SOUTH AFRICA'S INFRASTRUCTURE EMERGENCY: AN URGENT AND COLLABORATIVE INTERVENTION

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ONE.

INTRODUCTION

It is not by chance that infrastructure is generally well understood and frequently highlighted in economic growth and development literature. Infrastructure development plays a vital role in economic development; Tiwari (2000) argues that the key function of infrastructure in economic development entails the release of latent productivity in the factors of production. It also brings about an increase in the output of individual factors and units of production as well as a mutually additive effect through the coordination of inputs, outputs, space and time so as to maximise the economic growth rate. Infrastructure can enable the maximum utilisation of a plethora of resources leading to rapid economic development through efficiently employing all means available.

Infrastructure policy failures significantly hinder the development of infrastructure. Benitez et al. (2012) argue that although political failure plays a prominent role in the deterioration of infrastructure, poor infrastructure policies are the cause. Benitez et al. (2012) emphasise that government and governance failures impact crucially on the failure of infrastructure. Key determinants in the successful governance of infrastructure provision include coherent national planning processes; transparent project identification and prioritisation mechanisms; clear and enabling regulatory and institutional frameworks; strong co-ordination vertically and horizontally across government departments and agencies and efficient and effective mechanisms to monitor performance throughout an asset's lifecycle (OECD, 2017). Simply stated, a positive correlation is observed between economies with strong governance systems and greater private sector investment into infrastructure (Carrasco & Lau, 2020).

This paper argues that the haemorrhaging of technical and financial engineering skills in the country, the collapse of institutions and the dire ramifications of state capture have all conspired to degrade the quality of the country's infrastructure offering. This raises the critical importance of national government playing a strategic and key role with respect to aligning and consolidating investment priorities, building capacity at different levels of government across the infrastructure development value chain and across the project lifecycle and ensuring sound governance throughout (OECD, 2017). In this regard, as directed by Cabinet in 2020, Infrastructure South Africa (ISA) was established as the country's single point of entry for large-scale infrastructure projects and by implication, the country's single national custodian of the project pipeline for priority and large-scale infrastructure projects. ISA aims to streamline institutional roles, improve transparency and accountability and expedite new ways to boost capacity for robust infrastructure investment planning and efficient delivery, utilising both public and private resources. ISA's focus is not only on driving public sector investment but also on unblocking state obstacles to the independent investment initiatives of private sector companies. In this regard, ISA has developed mechanisms for private investors to register specific needs for support from government in the unblocking of private capital projects. This innovation is one of the current administration's direct responses to the significant levels of infrastructure deterioration in the country.

The Global Infrastructure Hub (2019) estimates that USD 94 trillion worth of infrastructure investment is required through to 2040 with project preparation costs estimated at between 5 and 12 percent of investment needs, that is USD 4.7 trillion or USD 188 billion per annum. Globally, the infrastructure investment gap amounts to USD 800 billion to deliver on the Sustainable Development Goals (SDGs) and financing the SDGs in low-income and developing countries requires an additional USD 0.5 trillion to 2030. Bringing this home, in order to achieve South Africa's NDP and global SDG targets, the country is faced with an infrastructure funding gap of ZAR 2.15 trillion.

Addressing these gaps is a key priority for many governments across the globe towards achieving inclusive growth (GIH, 2019). Increasing infrastructure finance is a necessary but insufficient condition. In order to deliver high quality infrastructure, resource utilisation must be optimised (Carrasco & Lau, 2020). As alluded to previously in terms of the importance of infrastructure governance, improving the overall management of infrastructure could lead to significant savings and could further increase the productivity of infrastructure (OECD, 2017).

Insufficient capacity, skills and an inefficient regulatory and policy framework hamper government's ability to develop a robust, credible and bankable project pipeline. Government currently lacks the technical expertise and institutional landscape to attract private sector finance and, in addition, to improve infrastructure project lifecycles. Aligned to the goals of the NDP, in order to crowd-in the private sector and other financiers, such as DFIs/MDBs, South Africa must build a capable state and improve intergovernmental co-ordination. Building state capacity and capability is in no respect a linear process as it involves the perpetual identification and correction of identified institutional weaknesses. The NDP Vision 2030 clearly articulates the need for "a state that is capable of playing a developmental and transformative role" with staff possessing the requisite authority, expertise and support in the execution of their roles; in turn, requiring a "long-term approach to skills development" (NPC, 2012). Whilst building administrative capabilities does not constitute a means to an end, it is an important contributor to enhancing a nation's economic development prospects. It is thus vital for government to gear its efforts towards creating an environment that is conducive to the development of human capital.

Section 2 of this paper sets the scene and discusses the evolution of economic policy in the country, following the dawn of South Africa's democracy. Based on the inextricable linkages between infrastructure development and economic growth and development, Section 3 provides a brief overview of this relationship whilst Section 4 addresses the critical role that infrastructure governance must play in the infrastructure delivery value chain. Within the context of the global and local challenge of large infrastructure finance and funding gaps, Section 5 provides an overview of South Africa's financing and funding landscape discussing key interventions that have been made, the limitations and inefficiencies of these interventions and begins to highlight some key institutional and policy interventions that are required to alter the country's current trajectory. Section 6 delves deeper into the country's infrastructure landscape across key sectors and Section 7 discusses priority infrastructure interventions at the local government level, with a specific reference to the identification of 19 centres of national economic importance. Aligned to the current administration's focus on advancing evidenced-based policy decision making, Section 8 provides an overview of the econometric modelling conducted to determine the relationship between infrastructure investment and growth with a summary of these results contained in Section 9 whilst detail pertaining to the econometric exercise is contained in Section 13, the document's annexure. Section 10 highlights key recommendations and policy interventions in the short- to medium-term towards transforming South Africa's infrastructure delivery ecosystem.

TWO.

SETTING THE SCENE

The objective of a genuinely inclusive economic growth path that is capable of satisfying the convergence of between economic growth, on the one hand, and employment creation, development and poverty reduction on the other has proven to be elusive for the democratic government. This failure has made the resolution of South Africa's economic question a major area of political consequence. The 1986 Budget Speech delivered by Apartheid-era Minister of Finance, Mr. Barend du Plessis, marks a significant turning point in the economic policy orientation of the Apartheid government. The speech was "unique in that it expressly gave the highest priority to the economic conditions for social reform- i.e. the redistribution, equity and development objectives, in conjunction with employment objective." This orientation was carried further by the democratic government post 1994 elections. In addition to the elevation of economic growth as a strategic objective, the Reconstruction and Development Programme (RDP), the first major comprehensive articulation of a developmental path for a democratic South Africa, asserted the centrality of human development whilst still acknowledging the need for economic growth.

In 1996, a new strategy aimed at macroeconomic stabilisation was adopted by the democratic government. The Growth, Employment and Redistribution (GEAR) strategy placed "greater emphasis on growth, fiscal prudence and avoiding government dissaving (typically requiring cutting government expenditure and deficits), monetary prudence (to get low inflation) and privatisation." GEAR triggered a period of significant political discord amongst progressive forces in the country, it defined ANC intra-party tensions manifesting in intense political leadership battles that would birth intense factional battles that still rages-on today. GEAR did not achieve the desired stimulus effect on investment and economic growth but was successful in reducing the budget deficit and public debt. The fiscal space created by GEAR made it possible for the ANC-led government to adopt microeconomic and redistributive polices that broadened the floor of the social wage.

The year 2006 saw the introduction of an intervention that was largely a constellation of efforts to address the binding constraints on growth, the Accelerated and Shared Growth Initiative South Africa (ASGISA). Although not having had successful traction, ASGISA, did foreground industrial policy, infrastructure investment and small business development as key areas of supporting growth. ASGISA was very instrumental in placing infrastructure investment as an indispensable pillar of growth and development. The New Growth Path (NGP) of 2010 further cemented the importance of investments in catalytic infrastructure projects in employment creation and decent jobs. The NGP could not satisfactorily elaborate on the social objectives or changing the situation of marginalised people.

The 2012 National Development Plan (NDP) set out to address the many dimensions of society's progress and, in part, to remedy some of the fatal deficits of the preceding strategies and/or policies aimed at addressing South Africa's economic question. The NDP took a long-term view with a 2030 horizon. The NDP prioritised "faster and more inclusive growth: an economy that will create more jobs". The NDP was successful in elevating the significance of extensive infrastructure expenditure that should stimulate growth and create jobs. The NDP advocates for Gross Fixed Capital Formation, levels of investments in the SA's economy, to be at 30% of Gross Domestic Product (GDP) in order to stimulate growth and development.

THREE.

INFRASTRUCTURE AND ECONOMIC DEVELOPMENT

Infrastructure development has been recognised as being central to economic growth and development with the modelling of the effect of infrastructure development on economic growth being traced back to the latter part of the twentieth century, for instance by leading researchers including Arrow and Kurz (1970), Romer (1986) and Barro (1990). The overarching consensus is that infrastructure development plays a role in economic growth with the methodologies, magnitude, and direction of impact raising some debate in the economic development policy space (Apurv & Uzma, 2021). Quality infrastructure improves the general productivity levels in the country through both capital and labour absorption (AFDB, 2018).

There is a distinct difference between building quality infrastructure and building more infrastructure. There are still gaps within economic growth literature about quality infrastructure given the complexity of the modelling required to distinguish between quality and quantity (Chakamera & Alagidede, 2017). More infrastructure spending does not necessarily translate into quality infrastructure and further, the optimal provision of infrastructure. Thus, it is important to note that fixed capital expenditure may not lead to required and potential productivity levels Ghali (1998). In a study conducted on China and its provinces, Quattara & Zhang (2019) find that infrastructure investment should be used to promote both national and regional economic development but not to the extent that there is oversupply of infrastructure. In a panel study conducted on BRICS economies, Apurv & Uzma (2021) find that transportation infrastructure investment led to economic growth in Russia but there was a negative growth contribution in China. There may be multiple reasons for these occurrences, including but not limited to project identification and prioritisation and also, differing infrastructure governance systems. In addition, infrastructure development is dependent on sector selection since different regions exhibit different comparative advantages and also, different infrastructure needs. Thus, is it essential to invest the optimum amount in the right sectors for the economy to flourish.

In South Africa, Kumo (2012) finds a bi-directional relationship between infrastructure investment and economic growth. Simply stated, this implies that the provision of infrastructure is an enabler of long-term economic growth, and that economic growth further enables increased infrastructure investment. Importantly, growth and development literature illustrates that differences in infrastructure elucidate differences in the wealth of nations (Barro, 1990). Similarly and as expected, industrialised economies exhibit high quality and high levels of social and economic infrastructure while poor economies exhibit infrastructure deficits (Romer, 1986).

The provision of infrastructure plays a major role in influencing the nature and level of socio-cultural and economic activities in the public realm. Infrastructure can deliver major benefits in economic growth; these include environmental sustainability and poverty alleviation.

Infrastructure embodies many activities that can be referred to as 'social overheard capital' by development economists and has been divided into three broad categories namely social, economic, and institutional (Grimsey and Lewis, 2004).

ECONOMIC INFRASTRUCTURE

It is hard to overemphasise the importance of economic infrastructure in spearheading the pace and direction of economic development. To a larger extent, the volume and quality of the infrastructure determines the foundations and the superstructure of the edifice of an economy. Economic infrastructure entails activities that provide general facilities for conducting economic activities. These facilities are often in the physical capital form and often includes long-lasting engineering structures, facilities, equipment, and the services they provide which are used in economic production (Grimsey and Lewis, 2004; Tiwari, 2000). Economic infrastructure includes energy, water, transport and digital infrastructure.

SOCIAL INFRASTRUCTURE

Often refers to facilities which directly impact on the wellbeing of a nation. These are facilities that improve the quality of human life such as education, health care, housing as well as science and technology. Human capital formation is a direct consequence of the optimum levels of investment in social infrastructure, including the optimal mix thereof. Social infrastructure such as hospitals and schools are crucial for the wellbeing of the people and poverty reduction (Haimin, 2010). Moreover, social infrastructure increases the quality and productivity of human capital within a nation. For instance, good educational infrastructure ensures the availability of skilled labour and good healthcare infrastructure ensures a healthy and thus, productive labour force.

INSTITUTIONAL INFRASTRUCTURE

Consists of financial, bureaucratic, regulatory, and administrative infrastructure. These provide different kinds of services which encourage investment while administrative institutions create ideal environment for economic activities to flourish.

FOUR.

THE CENTRALITY OF INFRASTRUCTURE GOVERNANCE IN INFRASTRUCTURE DEVELOPMENT

In the absence of good governance, the successful provision of the right mix and optimum quality of infrastructure fails (OECD, 2017). An enabling environment is often a critical differentiator between countries that deliver infrastructure at scale and those that experience challenges in doing so (GIH, 2019). Poor governance has been demonstrated to be at the heart of the poor productivity of infrastructure projects (Mischke & Garemo, 2013). Boston's "Big Dig" concerned the rerouting of an inter-state highway into a 1.5-mile-long tunnel. Construction of the US's most expensive highway project began in 1991, initially scheduled for completion by 1998 at a cost of USD 2.8 billion, and only finished in 2007 and cost over USD 24 billion. The project was fraught with poor governance, including a lack of long-term planning which led to cost over-runs, project delays, significant leakages and multiple design flaws. Rampant fraud and corruption plagued the project, including the use of substandard materials. Eventually, this led to 6 criminal arrests. The Big Dig project demonstrated that governance as opposed to the myth of a lack of financing is the primary obstacle is the delivery of affordable and quality infrastructure (World Bank, 2022). Within the EU, it is estimated that corruption in infrastructure projects costs EUR 120 billion per year (European Commission, 2014) and similarly, the OECD's Foreign Bribery Report (2014) found that two-thirds of corruption in infrastructure projects occurred in four infrastructure sectors.

The Global Infrastructure Hub's InfraCompass (2020) finds that country's that demonstrate high scores with respect to infrastructure governance exhibit strong leadership; capable institutions that support the rule of law; transparency and consultation and well-established and effective and autonomous decision-making structures for infrastructure investment. In this instance, Singapore, Denmark, the Netherlands, Canada and Austria have the strongest governance frameworks (GIH, 2020). Sound infrastructure governance systems will enable countries to finance and fund the right projects, place priorities in the right areas and meet the needs of its citizens (CEPR, 2013).

Infrastructure governance concerns the optimisation of the mechanisms that result in the maximisation of the sustainability and quality of infrastructure provision in the long-term (Carrasco & Lau, 2020). The OECD (2017) defines infrastructure governance as the "processes, tools and norms of interaction, decision making and monitoring by government and its counterparts with regard to making infrastructure services available to public and private users and citizens". Ultimately, the central aim of good infrastructure governance is to deliver the right projects in a manner where cost efficiency, affordability and trust by users and citizens is maximised (OECD, 2017).

The importance of good infrastructure governance has increased based on the repercussions of the Covid-19 crisis, which resulted in increasing the demand for certain infrastructure and also required the retrofitting of existing infrastructure. The subsequent economic stagnation has further impacted government's fiscal space due to decreased revenues in general and decreased user fees, in particular (World Bank, 2020). This has further amplified the importance of informed and sound investment decisions.

Engendering trust in the investment community requires strong governance systems (GIH, 2020). Weak infrastructure governance systems directly impact the financing and funding available for infrastructure development and increase the pricing of infrastructure based on increased risks present. Long-term decision making is hindered in the presence of volatile and uncertain regulatory frameworks and political systems, not limited to a lack of credibility in institutions mandated to deliver infrastructure. All these factors increase risks for project developers and financiers. The pro-

cesses to assess, plan, prioritise and select infrastructure projects must be anchored by robust legal frameworks and institutional capacities (World Bank, 2020).

The World Bank (2022) estimates that one-third of infrastructure expenditure is lost as a result of inefficiency as it pertains to governance-related challenges. The co-ordination of infrastructure investment across the different spheres of government is vital towards enhanced efficiency and effectiveness in the delivery of infrastructure. Horizontal and vertical co-operation can also bring about the mutualisation of funding enhancing access to finance for infrastructure development (OECD, 2017). In South Africa, the roles and responsibilities of various entities and departments lack certainty and are hampered by insufficient co-ordination mechanisms.

Towards improving co-ordination, Infrastructure South Africa (ISA) has established the Infrastructure Investment Review Committee and the Infrastructure Investment Committee, the latter of which is chaired at the Ministerial level. This paper argues that whilst ISA has reduced transaction costs, competitive pressures, resource constraints and misaligned priorities from a horizontal and vertical co-operation perspective, there are a number of key institutional arrangements that require amendment.

FIVE.

INFRASTRUCTURE FINANCE AND FUNDING: THE IMPORTANCE OF PROJECT PREPARATION

South Africa is well below its NDP target for gross fixed capital formation (GFCF) of 30 percent to GDP, with the public sector's 10 percent target not being reached for more than the last decade and most recently at below 8 percent. Whilst the current administration has made significant strides in mobilising the private sector as a key player in the investment value chain towards ensuring that GFCF as a percentage of GDP reaches 30 percent by 2030, the share of public infrastructure spend is not sufficient and budgets are declining. In terms of overall GFCF to GDP, in 2021, this percentage is 14.1 percent representing a decrease from a high of 19.7 percent in 2008 and is also lower compared to 2019. Noting the impact of the Covid-19 pandemic on the economy, GFCF as a percentage of GDP has not recovered since the Global Financial Crisis in 2008 and the accompanying recession the country saw in 2008/09. The ratio is becoming smaller as each year passes, increasingly moving the country further away from the NDP target. Public sector infrastructure expenditure amounted to R3.2 trillion between 1998/99 and 2018/19 reflecting average real growth of 8% until 2006/07 and declining to an average of 2 percent since 2009/10.

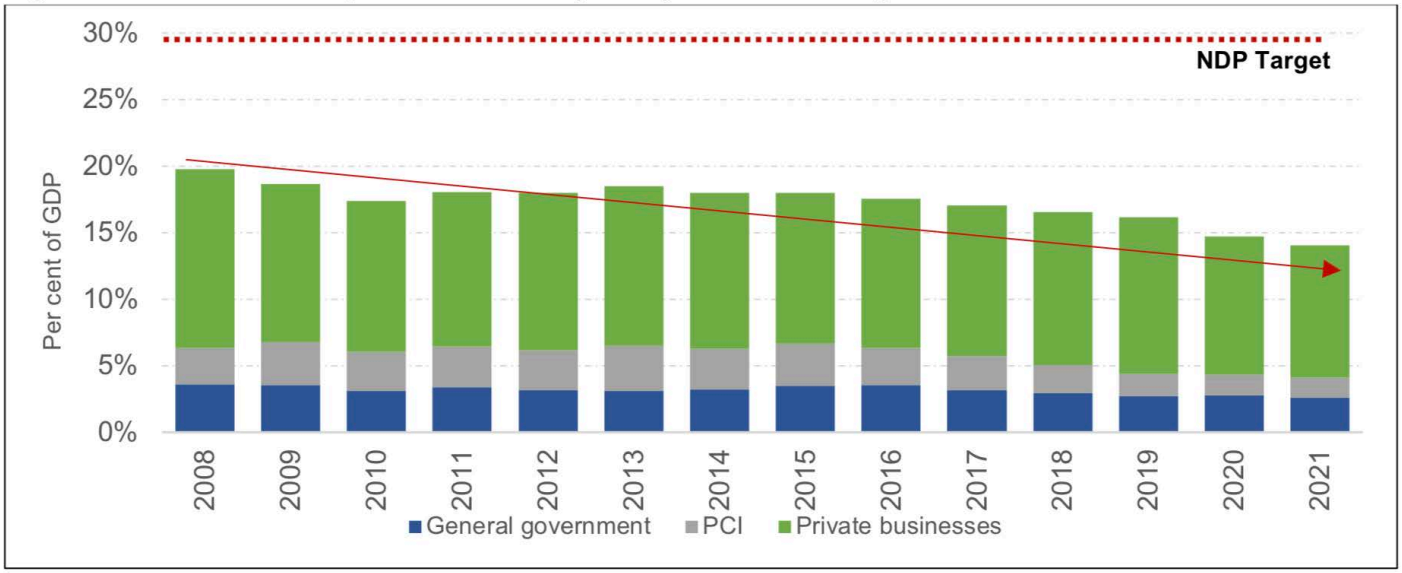
Significantly reduced municipal and state-owned entity (SOE) spending capacity is evident and is a drag on, rather than an enabler of, growth. Municipalities have continuously underspent on conditional grants and increasingly, have not collected sufficient revenue to finance capital expenditure. This situation is exacerbated by the fact that national government has decreased conditional grants to provinces and municipalities due to rising debt and an increasing budget deficit. SOEs, due to the unenviable state of their governance, have struggled to efficiently and effectively allocate their expenditure and deliver on infrastructure; essentially serving to undermine the country's macroeconomic stability. In addition, cost overruns on infrastructure projects are far too frequent creating major spending inefficiencies.

Infrastructure finance and funding is still heavily reliant on the state, which is not sustainable, nor desirable. For instance, on the Gautrain, despite high user fees, government still pays in excess of R250 million per annum, giving rise to a fiscal obligation on the state, known as contingent li-

abilities. These contingent liabilities have resulted in government's capital financial requirements, reflected by capital revenue less expenditure, remaining in a chronic deficit due to an increased reliance on the state for infrastructure funding.

MTEFs are critical medium-term mechanisms that can overcome the limitations of annual fiscal cycles towards achieving important fiscal objectives (Carrasco & Lau, 2020) and must further be used as a tool to signal confidence and certainty in a country's economy. Simply stated, a country's budget is the most significant instrument in shaping developmental priorities. South Africa's developmental agenda requires a more rigorous model that integrates cross-cutting principles and fiscal instruments, which in turn lays the basis for a more effective and innovative configuration of fiscal options within alternative investment scenarios that will enhance the country's development prospects. Thus, one of the most important considerations is that of establishing meaningful and effective partnerships for development, between the public and private sectors working in conjunction with the academic community; donor and multilateral organisations; organised labour and local communities. The biggest risks identified in the 2017, 2018, 2019, 2020, 2021 and 2022 Budgets continue to be relevant.

Figure 1: Gross Fixed Capital Formation by Entity as a Percentage of GDP



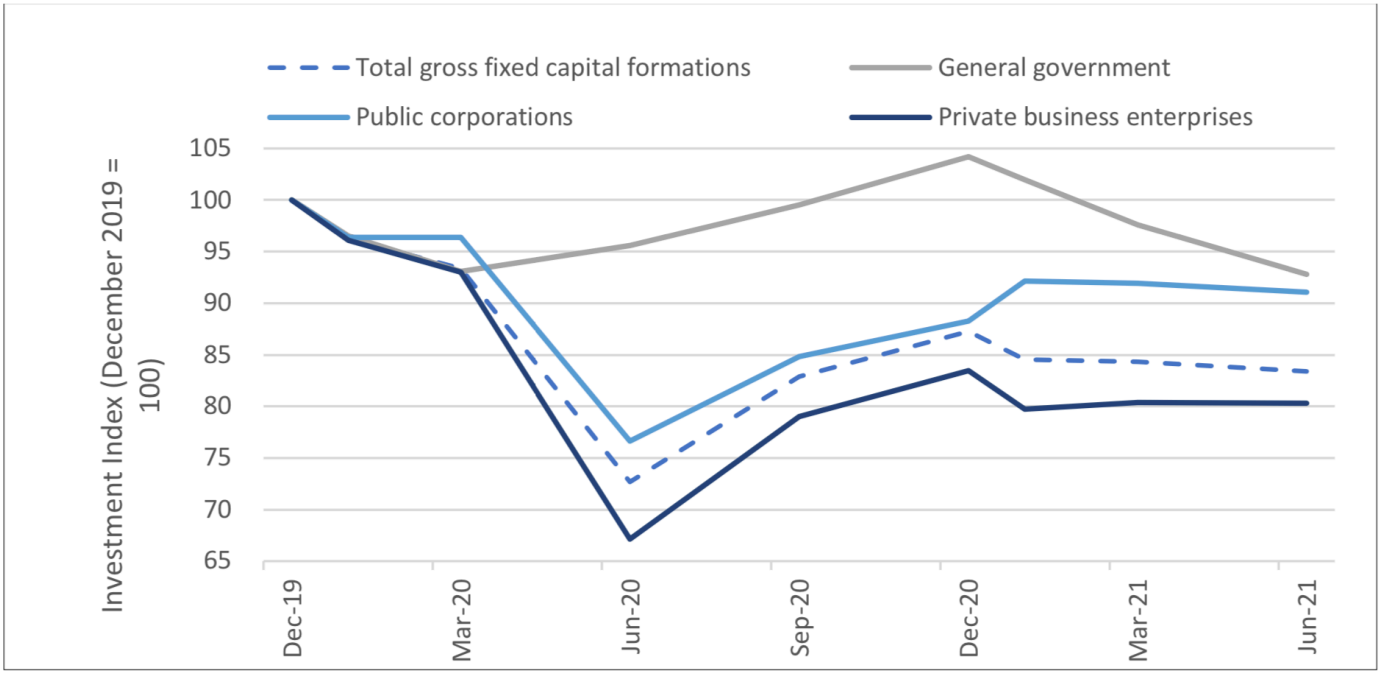
Source: Derived from Quantec (2022)

Figure 2 below demonstrates that while GFCF across all categories has slightly improved, it is still below levels seen prior to the Covid-19 pandemic. GFCF as a percentage of GDP at the second quarter of 2021 stood at 14 percent while private investment has been affected by the general global slowdown in addition to persistent structural constraints within the South African economic landscape (National Treasury, 2021).

Public infrastructure is predominantly financed through cash, savings and debt by government. In the last 10 years, South Africa has averaged at less than one PPP project closed per annum with all but one being office accommodation PPPs. PPPs currently account for 2.2 percent of total public sector infrastructure, with the majority funded through a combination of equity, debt and government capital contributions. The most recent innovation is private sector investment in renewables with the country's Independent Power Producer Programme, which has attracted over R200 billion, including R41.8 billion internationally.

Figure 3 highlights GFCF levels across South Africa's nine provinces with the largest GFCF levels, on average, found in the provincial economies of Gauteng, KwaZulu Natal and the Western Cape.

Figure 2: Gross Fixed Capital Formation in the Post-Pandemic Period



Source: Derived from SARB (2023)

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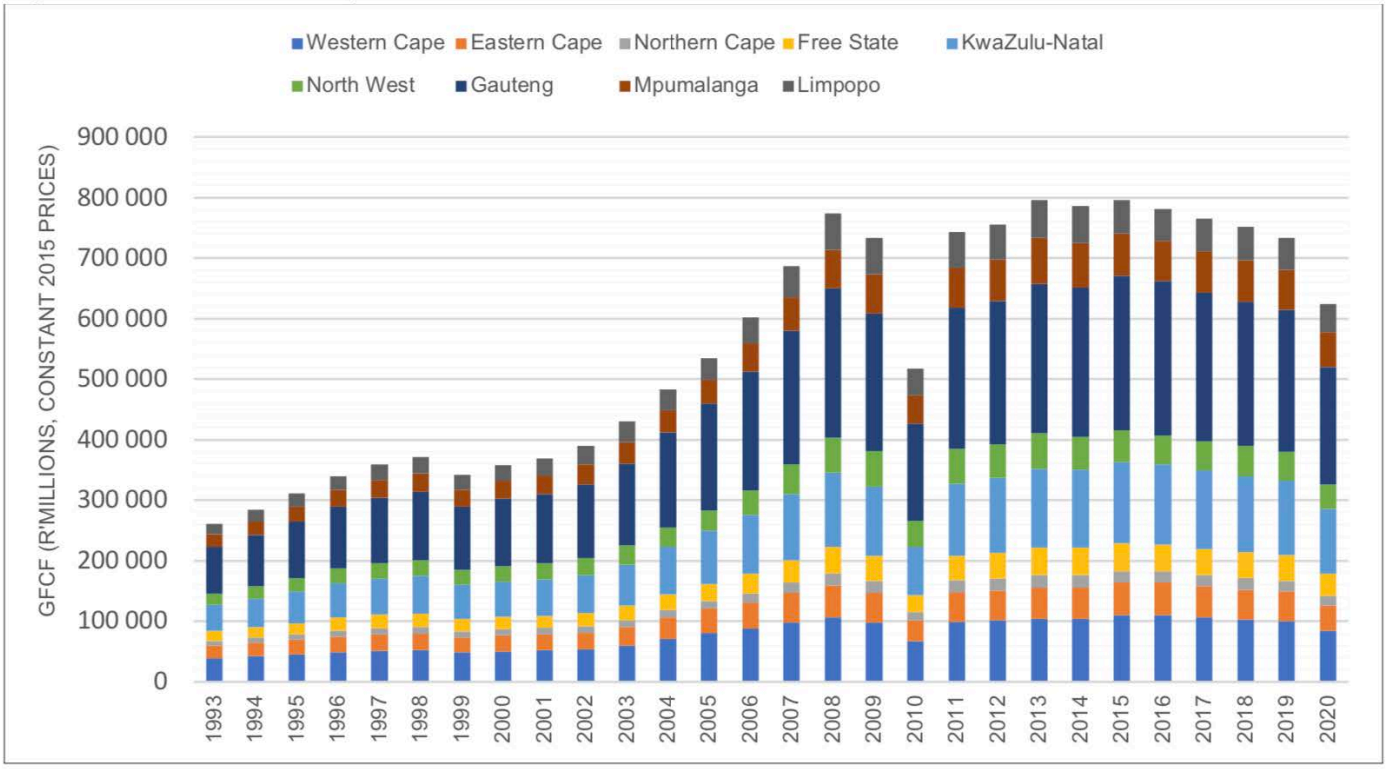
PPPs and other blended finance models must be embraced with tailored designs to maximise value and meet policy objectives. South Africa has an exceptionally innovative and sophisticated financial market, worth R13 trillion in assets. In addition, it is important to note that ESG funding holds increasingly promising potential as private investors seek to support environmental and social objectives, however, leveraging these innovations requires stringent monitoring and reporting with the same applying to the issuance of project specific and social bonds. In 2019, National Treasury began reviewing the public-private partnership (PPP) regulations and guidelines, which have been identified as a key barrier to the low uptake of PPPs. The reform of the PPP framework is key as most of the blended finance projects will be partnerships between the public and private sector which urgently need to increase in scale, quality, pace and impact. It is critical that these amendments are implemented with urgency as well-crafted PPPs can significantly alter a country's fiscal space by effectively and efficiently bringing private financing to public infrastructure projects (Fioravanti, Lembo & Deep, 2019).

Figure 3: Gross Fixed Capital Formation, 1993 - 2020, South African Provinces



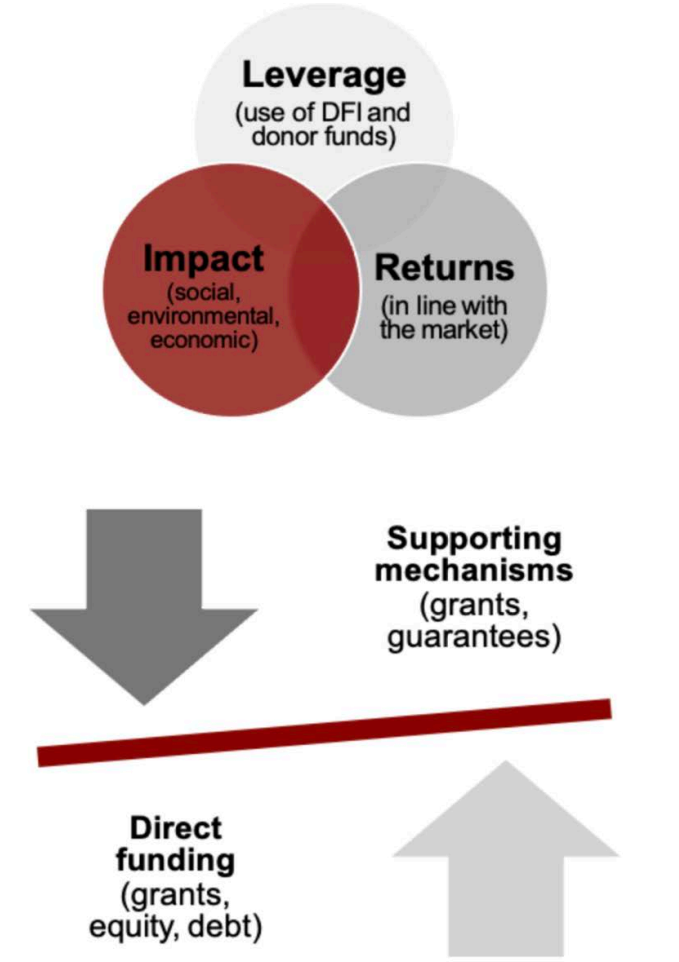
Source: Quantec (2022)

National Treasury (2020) highlights that "the state is borrowing at an increased rate – not to build infrastructure – but to fund operations". South Africa's fiscus and its capacity to finance and address growing infrastructure demands was already constrained in a pre-Covid environment with the state borrowing to fund growing government consumption spending and thus, requires an urgent paradigm shift. The crowding out of capital spending by consumption spending pressures, such as the public sector wage bill and debt service costs is not sustainable. In this regard, capital budget reforms are required to boost infrastructure spending, particularly as new projects are rolled out. Bridging the infrastructure investment gap, which will still exist with the elimination of efficiency improvements, requires the identification and implementation of alternative mechanisms to leverage private sector finance, making the necessary regulatory changes and improving infrastructure planning across government to build a pipeline of projects. To unlock this potential, government has initiated broad reforms in infrastructure provision, however, these reforms urgently need to be expedited. Identified reforms will ensure that infrastructure is built faster and that costs are controlled, with the appropriate sharing of risks between the private and public sector.

The importance of meaningful and effective partnerships for development cannot be overemphasised. A solution currently being implemented is that of blended finance, which is "the strategic use of development finance for the mobilisation of additional finance towards sustainable development in developing countries" (OECD, 2020). Blended Finance plays a critical role in bringing risk adjusted returns in line with investment requirements leveraging strategic public finance to mobilise private financing. Emerging innovations in the infrastructure finance space have revealed that blended finance plays a critical role in bringing risk adjusted returns in line with investment requirements. Blended finance leverages strategic public finance to mobilise private financing with the establishment of the South African Infrastructure Fund by the current administration being a notable development in this regard.

Government has committed R100 billion to the Infrastructure Fund, including R10 billion over the next three years. Government's aim is to leverage R1 trillion worth of infrastructure investment over a ten year period. The Fund, housed within the DBSA, aims to facilitate and expedite the development of projects and programmes. However, the Infrastructure Fund is heavily reliant on National Treasury's Budget Facility for Infrastructure (BFI) (explained later in this section) and does not have its own dedicated budget vote severely hampering the speed and scale of its operations and thus, impeding the pace of infrastructure delivery in the country. Furthermore, the low frequency of BFI sittings per year further hampers the Fund's effectiveness.

Figure 4: Blended Finance Fundamentals and Mechanisms



Source: Author's own

It is now widely acknowledged that a lack of financing and funding is not the challenge but rather the availability of robust, credible and bankable project pipelines. A significant amount of planning following project conceptualisation and inception is required for large-scale infrastructure projects, including but not limited to a plethora of studies that address the financial, legal, technical, social, economic and environmental considerations of an infrastructure project. Through high quality and well-thought-out project preparation, the infrastructure finance and funding gap can be mitigated.

The BFI, previously referenced, was established by National Treasury in 2016 to evaluate large-scale project proposals before committing fiscal resources. Most proposals submitted through the BFI have, however, been poorly planned and packaged, mainly because of insufficient technical expertise and institutional capacity to develop bankable projects. The Development Bank of Southern Africa (DBSA) has established a project preparation facility to bridge this gap, in addition to leveraging DFI support in this regard. Infrastructure South Africa has significantly altered the efficacy of the infrastructure development ecosystem through working with project sponsors from inception, assisting departments with their submissions to the BFI despite the absence of project preparation funding from the fiscus.

National Treasury's Neighbourhood Development Programme was aimed at assisting municipalities to improve the development and management of their built environment. A dedicated grant was created to support municipalities to establish effective and efficient programme management and project preparation facilities for capital investment programmes. The Cities Preparation Support Fund provides co-financing, which declines as these municipalities in-

crease their capacity. Despite these initiatives, projects are still poorly packaged. In addition, there exists a high level of fragmentation and thus, inefficiency from a project preparation perspective with project preparation funds split between the DBSA and National Treasury with ISA set to receive funding in the 2023/24 MTEF.

Better monitoring and reporting on projects will build investor trust and confidence. In order to build partnerships, it is critical to consider the risk appetite of financiers and funders in SA's blended finance approach. Projects must be designed to minimise risk and meet the risk-return profile of investors. It is important that government takes active measures to de-risk infrastructure projects to enhance the bankability of infrastructure projects and thus, generate greater interest from the private sector. The private sector must not be treated homogenously with risk-return profiles being optimised for each party involved towards ensuring value for money in the delivery of infrastructure projects. However, it is important to highlight that reducing the risk for the private sector will not compensate for the absence of de-risking regulatory and institutional considerations. Weaknesses in the investment climate must be addressed as de-risking investment is not tantamount to compensating for weak or absent fundamentals.

SIX.

SOUTH AFRICA'S INFRASTRUCTURE LANDSCAPE

Whilst the South African government has over the past decade invested in infrastructure, there is a need to significantly scale up the delivery of infrastructure to support the country's ambitious growth targets. Through Infrastructure South Africa, the country has developed its National Infrastructure Plan 2050 (NIP2050) through an extensive public participation process, during the course of 2021. The goal of the NIP2050 is to create a foundation for achieving the country's NDP vision of inclusive growth. Its purpose is to promote dynamism in infrastructure delivery, address institutional backlogs and weaknesses that hinder success over the longer term, as well as guide the way towards building stronger institutions that can deliver on NDP aspirations. The provision of infrastructure as an enabler for investment is linked to the provision of physical and digital infrastructure including energy, water, commercial transport and telecommunications while the NIP2050 Phase II focuses on social infrastructure.

The NIP2050 envisages a step change in the institutional capability that drives material progress in South Africa's infrastructure ambition. Planning, procurement and execution systems and capabilities will be operating at the highest global standard, commensurate with South Africa's significant infrastructure transformation agenda. Robust and ever-developing partnerships and alliances between public and private sectors is a significant feature in planning and implementation, in conjunction with think tanks, financial institutions, businesses or communities. There will be confidence to drive an increasingly dynamic, high-performance delivery machinery. This will align delivery with the constitutional imperative to promote the "efficient, economic and effective use of resources" and to ensure that public administration is "development-oriented". The vision also recognises that efficient and timeous delivery of public infrastructure requires an environment that is safe, secure and ethical. For a detailed analysis of each infrastructure sector in South Africa, please refer to South Africa's NIP2050.

In terms of the state of energy, it is no longer a crisis but rather, an emergency. The country's current inability to provide sustainable and reliable sources of power has long posed an immediate

risk with the situation drastically deteriorating on a daily basis. Based on the fact that the situation is an emergency and not a crisis, the scale and speed of the country's interventions in relation to energy must respond accordingly. Furthermore, it is crucial that procurement systems are able to respond appropriately to the energy emergency. Gearing these systems of readiness will ensure the country's ability to respond to emerging challenges in the water sector.

Table 1 below, reflects the condition assessment of South African infrastructure and services based on the findings of various sources.

Table 1: Conditional Assessment of Infrastructure Provision in South Africa

SECTOR	SUB-SECTOR	YEAR ON YEAR TREND	SCORE	SOURCE
Water	Bulk Water	Stable	D-	SAICE
	Supply to major urban areas	Upwards	C+	SAICE
	Supply to all other areas	Stable	D-	SAICE
	Piped water in dwelling	Stable	E+	StatsSA Adapted
Sanitation	For major urban areas	Stable	C-	SAICE
	To all other areas	Stable	E	SAICE
	Flush toilet connected to a public sewerage system	Stable	D-	StatsSA Adapted
Solid waste management	Waste collection in major urban areas	Downwards	C-	SAICE
	Waste collection in all other areas	Downwards	D-	SAICE
	Waste disposal in metros	Downwards	C-	SAICE
	Waste disposal in other areas	Stable	D-	SAICE
Roads	National roads	Upwards	B+	SAICE
	Paved provincial roads	Stable	D	SAICE
	Paved metropolitan roads	Downwards	D	SAICE
	other paved municipal roads	Stable	D-	SAICE
	Provincial, metropolitan and municipal gravel roads	Stable	E	SAICE
	Quality of roads	Stable	D	World bank adapted
Airports	ACSA owned	Downwards	B-	SAICE
	Quality of air transport infrastructure	Stable	A	World bank adapted
Public Transport	Distance from facilities	Stable		StatsSA Adapted
Ports	Commercial ports	Stable	B-	SAICE
	Fishing Harbours	Stable	B	SAICE
	Quality of port infrastructure	Downwards	D	World bank adapted
Oil and Gas Pipeline (new)	Oil and Gas pipeline	n/a	B	SAICE
Rail	Heavy haul freight lines	Downwards	B-	SAICE
	General freight lines	Downwards	C-	SAICE
	Branch lines	Downwards	E	SAICE

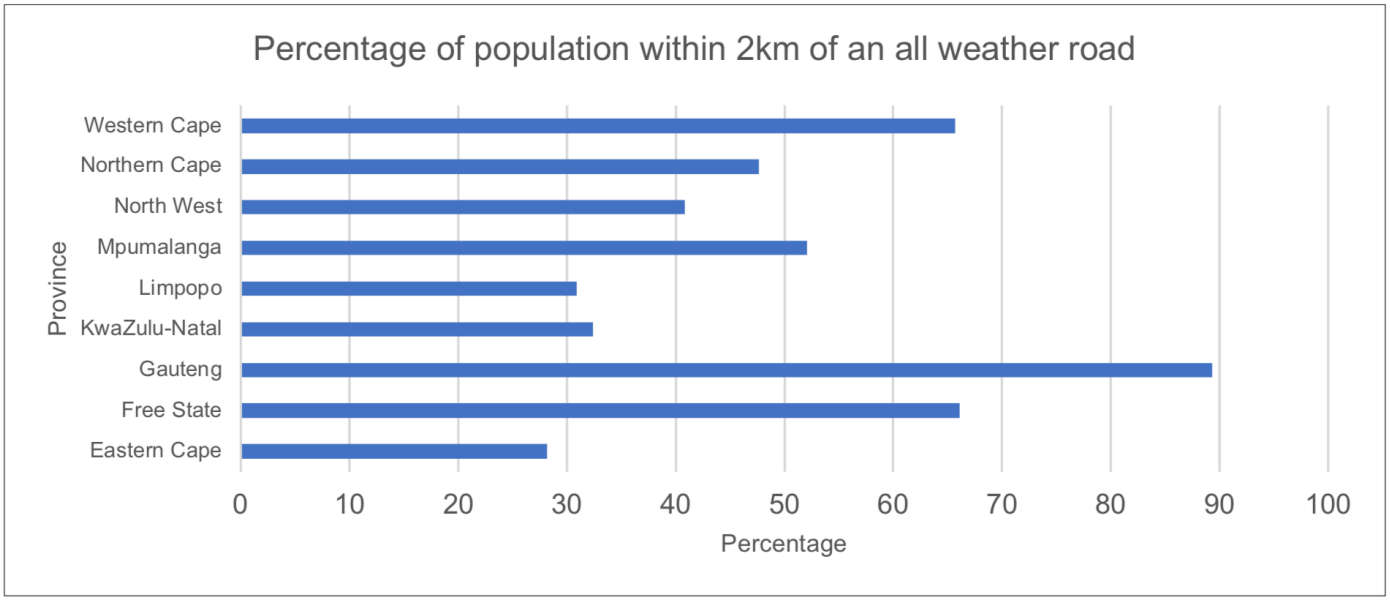
	Passenger lines (PRASA)	Downwards	**E**	SAICE
	Passenger lines (Gautrain)	Downwards	**A-**	SAICE
	Quality of railroad infrastructure	Stable	**E**	World bank adapted
Logistics	Cross border trade	Stable	**F**	World bank adapted
	Infrastructure	Stable	**C**	World bank adapted
Electricity	Generating infrastructure (ESKOM)	Downwards	**D-**	SAICE
	Transmission network (ESKOM)	Upwards	**B**	SAICE
	Local distribution	Stable	**D**	SAICE
	Household access to electricity	Stable	**B**	StatsSA Adapted
	Quality of electricity supply	Stable	**E**	World bank adapted
Health Care	Hospitals	Stable	**D+**	SAICE
	Clinics	Stable	**D**	SAICE
Education	Public ordinary schools	Downwards	**D**	SAICE
	Universities	Stable	**C+**	SAICE
	TVET colleges	Stable	**D+**	SAICE
	Education levels	Stable	**D-**	StatsSA Adapted
Information and Communication Technology (new)	ICT	n/a	**B**	SAICE
Overall Grade	Quality of overall infrastructure	Stable	**D**	World bank Adapted
	Overall grade	Downwards	**D**	SAICE

Source: SAICE, World Bank, StatsSA

The overall grade for South African infrastructure is deemed to be a "D" score. This is a relatively poor status score and is largely due to the inadequate maintenance of our infrastructure. In terms of accessibility to roads, a Roads Access Index (RAI) calculation was performed. The RAI is based on the percentage of population within 2km of an all-weather road.

Figure 5 reflects the RAI for the different provinces in South Africa. Gauteng has the best RAI in the country with more than 80% of its residents within 2km of a paved road. Eastern Cape and Limpopo have the worst RAI in the country with only around 30% of their residents within 2km of an all-weather road.

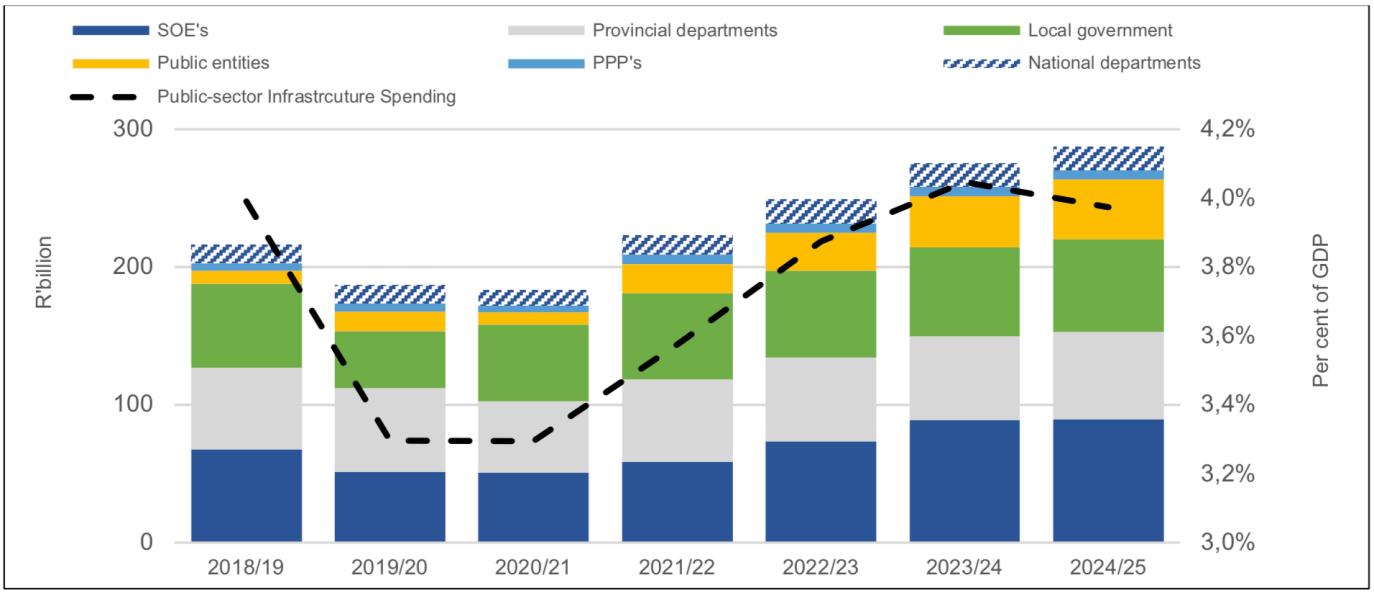
Figure 5: Composite Index for Road Access in South Africa



Source: ISA (2021)

State Owned Enterprises (SOE's), historically and over the Medium-Term Expenditure Framework (MTEF) period, continue to invest the most capital into infrastructure development. That is on average 29.3%. Over the Budget Review 2022 MTEF period, it is projected that SOE's will spend R251.7 billion. Between 2018/19 and the planned 2024/25 fiscal year, this spending is projected to increase by 32.5%. Spending is focused on economic infrastructure or more specifically in the electricity, gas and water, transport and logistics and water and sanitation sectors. There is dedicated focus on public-sector infrastructure reform under which various sector specific projects are target as outlined in the Budget Review 2022 (National Treasury, 2022). As such, spending by local municipalities, the second largest infrastructure investor, is expected to be R194.4 billion between 2022/23 and 2024/25. Between 2018/19 and 2024/25, that is an increase of 10.1%. Spending by Provincial Departments is foreseen to increase between 2018/19 and 2024/25 (6.3%), however, this increase is significantly lower in comparison to SOE's. Public entities are projected to spend R108.4 billion. It is estimated that these entities will spend R43.7 billion in 2024/25. Compared R9.6 billion in 2018/19, that is a staggering 355% increase. Despite the estimated increase in public-sector infrastructure spending, it must be noted that total spending as a percentage of GDP has not changed significantly, ranging between 3.3% and 4%. Refer to Figure 6 and Table 2.

Figure 6: Public-sector Infrastructure Spending



Source: Derived from National Treasury (2022)

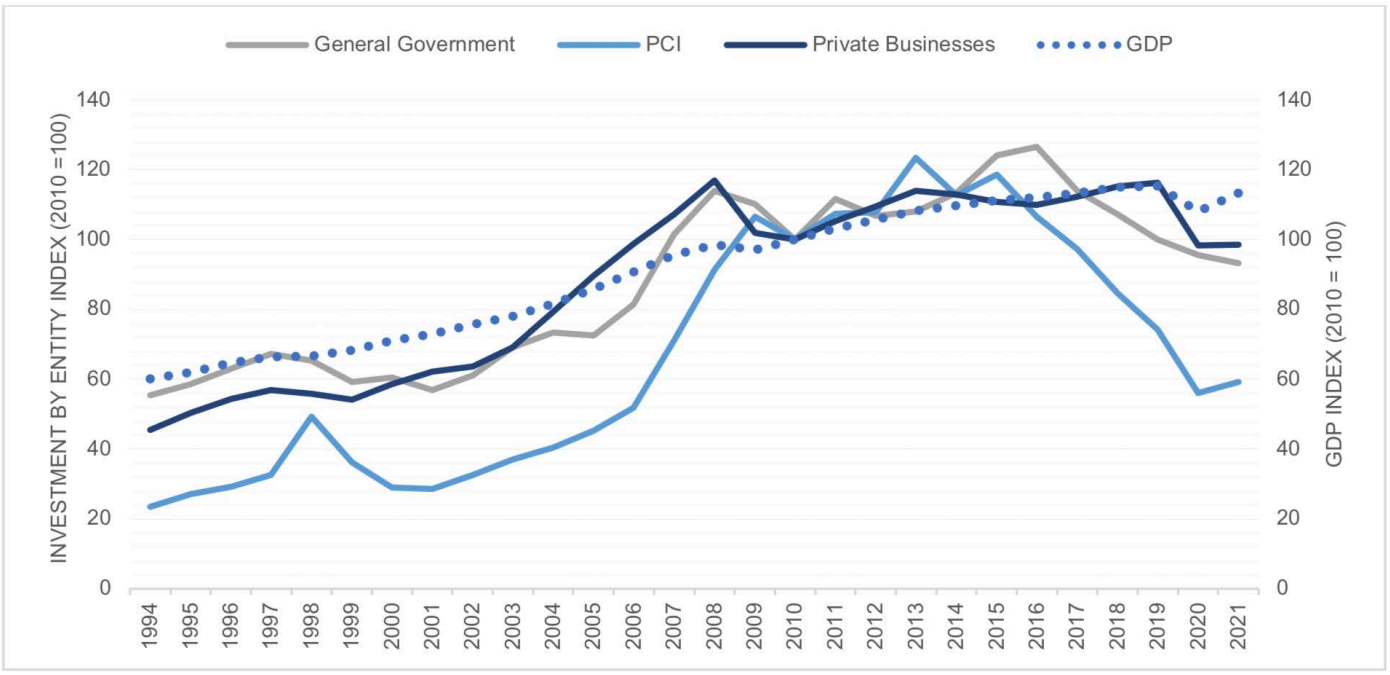
Table 2: Public-sector Infrastructure Expenditure and Estimates

R billion	2018/19 Outcomes	2019/20	2020/21	2021/22 Revised estimate	2022/23 Medium-term estimates	2023/24	2024/25	MTEF total
Energy	39.9	26.2	30,0	34.5	35.4	45.2	44.1	124.8
Water and sanitation	27.1	22.5	29.5	33.9	41.4	43.9	45.7	131.1
Transport and logistics	74.4	70.5	58.6	73.8	88.6	106.1	117.1	311.8
Other economic services	13.5	5.7	6.9	23.6	21.9	20.3	20.3	62.6
Health	11.3	12.2	14.7	13.8	14.1	13.4	12.9	40.4
Education	17.2	17.4	14.2	16.4	19.4	18.4	19.1	56.9
Human settlements[1]	15.0	20.9	13.3	13.4	14.3	14.9	15.1	44.3
Other social services	10.1	4.7	4.1	2.2	2.1	1.9	2.0	6.0
Administration services[2]	7.7	7.4	12.1	12.0	12.3	11.2	11.2	34.7
Total	**216.2**	**187.4**	**183.4**	**223.6**	**249.6**	**275.4**	**287.5**	**812.5**
National departments	13.6	13.8	11.4	14.4	17.5	17.3	17.2	52.0
Provincial departments	59.5	61.0	51.8	60.1	61.0	61.2	63.3	185.5
Local government	61.0	41.2	55.6	62.1	63.0	64.3	67.2	194.4
Public entities[3]	9.6	14.5	8.8	21.6	27.3	37.4	43.7	108.4
Public-private partnerships	4.9	5.6	4.9	6.8	7.1	6.6	6.7	20.4
State-owned companies[3]	67.5	51.2	50.8	58.6	73.6	88.6	89.5	251.7
Total	**216.2**	**187.4**	**183.4**	**223.6**	**249.6**	**275.4**	**287.5**	**812.5**

Source: National Treasury (2022)

As indicated, investment plays a key role in creating employment opportunities, assisting households, and creating economic growth. The figure below provides an historical overview of the relationship between investment by entity, employment, and GDP.

Figure 7: Economic Development Enablers Co-Performance



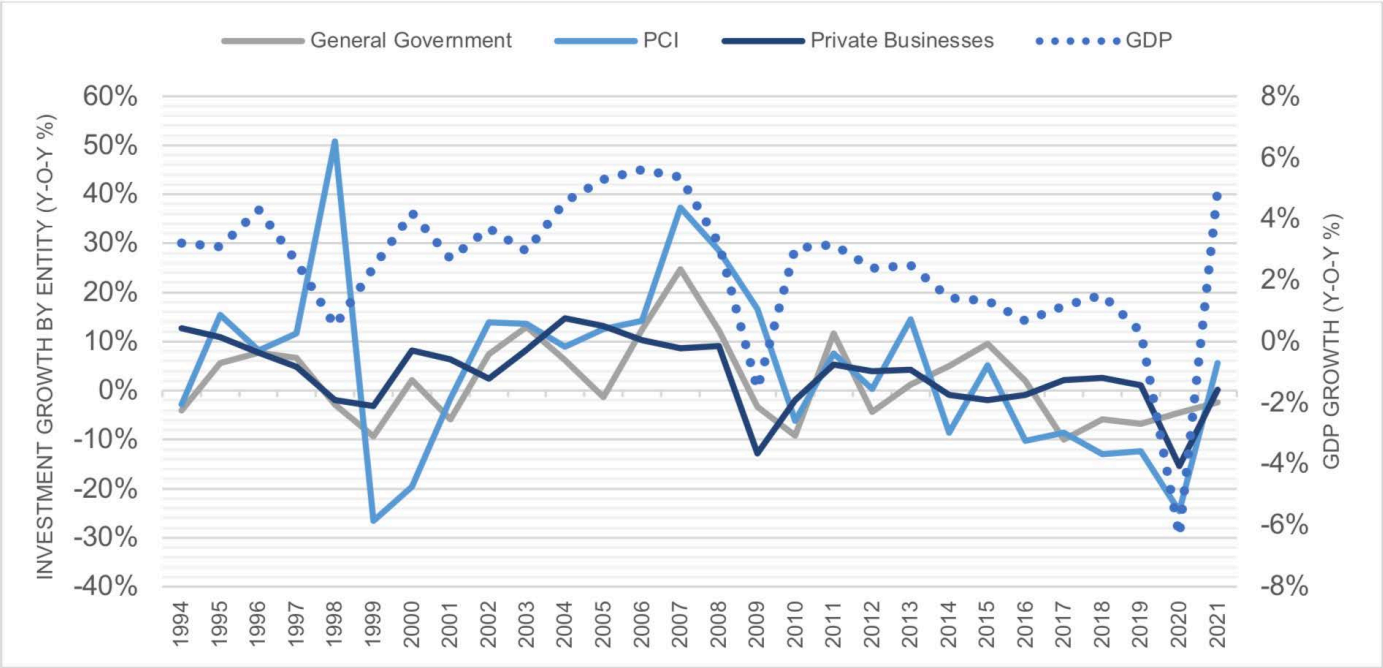
Source: Derived from SARB (2023)

Figure 7 illustrates the levels of investment by type of entity and GDP growth in the country since the democratic transition in 1994. Generally, the co-movements of the respective investment curves demonstrate a positive relationship between GDP growth and investment. There is an upward trajectory in both investments and GDP growth from the period 1994 to 2008. The period after the financial crisis is characterised by stagnant GDP growth and lack of sustained levels of investment. Currently, public investment has declined substantially with current levels being the lowest since the financial crisis. Private business investment has been relatively stable but have also fallen in recent years. Economic growth in South Africa has been stagnant with high unemployment rate. A lack of sustained levels of investment can negatively affect both employment and economic growth.

Private and government investment have not experienced sustained growth in the last 14 years.

Figure 8 below illustrates the growth rates in investment by the type of entity and GDP in the country since 1994. The growth rate patterns indicate that the variables are closely linked as seen by the similar trajectory observed between the respective variables. Generally, when there is a decrease in investment, there is also a decrease in GDP with the converse being true. The government investment trend is a bit more irregular compared to that of private investment trend, which might be indicative of policy uncertainty within government with regard to investment and suboptimal systems of governance.

Figure 8: GDP and Investment by Entity (1994 – 2021 year-on-year percentages)



Source: Derived from SARB (2023)

SEVEN.

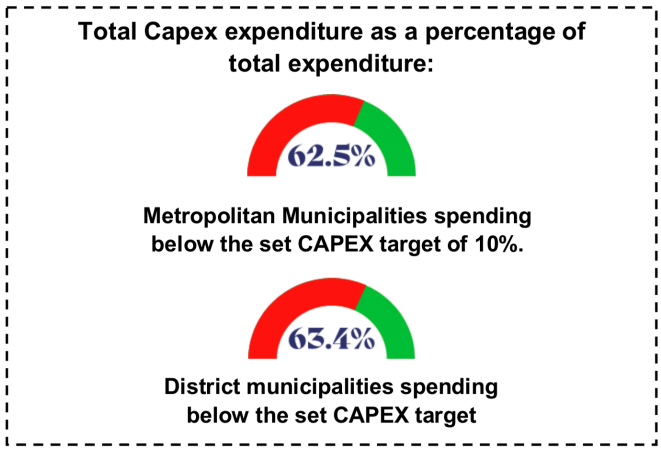
INFRASTRUCTURE INTERVENTIONS FOR LOCAL GOVERNMENT

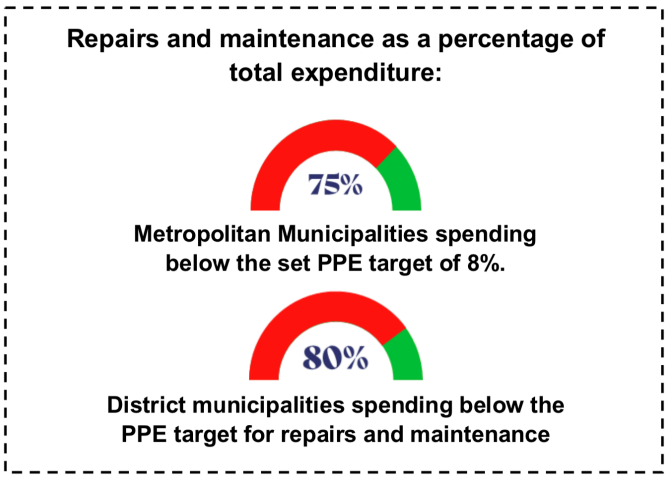
The purpose of this section is threefold: (i) to explain the need for infrastructure intervention at local government; (ii) to substantiate the criteria for selecting high priority economic centres for infrastructure intervention; (iii) and to indicate the cumulative socio-economic potential of specific infrastructure projects.

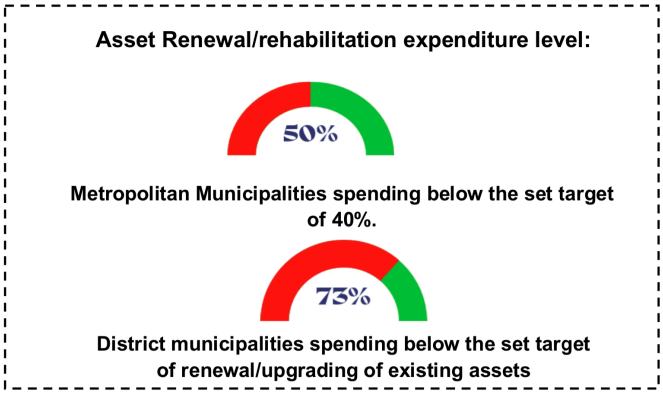
7.1. THE NEED FOR INFRASTRUCTURE INTERVENTION IN LOCAL GOVERNMENT

The analysis focuses on both district and metropolitan municipalities and measures infrastructure delivery by municipalities based on three performance indicators as set by National Treasury, namely: (i) an acceptable norm of 10 to 20 percent of capital expenditure as a percentage of total municipal expenditure; (ii) spending a minimum of 8 percent on repairs and maintenance against the property, plant, and equipment (PPE); and (iii) a minimum of 40 percent expenditure on the renewal/upgrading of existing assets.

The 2019/20 financial year audited outcomes reveal that local government did not meet its infrastructure delivery mandate. Most metropolitan and district municipalities were plagued by the chronic challenge of underspending in terms of capital expenditure on infrastructure. The same situation applies to maintenance (up to 80 percent target) and asset rehabilitation, which serves to undermine and threaten the social fabric of South Africa, as a nation.







Source: Adapted from National Treasury (2020)

7.2. SOCIO-ECONOMIC CONSIDERATIONS IN DETERMINING PRIORITY INTERVENTION AREAS

To identify high impact infrastructure intervention areas, specific socio-economic parameters were considered. These focused on population levels (impacting the largest population through investment) and the contribution to the Gross Value Add (GVA) of the economy (supporting the most economic productive locations through investment). Nineteen centres of national economic importance were thus identified as priority areas for infrastructure investment and will form the basis for areas of infrastructure intervention across the spheres of water, energy and roads. It is argued that the failure to address infrastructure challenges in these nineteen centres of economic importance will directly impact on the national economy, based on these centres accounting for 63.8 percent of the country's population, or 38.21 million, and 73.7 percent of national GVA.

Gross Value Added (GVA) is the measure of the value of goods and services produced in a sector of the economy. The table below demonstrates GVA contributions of the identified centres of national economic importance. The table above indicates that the selected areas across the country cumulatively contribute about 73.7 percent to the total GVA in 2021. The City of Johannesburg contributes the highest GVA amongst these areas.

Table 3: Population Contributions to South Africa

	Region	Total Population	Contribution to SA
	South Africa	**59 852 195**	
	Selected Districts	**38 215 432**	**63.8%**
1	*City of Ekurhuleni*	4 033 750	6.7%
2	*City of Johannesburg*	5 995 408	10.0%
3	*City of Tshwane*	3 811 773	6.4%
4	*uMgungundlovu*	1 134 265	1.9%
5	*eThekwini*	3 991 563	6.7%
6	*City of Cape Town*	4 648 567	7.8%
7	*Garden Route*	626 649	1.0%
8	*Vhembe*	1 425 151	2.4%
9	*Capricorn*	1 325 796	2.2%
10	*Nkangala*	1 630 869	2.7%
11	*Ehlanzeni*	1 810 401	3.0%
12	*Bojanala*	1 942 979	3.2%
13	*Ngaka Modiri Molema*	902 857	1.5%
14	*Lejweleputswa*	643 818	1.1%
15	*Mangaung*	865 701	1.4%
16	*Frances Baard*	414 853	0.7%
17	*ZF Mgcawu*	282 673	0.5%
18	*O.R Tambo*	1 517 388	2.5%
19	*Nelson Mandela Bay*	1 210 972	2.0%

Source: Adapted from Quantec (2022)

Table 4: Gross Value-Added Contributions to South Africa

	Region	GVA (R Million) - 2021	Contribution to SA
	South Africa	**R4 063 690**	
	Selected Districts	**R2 993 398**	**73.7%**
1	*City of Ekurhuleni*	R329 533	8.1%
2	*City of Johannesburg*	R584 834	14.4%
3	*City of Tshwane*	R367 703	9.0%
4	*uMgungundlovu*	R77 996	1.9%
5	*eThekwini*	R361 215	8.9%
6	*City of Cape Town*	R418 602	10.3%
7	*Garden Route*	R43 342	1.1%
8	*Vhembe*	R45 960	1.1%
9	*Capricorn*	R69 896	1.7%
10	*Nkangala*	R113 220	2.8%
11	*Ehlanzeni*	R89 723	2.2%
12	*Bojanala*	R126 262	3.1%
13	*Ngaka Modiri Molema*	R40 242	1.0%
14	*Lejweleputswa*	R49 479	1.2%
15	*Mangaung*	R73 426	1.8%
16	*Frances Baard*	R28 349	0.7%
17	*ZF Mgcawu*	R18 816	0.5%
18	*O.R Tambo*	R33 427	0.8%
19	*Nelson Mandela Bay*	R121 374	3.0%

Source: Adapted from Quantec (2022)

7.3. SOCIO-ECONOMIC POTENTIAL OF INFRASTRUCTURE INVESTMENT IN LOCAL GOVERNMENT

The scenario assumes investment in roads as well as water and sanitation infrastructure for local government. A high-level input-output analysis was performed to assess the socio-economic potential for infrastructure investment of R34 billion in the above locations based on key infrastructure priority projects. The analysis indicated that the total estimated investment value of R34 billion in selected areas of importance may add an additional R41 billion to the GVA of those economies. The cumulative increase for income is estimated at R14 billion due to increased employment opportunities, projected at approximately 150,000 jobs. The higher investment will also generate higher tax income of approximately R4 billion.

From a policy implications perspective, aggressive infrastructure intervention is required to assist local government in delivering on its infrastructure mandate though the financing (increased investment), implementation (construction) and management (maintenance and rehabilitation) of local infrastructure. Infrastructure investment support will also enhance improvements in municipal service delivery though increased capital expenditure and better maintenance of municipal property, as well as the improved renewal/upgrading of existing infrastructure.

EIGHT.

SUMMARY OF ECONOMETRIC MODELLING RESULTS

In the paper's first analysis, Analysis A, further discussed in the document's annexure, Section 11, the results from the econometric model yield mixed results in both the short-run and long-run. The model uses time series data from 1960 to 2021. In the long-run, it is estimated that government GFCF positively affects GDP. Public corporation investment (PCI) and similarly, private investment positively impact GDP in the country.

The model finds a bi-directional relationship between GDP and Government Investment implying that GDP influences Government Investment and vice versa. As expected, and similarly, there is a bi-directional relationship between GDP and PCI which means that GDP impact on PCI with the converse being true. A bi-directional relationship is found between PCI and Government Investment. Simply stated, PCI impacts Government Investment and Government Investment impacts PCI. Private Investment does have a causal relationship with Government Investment.

Analysis B sought to model the relationship between infrastructure investment and governance. It is clear that there is a distinct need to ensure that government promotes and practices good governance in public infrastructure investment. The picture revealed by the model was at first perplexing as higher investment levels reflect lower efficiency from government. However, the reason for this could be related to a lack of capacity to manage such increasing infrastructure expenditure. This underscores the importance of building a capable state that is effective and efficient in achieving its service delivery mandate. Infrastructure development is the flywheel of the South African economy with the NDP target for investment requiring a substantial increase in investment to meet the country's 2030 goals. Based on the econometric model, it is clear that increased levels of infrastructure investment require enhancing the country's infrastructure governance systems in addition to increased human capital investment.

NINE.

POLICY IMPLICATIONS AND INTERVENTIONS

Infrastructure development is one of the fundamental requirements to promote productivity and inclusion. The ability to leverage modern technologies and modern infrastructure increases the competitiveness of firms and businesses while a nation's residents rely on high quality infrastructure towards access equal opportunities and equal access to services (OECD, 2017). Successful infrastructure development is aligned to the achievement of important policy goals including growth. affordability and inclusion in an environmentally sustainable manner. From a policy implications perspective, aggressive infrastructure intervention is required to enhance the country's infrastructure governance systems and further, to assist local government in delivering on its infrastructure mandate though the financing (increased investment), implementation (construction) and management (maintenance and rehabilitation) of local infrastructure. Based on the outcomes of this research and the arguments made in this paper in terms of the critical role that infrastructure development plays in promoting a nation's development, the following interventions are proposed in the short- and medium-term:

A. SHORT-TERM INTERVENTIONS

1. ON INSTITUTIONS

A

Consolidate project preparation resources from other government departments and entities to ISA. The lack of a credible, robust and bankable project pipeline has been cited as a key driver of the country's inability to leverage private sector funding for the delivery of large-scale infrastructure projects. As ISA has been mandated as the single-entry point for large-scale infrastructure and the country's single national custodian of the infrastructure project pipeline, it is critical to Identify, designate and ringfence significant fiscal resources for financing project preparation.

B

Institutionalise the adoption and utilisation of the 5-case model for project preparation, endorsed and used by G20 nations, which will further assist in adopting a full life-cycle approach to project delivery, with greater emphasis on maintenance.

C

Commence Parliamentary process to establish ISA as an SOE.

D

Expedite the development of provincial and network industry infrastructure plans, which are costed through to 2050.

2. ON FINANCE AND FUNDING

A

Implement innovative social infrastructure financing and delivery mechanisms, based on the recent legislative amendments made.

B

Explore ways of concessioning unutilised SOE infrastructure to the private sector, in earnest, to optimise usage and productivity.

C

Capitalise the Infrastructure Fund (IF) through a dedicated budget vote within the fiscal framework of the country.

D

Increase the annual frequency of BFI sittings.

E

Expedite amendments to the PPP Regulations and Guidelines in earnest.

F

Create an Infrastructure Intervention Fund, in the 2023/24 MTEF, housed within ISA, to intervene in the identified 19 centres of national economic importance for critical infrastructure interventions, in the water, energy and roads sectors, that cannot be resolved by those cities/districts themselves due to the limitations of the budgeting process. This is based on the nineteen centres of national economic importance that were identified as priority areas for infrastructure investment and will form the basis for areas of infrastructure intervention across the spheres of water, energy and roads.

G

Create Infrastructure Intervention Panels of service providers housed at one of the country's DFIs. i.e. the IDC of DBSA further enabled by the establishment of a PMO in the same entity to address procurement failures in state departments

H

Identify funding for energy demand-side interventions in the upcoming MTEF.

I

Create and implement a catalytic rural infrastructure fund, managed by ISA, to incentivise private sector investment in rural areas.

J

Identify and implement private sector participation mechanisms for the funding of bulk infrastructure.

K

Expand the incentives offer under the SEZs dispensation to direct investments to rural areas.

3. ON ENERGY

In terms of the state of energy, it is no longer a crisis but rather, an emergency. The country's current inability to provide sustainable and reliable sources of power has long posed an immediate risk with the situation drastically deteriorating on a daily basis. Based on the fact that the situation is an emergency and not a crisis, the scale and speed of the country's interventions in relation to energy must respond accordingly. Furthermore, it is crucial that procurement systems are able to respond appropriately to the energy emergency. Gearing these systems of readiness will ensure the country's ability to respond to emerging challenges in the water sector.

A

Develop 800 – 1 000 MW of battery storage.

B

Enable municipalities to procure power from IPPs.

C

Identify funding for energy demand-side interventions immediately (an example of which is discussed in the body of this paper) in the upcoming MTEF, based on the energy emergency that the country faces.

D

Provide support and/or capacity to at least 10 non-delegated municipalities that deliver to large populations with significant challenges to enable them to maintain distribution and billing systems.

4. ON TRANSPORT

A

Implement emergency measures turnaround decline in the Durban port, Natal corridor and Gauteng link.

B

Urgently protect rail freight assets (and PRASA assets that rail freight requires) from further decline and waste through vandalism.

5. ON WATER

A

Establish the NWP PMO to support municipalities with partnership agreements signed and functioning.

B

Support and/or capacitate at least 10 non-delegated municipalities that deliver to large populations with significant challenges with capacity to maintain distribution and billing systems.

C

Review water SIPs in terms of their viability.

6. ON DIGITAL COMMUNICATIONS

A

Explore the digitisation of government services and identify and prioritise projects for funding.

7. ON PROJECT DELIVERY

A

Make it mandatory for all major projects to be accompanied by a legally enforceable localisation and industrialisation charter.

B

Expedite the introduction of a dedicated law enforcement unit to protect the delivery of projects.

C

Oversight over the project lifecycle for critical infrastructure projects.

D

Mandate ISA to have oversight on critical infrastructure projects over the project lifecycle. Infrastructure delivery must not be managed as ad-hoc collection of projects with oversight and delivery.

E

Evaluate and create a plan to address the multiple reasons for the number of cancelled tenders.

F

Review public sector infrastructure spending for build and maintenance with a focus on alignment to overall goals in network industry sectors.

B. MEDIUM-TERM INTERVENTIONS

1. ON INSTITUTIONS

A

Adopt a whole of government vision for infrastructure investment in the medium to long-term.

B

Establish ISA as a state-owned entity.

C

Cost and aggressively implement the National Infrastructure Plan 2050 with foundational network sectors directed at resuscitating the rural economies.

D

Translate the NIP2050 into prioritised and actionable project pipeline.

E

Institutionalise the adoption and utilisation of the 5-case model for project preparation, endorsed and used by G20 nations, which will further assist in adopting a full life-cycle approach to project delivery, with greater emphasis on maintenance.

F

Clearly define all role players involved and activities undertaken across national, regional and local levels establishing clear recommendations for enhancing co-ordination.

G

Clarify roles and responsibilities in the infrastructure value chain towards reducing overlaps at the national, provincial and local level. including defining all role players involved in infrastructure project conceptualisation and implementation, establish clear SOPs and creating clear TORs for dedicated committees at various levels of government to fast-track critical infrastructure projects, utilising ISA.

H

Review and clearly define mandates, activities and targets, whilst ensuring alignment to NDP goals and simultaneously assess whether these are adequately balanced and funded.

I

Review the composition of infrastructure related entity boards to ensure a balanced representation of actors. across various sectors.

J

Relocate the National Treasury PPP unit to ISA as the central entity for the large-scale infrastructure delivery, including the requisite supporting skills/consultancy services currently provided to the PPP unit.

1. ON INSTITUTIONS

K

Establish independent monitoring capacity for PPPs, as identified by Treasury, that is linked to global thought leaders and practitioners. This will create an important signalling effect to the private sector.

L

Enable timeous decision-making and organisational accountability, through improved delegations of authority.

M

Implement a centralised approach to screening and championing alternative financial mechanisms for projects utilising staff from all spheres of government to create improved partnerships.

2. ON FINANCE AND FUNDING

A

Create a recoverable project preparation grant fund, consolidating existing project preparation funding across government. The recoverable grant will be linked to project development impact metrics and is proposed to be housed and operated by ISA.

B

Develop a strategic framework for leveraging blended finance.

C

Embed principles for financial structures on infrastructure projects for each of the four sectors that can be used as a basis for structuring blended finance initiatives to be developed by the Infrastructure Fund.

D

ISA to review potential finance mechanisms and evaluate regulatory barriers, in conjunction with National Treasury, that need to be addressed, e.g. regulatory barriers have been identified in raising green bonds and project specific bonds.

E

Develop a South Africa specific project finance and funding selection tool, based on medium-term experience and based on legislation to be revised.

F

Continue collaboration with the private sector to produce at least 10 high impact and economy growing infrastructure projects/programmes to be implemented with project origination in the 2022/23 financial year.

G

Conclude amendments to the PPP Regulations and Guidelines.

2. ON FINANCE AND FUNDING

H

Reduce regulatory complexities and hurdles for investors, including making relevant amendments to the MFMA, MSA (e.g.. constraints on municipal use of PPPs), PFMA, whilst being cautious with regard to risk-return considerations.

I

Remove the identified conflict between PPP and PPPFA in terms of procurement, exempting the new integrated PPP Policy from the PPPFA.

J

Conclude the revision of the Procurement Bill and PPP Framework within the current financial year.

3. ON BUILDING A CAPABLE STATE

A

Conduct a clear capacity assessment in the infrastructure value chain with the aim of examining whether current resources allocated across activities are sufficient and further, whether they meet the demand of investors.

B

Develop staff by expanding capacity building initiatives and promoting peer-to-peer learning, for instance through exchange programmes with the private sector and within spheres of government.

C

Increase receptivity to outside information and assistance, including the improved productivity of participation in regional and international infrastructure networks, for instance through training and advisory services provided by many global institutions. This in turn requires adequate staff and funding to leverage the support and benefits provided by these networks.

D

Capacitate ISA to provide transversal engineering and financial technical project support to rural provinces and ailing municipalities in the country.

E

Create capacity that services not only South Africa, but the continent over the long-term.

F

Establish training capacity for public sector officials that is supported by MDBs, DFIs, donors and local financial institutions and thought leaders.

G

Create internal capacity within municipalities for project preparation purposes utilising ISA.

4. ON ENERGY

A

Accelerate the restructuring of Eskom into three legally separated entities.

B

Establish an energy planning Centre of Excellence, that is autonomous from Eskom.

C

Finalise plans in respect of thermal fuels (distillate and gas) to enable associated infrastructure planning in ports, pipelines, terminals and storage, and potentially refining infrastructure of bio-derived fuels.

5. ON TRANSPORT

A

Implement accounting and commercial separation at Transnet Freight Rail, thereby providing a sound basis to evaluate and accommodate third-party rail operators into the future.

B

Establish the independent National Ports Authority.

C

Develop critical strategic projects to facilitate the integration of rail. roads. ports and freight villages within SA and across the region.

D

Prioritise the development of national freight intelligence system.

E

Revitalise and protect major rail commuter corridors in the country.

F

Finalise the Port Master Plan. the National Rail Policy and the Road Funding Policy.

6. ON WATER

A

Accelerate the establishment of the National Water Resources Infrastructure Agency.

B

Expedite the introduction of an independent single national water regulator in the country.

C

Introduce measure to address the water licensing backlog.

6. ON WATER

D
Finalise the raw water pricing strategy.

E
Implement a policy for water usage in agriculture.

F
Develop reconciliation strategies the Vaal, Orange and Crocodile West rivers and the Western Cape water systems.

7. ON DIGITAL COMMUNICATIONS

A
Implement a policy on the rapid deployment of electronic communications networks and facilities.

B
Make high-speed broadband available to and accessible by all communities, achieving access comparable to competitor nations.

C
Finalise the Data Centre Strategy.

D
Finalise and implement a satellite communications strategy.

E
Finalise the SKA regional digital rollout strategy.

8. ON PROJECT DELIVERY

A
Embed the introduction and consideration of green solutions in the design and delivery of projects.

TEN.

CONCLUSION

This paper has argued that the haemorrhaging of technical and financial engineering skills in the country, the collapse of institutions and the dire ramifications of state capture have all conspired to degrade the quality of the infrastructure offering in the country. As such, national government needs to play a strategic and key role with respect to aligning and consolidating investment priorities, building capacity at different levels of government across the infrastructure development value chain and across the project lifecycle and ensuring sound governance throughout (OECD, 2017). MTEFs are critical medium-term mechanisms that can overcome the limitations of annual fiscal cycles towards achieving important fiscal objectives (Carrasco & Lau, 2020) and must further be used as a tool to signal confidence and certainty in a country's economy. Simply stated, a country's budget is the most significant instrument in shaping developmental priorities and must be treated as such. The World Bank (2022) estimates that one-third of infrastructure expenditure is lost as a result of inefficiency as it pertains to governance-related challenges. Furthermore, the co-ordination of infrastructure investment across the different spheres of government is vital towards enhanced efficiency and effectiveness in the delivery of infrastructure. Horizontal and vertical co-operation can also bring about the mutualisation of funding enhancing access to finance for infrastructure development (OECD, 2017). In South Africa, the roles and responsibilities of various entities and departments lack certainty and are hampered by insufficient co-ordination mechanisms.

Five key infrastructural weaknesses are apparent in South Africa and relate to the following:

1. LOCAL GOVERNMENT INFRASTRUCTURE INVESTMENT

The research finds that up to 75 percent of local government underspends in terms of its infrastructural delivery and maintenance requirements. This severely impacts on the delivery and long-term economic life of the country's infrastructure. Local government historically has received around 30 percent of the public infrastructural allocations. This allocation needs to be reconsidered and increased. The research reflected that implementation of relevant projects by local government has significant economic potential in terms of value add to the economy, job creation, income improvements and tax benefits for government. These investments, however, need to be done with due consideration to good governance requirements.

2. INFRASTRUCTURE GOVERNANCE

The research conducted illustrates a significant disconcerting trend in that there is an inverse relationship between infrastructure investment and governance, which is argued to signal a lack of capacity to manage increased infrastructure expenditure in the public sector. This relationship cannot be acceptable if the notion of a capable state is to be enhanced. Proper and robust governance systems should be designed and implemented for the infrastructure programme of government. Improved infrastructure governance will also contain corruption, improper project preparation and underspending on funded projects. South Africa has the potential to lead the way in this regard.

3. IMPORTANCE OF PRIVATE SECTOR INVESTMENT

This paper finds a strong causal relationship between private sector investment and GDP growth. This implies that government needs to ensure that market confidence is enhanced to ensure higher levels of private sector investment.

4. INFRASTRUCTURE MAINTENANCE

The lack of maintenance in infrastructure is clearly evidenced by the poor conditional assessments and level of service rankings by various institutions, impacting the production and export capacity of the country. For instance, current and deteriorating poor road networks increase the total logistics costs for business of the country. Similarly, perpetual power outages and poor water supply and quality adversely impacts both local and business communities. In addition, the economic lifespan of our infrastructure is substantially reduced due to poor maintenance. If left in unchecked, this will have significant consequences as current infrastructure delivery is focussed on the replacement infrastructure as opposed to the provision of new infrastructure to unlock development.

5. CONTINUED DETERIORATION OF INFRASTRUCTURE

In terms of the benefits of infrastructure development, the research also reflects the importance of timely provision of infrastructure as the increased investment in infrastructure has both short- and long-term implications. Certain short-term sacrifices, highlighted in this paper, are required to reap the long-term benefits of infrastructure investment. It is estimated that the spillover effects of infrastructure delivery will take approximately four to five years before the core benefits are realised, thus requiring urgent institutional change, institutional transformation and implementing certain difficult decisions at the highest levels.

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