in the sector and assist local firms to remain in the country on a profitable basis. The SEZ will be a strong attractor of foreign direct investment, especially into those firms with new technology processes based on gas. Basic chemical output volumes will increase dramatically and export volumes, especially to SSA, will increase resulting in sectoral growth and employment growth.

Second, improved basic chemical price competitiveness will have positive downstream economic impacts for buyers of intermediate chemical inputs - e.g. Industries such as mining, agriculture, agro-processing, paper and pulp, textiles and leather, automotive and the home care industry.

The establishment of a chemical SEZ is a ‘next generation’ intervention and a potentially decisive game-changer. At this time the project is limited to scoping and understanding the parameters of what such an intervention can and should look like and estimating its possible impacts.

At this time the project is limited to scoping and understanding the parameters of what such an intervention could and should look like and assessing its possible impacts.

Key Milestones

2016 / 17 Q1: Creation of an appropriately convened public and private sector Working Group inclusive of the SEZ unit.

Development of programme of work to bring the proposal to feasibility status.

Lead departments/agencies: the dti, DOE, DST, EDD, IDC

4. CHEMMISA

Nature and purpose of the intervention

To support the relaunching of the CHEMMISA website and associated services as part of the dti’s focus to increase regional trade, cross border value chain activity and foreign direct investment flows. In addition, improved access to appropriate market information and analysis within the domestic economy will assist domestic producers and consumers of intermediate chemical inputs to maximise their purchases of locally produced chemicals in a market which has recently been characterised by new importers, changing product names and brands and the closing down of many speciality chemical producers. In this environment of domestic supply flux and a sharply devalued Rand, information associated with accessing locally-produced chemical inputs is crucial to the competitiveness of all manufacturing concerns in the domestic economy.

Asymmetry of information is a market failure which in the modern age of ICT can and should be substantially ameliorated. The web and association web sites such as the proposed upgrade and relaunch of CHEMMISA play an important role in this regard.

As the only producer of basic chemicals in Africa and the largest producer of fine and speciality chemicals in Africa, local chemical firms should enjoy high levels of domestic and regional demand. Local demand is, however, often hindered by a lack of technical information and understanding due to differing trade mark input names and descriptions. Improved information through the website should increase demand for locally produced chemicals and support import substitution. Similarly, regional buyers of chemicals are more likely to place orders from SA companies if they are able to access the pertinent and relevant information easily and efficiently.

Targeted outcome

A well-run, fully-populated and continuously updated website should result in increased domestic chemical firm sales in the domestic and export market. The site may also support the substitution of domestic products for previously imported products based on improved access to information.

In the medium term, analysis of website enquiries and information aggregation should provide strategic information to local chemical producers concerning demand trends and new market opportunities allowing them to increase output and growth.

Key milestone

2016 /17 Q1 – Q4: MOU with CAIA and re-launch of site and associated support.

Lead departments/agencies: the dti, CAIA

Supporting departments and agencies: DST, IDC, EDD

Cosmetics sector

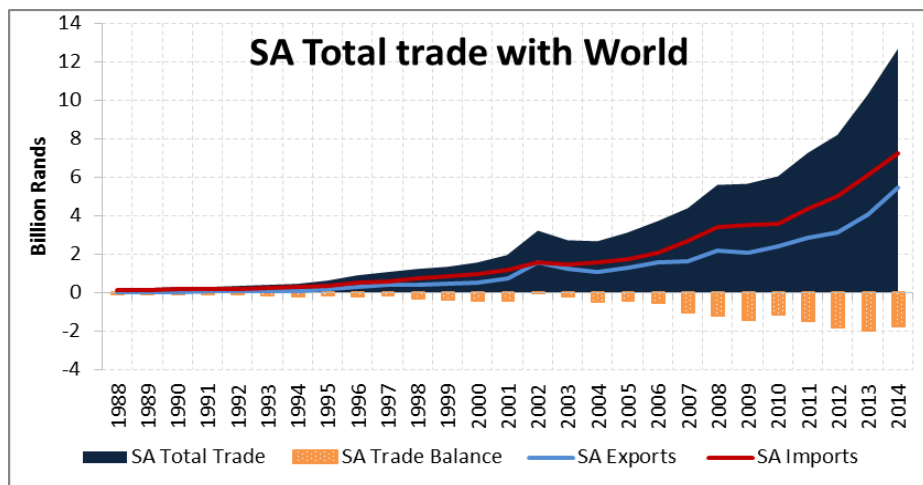
Situational analysis

The South African cosmetics sector is comprised of large and medium companies producing lotions, fragrances, cosmetics, soaps and detergents. Rapid urbanisation, increasing population and the fast-growing middle class are the driving forces behind increased demand for personal care products in Africa. The outlook for African cosmetics, beauty and personal care products market is very positive for the coming years.

Success in manufacturing often depends on the ability to quickly respond to ever-changing consumer demands and maintain price competitiveness. However, a rise in illegal imports threatens local manufacturing, and it is therefore critical that government protects the country's domestic manufacturing base.

The domestic sector is classified as one of the biggest cosmetics and personal care markets on the African continent, with manufacturing activity estimated at R5.2 bn in 2014. The sector contributes 0.14% towards GDP, with a retail value of R25 bn in 2014. In 2014, the largest shares of the country's cosmetics and personal care products were exported to Africa (64%); Europe (17%); Asia (9%) and the Americas (6%).

Figure 1: SA Cosmetics trade numbers



Source: Quantec

Table 1: Sector economic data

Variable	Contribution in 2014
Manufacturing Activity in 2014	R5.2 Billion
Retail value	R25 Billion
Contribution to GDP	0.14%
Exports 2014	R5.5 Billion
Imports 2014	R7.2 Billion
Overall Trade Deficit in 2014	-R 1.7 Billion
Employment	53 000

Source: Quantec

Key action plans

1. Promotion of cosmetics products from nature to market

South Africa is the third most biologically-diverse country in the world. The bio-prospecting sector contributed R101m to GDP in 2014. In order to increase the uptake and utilisation of these abundant resources, an approach that focuses on partnerships is critical. Manufacturers need to work with local suppliers of natural ingredients in order to satisfy the rising needs of consumers in this sector.

Nature and purpose of the intervention

Facilitate the establishment of an EU Certification Programme to assist companies with product registration in the EU market. This programme will expand to other markets in the next three years. Also - in partnership with Centre for the Promotion of Imports from Developing Countries (CBI), CSIR, phyto-trade and incubation centres - develop and run a programme to promote the use of natural ingredients.

Targeted outcomes

- Developed exports markets and with improved regulatory compliance.
- New products development with utilisation of local ingredients as a differentiator.
- Sustainable supplier base and testing facilities for natural ingredients through joint ventures between CSIR, HEIs and Industry.
- A competitive sector through natural ingredients products as measured by price, quality and inputs differentials.

Key milestones

- 2016/18 Q1-Q4: Develop mechanisms for EU Certification programme in partnership with IDC.
- 2016/17 Q1-Q4: Facilitate the development and commercialisation of new products in partnership with Phytotrade, CBI, EgoliBio and CSIR BIDC.

Lead departments/agencies: the dti, Incubation centres

Supporting departments / agencies: DEA, Industry, Phytotrade, DST, CSIR, CBI, CECOSA

2. Increase investment, upgrade capital equipment and processes

Nature and purpose of the intervention

It is important that interventions are geared to support local manufacturers with the aim of upgrading their competitiveness and to enhance their ability to meet new standards and requirements necessary for the cosmetics and personal care sector.

Manufacturers in the cosmetics industry are faced with the challenges of production capacity, Quality and Good Manufacturing Practice (GMP); though these firms possess innovation and creativity, they lack the capacity to achieve sufficient economies of scale.

The aim of this intervention is therefore to facilitate increased access of companies to government incentives, so as to help stabilise local manufacturing capacity in South Africa and grow it into the future. In addition, it is envisaged that the programme will support companies to become GMP-compliant.

Targeted outcomes

- Upgrading equipment and processes to meet Good Manufacturing Practice requirements.
- Increased contact with and exposure to products and processes development undertaken at publicly-funded research institutes.
- Market development to increase demand for local and third party manufacturers.

Key milestones:

- 2016/17 Q1-Q4: Facilitate access to government incentives by 4 companies to become GMP compliant.
- 2017/18 Q1-Q4: Facilitate access to government incentives by 4 companies to become GMP compliant.

Lead departments/agencies: the dti

Supporting departments / agencies: Industry, SEFA, IDC, DSBD, SABS, EDD

CASE STUDY: AMKA'S 5 YEAR, R 900 MILLION RECAPITALISATION PROGRAMME

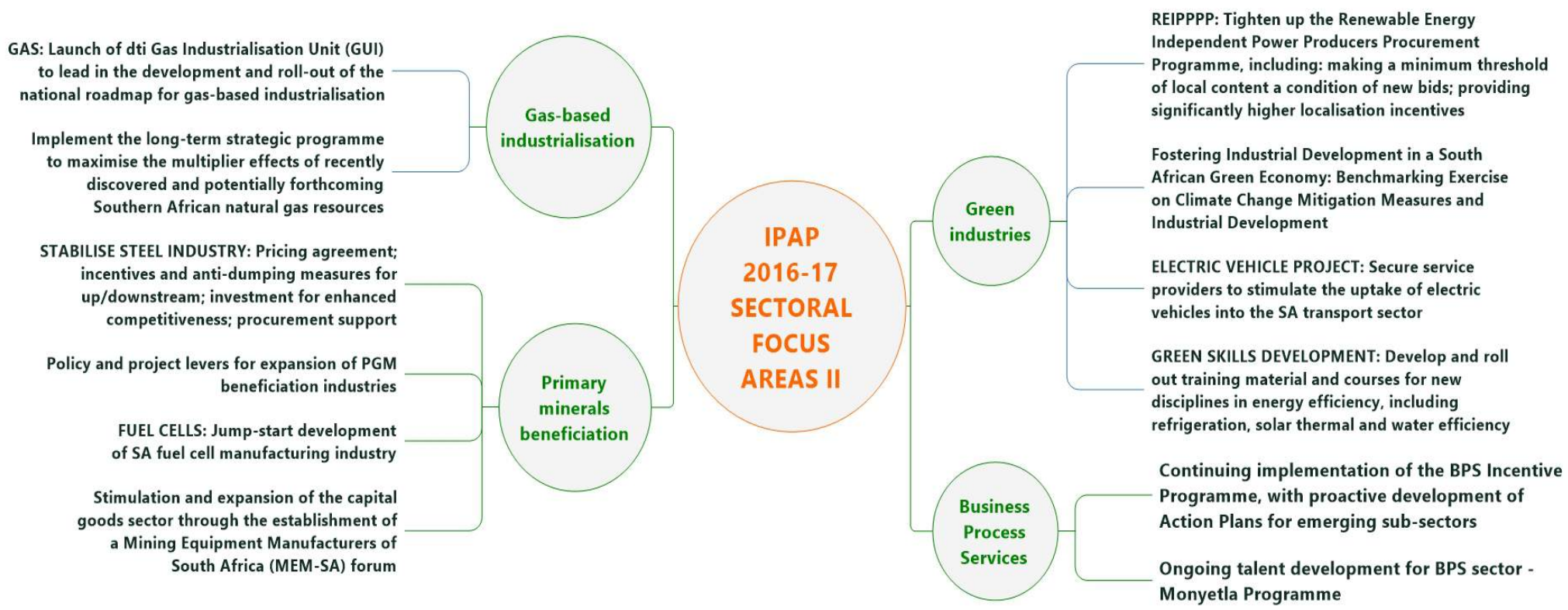
AMKA Products Company was established in 1965 as a small trading operation, producing a cosmetic range, personal care and household cleaning products for the local market. Amka has always focused on the unique needs and opportunities inherent in Africa's emerging markets.

Through a CIP grant of R5.8 million from **the dti**, the company facilitated the pending installation of bulk infrastructure, including electricity, water, sewerage, roads and storm-water drains in Sunderland Ridge. This has had the effect of unlocking the area for nodal growth, resulting in substantial employment opportunities being created. Currently the company employs 1,000 people.

Amka qualified for an MCEP grant. Grant payments received have allowed AMKA to invest in increased production capacity. The new plant and machinery acquired has allowed the company to improve the quality of its products, meet growing demand both locally and in international markets and compete on an equal footing with international players. As a result of the MCEP grant, Amka has invested in improved process technology, resulting in reduced water and energy usage. It has also supported local machinery manufacturers by sourcing most of its new plant and machinery in SA.



IPAP 2016/17 – 2018/19 SECTORAL FOCUS AREAS 2



Leveraging South Africa's and the region's mineral resource endowment

The mining sector remains a core part of the South African economy, responsible for around 9% of GDP and about 40% of exports. Historically, the sector played a key role in supporting investment in industrial capacity, especially investments in capital and energy-intensive technologies. While it is recognised that many key players in the sector have globalised their operations, it remains critical to maximise the opportunities provided by the linkages and multipliers that exist between mining and manufacturing in order to extract full value from South Africa's enormous resource endowment.

This applies not only to upstream mining opportunities and downstream beneficiation projects but also to the significant work that has already taken place with respect to future gas-based/driven industrialisation. IPAP 2016 therefore focuses on continuing efforts to build working relationships between large mining companies and the local manufacturing sector; such relationships will solidly contribute to the realisation of SA's industrial ambitions.

The revised empowerment codes, which unambiguously provide incentives for both small business and supplier development, create a foundation for working with mining companies towards building world-class engineering companies in the mining supply chain.

This includes collaboration between government and mining companies on the development of new technologies to benefit our mineral wealth inside South Africa.

Mining Phakisa 2015

Operation Phakisa, a programme run by the Office of the Presidency, was established to work with various government sectors to fast-track the achievement of the goals outlined in the National Development Plan (NDP). The Mining Phakisa, coming at a time of immense distress across the minerals value chain, had two interlinked objectives:

- (i) *"identifying a set of concrete programs that will unlock the growth and developmental impact of the sector"* and
- (ii) *"collaboratively developing and implementing detailed plans for these programmes."*

The overarching resolution of Mining Phakisa 2015 is the need to reconvene a mining inputs cluster - a multi-stakeholder collaboration that coordinates the SA Inc effort in

creating decent safe jobs, enhances transformation, increases the life span (LOM) of current and greenfield projects, increase local content in current procurement and New Generation Mining Systems and generally improves the investment levels across the whole value chain. This will be achieved by specific deliverables in this IPAP and the collaborative efforts of the mining sector, beneficiaries, manufacturing sector the other 16 national departments that were participants at Mining Phakisa.

"The broad aim of the Mining Phakisa as a whole is to galvanise growth, transformation, investment and employment creation along the entire mining value chain, in relevant input sectors and in mining related communities."

7. Gas-based industrialisation

Maximising the industrial potential of Southern Africa's petroleum resources: Towards impactful gas industrialisation policy

Situational analysis

Last year's iteration of the Industrial Policy Action Plan (IPAP) highlighted the fact that the Southern African region is fast transforming into an oil and gas jurisdiction, led by major on- and offshore gas finds in Mozambique, Tanzania, Botswana and Namibia - together with the significant potential for substantial hydrocarbon resources in South Africa.

Naturally the presence of such large potentially recoverable resources has already triggered-off robust competition between a number of the major international oil and gas players for acreage, both on and offshore. From a South African perspective, the scale of the find in neighbouring Mozambique (estimated at between 200-250 tcf) is of particular significance.

The 2015/16 IPAP emphasised the remarkable potential of gas in reviving previously stagnant industrial sectors. The stand-out 'benchmark case' would be that of the United States, where cheap shale gas has contributed to a dramatic revitalisation of wide swathes of the manufacturing economy and a very substantial "re-/on-shoring" of manufacturing.

Whilst the US case is highly instructive, the point was made in IPAP 2015 that this experience does not necessarily provide a straightforwardly replicable blueprint for Southern Africa.

The regional context is vastly different and will require very careful policy development, planning and coordination if South Africa and its neighbours are to successfully unlock the enormous potential multiplier effects that could be delivered by a regional gas economy; not least because of the lack of existing transportation and gas utilisation infrastructure in the Southern African region.

The drop in the oil price over the past year has also presented a further complication, certainly constraining the upstream industry's capacity to invest in upstream exploration and production - although conversely making it an ideal time to be a purchaser of LNG (as South Africa will be in the early stages of the development of its gas markets) given the low input prices. This factor highlights the important near-term opportunity for gas industrialisation in South Africa based on LNG import.

Recognising the opportunity for South Africa and its neighbours, in the 2015-2016 financial year **the dti** put in place a Working Group made up of **the dti** personnel, key independent industry experts and senior representatives of SASOL (as a national champion) to begin the process of policy analysis and planning for the development of a gas-based industrial economy.

Key to the Working Group's mandate was laying the foundation for the establishment of a Gas Industrialisation Unit (GIU), led by **the dti**, consisting of a broader collection of senior personnel from relevant government departments and SOCs, industry and civil society.

To prepare the ground as thoroughly as possible, over the past year the Working Group also developed a clearly defined Action Plan for the GIU to implement upon its inception. Building off the efforts of the Working Group and **the dti**, the GIU will be launched shortly after the publication of this IPAP.

The core organising principles guiding the work of the National Task Team and Gas Industrialisation Unit going forward are the following:

A. ECONOMIC / DEVELOPMENTAL

- Appropriate gas utilisation for the South African and regional economies.
- Real collaborative regionalisation projects underpinned by gas.
- Driving the establishment of South Africa as a hub for the oil and gas services sector in the region.

- Assessment of appropriate utilisation value chains: gas-to-power will drive the initial stages of development of the domestic gas economy, but other gas utilisation value chains will need to be appropriately brought on stream and properly sequenced.
- Consideration will have to be given to the implementation of impactful incentives for industry development that have minimal impact on the State balance sheet.
- Technology and innovation: there is clear potential to leapfrog other gas jurisdictions from a technology and innovation perspective; moving, for example into:
 - Waterless fracking;
 - Development of rapidly emerging gas infrastructure technologies and new carbon-capture technologies.

B. POLICY / METHODOLOGY

- Fact-based decision making;
- Long-term planning informing short-term needs;
- Intra-governmental policy coherence, aligned with industry needs;
- Fit-for-purpose regulation;
- Appropriate local content requirements in the context of a greenfield industry;
- Specialist and generalist skills development and training.

The Gas Industrialisation Unit – which will be guided by **the dti**-based Gas Working Group - will accordingly focus on the following concrete developments during the period of IPAP 2016/17 - 2018-19:

- *Launch*: Formal launch of the Gas Industrialisation Unit, supported by the Working Group and **the dti**.
- *Industrial gas utilisation*: Working with the IPP office and Department of Energy, support the LNG-to-power procurement programme by assisting in driving the development of gas markets and non-IPP gas utilisation within the three ports identified for LNG importation by the Department of Energy and the IPP office.
- *Regionalisation*: Lead South Africa's outreach on a regional level, focusing on developing a government-to-government accord with Mozambique that seeks to

realise the potential for Mozambican gas to be delivered to South Africa, in exchange for South African assistance in building onshore utilisation facilities in Mozambique - potentially in power, gas-to-liquids and fertilisers amongst other possible downstream uses.

- *Oil & gas services and supplier development:* Facilitating the establishment of South Africa as a hub for the oil and gas services sector in the region. This means:
 - working with the upstream oil and gas industry bodies to determine goods and services required for their operations in the region and connecting these with existing and potential South African services;
 - facilitating the development of South African supplier development by working with industry and the CSIR to develop a supply chain database;
 - supporting the growth and development of the South African Oil & Gas Alliance as a national and regional oil and gas services industry representative body.
- *Science & technology:* Work with the Department of Science and Technology to leverage private sector and foreign government assistance to establish funded government science labs within existing government science lab structures, with a view to informing debate and consolidating a fact-based scientific discourse.



Key action programme

Development of the long-term strategic framework to leverage the opportunities presented by regional oil and gas resources.

Nature and purpose of the intervention

The core purpose of this intervention is to put in place the necessary institutional infrastructure to implement the long-term strategic programme and maximise the multiplier effects of recently discovered and potentially forthcoming Southern African natural gas resources.

Targeted outcomes

Dynamisation of the regional economy through onshore utilisation of gas (and its associated services sector) in order to support the industry across the region – and with a view to establishing and deepening backward, forward and lateral linkages along the entire natural gas value chain, both domestically and regionally.

Key milestones

- 2016/17: Q1-Q2: Finalise the composition of the Gas Industrialisation Unit (GIU). Ministerial Report to the ESEID Cabinet Cluster and Full Cabinet.
- 2016/17: Q1-Q2: The task team works closely with the IPP office to ascertain, among other considerations, the infrastructure requirements of industry, gas-sharing arrangements, local content requirements etc.
- 2016/17: Q2: Launch of the Gas Industrialisation Unit - to be appointed for an initial period of thirty-six months and thereafter assessed annually by the Minister of Trade and Industry.
- 2016/17: Q2-Q4: Consolidate the Gas Industrialisation Unit as a vehicle for driving the implementation of gas industrial policy and for international engagement – as a trusted long-term partner and collaborator.
- 2016/17: Q2-Q4: Support the growth and development of the restructured SA Oil and Gas Alliance (SAOGA).
- 2016/17: Q3-Q4: Work with all the upstream oil and gas industry players to determine goods and services required for their operations in the



region and connect these with existing and potential South African services.

2017/18: Q1-Q2: GIU to identify projects where South Africa will be able to assist in stimulating onshore industrial gas utilisation in Mozambique, while at the same time working out a deal to secure a decisive volume of Mozambican gas for South African industry.

This process to be formalised through a government-to-government accord between Mozambique and South Africa.

2017/18: Q1-Q2: Work with the DST to leverage private sector and foreign (e.g. already-offered US) government assistance to establish funded state science labs within existing government science lab structures.

2017/18: Q1-Q2: Work with the KARIN project to potentially drill for additional core samples in the Karoo basin.

2017/18: Q2-Q3: The GIU (in collaboration with OPASA, ONPASA, the DST and the CSIR) to identify key inputs - linked to current and potential manufacturers in the South African economy - that can prove to be vital inputs into the up- mid- and downstream segments of the offshore and onshore gas value chain.

2017/18: Q4 A detailed assessment of identified manufacturers and/or potential manufacturers in terms of their positional and technical capabilities to enter the gas industrialisation field; together with the appropriate remedial measures that would be required to get them up to speed. (This to include work with the CSIR to develop a 'deep' supply-chain database).

Lead departments: the dti, DOE/IPP Office

Supporting departments/agencies: DST, DPE/Transnet/Eskom, CSIR, SASOL, ONPASA, OPASA, SAOGA, SANEA

8. Primary minerals beneficiation

Situational analysis

Conditions in the global economic environment remain very difficult, especially for resource based economies, with mineral commodity prices sinking to their lowest levels in decades. The iron ore/steel value chain has been seriously affected, with large-scale job losses across the globe. The problem facing most minerals and metals is that high levels of production have seen supply outstrip global demand – a phenomenon largely attributed to falling demand from China, accompanied by continuing high volume exports of low- priced primary steel.

The combined negative impact of large primary resource endowments and a volatile exchange rate linked to commodity prices is becoming more and more evident. Mineral-exporting economies tend to have lower than average growth rates, higher levels of inequality and substantial difficulties in diversifying their industrial base. There is a clear and pressing need for economies like ours to switch away from unbeneficiated resource export dependence into much greater participation in the tradeable, value-added sectors of the economy, including both labour-intensive and technologically sophisticated spill-over sectors; and by ensuring that growing domestic demand underpins efforts to re-industrialise.

As a middle-income country, South Africa has to compete on the basis of excellent products and brands and effective entry into global distribution channels. This will require greater commitment to R&D, the development and commercialisation of new technology-bases products, an efficient logistics platform and effective economic diplomacy.

IPAP 2016/17 focuses on key beneficiation projects (platinum group metals and fuel cells, steel and resource-linked capital goods) – with a strong emphasis on continuing efforts to stabilise the steel industry and mitigate the effects of global oversupply.

Key opportunities

- Increased foreign and domestic investment;
- Oil and gas discoveries in South Africa and the Southern African region as an opportunity to leverage imported gas as a cleaner, cheaper source of industrial energy input than coal;
- Employment creation;
- Transfer of technology and skills development;

- Creation of economic linkages through supplier development for the mining, oil and gas sectors;
- Planned regional integration of SACU, SADC, COMESA and EAC.
- Increased local content in non-state domestic procurement beyond the current designated products purchased by the state.

Key constraints

- Delays in finalising key legislative enablers and processes:
 - the MPRDA Bill, 2012;
 - Mining Charter revision;
 - Competition Act amendment;
 - conclusion of cases by the Competition Commission, especially in the steel sector;
 - conclusion of scrap metal export tax proposals and the failure of current initiatives to improve access and pricing of scrap metal to local beneficiaries;
 - delays in finalising clean fuels policy.
- Access and pricing of key inputs (energy/power, skills, iron ore/steel, scrap metal, polymers);
- Inadequate and expensive infrastructure: rail branch-lines, roads, electricity, water supply and ports;
- Slow pace of regional integration and development of regional physical and trade infrastructure and markets;
- Obstacles to the development of the fuel cells sector utilising PGM as a catalyst, in the light of growing competition from other catalysts.

Key action programmes

1. Stabilisation of the iron ore/steel value chain

Nature and purpose of the intervention

The current global crisis affecting the iron ore/steel industry, triggered by reduced consumption in China, has adversely affected the viability of iron ore mines and primary steel producers around the world. South Africa has not been spared.

In order to preserve SA's primary steelmaking capacity, whilst ensuring the competitive supply of primary steel to the downstream sector, government has embarked on measures to stabilise the steel sector across the entire value-chain. These include the following short to medium term measures:

- Support conditional tariff adjustment applications submitted to ITAC by both primary steel producers and the downstream sector.
- Negotiate tariff conditions including pricing mechanisms with key primary producers.
- Stimulate local demand by increasing local steel content in state procurement and promoting the use of local steel and steel manufactured components/products in non-state procurement.
- Support access to inputs at favourable prices for local primary producers, including access to iron ore and scrap metals.
- Promote new investments along the iron ore/steel value chain to increase competitiveness and diversify the range, quantity and quality of products available to local manufacturers.

Work on a set of longer term measures to ensure that SA's steel producers' capability is returned to globally competitive levels. This will be done in a manner which ensures that the downstream, value-adding, labour-intensive steel industry can fully leverage the competitive advantage arising from SA's rich mineral resource endowment.

Key milestones

- 2016/17 Q1: Finalise steel pricing agreements with key primary producers and conclude on tariff award conditions.
- 2016/17 Q2: Provide quarterly monitoring reports and recommendations to the Inter-Ministerial Steel Task Team.
- 2016/17 Q1-Q4: Work with EDD/ITAC monitor the availability and price of scrap metals to local beneficiaries.

Lead departments/agencies: the dti

Supporting departments/agencies: EDD, ITAC

Expansion of the PGM beneficiation industries

The following intervention is aimed at developing and growing platinum group metals (PGM) beneficiation and demand for platinum in SA beyond current levels, through the development of a fuel cell industry.

2. Fuel cell industry development

Nature and purpose of the intervention

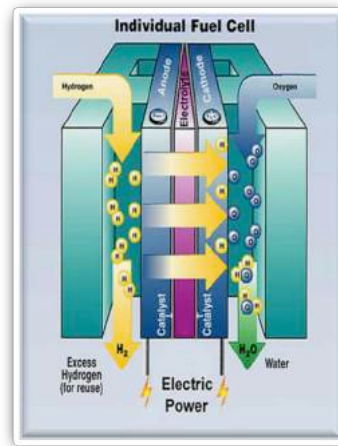
Significant industrial development opportunities are emerging in the form of clean energy and mineral beneficiation-linked solutions utilising key SA mineral resources - especially PGMs and vanadium. Fuel cell development is one key area of PGM resource beneficiation. It does not start from zero – there is an existing base of fabricators on which to build. Stepped up R&D and demonstration initiatives offer the SA platinum mining industry potentially crucial new growth opportunities for long term sustainability.

This intervention aims to accelerate current PGM beneficiation initiatives by creating a new demand stream for platinum, whilst at the same time saving electricity, providing more off-grid options, creating new jobs and attracting new investments.

The key constraints to platinum fuel cell commercialisation in SA are:

1. The high cost per kwh and current small market, in the face of competing energy solutions;
2. The utilisation of other catalysts;
3. Low existing gas supply and weak supporting gas supply infrastructure;
4. Under-developed supporting policy and regulations;
5. Insufficient funding;
6. Insufficient and slow market development (local and regional).

Building on the work done thus far, in 2016/17, **the dti** and industry will focus intervention on a multi-faceted and structured approach covering large scale



demonstration projects, market development and demand stimulation to strengthen and deepen the value chain. The key elements of this approach will be investment promotion initiatives and building up the supporting SEZ infrastructure, in collaboration with potential OEMs and technology partners. The full range of participants will include the local platinum mining industry, fuel cell OEMs, gas suppliers and potential public and private users. This will give us the necessary initial base for developing the market/off-take and early adoption applications.

Targeted outcomes

Platinum is the key catalyst in three out of the six major globally available fuel cell technologies. This intervention will not only lead to increased fuel cell usage but the adoption of Pt as the preferred catalyst. If SA manufactures 20% of the global market by 2025 (800MW, based on current platinum loadings, demand for platinum is expected to increase by 120 000 ounces/annum. It is estimated that 50,000 new employment opportunities could be created in manufacturing, installation and maintenance activities by 2030. In the long term, real demand will be through fuel cell electric vehicle uptake. If 1% of vehicles globally switch to fuel cell energy (assuming 30g platinum/unit), platinum demand will increase by 12.5% - translating into approximately 24,000 mining jobs.

Key milestones

- | | |
|-------------------------|--|
| 2016/17 Q1- Q2: | Development of clear value proposition for public and private off-take. |
| 2016/17 Q3-Q4: | Investment promotion/SEZ viability assessment: promote localisation of fuel cell manufacturing with key OEMs. |
| 2016/17 Q4: | Large scale real-world demonstration of technology(ies). |
| 2016/17 Q4: | Programme of action on how the public sector transportation sector can be utilized to catalyse the required demand off-take requirements for the localisation of fuel cells in SA. |
| 2016/17 Q2 -2017/18 Q4: | Development and demonstration of fuel cell underground mining equipment. |

Lead departments/agencies: the dti, DST, IDC, DOE

Supporting departments/agencies: DMR, EDD

3. Stimulation and expansion of the capital goods sector through the establishment of a new industry forum: Mining Equipment Manufacturers of South Africa (MEM-SA)

Nature and purpose of the intervention

Global demand for mining equipment has increased significantly over the past decade and is forecast to continue to do so through to 2020 and beyond. The total value of the market increased from approximately US\$34 bn in 2005 to just over US\$60 bn in 2010. Mining (extraction) and minerals processing capital goods are the most dynamic sections of the South African capital goods sector, with more than 50% sold regionally. Exports into Africa increased by 400% between 2000 and 2008 and amounted to R34 bn in 2014. In spite of the current low commodity prices, the long-term outlook for the global minerals industry remains strong.

Upon analysis of existing incentives, tariff regime and other policy support interventions it became evident that more effort will be required to unlock and deepen the SA capital goods manufacturing sector. The MEM-SA will enhance the viability local capital goods manufacture by implementing an industry support mechanism to accelerate local manufacturing and exports of mining equipment. Upon implementation, the intervention will reduce imports of mining capital goods and will stimulate local content, exports, employment creation and transformation. The immediate focus will be on current procurement whilst developing high local content next-generation mining systems that will be deployed as most of SA's mines increase levels of mechanisation - especially in narrow reef gold and platinum mines.

Two specific areas have been identified that require immediate intervention:

- a) Revitalising mining manufacturing equipment research and development; and
- b) Recreating an export-oriented South African mining equipment manufacturing cluster capable of meeting local demand and supplying key export markets.

This would assist the current manufacturers to evolve their offerings and become the suppliers of Next Generation Mining Systems (NGMS) that are required to extract deep-lying gold and PGM resources and the recovery of ores locked in pillars. In addition, there is the need to consolidate and integrate R&D activities within the sector. These are currently fragmented - residing within various institutions - and will require much tighter alignment, coordination and up-scaling.

Even in the absence of a coherent state intervention strategy, the SA mining capital goods industry has made very considerable strides, growing its market volume in both local and regional sales. However, there is an indication that whilst *volumes* have indeed grown, SA is losing *market share* in many capital projects in Africa. This intervention will therefore have three sequential dimensions:

Phase 1: Conduct a baseline evaluation of mining procurement to establish existing levels of local content in current procurement patterns, in order to identify further localisation opportunities. The opportunities identified will need to be closely matched to the capabilities of SA-based manufacturers.

Phase 2: Determine the current capability and capacity of SA-based mining inputs manufacturers and propose a suite of support measures to increase local content in current procurement and Next Generation Mining Systems. This will include review and adjustment of existing incentives, export support and a consolidated R&D strategy.

Phase 3: Develop an investment package aimed at attracting foreign OEMs into the domestic market in order to facilitate local assembly and manufacturing and establish R&D centres of excellence. This is aimed at consolidating the local manufacturing and export base and allowing for robust expansion into key markets in the rest of Africa and South America.

Targeted outcomes

Increased local content in the SA minerals value chain procurement and increased exports of SA manufactured goods. Through the development of Next Generation Mining Systems, SA will become a global centre for the manufacture and deployment of high end systems for narrow reef mining.

Key milestones

2016/17 Q1 - Q2:	Conduct baseline study on localisation opportunities in current mining procurement, working with selected mining houses and initiate supplier development programmes to meet identified opportunities.
2016/17 Q2:	Complete consolidated R&D strategy for supply of capital equipment into the minerals value chain, including the development of Next Generation Mining Systems.
2016/17 Q3:	Seek commitment from targeted foreign OEMs within the sector to invest in and establish manufacturing capacity within South

Africa and develop an appropriate framework to guide the process.

2016/17 Q1 – Q2: Complete review of state supply-side support measures (incentives, tariffs, export incentives) to promote local manufacture of mining inputs.

2016/17 Q3 – Q4: Develop proposals to increase regional manufacture and intra – regional trade of mining capital goods within SADC.

Lead departments/agencies: the dti, DMR, DST and IDC

Supporting departments/agencies: EDD

CASE STUDY: AARD MINING EQUIPMENT

This mining equipment manufacturing entity was established in 1983 as part of the Boart Longyear group of companies. The company, renamed AARD Mining Equipment, was sold to the current shareholders in 2008, a consortium comprising Nedbank Capital Private Equity, Matasis (a BBBEE group) and management.

AARD is a 65.39% black-owned and controlled company (24.48% Black Women Ownership). It employs 240 full-time staff, with HDSAs making up 60% of the workforce, 14% of whom are women.

With a management team boasting 160 years of experience in the mining industry, AARD has built up a comprehensive product range of trackless mobile mining machinery (TM3) across drilling, blasting, bolting, cleaning and support operations in both low profile and standard height mechanised underground mining operations. AARD continuously undertakes research and development to provide total solutions to the mining sector. It has teams of field service technicians operating out of its head-office in Krugersdorp and has branches in Kuruman, Rustenburg, Steelpoort, Emalahleni and – further afield - Zambia and Zimbabwe.

AARD’s range of products and applications is deployed extensively on more than 30 base metal, precious metal, coal and diamond mines in sub-Saharan Africa. It has in excess of 1,550 low-profile LHDs and 3,000 hydraulic rock drills in the field. Its machines, designed in Krugersdorp, are ‘proudly South African’, with only key components like engines and axles imported. All AARD machines have a 60% local content.

Besides increasing market share in South Africa, AARD is targeting key export markets in SADC, BRICS, South America, North America and Europe.



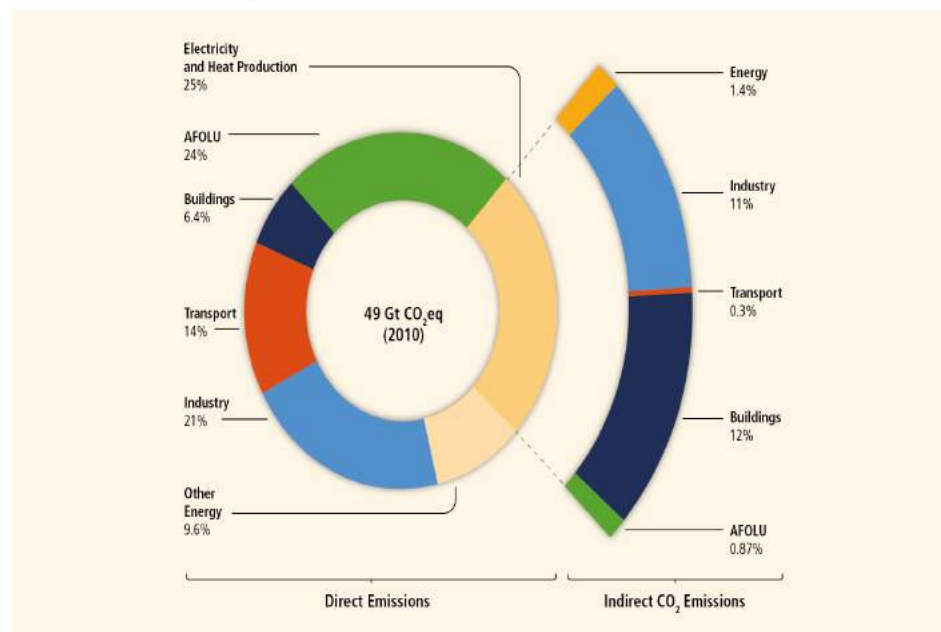
9. Green industries

Situational analysis

The world is currently grappling with multiple challenges on the economic and social fronts, whilst ecological pressures are intensifying worldwide - over-use of fossil fuel resources and exponentially increasing greenhouse gas (GHG) emissions exacerbating climate change and environmental risk worldwide.

Figure 1: GHG emissions

Greenhouse Gas Emissions by Economic Sectors

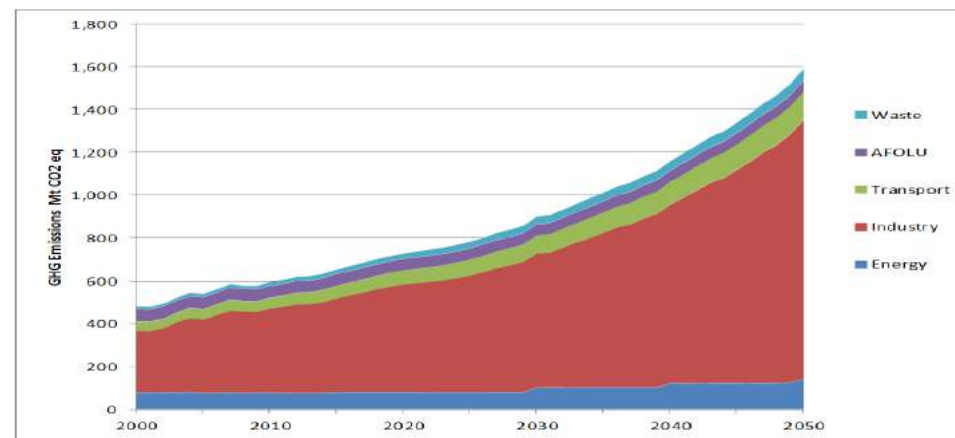


Source: Climate Change 2014

Globally, total anthropogenic GHG emissions have continued to increase from 1970 to 2010. Despite a growing number of climate change mitigation policies, annual GHG emissions grew on average by 1.0 gigatonne carbon dioxide equivalent (GtCO₂eq) (2.2 %) per year from 2000 to 2010 – as compared to 0.4 GtCO₂eq (1.3 %) per year from 1970 to 2000. Total anthropogenic GHG emissions were the highest in human history

from 2000 to 2010 and reached 49 (±4.5) GtCO₂eq / yr. in 2010. The 2008-09 global economic crisis only temporarily reduced emissions.¹³

Figure 2: South Africa’s national GHG emissions under the “With Existing Measures” (WEM) projection, showing a breakdown per sector (2000-2050).



Source: Climate Change 2014

Industrial emissions (including energy) constitute the main driver of GHG emissions in the world, accounting for over 30% of all GHG emissions.

Despite the fact that South Africa has been an active stakeholder in both the Kyoto Protocol and the United Nations Framework Convention on Climate Change (UNFCCC) for more than two decades, we continue to be one of the most energy- and carbon-intensive economies in the world. Although the country accounts for only 1.5% of global GHG emissions, South Africa is the 13th largest emitter in the world.

South Africa’s GHG emissions are heavily driven by the energy and industry sectors, due to the country’s reliance on coal for historically cheap electricity generation as well as the role of mineral resources and linked energy-intensive industries in the country.

¹³ Climate Change 2014: Mitigation of Climate Change - IPCC Working Group III Contribution to AR5 - Summary for Policymakers, p6

In 2010, the energy and industrial sectors respectively accounted for 61% and 19% of the country's total emissions.

Moreover, if electricity emissions are allocated to end-use sectors, industries then account for 67% of total emissions. Reducing South Africa's GHG emissions is therefore deeply linked to mitigating emissions from local industries.

During the previous iterations of the IPAP the focus was on "greening of industries" (improving the environmental performance of industry), stimulating the development and creation of industries that provide environmental goods and services and supporting the alignment of climate change policies and industrial development policies in South Africa. The work of the National Cleaner Production Centre has proved very effective in improving the energy and resource efficiencies and environmental performance of a large number of companies; and this work is set to continue. The focus of the NCPC is however shifting towards achieving *higher impacts with existing resources*, mainly through the development of training programmes that can be implemented by registered training providers, in-house training of industry role-players and the distribution of RECP information via the NCPC website, social media and other platforms.

The roll-out of the REIPPPP resulted in significant localisation of components used in the renewable energy sector. However, in order to further improve the competitiveness of South African suppliers and increase both local content and new industrial capabilities, a more strategic approach to localisation in the Independent Power Programme is required.

On the policy alignment front, **the dti** will build on the work done during the 2014/2015 financial year under a KAP "Setting South Africa on a Green Growth Path: A Benchmarking Exercise on Climate Change Mitigation Measures and Industrial Development". This work aims to inform the specific role of **the dti** in the climate change mitigation framework, particularly with regard to supporting industries' transition to low-carbon practices.

Key action programmes

1. Strategic Industrialisation through the Independent Power Programme

Nature and purpose of the intervention

The roll out of the REIPPPP resulted in significant localisation of components used in the renewable energy sector. In order to further improve the competitiveness of South African suppliers and to increase local content through developing new industrial capabilities, a more strategic approach to localisation in the Independent Power Programme is required.

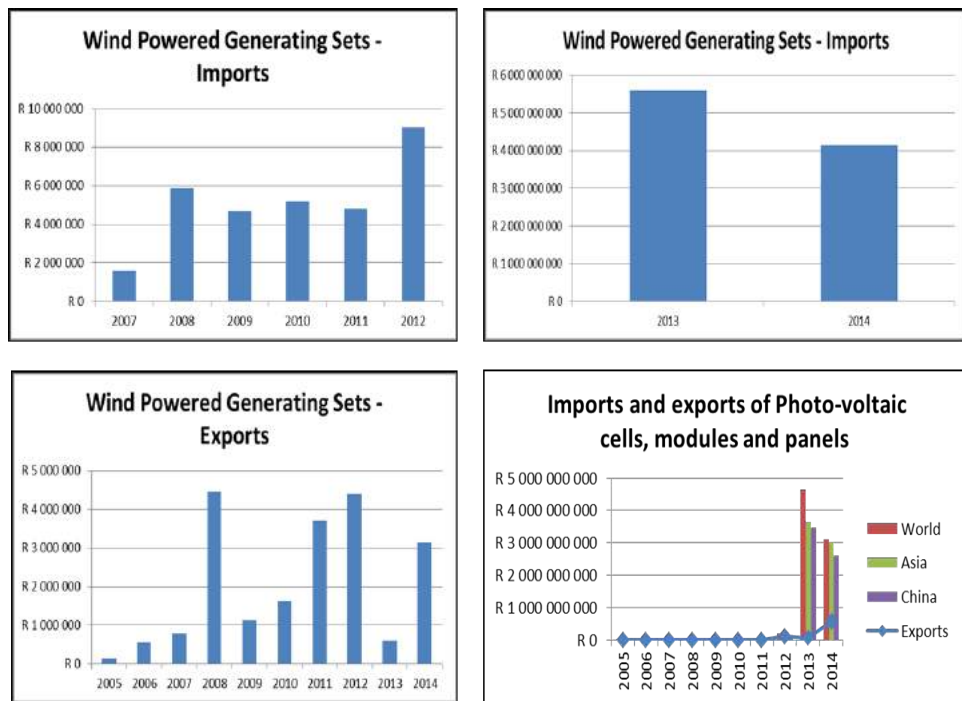
There are four key outputs required from strategic procurement planning to effectively support local industrial development. These are (i) the size of the demand (i.e. the number of products required over the planning time horizon); (ii) the functional specifications for the product (i.e. what the product needs to be able to do over its full life-time); (iii) the technical specifications for the product (i.e. what needs to be included in the design of the product); and (iv) the localisation parameters for the product (i.e. the extent to which the product can be designed and produced in South Africa). These different elements are inter-related.

The most fundamental driver of investment in intermediate and advanced manufacturing in an economy is the perception of the scale, consistency and quality of the national demand for a product and service. A second critical driver of investment is the extent to which incentives are in place to allow for an adequate return whilst an enterprise learns and masters the technologies and processes required to produce competitively in the global economy. A programme to leverage procurement to facilitate the development of national industrial capabilities needs to provide both an adequate demand platform and relevant incentives to suppliers. Hence, in order to optimise the impact of the IPPP, a more strategic procurement and industry development approach is required that should address the following:

1. The planning of the roll-out should be better aligned with a viable process of building relevant industrial capacity and capability.
2. A minimum threshold of local content needs to be a condition of making a bid.
3. The bid evaluation process needs to include significantly higher localisation incentives for supplier development and localisation so that independent power producers start competing meaningfully around their contribution to the industrial development process.

4. The contracts need to include extremely stringent penalties for non-delivery of localisation requirements, including the negation of the power purchase agreement.
5. An adequate monitoring mechanism needs to be established.

Figure 3: Wind power Industry

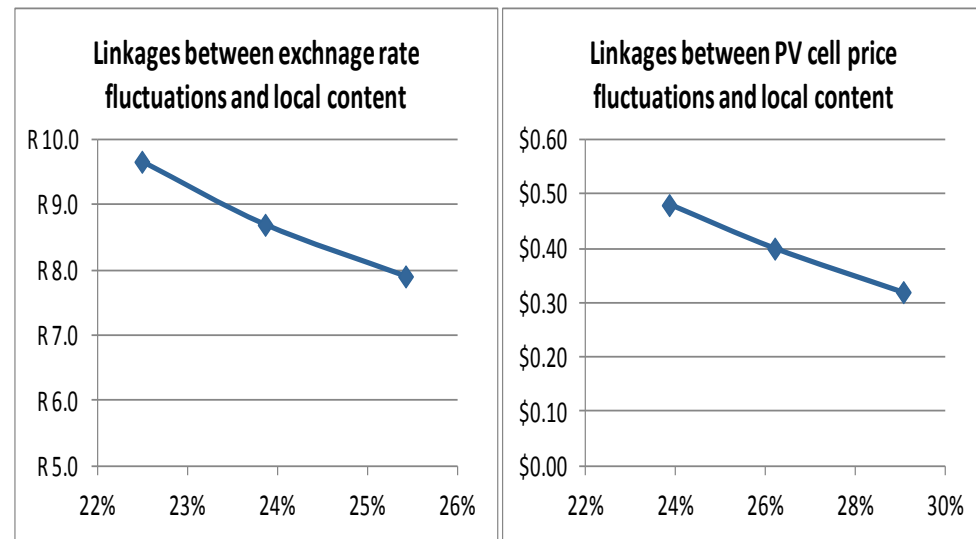


Source: Quantec

The actual local content spent in the IPPP as at 30 June 2015 was R21.7 billion, and the planned local content of the first 92 approved projects amounts to R65 billion. One of the main challenges as far as localisation is concerned is the fact that the industry started at a very low base. Localisation was promoted through minimum local content thresholds and additional bidding points for higher local content levels for Renewable Energy Bidders.

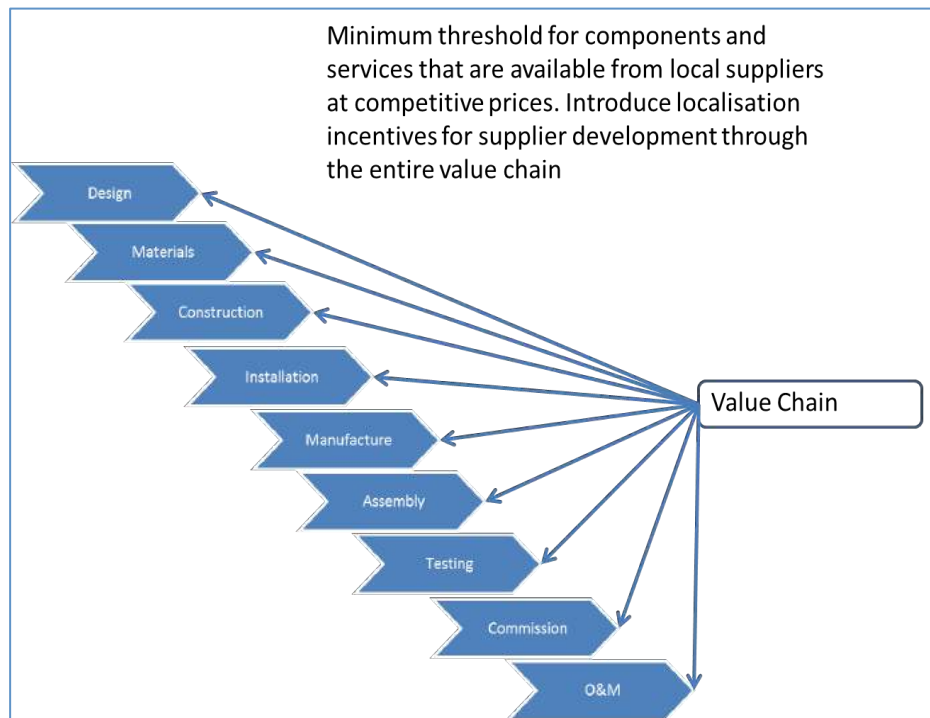
The current measurement of local content is linked to Rand value. This measurement approach faces a number of challenges. The most obvious is the fact that fluctuations in exchange rates and prices on imported products would significantly impact the local content percentage. Local content is therefore only valid for a specific set of market conditions. Considering for example that more than three quarters of a PV module consists of imported components and that the silicon cell is the largest cost item of a c-Si PV module, the cost breakdown of c-Si PV module manufacturing (and subsequently the local content calculated) are highly dependent on the exchange rate and the price of imported silicon cells - as illustrated in figure 4 below (linkages between PV cell price fluctuations and local content).

Figure 4: Linkages between exchange rate, PV Cell and local content



Source: Quantec

Figure 5: Value chain



Source: IPP Working Group

Revised local content reporting

The challenges of relying on Rand value measurement for local content calculations need to be overcome – meaning that a standardised approach should be considered that will allow for projects to be compared on the same basis.

A further complication with the current measurement approach is that calculating 2nd and 3rd tier sub-component local content is difficult. The key issues are the following:

- Intermediate inputs required for PV projects are not sole products manufactured by businesses; thus, calculating the local content of one product or unfinished good would require considerable time from the accounting department.
- Intermediate inputs manufactured by various businesses are not homogenous.

- Business models of companies differ within and across industries.

The most important aspect of compliance management lies in strong enforcement during the project implementation and monitoring phases without incurring an excessive administrative burden.

Targeted outcomes

Reduce imports; optimum development of local industry.

Key milestones

- 2016/17: Revise the reporting of localisation, simplify the local content calculation and implement minimum threshold for components and services that are available from local suppliers at competitive prices. Introduce localisation incentives for supplier development through the entire value chain. This can include extra bidding points for support of new sub-sectors in the renewable value chain.
- 2016/17: Make recommendations to streamline the demand and supply of renewable energy components that are manufactured locally. Make recommendations to improve strategic sourcing through a revised contract management system.
- 2017/18: In line with localisation roadmaps and prevailing industrial development conditions, review the local industry’s development requirements for subsequent bidding rounds.
- 2017/18: Identify industrial tariff rebates that can support the development of the industry (wind turbine blades for example) and make recommendations to the International Trade Administration Commission (ITAC).
- 2017/18: Conduct Impact analysis of Renewable Energy Localisation after every successful bidding round.

Lead departments/agencies: the dti, Independent Power Producers Procurement Programme

Supporting departments/agencies: Technology Localisation Unit (CSIR), ITAC, IDC, PICC, EDD

2. Fostering industrial development in a South African green economy

Nature and purpose of the intervention

This project will play an important role in balancing the demands of industrialisation with the aim of a smooth transition to a green economy. This will require re-positioning future industrial development so as to achieve sustainable trade-offs between the two often competing imperatives.

The project deals specifically with the cross-cutting interplay between industrial development and climate change in South Africa. It aims at informing the role of **the dti** in assisting local industries to fully factor in climate change considerations, cope with climate change-related regulations and embark on the transition to a low-carbon development path.

The project is particularly timely in the light of ongoing discussions around the introduction of a carbon tax and other instruments (carbon budget, energy management plans, etc.) by a number of national departments. The Department of Trade and Industry will play a key role in the process by providing new mechanisms to complement the package of existing and planned measures. It will play an essential role in incentivising the transition of industries to low-carbon practices as well as providing support to hard-hit firms to cope with climate change-related regulations.

A Benchmarking Exercise on Climate Change Mitigation Measures and Industrial Development aims to inform the specific role of **the dti** in the climate change mitigation framework, particularly with regard to supporting industries' transition to low-carbon practices.

Targeted outcomes

Coordinated policy alignment across government: as the world increasingly moves towards pricing carbon and/or capping emissions, *de facto* making GHGs an additional factor of production, the integration of both approaches is inevitable and vital. Balanced, flexible and responsive industrial policy is at the core of economic, social and environmental sustainability, and is the main channel towards the achievement of inclusive green growth.

Key milestones

2016/17 Q3: Benchmarking Exercise on Climate Change Mitigation Measures and Industrial Development. This will include a review and analysis of available measures to the Department of Trade and Industry - the research will unpack the universe of instruments available to **the dti** to support the transition of domestic industries to a low-carbon development path.

This research will take place within the context of South Africa's existing and developing climate change regime, acknowledging that the implementation of numerous instruments is outside of the control of **the dti**. It will also include stakeholder engagement and strategic workshops with other line departments involved in climate change policy.

2016/17 Q4: Present industrial policy recommendations for approval.

Lead departments/agencies: the dti, DEA

Supporting departments/agencies: TIPS

3. Electric vehicle project

Nature and purpose of the intervention

With greater certainty on long term incentives (and disincentives) for clean (and dirty) fuels - and with the envisaged positive impact of demonstrations under the LCT Project - the aim is to stimulate the uptake of electric vehicles into the SA transport sector, triggering a range of spin-off opportunities for new businesses supporting the industry through recharging infrastructure, energy-storage components (batteries) and so forth.

Targeted outcomes

The incremental introduction of electric vehicles, particularly in urban transport.

Key milestones

- 2015-16 Q1: Project Document and resourcing finalised.
- 2015-16 Q2: Procurement of service providers commenced by UNIDO and initial project implementation commenced.
- 2015-16 Q4: Project Implementation continues.
- 2016-17 Q1: Monitoring and evaluation commences.
- 2016-17 Q2: Project Mid-term impact evaluation commences.
- 2018-19 Q3: Project Final Impact assessment.

Lead departments/agencies: the dti, in partnership with DoT, SANEDI, UNIDO

Supporting departments/agencies: DEA, DoE, DST, TIA

4. The development of green skills

Nature and purpose of the intervention

The development of green skills is increasingly recognised as one of the pillars towards green industrialisation and a green economy. The development of green skills, both in SA and globally, has already proved that a significant range of new jobs and careers can be developed for resource efficiency professionals. Not only does this contribute directly to financial benefit for businesses; it also improves the employability of appropriately skilled youth and ultimately improves the environmental performance of SA industry.

Targeted outcomes

Identify skills requirements in the RECP environment and develop training material and training courses to equip Resource Efficiency and Cleaner Production (RECP) Practitioners with skills to perform RECP assessments and implement solutions to improve efficiency and reduce the consumption of resources in industry.

Key milestone

- 2016/17 Q4: Develop training material and courses for three new disciplines in Energy Efficiency that have already been identified: refrigeration, solar thermal efficiency and water efficiency.

Lead departments/agencies: the dti, NCPC

Supporting departments/agencies: DHET

CASE STUDY: GESTAMP CORPORATION GROUP

In 2014 GRI Renewable industries, a division of Spain’s Gestamp Corporation group, opened Africa’s largest wind tower factory in Atlantis. The facility is designed to deliver 150 towers per annum, but is already expanding to increase delivery capacity in order to meet growing demand.

the dti supported this foreign direct investment by granting GRI a 12i tax incentive valued at almost R80 million. Building on this support, GRI invested R300 million in 2014 and an additional R76 million in 2015/16.

the dti’s Investment Promotion Team won an Annual Investment Award in Dubai for facilitating the best investment project in Africa for 2014, based on GRI’s investment in the Atlantis factory.

GRI has employed in excess of 300 personnel and increased production volumes will require more materials and components to be supplied. Localisation of GRI’s supply chain is a top priority for both the company and its customers.

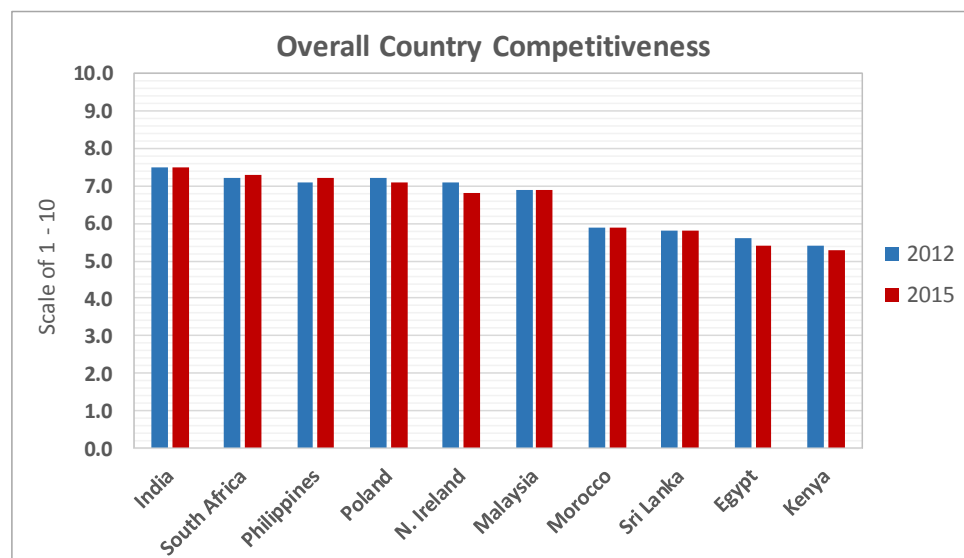


10. Business process services

Situational analysis

In March 2015, South Africa was ranked 2nd overall among its peers by the London School of Economics, using indices including cost, skills, risks, market potential, environment and infrastructure.

Figure 1: Overall country competitiveness



Source: London School of Economics Outsourcing Unit: 2015

The UK, USA and Australia continue to choose South Africa for voice-based, front office English language work while Benelux countries are leveraging South Africa for European multilingual work anchored around the Dutch language. For instance, the Amazon customer service centre in Cape Town services both Amazon’s English speaking and Dutch speaking customers.

In 2015, of the approximately 18,000 offshore jobs which were catalysed by the BPS incentive, 9,077 were created between 2011 and 2014, achieving a growth rate of 26% per annum during this period. In addition, more than 13,000 unemployed youth have

been put through sector-specific training by various operators countrywide, as a result of their participation in the Monyetla Work Readiness Programme™, which is supported by the National Skills Fund and the Jobs Fund.

Table 1: Key economic data

Variable	Contribution 2007-2010	Contribution 2011-2015	Total contribution
Sustained employment resulting from incentives	7,295	11,406 (BPS)	18,701
Unemployed youth trained under Monyetla	4,467	9,276	13,743
Unemployed youth employed from MWRP	3,483	6,931	10,414
Foreign direct investment	R349m (actual)	R5,9bn (projected)	
Export revenue	N/A	¹⁴ R10,4 bn (projected as at 2014)	

Source: the dti

Key constraints

- Middle management shortage leading to the importing of expats to fill in key positions;
- Resistance to transformation by industry.

Key Opportunities

- Optimising the Shared Services Centres model;
- New emerging sub sectors with higher value (Shared Services Centres, Legal Process Outsourcing, Back-office processing, Online shopping);
- Australia emerging as next big market.

¹⁴ Prior to the review of the BPS incentive in October 2014, the 2 success indicators were employment and Foreign Direct investment (FDI). The review resulted in FDI being replaced by export revenue. As at October 2014, reporting is based on employment and Export revenue.

Key action programmes

1. Implementation of the BPS incentive

Nature and purpose of the intervention

A graded scheme which extends over five years has been a result of a review during 2014. The purpose of the new scheme is to sustain the strong growth momentum of the BPS industry which is predominantly voice-centric, thus enabling job creation for unemployed youth.

The incentives will also help in increasing the competitiveness of South Africa as a BPS location for higher value jobs thus helping it move up in the value chain in emerging areas such as marketing, knowledge process services, legal process outsourcing, social media, analytics and finance and accounting.

A bonus incentive is offered for greater job creation, if the applicant exceeds annual offshore job creation targets.

Targeted outcomes

The new guidelines will increase financial benefit for companies planning to set up or grow in South Africa. The incentives will help reduce operating costs for companies by 11-12%, thereby reducing the cost gap between SA and its competitors. The incentive will result in the creation of approximately 18,000 new jobs by 2019.

Key milestone

2016/17 Q1-Q4: Ongoing Implementation of the BPS incentive.

Lead departments/agencies: the dti

Supporting departments / agencies: NT

2. Talent development for the BPS sector

Nature and purpose of the intervention

In the first phase of implementation of the BPS Sector Support Programme in South Africa, the main area of focus was marketing South Africa as an investment destination, as the global industry was not even aware of South Africa's capabilities in this space.

Having achieved this to a significant degree by launching some well-known captive multinationals, the focus has shifted to addressing the challenge of skills gaps - particularly at middle management level – and developing additional specialised skills in the various industry segments.

The Monyetla Work Readiness Programme provides support by partnering with the industry in the provision of skills development programmes leading to gainful employment. The programme's focus is on unemployed youth who are not employable from the target group as defined by the National Skills Development Strategy (NSDS).

Targeted outcomes

The continuation of the programme will increase the number of agents with specialised skills as well the pool of managers domestically. The next phase will provide a "Monyetla" (an opportunity) to an additional 3,220 unemployed youth from across the country to gain work experience in this industry and other sectors of the economy.

Key milestones

- 2016/17 Q2-Q4: Training of 3,220 unemployed youth at NQF level 4 and above takes place.
- 2016/17 Q4: 483 unemployed youth recruited from 2 and tier 3 towns, townships and rural areas are contracted into employment.
- 2016/17 Q4: 2,100 learners contracted into employment for minimum of 12-month contract.
- 2016/17 Q4: Review of the BPO Cross-Sector Skills Plan finalised.

Lead departments/agencies: the dti

Supporting departments / agencies: NT

CASE STUDY: CCI Call Centres (Pty) Ltd

Winner of Investor of the Year category in SA Premier Business Awards 2015

Established in 2009, **CCI Call Centres (Pty) Ltd** is a company located in Umhlanga, Durban. In 2015 it embarked on an expansion programme to the value of R136 million in assets and R200 million in a state-of-the-art building. This facility is 12,500 square meters, including a Wellness Centre and food court along with 21st Century operational floors.

CCI partners with both local and international businesses to leverage South Africa’s connectivity with the UK, Australia and America; and it is currently eyeing possible new work streams from the Philippines and India, as well as expansion into other parts of Africa.

CCI is the largest BPS operation in South Africa with 5, 500 agents. It works with some of the leading companies across multiple sectors (including mobile, technology, telecommunications, and financial services). It offers a package of voice and non-voice inbound and outbound contacts, backed up by dedicated sales and service.

CCI was the largest single recipient of **the dti’s** BPS incentive scheme; and this support directly led to the creation of some 2,500 sustainable new jobs.

It was the largest participant in the *Monyetla Work Readiness Programme* in 2015, training 520 unemployed youth, of whom 483 gained confirmed employment after completion of their training.



CASE STUDY: Webhelp South Africa

The company was established in 2013 following the acquisition of RightSource by the Webhelp Group. Operations under the Webhelp SA name launched in Cape Town in March 2014.

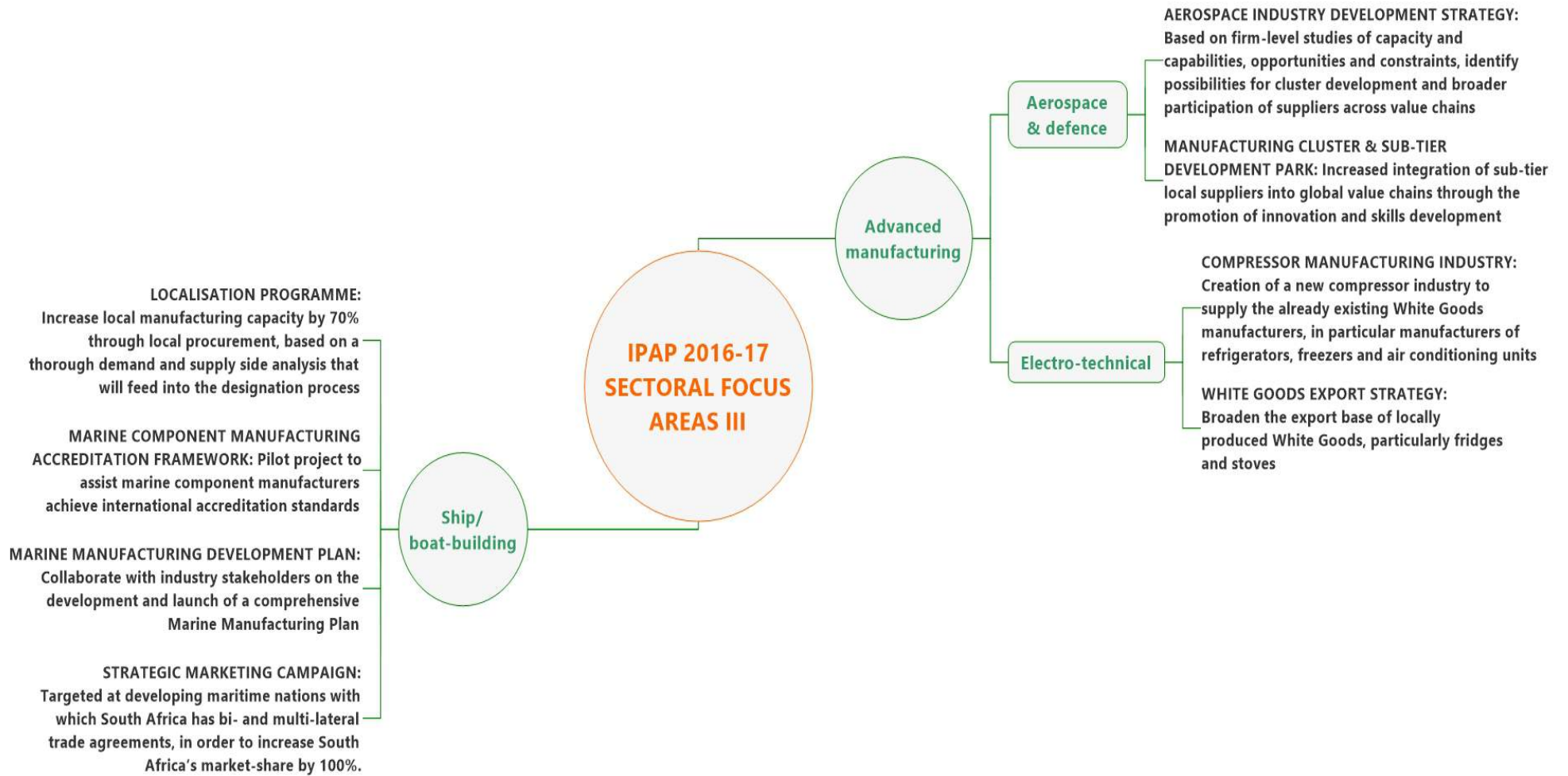
The initial investment was roughly R34m, though it is expected to rise to over R220m by 2017. The Cape Town operation created 400 new jobs. The launch of the Johannesburg site created a further 500 jobs. The number of jobs created within the business is expected to reach approximately 5,000 by 2018.

The company specialises in Business Process Outsourcing services and has operations all over Europe, with the main export market being the UK.

The company expanded its operations on the back of a R36m **dti** support grant.



IPAP 2016/17 – 2018/19 SECTORAL FOCUS AREAS 3



11. Ship/boatbuilding and associated services industry

Situational analysis

The Industrial Policy Action Plan identified ship/boatbuilding and repair as a priority sector some years ago, both for its future growth and employment multiplier potential.

In early 2013, Cabinet gave approval for the establishment of Operation Phakisa Labs to systematically evaluate the current potential and future value of the oceans economy and identify the key drivers for further economic development.

In its analysis and search for effective programmes of intervention, Operation Phakisa assigned to the Marine Transport and Manufacturing (MTM) Delivery Unit (DU) the following initiatives in marine manufacturing and associated services industry:

- Create and implement a public procurement and localisation programme.
- Develop a strategic marketing campaign and value proposition for target markets.
- Propose inclusion of a preferential procurement clause in the African Maritime Charter.
- Support local registration of vessels through incentives and legislation promoting the use of SA-flagged ships for cargo and coastal operations (based on UNCTAD and African Maritime Charter guidelines).

The Marine Manufacturing and Associated Services Industry falls under the MTM DU with **the dti** playing an important role in the 3 first initiatives under its support programme for the industry.

The South African marine manufacturing industry includes the manufacturing of vessels (boat and ship) sub-sector and the maintenance and repair of ships, boats and rigs. The purposes of locally manufactured vessels vary widely, from commercial, working and transportation vessels to various kinds of leisure craft.

The economic impact of the marine manufacturing industry on direct and indirect jobs is estimated at 12,800 across the value chain, excluding shipbuilding. The table below indicates the direct, indirect and induced effects of the industry as a whole.

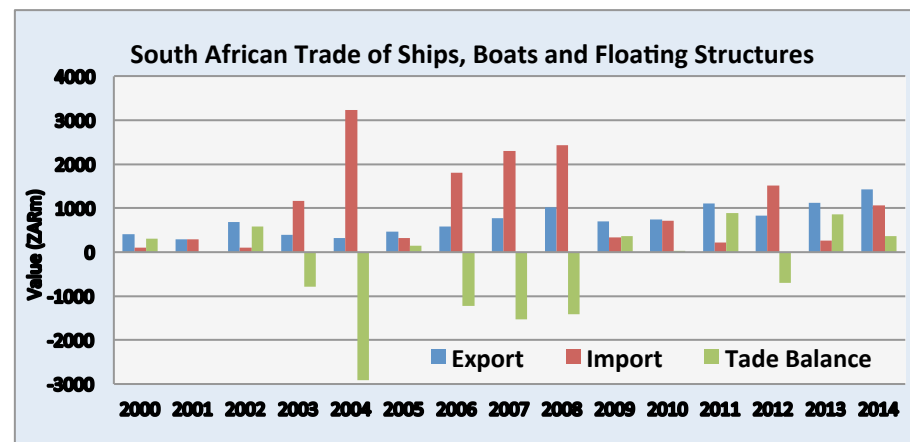
Table 1: Marine manufacturing industry impact (values in 2005 constant price)

Impact on:	Direct	Indirect (suppliers)	Induced (salaries and wages)	Total Impact
Production	R5 billion	R2.8 billion	R6.1 billion	R13.9 billion
GDP	R1.35 billion	R0.7 billion	R1.65 billion	R3.7 billion
Jobs	3,900	2,600	6,300	12,800
Salary & Wages	R1.3 billion	R0.56 billion	R1.1 billion	R2.96 billion

Source: Urban-Econ

Despite the impact of the 2008 financial crisis, since 2009 the marine manufacturing sector has experienced a positive export growth outlook and – with the exception of 2012 - a continuing positive trade balance. Exports grew from R824 m in 2012 to R 1.13 bn in 2013 to R1.4 bn in 2014. (i.e. by 73% from 2012 to 2014 and by 27% from 2013 to 2014). In 2014, imports decreased by 30%, from R 1.5bn 2012 (negative trade balance year) to R 1.07 bn. The graph below (Figure 1) illustrates the industry performance since 2000.

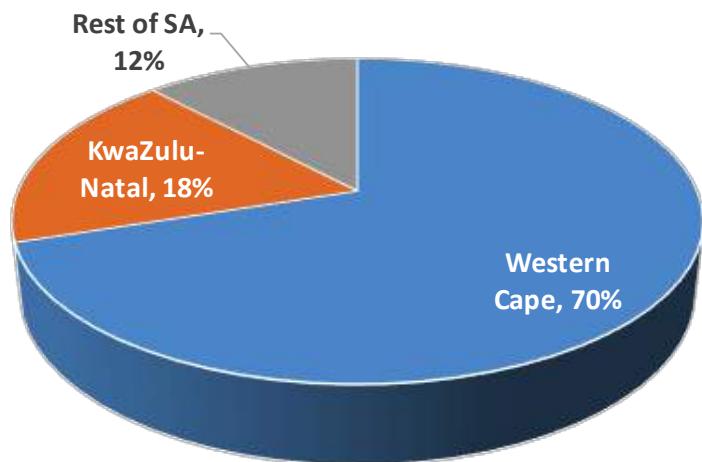
Figure 1: Trade data of commercial vessels



Source: StatsSA

The marine manufacturing industry remains dominant in the coastal regions of South Africa. However, Gauteng province has a number of players who specialise in the smaller racing and motor boats. The Western Cape Province represents the largest share of marine manufacturing in South Africa, generating over R1 billion in export revenue, and housing approximately 70% of SA's boat builders.

Figure 2: Distribution of activities across provinces



Source: Urban-Econ, 2015

Boatbuilding sub-industry

The boatbuilding sub-sector of the industry specialises in the manufacture of multihull catamarans and is the world's second largest producer of vessels in this category. A number of local companies have been acknowledged for the excellence of their work and are considered to be global leaders.

The South African commercial boatbuilding sub-sector generally performed well, and it continues to experience significant market growth. In particular, demand for working boats in Africa has greatly increased, mainly driven by the need for maritime patrol vessels to combat piracy off the East and West Coasts of the continent.

The requirements of the burgeoning offshore oil and gas industry have also contributed to the industry's upward trajectory. Interest in waterborne rescue craft has soared in Africa as well, because the level of preparedness of organs of state to effectively conduct disaster management operations has been coming under increasing scrutiny.

Shipbuilding sub-industry

Shipbuilding is a well-established sub-sector of the marine manufacturing and associated services industry, with a capacity for manufacturing ships of up to 120 meters in length. The strength of the sector lies in its interconnections with the rest of the economy. The economic multipliers in its value chain are highly significant, making the sub-sector a significant contributor to job creation in many other economic sectors.

The component inputs into the manufacturing of ships include various products in which South Africa has high quality and high production volume capacity – e.g. electrical cables, steel materials of various format, glass, composites, wood etc. However, in most cases component manufacturers are required to get an international marine certification of components to be able to supply the Marine Manufacturing industry. The cost of testing for certification remains a challenge for component manufacturers.

Maintenance and repair of ships, boats, and rigs sub-industry

The coastal density of marine vessels in South Africa - 134,000 ships passing by SA ports annually – indicates that there is huge untapped potential for growth in the ship repair market. In addition, the offshore Oil and Gas industry offers another very significant area of growth potential for the marine manufacturing and associated services industry. The growing number of rigs supporting west coast oil and gas drilling and extraction activities offers further exciting potential for expansion of the market in rig repairs.

Table 2: Overall sector economic data

Variable	Contribution in 2013	Contribution in 2014
Trade balance	R862 million	R 360 million

Analysis of the current performance of the south African marine manufacturing and associated services industry shows up the following major opportunities and constraints for sector:

Key opportunities

- Opportunities to expand exports in non-traditional markets driven by industrial and tourism development in emerging markets, particularly including sub-Saharan Africa and the Middle East.
- Substantial growth opportunities in the commercial boat market, particularly including sub-Saharan Africa, with an emphasis on offshore speed craft, ferries, water ambulances and working boats.
- Opportunities to develop training, repair and maintenance operations in sub-Saharan Africa.
- Greater intergovernmental collaboration with African countries and facilitation of expanded trade, e.g. through funding assistance.
- Opportunities to increase innovation through collaboration between industry and research organisations to improve the competitiveness of the industry in terms of international standards.
- The development of sector-specific training and skills improvement programmes

Key constraints

- Lack of available berths and inadequate mooring infrastructure.
- Less than optimal price competitiveness, given the fact that the industry is still dependent on imports for a high proportion of core components.
- Many companies are undercapitalised, leading to difficulties in investing in product development.

- In addition to this, because ship repair is largely US dollar-based, the volatility of the Rand has caused budget-planning difficulties for the local industry.
- Lack of transformation - mainly because of high production costs and the high threshold cost of starting a business in this industry.
- A shortage of skilled labour: in particular, the scarcity of highly specialised marine engineering skills (with the partial exception of the Western Cape).
- Lack of a clear roadmap for future ports expansions.

CASE STUDY: Denith Engineering

Denith Engineering, a high-tech company, produces innovative launch and recovery systems, winches and special deck equipment. The company actively manufactures equipment for the local and international markets. Its local clients include Nautic Africa, DCD Dorbyl, De Beers Marine, Unique Hydra and Hytec, amongst others.

Denith Engineering is a self-funded company and its product development processes often require extensive Research & Innovation, the key driver of further industrial development.

Denith competes with global players in the high-tech arena. Its main competitors are Kongsberg, Huisman and ACE Winches. The products are ‘A’ Frames, cranes, davits, winches, towers and general special deck equipment.

Denith’s products are internationally well-accepted in terms of quality standards and are exported mainly to Europe, Asia, America and Australia.

The company’s input suppliers include steel fabrication and machine suppliers in Gauteng and Cape Province, suppliers of hydraulic components and systems, suppliers of electrical and control systems and suppliers of sundry buy-outs. These include DCD Dorbyl, Javan Fabrication, EET (Gauteng), Hytec, Hyflo, Hydron, Electrowave, Kaltron and Bonfiglioli.



Key action programmes

1. Localisation Programme

Nature and purpose of the intervention

The rationale behind designation for the industry is the fact that the procurement of locally manufactured vessels for the public sector will provide a stimulus to the sector’s weak domestic market. *Operation Phakisa* advocates for a determination of mechanisms that channel state entities’ expenditure on vessels towards the local market, thus helping to offset the import cost effects of Rand volatility. The designation of working vessels will contribute significantly to job creation in both the core ship- and boat-building sub-industries and the wider value chain. The purpose of this intervention is to develop a localisation programme for government departments and entities which prioritises local content in order to grow the South African market.

Targeted outcome

Increase local manufacturing capacity by 70% through local procurement, based on a thorough demand and supply side analysis that will feed into the designation process.

Key milestones

- 2016/17 Q1-Q2: A strategic report on the processes of big ticket items/components in the manufacturing of working vessels for further designation.
- 2016/17 Q2 – Q3: A 5-year Designation Implementation Plan for working vessels approved for implementation by National Treasury.
- 2016/17 Q4: Research proposal for further designation of components for working vessels.

Lead department/agencies: the dti

Supporting department/agencies: Transnet, Armscor, SAMSA, MIASA, eThekweni Maritime Cluster, Industry, DAFF, DEA, NT, DOT

2. Marine Manufacturing Components Accreditation Framework

Nature and purpose of the intervention

The marine manufacturing industry has high growth and employment multipliers due to its links with other sectors of the economy. Research has indicated that most of the components used in the manufacturing of ships and boats are imported. It has also been noted that local industry has existing capacity for the production of a number of components. However, to supply to the marine manufacturing industry requires a marine certification and the cost associated with the certification is a barrier to many local component manufacturers.

The purpose of the intervention is to identify component manufacturers which could be assisted with the process of marine accreditation, an important requirement to supply to the industry.

Targeted outcome

Strengthened local manufacturing of marine classified components; increased numbers of local manufacturers that fully participate in global OEM value chains.

Key milestones

2016/17 Q1 - Q2: Develop a support mechanism informed by the Strategic Report for the Marine Accreditation of Components manufactured locally through NIP.

2016/17 Q2 – Q3: Piloting of the support mechanism with selected component manufacturers.

Lead department/agencies: the dti

Supporting department/agencies: SABS, Procuring Entities, SAMSA, MIASA, eThekweni Maritime Cluster, Industry

3. Marine Manufacturing Development Plan

Nature and purpose of the intervention

The purpose of the intervention is to develop a Growth Plan for the marine manufacturing sector in order for it to reach its full potential. This will entail working closely with industry and other stakeholders within the marine space.

Targeted outcome

Increased competitiveness, employment and growth in the sector.

Key milestones

2016/17 Q1 - Q2: Development of the framework on which the Plan will be based on.

2016/17 Q3: Launch and implementation of the Marine Manufacturing Plan.

Lead department/agencies: the dti

Supporting department/agencies: IDC, TNPA, SAMSA, MIASA, eThekweni Maritime Cluster, EC DEDEAT, Industry

4. Strategic marketing campaign

Nature and purpose of the intervention

South Africa currently has less than 1% of global market share in shipbuilding, ship repair and rig repair; but its great potential strength lies in its strategic location, with 134,000 vessels, including oil rigs, passing SA's shores on an annual basis.

The purpose of this intervention is to develop a strategic marketing campaign targeted at developing maritime nations with which South Africa has bi- and multi-lateral trade agreements, in order to increase South Africa's market-share by 100%. Hence the packaging of an integrated maritime value proposition comprising shipbuilding, ship repair, rig repair, port management operations and training for developing maritime nations in Africa.

Targeted outcome

Establish the South African marine manufacturing and associated services industry as a major player in the region and beyond for shipbuilding, ship repair, rig repair, port management operations and training.

Key milestones

2016/17 Q1 – Q3: Development of a strategic marketing campaign which will focus on the current opportunities in the following countries: Angola, Namibia, Mozambique, Nigeria, Tanzania, Kenya, Ghana and high-growth countries in the Gulf region.

2016/17 Q4: Launch of the strategic marketing campaign.

Lead departments/agencies: the dti

Supporting departments / agencies: DIRCO, DFIs, industry, Transnet, PIPA, Provincial and local government

ADVANCED MANUFACTURING

12. Aerospace and defence

Situational analysis

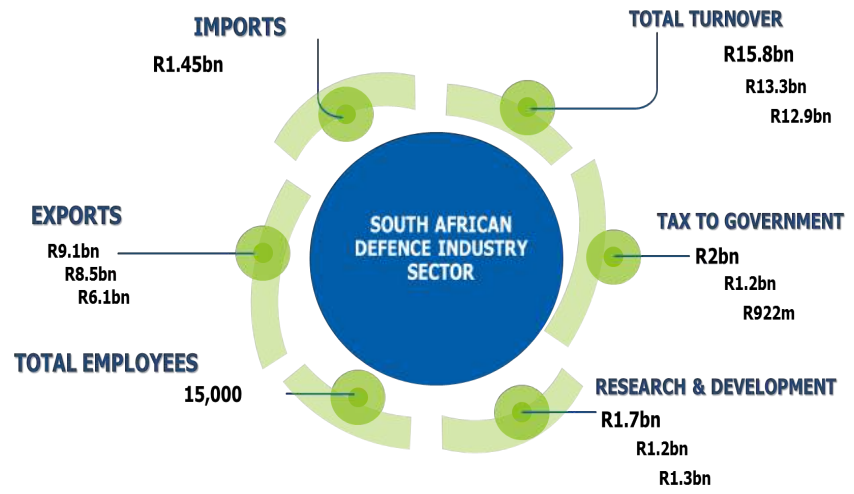
The aerospace industry in South Africa consists of a range of stakeholders in general aviation; commercial aviation; military aviation; air traffic management; aircraft materials parts and components; and system manufacturing, integration, propulsion avionics, sensors, ICT systems, MRO (maintenance, refurbishment and overhaul) and research and technology - including university and science council based fundamental research into new technologies and materials (e.g. titanium and composites for light structures).



Given the increased overlap between products intended for defence and civilian use, both nationally and internationally, the aerospace industry also includes companies which produce defence equipment or products by making use of civilian technologies, or which manufacture dual-use products, saleable in both defence and non-defence markets.

In 2014 the turnover (fig. 1) of the defence industry increased to R15.8 bn, with R9.1 bn of this attributable to high value-added export contracts. This impacts positively on the country’s balance of payments and foreign reserves and it further positions the industry as a sector with one of the highest export propensities in South Africa. The industry also contributes significantly to employment and skills development, employing about 15,000 highly qualified and experienced technical personnel. The aerospace industry continues to nurture engineers, technicians and artisans who often go on to play valuable roles in transport, construction, space and power generation projects.

Figure 1: Defence sector review for 2012, 2013, 2014



Source: Export Council

About R1.7 billion was invested towards research and development in 2014, an increase of 24% from 2012 (R1.3 billion). The technology that emerges from this has found its way into civilian life. Civilian sectors that have benefited from military technology include automotive, railways, crime prevention, and mining safety and productivity – not to mention astronomy projects such as the South African Large Telescope (SALT) and the Square Kilometre Array (SKA).

The globalisation of supply chains and current market conditions require that the SA Government and the SA aerospace and defence industry co-operate even more closely than before to maintain and expand their share of this important part of the advanced engineering sector. The Joint Aerospace Steering Committee (JASC) provides such a co-platform for cooperation between government and industry. It is intended to improve coordination between the main industry players and relevant government departments and support institutions, with a view to continuous enhancement of the competitiveness of the aerospace and defence industry as a whole.

The development of clusters and industrial parks

Cluster-type developments in South Africa include the development of Industrial Development Zones – both established IDZs like Coega and East London IDZ and the new generation IDZs at Saldanha in the Western Cape and at the Dube Trade Port in KZN. The medium term goal is for all IDZs to gradually migrate to Special Economic Zones (SEZs). The Aerotropolis-type developments that are being undertaken at Ekurhuleni (around the OR Tambo Airport) and the Dube Trade Port seek to leverage off combined and synergistic economic and demographic developments in those particular areas.

Significant work on the development industrial parks across a variety of industries and areas has been undertaken in order to attract investors, tenants and users of facilities and to leverage off local and foreign investment, availability of shared services and phased development of infrastructure and utility services. Benchmarked industrial park-type developments are the Automotive Supplier Park in Rosslyn (Northern part of the City of Tshwane’s geographical Area) and the Nelson Mandela Bay Logistics Park at Uitenhage (near Port Elizabeth in the Eastern Cape).

A cursory glance at experiences both locally and internationally indicates that there is more scope for commercial sustainability of cluster and industrial park developments if projects of this nature are operated *outside of government administration structures* - albeit with government initiation and even funding of the process - at least initially - with infrastructure and services development funding.

The following are examples that give credence to this proposition:

- The Aerospace Valley (Toulouse, France) is a French cluster of aerospace engineering companies and research centres. More than 500 affiliated companies (including Airbus, EADS, Air France Industries and Dassault Aviation) are responsible for some 120,000 jobs in the aviation and space flight industries. In addition, some 8,500 researchers are active within the affiliated companies and institutions;
- The Automotive Supplier Park (Rosslyn, Gauteng), ASP, was developed to create a beneficial environment for automotive component suppliers by providing infrastructure, logistics and services. By grouping together different technologies, services and service providers, the ASP achieves synergies and optimisation through economies of scale and contributes to the sustainability and growth of the South African automotive industry. The ASP was the first of its kind in Africa and the first supplier park in the world to service more than one Original Equipment

Manufacturer (OEM) and be specifically dedicated as a facility to suppliers serving OEMs.

- The Ekurhuleni Aerotropolis is one of the flagship projects of the City of Ekurhuleni, which is poised to become the first Aerotropolis in Africa. An Aerotropolis is a city that is built around an airport offering its businesses speedy connectivity to their suppliers, customers and enterprise partners, both nationally and internationally. It is a new urban format currently developing around many large airports.
- The Dube Trade Port Aerotropolis is being developed as an application of the concept where airport-linked facilities are influencing metropolitan development. At the Aerotropolis travellers and locals are able to conduct business, exchange knowledge, shop, eat, sleep and be entertained – all within a few minutes of the airport. The development of the Aerotropolis around the Dube Trade Port will support the notion of transformation of city airports into airport cities, with aviation-related businesses increasingly locating closer to airports and on existing transport corridors. The future growth of the concept employs strategic infrastructure and urban planning and is unencumbered by earlier surrounding development.

The Centurion Aerospace Village

The Centurion Aerospace Village (CAV), an initiative of **the dti**, is a cluster-type development, or Supplier Development Park. The CAV is aimed at strengthening the supply chains in the aerospace and defence industry through physical co-location, but also through increased value networks. The development fulfils a strategic position in high-tech advanced manufacturing and is intended in the future to unlock capability within additional land made available for the maintenance, repairs and overhaul (MRO) business.

CAV is building the Landside Development for general manufacturing facilities for components, parts and assemblies. The intended Airside Development will cater for tenants who require direct airport access and services. Both developments are planned to be implemented in phases, with the minimum bulk services at CAV Landside envisaged to be completed in the 2016/17 financial year.

Amongst other things, the CAV is earmarked to achieve the following:

- Promote local innovation, new business (including B-BBEE and SME development) and export opportunities in the aerospace and defence sector;

- Provide opportunities for incubation and entry-level manufacturing through skills development;
- Directly benefit local OEM manufacturers of components, parts, assemblies and tools, as well as synergistic service providers – allowing for greater economies of scale/ scope;
- Develop other relevant industries (e.g. tooling) and sectors (e.g. electro-technical, metals, chemicals, thermoplastics, etc.).

Key opportunities

The present main opportunities lie in:

- Ramping up cluster development and investment in the CAV aero-mechanical cluster and Special Economic Zones;
- Forging synergy with National Champions or State Owned Companies in leveraging on their acquisitions to boost local manufacturing and broaden their supply chains;
- Deepening business relationships amongst OEMs (both National Champions and Global OEMs);
- Unlocking present incentive programs to support the aerospace and defence industry.

Key constraints

The primary and most significant constraint in the aerospace and defence industry is the pervasive and persistent insufficiency in the pipeline of skilled personnel to absorb current knowledge and experience.

Other notable constraints in the aerospace and defence sector are as follows:

- Lack of large development programmes to build technology capabilities and skills pipelines and enable knowledge transfer from international to local firms, and between knowledge generating entities (science councils, universities) and industry. This is also related to recent reductions in R&D spend, shortage of technology demonstrators and less than optimal capacity development and skills retention.
- Lack of a comprehensive aerospace and defence industry support programme, including export support, compliance skills, and a 'South Africa First' philosophy, which would put a much stronger emphasis on localisation of technology;

- Lack of diversification into export markets, increased foreign ownership in key strategic technological areas, reduction in the size of the industry, insufficient product diversification (civil & commercial) etc.

Key action programmes

1. Development of an Aerospace Industrial Development Strategy

Nature and purpose of the intervention

The local aerospace and defence industry has re-established itself as a reliable and competent supplier of components and subsystems to OEMs and other large integrators. It is adding immense value to the local economy through the generation of exports, high-end skills and advanced technologies that contribute to increased economic activity and competitiveness.

The growth of the aerospace and defence industry has primarily been the result of state aerospace and defence packages. These packages were specifically designed to support industrialisation and economic development through government interventions such as the National Industrial Participation Programme (NIPP), Defence Industrial Development (DIP), as well as through foreign policy interventions (government-to-government deal-making). The packages have multi-year reach and involve manufacturing of components and products, commissioning, maintenance and overhaul; and they have created hundreds of jobs for staff officers and programme managers. They have also led to significant cross-fertilisations and spin-offs in related endeavours such as the SA National Space Programme.

The growth of these spin-offs and cross-fertilisations has been proving so valuable that its sustainability should be guaranteed, possibly by a transient Strategic Industrial Development Plan based on the National Strategic Packages. **the dti**, in partnership with many stakeholders will be focused on building sovereign industry through the instrument of Strategic Programmes that will provide guidance on investment strategies and institutional realignments aimed at reducing the inherent complexity of innovation exploitation.

The next phase will be to enable the local aerospace and defence industry to substantially scale up its participation in global value chains and innovation ecosystems. The strategy seeks to identify and alleviate current constraints and inject fresh energy into cutting-edge development in the aerospace and defence industry.

Targeted outcomes

The objectives of this industry strategy are to identify, address and recommend interventions to create a conducive environment for expanding the Aerospace and Defence industry in South Africa.

Based on a detailed firm-level study of capacity and capabilities, opportunities and constraints, the strategy will identify vital activities to be undertaken and provide guidance in achieving the following key outcomes:

- Promote advancement of the industry and the use of all the policy instruments that could be deployed in supporting it;
- Analyse and put forward a set of proposals for cluster development in the industry;
- Broaden participation of suppliers across value chains and sub-sectors within the industry.

Key milestones

2016/17 Q4: Approved Aerospace Industry Development Strategy.

2016/17 Q4: Collaboration with National Champions.

Lead departments / agencies: the dti

Supporting departments / agencies: DPW, DPE, DST, DoD, AMD, Aerospace and Defence Export Council and Industry

2. Building a competitive aerospace and defence industry through establishing a manufacturing cluster and sub-tier development park

Nature and purpose of the intervention

The South African Defence Related Industry (SADRI) has continued to grow in revenue, primarily in the export market. In order to maintain and expand this export market, there is a need to immediately stimulate the industry's growth potential by establishing a Supplier Development Park. The cluster should provide an enabling infrastructure for aero-mechanical, advanced manufacturing, maintenance, repairs and overhaul (MRO) capabilities – both for the initial 'anchor tenants' and, subsequently, for a range of large to small enterprises attracted by the opportunity to do business related to the growth of the cluster.

It is expected that the CAV, as an industrial park, will benefit the local OEM suppliers of components, parts and tools, as well as associated service providers. Other relevant industries (tooling) and sectors (electro-technical, metals, chemicals, etc.) will directly or indirectly benefit from the establishment of the CAV, in addition to shared services.

The completion of bulk utility services and infrastructure and finalisation of uptake agreements will affect the phased construction of buildings by prospective tenants and industry investors. The capitalisation of CAV Landside Phase 1A (anchor tenant, shared service, office hub, initial tenant facilities) will be expedited via the provision of infrastructure and the requisite operational funding.

This intervention will entail the following:

- Integration of sub-tier suppliers of the local industry into the global supply chain by bringing aerospace and defence industry suppliers into proximity with one another and to locating them next to major system integrators and anchor partners like Aerosud and Denel;
- Promotion of local innovation, new business and exports in the aerospace and defence sector;
- Providing opportunity for incubation and entry-level manufacturing through skills development.

Targeted outcome

Increased integration of sub-tier local suppliers into global value chains through the promotion of innovation and skills development.

Key milestones

- 2016/2017 Q1: Conclusion of uptake agreements with prospective tenants and industry investors.
- 2016/2017 Q2: Completion of the prioritised core CAV Landside bulk utility services and infrastructure such as water and sanitation, roads and storm water, electricity and land management.
- 2016/2017 Q3: Provision of funding for phase 1A development.

Lead departments / agencies: the dti, CAV

Supporting departments / agencies: DPW, DPE, DoD, DST, GPG, CoT

CASE STUDY: Space Commercial Services Aerospace Group, SKA and 'Big Data'

In July 2015, it was announced that the Space Commercial Services Aerospace Group (SCSA) - a private South African company providing commercial satellite technology solutions - had once again proved its world class capabilities by delivering systems engineering services to the pre-construction phase of the Square Kilometre Array (SKA), the world's largest radio telescope, currently under construction in South Africa.

The group was awarded a pre-qualification contract in May 2013, to provide systems engineering services for the radio telescope project's Science Data Processor. The Science Data Processor of the project will provide an estimated computing power of 100 million desktop computers by the time of its completion in 2030.

The capabilities developed by SCSA stand to generate significant spin-off benefits in 'big data' processing challenges in the commercial sector. To date, geospatial and satellite information has proved to be very useful as a community-mapping tool for government agencies in the case of disaster management, urban development and population migration. On the other side of the spectrum, insurance companies and banks now increasingly utilise big data to identify types of dwellings and to assess, for example, flood risk and bond exposure. Similarly, the retail industry can apply satellite information to recognise income group dispersion and predict the likely effectiveness of direct marketing and advertising campaigns.



13. Electro-technical industries

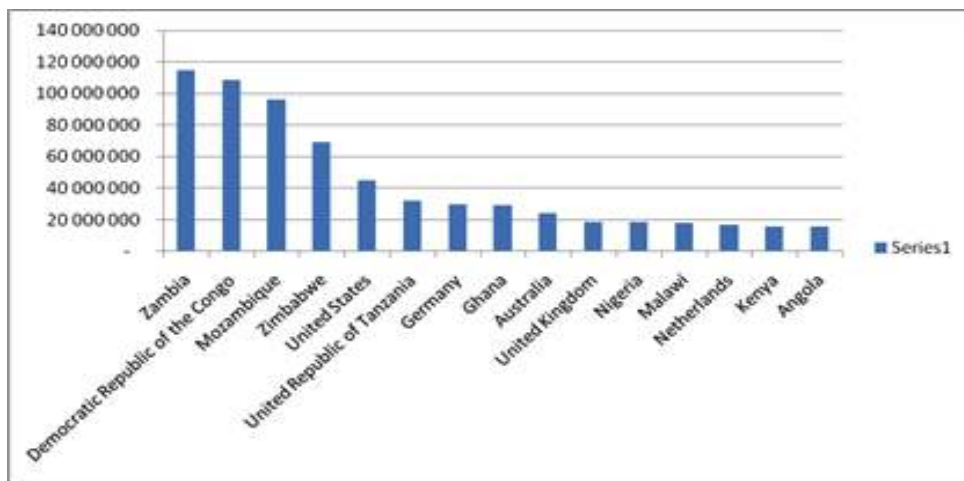
Situational analysis

The South African electro-technical industry covers a very broad range of products and services that each contribute directly to the sector itself as well as to other manufacturing and value-adding technology sectors in South Africa. The products range across three broad categories, namely:

1. Electrical machinery and apparatus (including White Goods);
2. Television, radio and communication equipment; and
3. Professional and scientific equipment.

SA is a key supplier of electro-technical goods into Sub-Saharan Africa, although the country has not exploited key markets to anything like the extent potentially possible. SA's share of the market stood at 5.3% in 2012 and is estimated to be growing at a year-on-year rate of between 1 and 2%. The sector as a whole has yet to meaningfully penetrate some of the key markets in East and West Africa. The focus of current exports is still heavily concentrated in the Southern African region, with Zambia as the leading export market for electrical machinery and apparatus, including White Goods.

Figure 1: South Africa's exports: Electrical machinery and apparatus

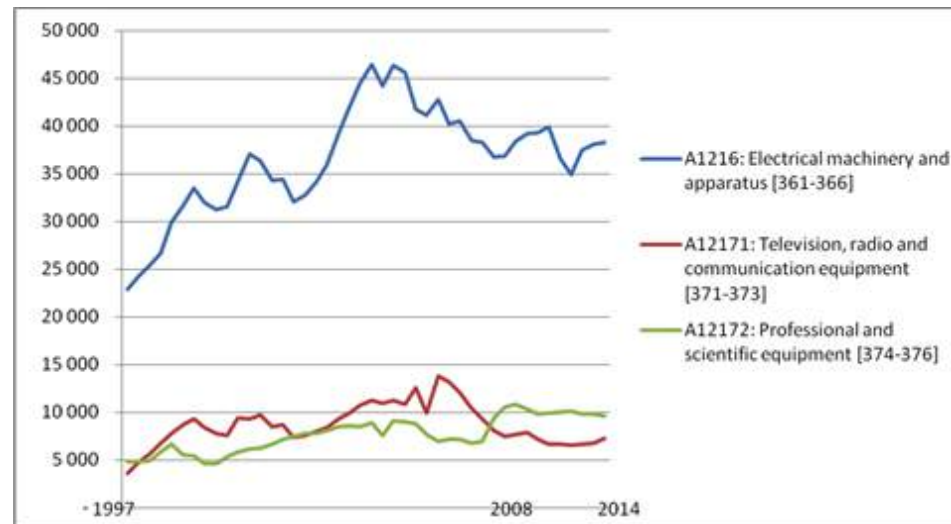


Source: Quantec

Key economic data

Of the three categories, the one that has shown the largest capability for productivity improvement and growth is the electrical machinery and apparatus sub-sector. As illustrated below, this sub-sector experienced shocks during the global financial meltdown, but has recently registered a gradual incline (from 2012 onwards).

Figure 2: Employment 1997 - 2014



Source: Quantec

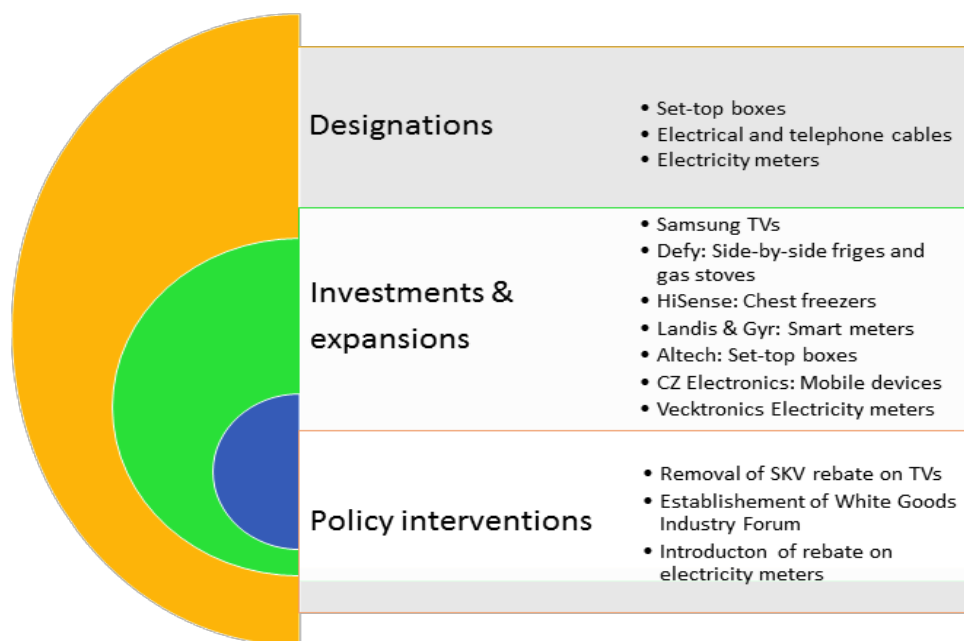
Key constraints

- High cost of doing business internationally; credit risk.
- High Competition from cheap and illegal Asian importers.
- Electricity shortages, cuts and costs.

Key opportunities

- Investment in Africa: Nigeria, Kenya and Tanzania have been identified as the top 3 future export markets for electro-technical products, including White Goods.
- R&D, technology and skills transfer to local manufacturers through OEMs and academia.
- Existing and future national projects: e.g. digital migration, e-learning (tablets), general infrastructure projects etc.
- Growing demand for smart meters in both the water and electricity sectors.
- South African-based PC manufacturing plant, aimed at initially supplying South African demand and then expanding exports into the region and the continent.

Graphic: Key developments in electro-technical sector in 2015



Key action programmes

1. Implementation of the White Goods Export Strategy

Nature and purpose of the intervention

While the industry is thriving inside South Africa, this intervention seeks to broaden the export base of locally produced White Goods, particularly fridges and stoves. Additionally, it will create interest in new investments in those white goods which are currently not being produced in the country, despite available capabilities. These include washing machines, microwaves and gas stoves.

Additionally, the intervention seeks to establish new markets for electronic inputs into White Goods where there are viable possibilities - e.g. compressors.

Targeted outcomes

This will result in increased export levels for South African made White Goods. Additionally, it will lead to increased production levels in the existing factories, thereby increasing the labour complement.

Key milestones

- Q4 2016/17: Action Plan for the establishment of the air-conditioning manufacturing sub-sector finalised.
- 2016/17: Tariff review for imported washing machines, microwaves and gas stoves finalised.¹⁵
- Q1 2017/18: Action Plan for Rules of Origin on exported White Goods finalised.

Lead departments/agencies: the dti

Supporting departments / agencies: NT, ITAC, South African Electro-Technical Export Council (SAEEC)

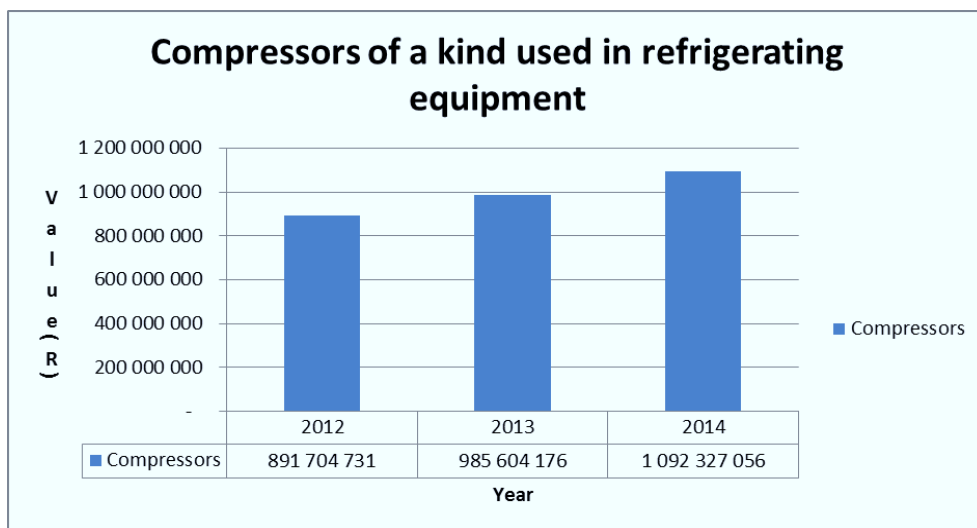
¹⁵ Subject to compliance to the World Trade Organisation regulations

2. Action plan for the establishment of the compressor manufacturing industry

Nature and purpose of the intervention

Recent research has indicated that the increase in utilisation of fridges and air conditioners is likely to continue for some time due to growing middle class purchasing power, both locally and regionally. While the SA white goods manufacturing industry has been growing steadily, it has not yet been able to produce a key component of refrigerators, freezers and air-conditioners - namely compressors. As a result of continuing local demand for white goods - and as indicated in Fig 3 below – compressor imports have been on the rise in parallel with this consumer trend.

Figure 3: SA compressor importation by R value, 2012-2014



Source: the dti

The fact that there are currently no compressor manufacturers in Africa presents an opportunity for South Africa to establish a robust compressor manufacturing and export industry to supply both domestic manufacturers and the entire continent.

This intervention therefore seeks to assist existing White Goods manufacturers in terms of local sourcing of compressors for use as inputs in the manufacturing of refrigerators and freezers.

Additionally, it will attract new investments into the white goods industry and open up the export market for opportunities to export to other African countries.

Targeted outcomes

Creation of a new compressor industry to supply the already existing White Goods manufacturers, in particular manufacturers of refrigerators, freezers and air conditioning units. Key spin-offs will be high-tech skill transfers and increased production volumes, leading to the creation of new jobs.

Key milestones

Q3 2016/17: Development of a value proposition for the compressor manufacturing industry finalised.

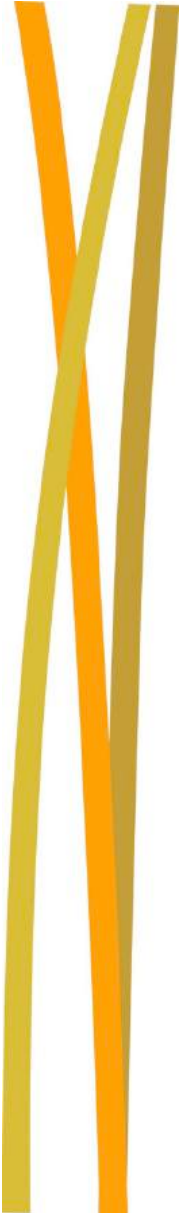
Q2 2017/18: Two identified global investors committed to locate in the country.

Q4 2017/18: Formation of a Compressor Manufacturers Industry Forum completed.

Lead departments/agencies: the dti

Supporting departments / agencies: ITAC, South African Electro-Technical Export Council (SAEEC)

the dti KEY PARTNERS, TECHNICAL SUPPORT INSTITUTIONS & EXPORT COUNCILS



SELECTED PARTNER INSTITUTIONS



Industrial Development Corporation (IDC)

The IDC is a national development finance institution. Its core function is to provide industrial financing support, much of which flows to key Industrial Policy Action Plan (IPAP) and/or New Growth Path (NGP) sectors.

Contact

Head Office: +27 11 269 3000

Call Centre: +27 860 693 888

Web: www.idc.co.za



competition commission
south africa

Competition Commission South Africa

Investigates, controls and evaluates restrictive business practices, abuse of dominant positions and mergers.

Contact

Head Office: + 27 12 394 3200/3320

Web: www.compcom.co.za



National Empowerment Fund (NEF)

The NEF's role is to support broad-based black economic empowerment. It focuses on preferential procurement, broadening the reach of equity ownership, transformation of staffing and management, and prevents the dilution of black shareholding.

Contact

Head Office: +27 11 305 8000

Web: www.nefcorp.co.za



Export Credit Insurance Corporation of South Africa

Provides insurance cover on risks associated with investments and loan finance for capital goods and services projects in foreign countries.

Contact

Head Office: + 27 12 471 3800

Web: www.ecic.co.za



Council for Scientific and Industrial Research (CSIR)

Undertakes and supports research across diverse areas of science and technological innovation to enhance industrial and scientific development.

Contact

Head Office: + 27 12 841 2911

Web: www.csir.co.za



International Trade Administration Commission (ITAC)

ITAC works with **the dti** to create an enabling environment for fair trade through sound technical advice and effective administration of its trade instruments.

Contact

Head Office: + 27 12 394 3688

Web: www.itac.org.za



Technology Innovation Agency (TIA)

The TIA was formed through merging seven Department of Science and Technology entities previously tasked with supporting and promoting innovation in the country. The TIA's mandate is to enable and support technological innovation across all sectors of the economy to achieve socio-economic benefits for South Africa and enhance its global competitiveness.

Contact

Head Office: +27 12 472 2700

Web: www.tia.org.za



Technology Localisation Implementation Unit (TLIU)

The TLIU is an initiative of the Department of Science and Technology, which is hosted and incubated at the CSIR. It was established by the department to implement the deliverables of its Technology Localisation Plan.

Contact

Head Office: +27 12 841 2911

Web: www.tliu.co.za

TECHNICAL SUPPORT INSTITUTIONS



National Metrology Institute of South Africa (NMISA)

Oversees and controls the use of measurements units of the International System of Units to maintain primary scientific standards of physical quantities in South Africa.

Contact

Dr Wynand Louw

Director Research and Technology Development

Tel: +27 12 841 4227

E-mail: wlouw@nmisa.org

Web: www.nmisa.org



The National Regulator for Compulsory Specifications (NRCS)

Protects human health and safety and the environment: Develops, administers and enforces compulsory minimum specifications for the safety and performance of products and services; supports fair trade practices.

Contact

Dr Zen Fourie

Tel: +27 12 482 8734

E-mail: zen.fourie@nrcs.org.za

Web: www.nrcs.org.za



The South African Bureau of Standards (SABS)

Develops, promotes and maintains SA National Standards of quality in commodities, products and services; provides conformity assessment services (testing and certifications).

Contact

Dr Sadvir Bissoon

Executive Standards Division

Tel: +27 12 428 6130

E-mail: sadvir.bissoon@sabs.co.za

Web: www.sabs.co.za



South African National Accreditation System (SANAS)

Provides formal recognition of the competency of laboratories, certification and inspection bodies, proficiency testing scheme providers and good laboratory practice (GLP) test facilities.

Contact

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Senior Manager: Strategy and Development

Tel: +27 12 394 5024

E-mail: elsabes@sanas.co.za

Web: home.sanas.co.za

EXPORT COUNCILS



National Association of Automobile
Manufacturers of South Africa

National Association of Automobile Manufacturers of South Africa (NAAMSA)

NAAMSA is the representative organisation for franchise holders marketing vehicles in South Africa.

Contact

Head Office: +27 12 807-0152

Web: www.naamsa.co.za



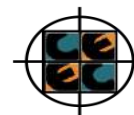
Built Environment Professions Export Council (BEPEC)

BEPEC offers a one-stop-shop for international clients who are in the market to employ South African built environment professionals. BEPEC is a Section 21 non-profit organisation in public-private partnership with **the dti**.

Contact

Head Office: +27 12 362 0522

Web: www.bepec.co.za



SA CAPITAL EQUIPMENT
EXPORT COUNCIL

SA Capital Equipment Export Council (SACEEC)

SACEEC represents the capital equipment and project sector for new projects and aftermarket. It is also the endorsed representative body for consulting engineers and their associated bodies, merchant bankers – with regard to their involvement in financing capital projects - capital equipment suppliers and supplier of services to the capital projects sector.

Contact

Head Office: +27 11 849 7388

Web: www.saceec.com



Fresh Produce Exporters Forum/Fruit South Africa (FPEF)

The FPEF is a voluntary, non-profit organisation with more than 120 members, accounting for about 90% of fresh fruit exported from South Africa. The FPEF is also a member of Fruit South Africa (FSA), together with the country's four growers' associations. This position strengthens the FPEF's role of providing leadership and services to its members, the international buying community and the fresh fruit export industry as a whole.

Contact

Head Office: +27 21 526 0474

Web: www.fpef.co.za



SA Boatbuilders Export Council (SABBEX)

SABBEX is a national export council that is a major contributor to establishing South Africa as a globally competitive boatbuilding export country.

Contact

Head Office: +27 72 836 3998

Web: www.sabbex.co.za



SA Cosmetics Export Council (CECOSA)

The CECOSA is a Section 21, non-profit organisation and has a PPP with **the dti**. The council works in conjunction with **the dti** and South African embassies and/or economic offices around the world. The prime objective is to create an exporting environment that will promote increased business for South African companies and highlight our world-class cosmetic products to the global market.

Contact

Head Office: +27 86 730 0840

Web: www.cecosa.co.za



SA Electro-Technical Export Council (SAEPEC)

The SAEPEC is a non-profit company established as a PPP with **the dti** and is uniquely positioned to support the export growth of its members.

Contact

Head Office: +27 11 315 0209

Web: www.saeec.org.za



SA Flower Industry Council

Over the years, the SAFEC has developed a partnership with **the dti**. The aim of this partnership is to increase and develop growth in exports of a wide range of flowers (as well as dried products from the fynbos industry, flower bulbs and propagation material).

Contact

Head Office: +27 21 870 2900

Web: www.saflower.co.za



SA Footwear and Leather Export Council (SAFLEC)

The South African Footwear and Leather Export Council (SAFLEC) is the official voice for exporters of footwear (shoes) manufacturers Leather Hand Bags, Belts and allied activities in South Africa.

Contact

Head Office: +27 31 266 1472/3

Web: www.saflec.co.za



SA International Steel Fabricators (ISF)

The ISF is a joint-venture marketing consortium representing the leading players in the South African structural steel construction industry with the objective to increase export sales by pooling resources. Each company represented by the ISF has an established reputation for their ability to provide clients with price-competitive and quality-driven products and services for projects anywhere in the world. The ISF members have successfully delivered projects on all continents, including Antarctica.

Contact

Head Office: +27 11 726 6111

Web: www.isf.co.za



Textile Industry Export Council (SATIEC)

The SATIEC is based in Cape Town and represents the organised driving force within the South African textile industry to grow exports by assisting all members of the Industry and beneficiated industries to develop sustainable exports. The SATIEC's priorities are to add value to the following objectives in accordance of their importance: Increase the number of companies involved in the export process; increase the participation of black empowerment enterprises in the export process; increase sustainable export growth; and promote companies with potential global brands.

Contact

Head Office: +27 21 959 4162

Web: www.satiec.co.za



SA Wire Business Council

SAWA is a non-profit organisation to promote global exports of South African value-added wire-related products to grow the export base and markets, while maintaining a strong and competitive local wire industry. SAWA represents the wire industry as a single voice with other stakeholders such as **the dti** and the South African Iron and Steel Institute and other government departments.

Contact

Head Office: +27 11 455 3228

Web: www.sawa.co.za



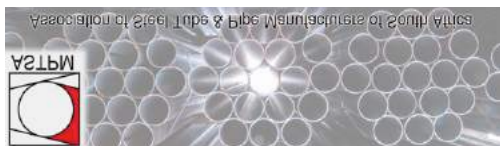
Wines of South Africa (WOSA)

WOSA is a not-for-profit industry organisation that promotes the export of all South African wine in key international markets. Here you will find up-to-date information on our regions, varieties, terroir and amazing biodiversity, which all make for magic wines from a magical place.

Contact

Head Office: +27 21 883 3860

Web: www.wosa.co.za



Steel Tube Export Council

Established in 1983 and represents the welded carbon steel tube and pipe manufacturers in South Africa. The members account for 70% of the installed capacity for conveyance, mechanical and structural tubular products, which are supplied to international specifications.

Contact

Head Office: +27 11 726 6111

Web: www.astpm.co.za



Automotive Industry Export Council (AIEC)

The AIEC was established in 1999 as the official private sector export promotion body for the automotive industry in South Africa. Products addressed include passenger cars, trucks and buses, original equipment components, aftermarket parts and accessories.

Contact

Head Office: +27 12 323 2980/1

Web: www.aiec.co.za



SA Equine Trade Council

SA Equine Trade Council facilitates debate on matters of national importance to the sport of South African horseracing and to provide equitable funding solutions for approved projects. Additionally, Racing South Africa seeks to assist in the curing and management of diseases, and the changing of international protocols, to improve the delivery of horses into and out of South Africa and to effectively market South African horses to the world.

Contact

Head Office: +27 31 769 2961

Web: sheila.devilliers@racingsouthafrica.co.za



SA Fruit and Vegetable Cannery Export Council

For over 50 years, the interests of the South African fruit and vegetable canning and processing industry have been directed and managed by the South African Fruit and Vegetable Cannery Association (SAFVCA). The SAFVCA was founded in January 1954 with 20 members representing the three main industry sectors, namely deciduous fruit, pineapple, vegetable and tomatoes.

Contact

Head Office: +27 21 871 1308

Web: jill@safvca.co.za



Rail Road Association (RRA)

The RRA was officially established on 11 October 2000. More than 20 major companies and organisations are now members. Support for the creation of RRA came from the Committee for Railway Engineering (CRE) in 1998. At the time, the CRE represented a group professional road and railway engineers, including academics who had become increasingly concerned that South Africa's transport resources were not being utilised in the most effective manner.

Contact

Head Office: 079 879 8181

Web: www.rra.co.za



SA Ostrich Business Chamber (SAOBC)

The SAOBC serves as a coordinating body for the ostrich industry to benefit both the producers and processors of ostriches and ostrich products. The mission of the SAOBC is to promote a sustainable, economically viable ostrich industry through co-operation between stakeholders.

Contact

Head Office: +27 44 272 3336

Web: admin@saobc.co.za



Aerospace, Maritime and Defence Industries Export Council (AMD)

AMD is the Aerospace, Maritime and Defence Industries Export Council of South Africa. Its primary objectives include the representation of the industry in matters of mutual interest, and the promotion of a profitable, sustainable and responsible industry.

Contact

Head Office: +27 12 752 5880 / 27

Web: michellen@amd.org.za

Farmed Abalone Export Council

The South African Farmed Abalone Export Council was established in September 2007 and immediately set about developing a brand strategy. The council also plans to participate in exhibitions and events in relevant markets.

Contact

Head Office: +27 21 701 1820

Web: upson@iafrica.com



ABBREVIATIONS AND ACRONYMS

AAT	Aerosud and Aerodyne Aviation Technology	BNDES	Brazil's Banco Nacional de Desenvolvimento Econômico e Social
ABC	Aerial Bundled Conductor	BMI	Business Monitor International
ADEP	Aquaculture Development and Enhancement Programme	BPS	Business Process Services
AECMSA	Association of Electric Cable Manufacturers of South Africa	BOP	Balance of payment
AIDC	Automotive Industry Development Centre	BTSA	Bombardier Transportation South Africa
AIDS	Acquired Immune Deficiency Syndrome	BTX	Benzene, Toluene and Xylene
AIS	Automotive Investment Scheme	CAGR	Compound Annual growth rate
AIRN	African Industrial Research Network	CAIA	Chemical & Allied Industries Association
APDP	Automotive Production and Development Programme	CAV	Centurion Aerospace Village
API	Active Pharmaceutical Ingredients	CDC	Coega Development Corporation
AMSA	Arcelor-Mittal SA	CDP	Cluster Development Programme
AMTS	Advanced Manufacturing Technology Strategy	CDM	Clean Development Mechanism
ARSO	African Organisation for Standardisation	CEF	Central Energy Fund
ART	Antiretroviral Treatment	CIACM	Competitiveness Improvement of Automotive Component Manufactures
ARV	Anti-retroviral	CIC	Customer Innovation Centre
AsgiSA- EC	Accelerated and Shared Growth Initiative for South Africa - Eastern Cape	CIP	Critical Infrastructure Programme
ASCCII	Automotive Supply Chain Competitiveness Improvement Initiative	CKD	Completely Knock Down
ATF	Aluminium Trifluoride	CMMI	Capability Maturity Model Integration
B-BBEE	Broad Based Black Economic Empowerment	CMT	Cut, Make and Trim
BC	Bushveld Complex	COC	Centre of Competence
BI	Black Industrialist	COM	Chamber of Mines
		COMESA	Common Market for Eastern and Southern Africa

CSA	Corrugated Seamless Aluminium	DHET	Department of Higher Education and Training
CRM	Customer Relations Management	DoJ	Department of Justice
CRE	Customs Risk Engine	DoL	Department of Labour
CSDP	Competitive Supplier Development Programme	DoT	Department of Transport
CSID	Corporate Strategies and Industrial Development	DPE	Department of Public Enterprises
CSIR	Council for Scientific and Industrial Research	DPW	Department of Public Works
CSP	Customised Sector Programme	DST	Department of Science and Technology
CSR	China South Rail	the dti	The Department of Trade and Industry
CTS	Concentrated Thermal Solar	DTH	Direct to home television
CTCP	Clothing and Textiles Competitiveness Programme	DTT	Digital Terrestrial Television
CTLF	Clothing Textiles, Leather and Footwear	DRDLA	Rural Development & Land Affairs
DAC	Department of Arts and Culture	DWEA	Department of Water and Environmental Affairs
DAFF	Department of Agriculture, Forestry and Fisheries	EAC	East African Community
DBSA	Development Bank of Southern Africa	EC	Eastern Cape
DERO	Desired Emission Reduction Outcomes	ECIC	Export Credit Insurance Corporation
DFIs	Development Finance Institutions	EE	Energy Efficiency
DFID	Department for Internal Development	EEC	Ekurhuleni East College
DG	Director General	EDD	Economic Development Department
DIRCO	Department of International Relations and Cooperation	EIA	Environment Impact Assessment
DIP	Defence Industrial Development	EIAP	Emerging Industries Action Plan
DMR	Department of Mineral Resources	EIP	Enterprise Investment Programme
DoC	Department of Communications	ELIDZ	East London IDZ
DOD	Department of Defence	EMU	Electric Multiple Units
DoE	Department of Energy	EMIA	Export Marketing and Investment Assistance
DoH	Department of Health	EPI	Extended Programme of Immunisation

ERA	Enterprise Reference Architecture	GNC	Gauteng Nerve Centre
ESEIC	Economic Sectors and Employment Cluster	HEIs	Higher Education Institutions
ESO	Energy Systems Optimisation	SANDF	South African National Defence Force
ESEID	Economic Sectors, Employment and Infrastructure Development Cluster	GERD	Gross Expenditure on R&D
ESKOM	Electricity Supply Commission	GHG	Greenhouse Gas
EU	European Union	GHS	Globally Harmonised System
EV	Electric Vehicle	GFCF	Gross Fixed Capital Formation
FAT	Free Trade Area	GW	Gigawatt
FAW	First Automotive Works	GWH	Gigawatt Hour
FDI	Foreign Direct Investment	GSK	GlaxoSmithKline
FET	Further Education and Training	ha	hectares
FIETA	Forest Industries Education and Training Authority	HASA	Hyundai Automotive South Africa
FILDA	International Fair of Luanda Trade Exhibition	HEIs	Higher Education Institutions
FPM	Fibre Processing and Manufacturing	HF	Hydrogen Fluoride
FPSO	Floating Production Storage & Offloading	HIV	Human Immune Virus
FRIDGE	Fund for Research into Industrial Development Growth and Equity	HRD	Human Resource Development
FRP	Fibre-reinforced polymer	HS	Harmonised System
FSA	Food Safety Agency	ICT	Information Communication Technologies
FSA	Forestry South Africa	IDAP	Integrated dti Aerospace Programme
FTPP	Forestry, Timber, Pulp and Paper	IDC	Industrial Development Corporation
GDP	Gross Domestic Product	IDAD	Incentive Development and Administration Division
GE	General Electric	IDTV	Integrated Digital Television
GIU	Gas Industrialisation Unit	IDZ	Industrial Development Zone
GMP	Good Manufacturing Practice	IEE	Industrial Energy Efficiency
		IFPI	International Federation of the Phonographic Industry

IMC	Inter-Ministerial Committee	MEA	Middle East & Africa
INES	Integrated National Export Strategy	MRO	Maintenance, repair and Overhaul
IPAP	Industrial Policy Action Plan	MerSETA	Manufacturing, Engineering and Related Services SETA
IPM	Isondo Precious Metals	MFMA	Municipal Finance Management Act
IRP	Integrated Resource Plan	MHCV	Medium and Heavy Commercial Vehicles
ISAW	Iveco South Africa Works	MIC	Middle Income Countries
ITAC	International Trade Administration Commission	MIDP	Motor Industry Development Programme
ITED	International Trade and Economic Development	MNC	Multi-National Corporations
JASC	Joint Aerospace Steering Committee	MOA	Memorandum of Agreement
JMP	Jewellery Manufacturing Precinct	MOGS	Mining, Oil and Gas Services
JV	Joint Venture	MoU	Memorandum of Understanding
KAP	Key Action Programme	MSD	Merck Sharp & Dohme
KDB	Korean Development Bank	MSTF	Medium term Strategic Framework
KZN	KwaZulu-Natal	MTBPS	Medium Term Budget Policy Statement
LCT	Low-Carbon Transportation	MTBS	Medium Term Budget Statement
LED	Local Economic Development	MTIDC	Malawi-Tanzania Industrial Development Cluster
LGM	Lawrence Global Manufacturing	MRO	Maintenance, Refurbishment and Overhaul
LLD	large, lead and dynamic	MW	Megawatt
LNG	Liquid Natural Gas	NAAMSA	National Association of Automobile Manufacturers of South Africa
LSOH	Low Smoke Zero Halogen	NADP	National Artisan Development Programme
m	metres	NAMB	National Artisan Moderation Body
MACC	Mobilisation, Alignment, Capacity Building and Cooperation	NAPM	National Association of Pharmaceutical Manufacturers
MBAP	Mineral Beneficiation Actions Plans	NAMC	National Agricultural Marketing Council
MCC	Medicines Control Council	NBCLI	National Bargaining Council of the Leather Industry of South Africa
MCEP	Manufacturing Competitiveness Enhancement Programme	NCPC-SA	National Cleaner Production Centre, South Africa

NCSDP	National Craft Sector Development Programme	NSSD	National Strategy for Sustainable Development and Action Plan
NCCRP	National Climate Change Response Policy White Paper	NSSS	Nuclear Steam Supply System
NDP	National Development Plan	NT	National Treasury
NDT	National Department of Tourism	NTB	Non-Tariff Barriers
NECSA	South African Nuclear Energy Corporation	NFTN	National Foundry Technology Network
NEDLAC	National Economic Development and Labour Council	NTI	National Tooling Initiative
NEF	National Empowerment Fund	NTP	Nuclear Technology Products
NECSA	Nuclear Energy Corporations	NYK	Nippon Yusen Kabushiki Kaisha
NERSA	National Energy Regulator of South Africa	OEMs	Original Equipment Manufactures
NFVF	National Film and Video Foundation	OPIC	Overseas Private Investment Corporation
NGMS	Next Generation Mining Systems	OSD	Oral Solid Dosage
NGP	New Growth Path	OSSB	Off-Shore Supply Base
NIPMO	National Intellectual Property Management Office	OTGC	Oiltanking Grindrod Calulo
NIPF	National Industrial Policy Framework	OTIF	On time in full deliveries
NIPP	National Industrial Participation Programme	OTMS	Oiltanking MOGS Saldanha
NLA	National Laboratory Association	PAMSA	Paper Manufacturers' Association of South Africa
NMISA	National Metrology Institute of South Africa	P-AIS	People-carrier Automotive Investment Scheme
NNR	National Nuclear Regulator	PET	Polyethylene Terephthalate
NOA	National Outsourcing Association	PFMA	Public Finance Management Act
NQF	National Qualification Framework	PGM	Platinum Group Minerals
NPA	National Prosecuting Authority	PGWC	Provincial Government of the Western Cape
NRCS	National Regulator for Compulsory Specification	PI	Production Incentive
NSDS	National Skills Development Strategy	PICC	Presidential Infrastructure Coordinating Committee
NSI	National innovation system	PIC/S	Pharmaceutical Inspection Cooperation Scheme
NSF	National Skills Fund	PILC	Paper Insulated Lead Covered

PMI	Purchasing Managers Index	QCTO	Quality Council for Trades and Occupations
PPA	Power Purchase Agreement	QSM	Quality of Supply Meter
PPP	Public Private Partnership	SA	South Africa
PPPFA	Preferential Procurement Policy Framework Act	SaaS	Software as a Service
PRASA	Passenger Rail Agency of South Africa	SAA	South African Airways
PSA	Proudly South African	SABC	South African Broadcasting Corporation
PV	Photovoltaic	SABS	South African Bureau of Standards
PVG	Premier Valves Group	SADC	Southern African Development Community
RAAVC	Round Table Agricultural Value-chain	SADRI	South African Defence Related Industry
RTA	Ready-To-Assemble	SAFVCA	South African Fruit and Vegetable Canning Association
RD&I	Research, Development and Innovation	SAHC	South African Handmade Collection
RECP	Resource Efficiency and Cleaner Production	SAHPRA	South African Health Products Regulatory Authority
REFIT	Renewable Energy Feed in Tariff	SALT	South African Large Telescope
REIPP	Renewable Energy Independent Power Producers	SANS	South African National Standards
REIPPPP	Renewable Energy Independent Power Producer Procurement Programme	SANAS	South African National Accreditation System
RFP	Request for Proposals	SANDF	South African National Defence Force
RFQ	Request for Qualification	SANEA	South African Energy Association
RIBS	Rigid Inflatable Boats	SAOGA	South African Oil and Gas Alliance
RPO	Radiation Protection Officers	SAOSO	South African Organics Sector Organisation
R&D	Research and Development	SAPS	South African Police Services
RISDP	Regional Indicative Strategic Development Plan	SARS	South African Revenue Services
RSDIP	Regional Spatial Development Initiatives Programme	SARi	South African Renewables Initiative
RSV	Resilient Seal Valve	SASTAC	Southern African Sustainable Textile and Apparel Cluster
RTE	The Rail Transport Equipment	SAT	South African Tourism
		SATS	South African Technical Standard

SANAS	South African National Accreditation System	STB	Set Top Box
SASTAC	Southern Africa Sustainable Textile and Apparel Cluster	STI	Science, Technology and Innovation
SCs	Science Councils	SWH	Solar Water Heaters
SCSA	Space Commercial Services Aerospace Group	SWOT	Strength, Weakness, Opportunity and Threats
SDI	Spatial Development Initiatives	TAPMA	Thailand Automotive Parts Manufactures Association
SDP	Supplier Development Plans	TBT	Technical Barriers to Trade
SECO	Secretariat for Economic Affairs	TDCA	Development and Cooperation Agreement
SEDA	Small Enterprise Development Agency	TDM	Tool, Die and Mould
SET	Science, engineering and technology	TEO	The Enterprise Organisation
SETA	Skills Education and Training Authorities	TFA	Trade Facilitation Agreement
SEZ	Special Economic Zones	TIA	Technology Innovation Agency
SIFs	Specialised industrial facilities	TFG	The Foschini Group's
SIF	Sector Innovation Fund	TFR	Transnet Freight Rail
SIP	Strategic Integrated Programmes	T/G	Turbine Generator
SKD	Semi-Knock Down	TISA	Trade and Investment South Africa
SME	Small and Medium Enterprises	THRIP	Technology and Human Resources for Industry Programme
SMME	Small Medium and Micro Enterprises	TIDCA	Trade, Investment and Development Cooperation Agreement
SOCs	State-Owned Companies	TPA	Tonnes Per Annum
SOC-ATD-TT	State-Owned Companies Artisan Development Task Team	TNPA	Transnet National Ports Authority
SOEs	State-Owned Enterprises	TSAM	Toyota South Africa Motors
SPS	Sanitary and Phytosanitary Standards	TTC	Thermal Test Chamber
SQAM	Standards, Quality Assurance and Metrology	TSP	Team Software Process
SRSA	Sumitomo Rubber South Africa	TV	Television
SSAS	Sector Specific Assistant Scheme	TVET	Technical Vocational Education and Training
SSP	Sector Skills Plans	TVC	Technology Venture Capital

UNIDO	United Nations Industrial Development Organisation
UNFCCC	United Nations Framework Convention on Climate Change
UNCTAD	United Nations Conference on Trade and Development
UK	United Kingdom
US	United States
VAT	Value Added Tax
WC	Western Cape
WCM	World Class Manufacturing
WTO	World Trade Organisation

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