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Solidarity
Equality
Sustainability

SAI20 CONSOLIDATED THEME PAPER

UNLOCKING AND LEVERAGING PUBLIC INFRASTRUCTURE FUNDING FOR EQUALITY, SUSTAINABLE GROWTH AND BRINGING IMPROVEMENT TO THE LIVES OF CITIZENS

DISCUSSED AT HEAD OF SAI SUMMIT, JUNE 2025

Executive summary

Infrastructure development and funding as a global economic development priority

Infrastructure development and funding is a global economic development priority; one that is key to the realisation of solidarity, equality and sustainability. Investments in energy, telecommunications, transport networks and water supply directly impact growth as they serve as essential inputs in the production of any and all goods and services. According to the World Economic Forum (WEF), almost 14% of the global gross domestic product (GDP) is invested in infrastructure. It is for that reason that Goal 9 of the sustainable development goals (SDGs) seeks to build resilient infrastructure, promote sustainable industrialisation and foster innovation.

The infrastructure development and funding challenge

There exists, however, a significant and expanding global infrastructure development gap, one that is estimated by the World Bank to be the cause behind nearly 700 million people still not having access to electricity, 2,2 billion people lacking drinking water, 3,5 billion people lacking safe sanitation, 1 billion people living more than 2 kilometres from an all-season access road, and a third of the global population – 2,6 billion people – remaining digitally unconnected. The cost of financing these gaps is also enormous, estimated at 4,5% of the annual GDP of low and middle-income countries, or around US $1,5 trillion. Mobilising adequate investment allocation, especially private capital, towards closing this gap has proven difficult despite there being an abundance of available capital in the world.

Infrastructure development and funding as a G20 priority

As a result of this, infrastructure development and funding are also a G20 priority and has featured consistently on its agenda. SAI20 nations have also engaged on this from different perspectives since inception, specifically with respect to:

- project origination and governance factors
- financing factors
- private sector involvement
- low income, emerging and developing countries
- sustainability factors
- force multipliers of infrastructure investment
- infrastructure use cases.

Infrastructure development goals and priorities of SAI20 nations

The infrastructure development goals and priorities of SAI20 nations, while varying according to country-specific factors, broadly cover three categories in this regard, namely: development, maintenance and digital infrastructure rollout.

Factors shaping the current context of infrastructure development in SAI20 nations

The key factors shaping their current context with respect to infrastructure development are:

- **Governance** – Despite a general acknowledgment of the importance of governance, some of the SAI20 nations reported persistent inefficiencies in financial management, weak governance structures, corruption, and misallocation of funds.
- **Planning** – The majority of SAI20 countries report that their governments have developed infrastructure plans that detail long-term priorities. Although those plans are reported to provide a clear roadmap of the countries' visions towards infrastructure development, the coordination and monitoring of such plans is reported to not have matured adequately.
- **Project delivery** – Some SAI20 nations report that their audits of infrastructure projects have revealed a variety of project execution challenges, key amongst these being persistent implementation delays, cost overruns, and quality issues.

- **Operation and maintenance** – SAI20 nations report one of the key factors constraining their ability to close their infrastructure gaps is the poor maintenance and management of existing infrastructure.
- **Resilience** – For those SAI20 nations where infrastructure resilience features as a focus area, it has primarily been with regard to climate resilience, cybersecurity and population growth.

Factors shaping the current context of infrastructure funding in SAI20 nations

SAI20 nations mostly self-report significant infrastructure funding gaps. Where governments mostly fund infrastructure development projects, the financing is insufficient relative to the demand for infrastructure development, necessitating that SAI20 nations tap into resources other than their own. These may include foreign funding and blended finance models which are helpful sources of funding in some ways yet complex in others. Attracting these sources of capital remains a challenge though, driven by a variety of risks relating to infrastructure financing that have proven to be intolerable for the private sector to allocate materially larger sums of capital to closing the infrastructure gap. Key risks factors include weak governance structures, corruption, complex procurement and contract management regulations, lack of available data to promote transparency, and capacity and expertise shortages in government institutions to effectively implement infrastructure projects.

Infrastructure development gap

The existence, widening and persistence of infrastructure development gaps is, as reported by SAI20 nations, a function of both supply and demand factors. To address these, SAI20 nations are implementing and undertaking a variety of initiatives, including enhanced funding mechanisms to strengthen infrastructure financing, sector-specific funding projects, use of data analytics platforms, geo-spatial tools, and specialised technical support teams to enhance real-time monitoring and risk assessment and leveraging collaborations with institutions such as the World Bank and regional financing institutions.

SAIs and the infrastructure development gap

SAIs have a unique nature and role generally, as public assurance providers, which audit governments' use of public funds. On one hand, understanding the myriad of issues pertaining to the infrastructure investment and funding challenge; and on the other hand, also understanding the role, mandate, capabilities and perspectives that SAIs have – particularly on the workings of government and the outcomes thereof – these institutions are uniquely positioned to support their governments in addressing the infrastructure gap across all relevant factors. SAI20 SAIs specifically support their countries by positioning infrastructure as a prioritised audit focus area and employing methodological tools and resourcing interventions such as risk-based and preventative auditing, technology and data-driven audits, hiring experts and conducting targeted audits.

Recommendations on accelerating efforts to unlock and leverage public infrastructure funding for equality, sustainable growth and bringing improvement to the lives of citizens

SAI20 has presented a number of recommendations to G20 nations and to the SAIs of G20 nations on how efforts to unlock and leverage public infrastructure funding for equality, sustainable growth and bringing improvement to the lives of citizens might be accelerated. There has been greater consensus among the SAI20 nations on the following:

To the G20 nations:

Governance

- Establish global frameworks for infrastructure finance assessment, empowering stakeholders, including SAIs, to pinpoint and address barriers to funding and promote sustainable development.
- Promote collaboration among governments, supreme audit institutions, international organisations, civil society and the citizenry to create robust systems that can effectively manage, monitor and audit public infrastructure funding.

- Encourage enforcement of laws and regulations that govern infrastructure funding and utilisation, including related anti-corruption measures.
- Assess the efficiency of programmes and projects before, during and after implementation, based on clearly defined norms and objectives.
- Encourage the updating of laws and regulations relating to procurement and public-private partnerships to facilitate efficient infrastructure funding and management.
- Enact laws that codify environmental and social safeguards in large-scale infrastructure projects.

Planning

- Adopt multi-stakeholder, collaborative approaches to responsive infrastructure planning involving relevant roleplayers and the citizenry to assist with early problem and needs identification, triggering of proactive corrective action and promoting equitable investments.

Project delivery

- Adopt best practices in financial planning and project management to optimise the use of available resources, direct them to priority projects and ensure that projects are completed on time, within budget and at the necessary quality.

Use of technology and data

- Adopt data-driven decision-making to provide valuable insights into infrastructure needs, project performance and the socioeconomic impact of investments.
- Improve data collection and transparency in data sharing, cognisant of national conditions and laws of G20 members, to enable effective monitoring of public policies by SAIs and civil society.
- Use technology and digital platforms to improve transparency and citizen engagement in infrastructure projects.

Operation and maintenance

- Place ongoing emphasis on lifecycle asset management, including maintenance, to ensure sustainability in service delivery and to optimise value for money.

SAI mandates

- Mandate SAIs to assess bilateral infrastructure financing agreements between G20 members to provide recommendations for improving transparency and compliance and share best practices and value for money outcomes aligned with country priorities.

To the SAIs of the G20:

Governance

- Review the country's integrated infrastructure value-chain, including planning, financing, implementation and enabling legislation for infrastructure projects, to provide insights on the progress made and its adequacy to achieve the SDGs.

Use of technology and data

- Improve audits of public infrastructure funds by advocating for data transparency, tracking fund flows and assessing investment impact. Use technology to enable auditors to quickly find information and identify issues.

Audit frameworks and methodologies

- Develop frameworks and guidelines for auditing and assessing infrastructure financing to enhance oversight;
- Invest in real-time auditing of infrastructure projects dealing with entire value chains;
- Establish processes to track and enforce SAI recommendations which can lead to tangible improvements in project governance and efficiency.

Capacity

- Broaden auditors' skills in areas such as engineering, finance, auditing and project management.
- Partner with multidisciplinary professional bodies to bolster SAI capabilities to deal with challenges related to complex infrastructure projects.

Reporting

- Regularly produce a whole-of-government and/or infrastructure sector report that provides a comprehensive, consolidated view of government's success in infrastructure governance, planning, funding, delivery, maintenance and utilisation.

Background

Infrastructure development and funding as a global economic development priority

Key to the realisation of solidarity, equality and sustainability is public infrastructure which serves as an important enabler and underpins the ability of governments to drive inclusive economic growth, industrialisation, employment and to mitigate inequality. Investments in energy, telecommunications, transport networks and water supply directly impact growth as they serve as essential inputs in any production of goods and services. In addition, infrastructure can also reduce the cost of delivered goods, facilitate the physical mobility of people and products, remove productivity constraints and increase competitiveness[1].

It is for this reason that SDG 9 seeks to build resilient infrastructure, promote sustainable industrialisation and foster innovation. Economic growth, social development and climate action are heavily dependent on investments in infrastructure, sustainable industrial development and technological progress. Investments in infrastructure – transport, irrigation, energy and information and communication technology – are crucial to achieving sustainable development and empowering communities in many countries.[2]

Insufficient or poor infrastructure limits citizens' access to markets, opportunities and services such as clean water, education, health, transport and communications. In 2010, an International Labour Organization (ILO) report noted that although infrastructure development was not identified as a direct Millenium Development Goal (MDG) target or indicator, without it many of the targets would not be met and that sustainable infrastructure was not only an essential part in improving livelihoods of the poor; it also provided opportunities for creating jobs during development, operation and maintenance[3].

According to the World Economic Forum (WEF), almost 14% of global GDP is invested in infrastructure, with most of that divided across: (a) transportation infrastructure (roads, railroad, airports, ports); (b) electric power supply and distribution; (c) water supply and sewage; and (d) communications infrastructure[4].

More details in this regard are available as part of the individual SAI20 members' country paper submissions (www.sai20.org).

[1] https://blogs.worldbank.org/en/digital-development/how-does-infrastructure-support-sustainable-growth
[2] https://www.un.org/sustainabledevelopment/infrastructure-industrialization/
[3] https://www.afdb.org/sites/default/files/documents/publications/working_paper_160_-_infrastructure_investment_and_economic_growth_in_south_africa_a_granger_causality_analysis.pdf
[4] https://www.zurich.com/knowledge/topics/global-risks/the-risks-of-rapid-urbanization-in-developing-countries

Infrastructure development and funding as a G20 priority

Analysis of the G20 declarations since inception provides a clear indication that the infrastructure investment challenge has remained a key and persistent issue to global economic development and to the G20 for decades.

Testament to the significance and complexity of challenge to global economic development, it has featured on the agenda and been engaged with by the G20 nations from multiple perspectives since inception. Key among these being:

Project origination and governance factors

Key issues	G20 position
Infrastructure deficits	**Prioritise action** on addressing critical bottlenecks
Infrastructure spending	**Enhance/increase**
	Structural reforms by advanced surplus economies tailored to country circumstances to **increase spending** in order to help boost productive capacity and reduce supply bottlenecks
Prioritisation, planning and funding of projects	**Improving processes and transparency** in prioritisation, planning and funding of investment projects
	Making **better use of project preparation funds**
	Endorsement of InfraTracker 2.0 which will enable both public and private sectors towards post-covid-19 transformative infrastructure investment by providing **insights into long-term infrastructure strategies and plans**
	Encourage stakeholders to draw upon **G20 Principles for Financing Cities of Tomorrow** in their planning and financing of urban infrastructure and share experiences from early pilot cases
	Call on multilateral development banks, working with countries involved and in accordance with regional priorities, to **prioritise project preparation financing**
	Developed guidelines and best practices for **public-private partnership (PPP) models** to improve investment preparation, prioritisation and execution processes
	Advancing efforts and developing toolkits to **unlock ways and means for countries to better prepare, prioritise and finance** infrastructure projects
Infrastructure shortfalls	Tackling global investment and infrastructure shortfalls is **crucial to lifting growth, job creation and productivity**
Quality infrastructure	Endorse global infrastructure initiative, a multi-year work programme to **lift quality public and private infrastructure investment**
	Adopt leading practices to promote and prioritise quality investment
	Develop country-specific investment strategies, which **bring together concrete policies and actions to improve the investment ecosystem, foster efficient and quality infrastructure**
	Commitment to promote infrastructure investment in terms of **quantity and quality**
	Quantitative ambitions of multilateral development banks for high-quality infrastructure projects
	Importance of quality infrastructure investment
	G20 principles for quality infrastructure
	Quality infrastructure is an **essential part of G20's efforts to close infrastructure gap**
	Explore **possible indicators** on quality infrastructure investment
	Quality infrastructure investment (QII) indicators and associated guidance notes

Use of technology in infrastructure	Use of technology with the aim of improving investment decisions, enhancing value for money, and promoting quality infrastructure investments
Sustainable development	Significant role of digital public infrastructure in helping to advance financial inclusion for inclusive growth and sustainable development
	Infrastructure is a key driver of economic prosperity, sustainable development and inclusive growth

Financing factors

Key issues	G20 position
Mobilisation of resources	Ask multilateral development banks to bring forward actions to mobilise and provide additional financing within their mandates, to support achievement of SDGs including through sustainable infrastructure investments
	Develop further collaboration between the public and private investors to mobilise private capital
Public infrastructure financing	Contribute to building an enabling environment for private and public infrastructure financing, especially for regional projects by supporting increased transparency in the construction sector, review of the debt sustainability framework and harmonising of multilateral development bank procurement rules and practices towards mutual recognition of procedures and eligibility rules
Financial instruments for infrastructure finance	G20/OECD Guidance Note on Diversification of Financial Instruments for Infrastructure
Financing gap	Address the persistent infrastructure financing gap by reaffirming commitment to attract more private capital to infrastructure investment
	Address financing gap through enhancing innovative financing mechanisms, including blended finance, while noticing the importance of transparency and mutual accountability
Infrastructure as an asset class	Endorse roadmap to infrastructure as an asset class in order to achieve attraction of more private capital to infrastructure investment
	Advance elements to develop infrastructure as an asset class
Sustainable debt financing	Work towards enhancing debt transparency and sustainability
	Support of the debt sustainability framework taking into account the investment-growth nexus
Multilateral development banks	Welcome introduction of new facilities by the World Bank in infrastructure and trade finance
	World Bank, working with the regional development banks and other international organisations, should strengthen support for private sector led growth and infrastructure
	Consider ways in which the G20 can foster investment in infrastructure and ensure sufficient funding for infrastructure projects, including through multilateral development bank financing and technical support
	Will continue to work with multilateral development banks and encourage national development banks to optimise use of their balance sheets to provide additional lending and ensure that work on infrastructure benefits low-income countries

Private sector involvement

Key issues	G20 position
Mobilisation of resources	Mobilisation of private sector resources and capacity building assistance to support developing countries to advance towards timely implementation of SDGs in areas such as quality infrastructure
	Develop further collaboration between the public and private investors to mobilise private capital
	Address persistent infrastructure financing gap by reaffirming commitment to attract more private capital to infrastructure investment
	Public financing of infrastructure development projects in developing countries remains essential, however it should be complemented by private sector investment
	Ask finance ministers and central bank governors to explore ways in which private financing and capital markets can be better mobilised
	Sizeable investment, including from private sources, will be needed in the G20 and other economies in energy infrastructure
	Endorse the multilateral development banks' joint principles and ambitions on crowding-in private finance
	Endorse the G20/GI Hub Framework on how best to leverage private sector participation to scale up sustainable infrastructure investment
Private sector led infrastructure	Strengthen support for private sector led growth and infrastructure to enhance opportunities
	Support efforts to improve capacities and facilitate mobilisation of resources for infrastructure projects initiated by the public and private sector
Impediments to private capital	Comprehensive approach required to identify and address impediments to the mobilisation of private capital and improving underlying investment conditions
	Welcome the G20/ Organisation for Economic Cooperation and Development (OECD) report on the collaboration with institutional investors and asset managers on infrastructure investment, which reflects investors' views on issues and challenges affecting private investment in infrastructure
Public-private-partnerships (PPP)	Particular attention to be given to ways to improve the design of and conditions for productive public-private partnership arrangements
	PPP sourcebook by the World Bank
	Developed guidelines and best practices for public-private-partnership models to improve investment preparation, prioritisation and execution processes
Gender inclusivity	Note preliminary findings report on gender inclusive approaches in private participation in infrastructure aimed at promoting gender considerations during infrastructure lifecycle

Low income, emerging and developing countries

Key issues	G20 position
Finance availability and access	**Make finance available** through global financial institutions to support growth in emerging markets and developing countries

	Emerging countries' access to credit and private capital flows are critical for sustainable growth and development, including ongoing infrastructure investment
	Intensify efforts to create a more conducive environment for development in developing countries, including supporting infrastructure investment
	Importance of properly perceiving the risks posed, as well as opportunities offered, by long-term infrastructure investment in low-income countries
	Work underway by the World Bank and regional development banks to mobilise and catalyse additional finance for infrastructure investment, particularly in emerging markets and developing countries
Protection of infrastructure spend	Concern about the adverse **impact of global crisis on low-income countries' capacity** to protect infrastructure spend
Infrastructure risk	Welcome the annotated PPP Risk Allocation Matrices completed by the GH to help developing countries better assess infrastructure risk
Africa	G20 initiative on supporting industrialisation in Africa and least-developed countries to strengthen inclusive growth and development potential including exploring ways to develop cooperation on sustainable and resilient infrastructure and industries
	Welcome outcomes of the G20 Africa Partnership Conference in Berlin which highlighted the need for joint measures to enhance sustainable infrastructure, improve investment frameworks as well as support education and capacity building
Infrastructure investment	Investing in infrastructure in developing countries, especially low-income countries, unlocks new sources of growth and achievement of sustainable development

Sustainability factors

Key issues	G20 position
Sustainable infrastructure	Committed to promoting investment in sustainable infrastructure and industry
	Sustainable electricity infrastructure where feasible
Resilient infrastructure	Acknowledge that resilient, properly funded, well maintained and optimally managed systems are essential to preserve infrastructure assets over their lifecycles
Maintenance	Endorse G20 policy agenda on infrastructure maintenance
Protection	It is essential to defend all the purposes and principles enshrined in the Charter of the United Nations, including the protection of infrastructure in armed conflicts

Force multipliers of infrastructure investment

Key issues	G20 position
Infrastructure connectivity	Infrastructure connectivity is key to achieving sustainable development and shared prosperity
	Endorse global infrastructure connectivity alliance to enhance synergy and cooperation among various infrastructure connectivity programmes
	Welcome the work of multilateral development banks optimising balance sheets and boosting investment in infrastructure and connectivity
	Grid interconnections and regional/cross-border power systems integration enhance energy security, fostering economic growth and facilitating universal energy access for all
Collaboration	Agree to establish a global infrastructure hub which will contribute to developing a knowledge-sharing platform and network between

	governments, the private sector, development banks and other international organisations while fostering collaboration among them to improve the functioning and financing of infrastructure markets
	Further collaboration among existing and new multilateral development banks
	G20/OECD Report on the collaboration with institutional investors and asset managers on infrastructure investment
	Develop further collaboration between the public and private investors to mobilise private capital

Infrastructure use cases

Key issues	G20 position
Low-carbon technologies and infrastructure	Transition towards clean, innovative, resource-efficient, low-carbon technologies and infrastructure
	Commonly interested in assessing existing obstacles and identifying opportunities to facilitate more investment into more smart and low-carbon energy infrastructure, particularly in clean and sustainable electricity infrastructure where feasible
	Most appropriate policy mix to move towards low greenhouse gas emission economies including investment in sustainable infrastructure and innovative technologies that promote decarbonisation and circular economy
Energy infrastructure	Sizeable investment, including from private sources, will be needed in the G20 and other economies in energy infrastructure in the years ahead to support global growth and development
	Commonly interested in assessing existing obstacles and identifying opportunities to facilitate more investment into more smart and low-carbon energy infrastructure, particularly in clean and sustainable electricity infrastructure where feasible
	Acknowledge the importance of global energy security as one of the guiding principles for the transformation of energy systems, including resilience, safety and development of infrastructure and undisputed flow of energy from various sources, suppliers and routes
	Recognise the role of grid interconnections, resilient energy infrastructure and regional/cross-border power systems integration, where applicable, in enhancing energy security, fostering economic growth and facilitating universal energy access for all
Low-carbon technologies and infrastructure	Transition towards clean, innovative, resource efficient, low-carbon technologies and infrastructure
New industrial infrastructure	Commit to new industrial infrastructure, and support industrialisation
Digital infrastructure	Promote measures to improve digital government, digital infrastructure and measurement of the digital economy to maximise the benefits of digitalisation and emerging technologies for innovative growth and productivity
	Sustainable investment in quality digital infrastructure can greatly contribute to reducing the digital divide
	Universal, secure, affordable, advanced and well-functioning digital infrastructure is an important driver for economic recovery
	G20 guidelines for financing and fostering high-quality broadband connectivity for a digital world
	Improve access to digital services and digital public infrastructure, and leverage digital transformation opportunities to boost sustainable and inclusive growth

	G20 policy recommendations for advancing financial inclusion and productivity gains through digital public infrastructure
	Significant role of digital public infrastructure in helping to advance financial inclusion in support of inclusive growth and sustainable development
Affordable care infrastructure	Commit to promoting women's economic empowerment, including by working with the private sector to improve labour conditions for all, such as through access to quality and affordable care infrastructure
Inclusive infrastructure	Importance of promoting knowledge-sharing between local authorities and national governments to foster more inclusive infrastructure
Connectivity infrastructure	Acknowledge the importance of ensuring security in connectivity infrastructure
Urban infrastructure	Encourage stakeholders to explore the potential of drawing upon the G20 Principles for Financing Cities of Tomorrow in their planning and financing of urban infrastructure
	Welcome the report on best practices for urban mass transport infrastructure projects in medium and large cities in developing countries

The infrastructure development and funding challenge for SAI20 nations

As indicated above, the infrastructure development and maintenance gaps persist among SAI20 nations despite:

- having been, over the decades, and remaining to this date, a global development priority, most recently articulated under SDG 9
- having been a consistent feature on the G20 agenda and among the G20 resolutions since inception

A persistent infrastructure funding deficit, despite an abundance of global finance, has consistently been identified as the key constraint driving the persistence of the infrastructure development gap. This, in turn, is driven by the primary challenge of mobilising significant, adequate investment allocation, especially private capital, towards infrastructure investment. Unlocking and mobilising the increase in private capital allocations towards infrastructure development in turn requires that countries systematically deal with key risks and impediments to significantly greater allocation of capital, especially private sector capital, towards infrastructure investment.

Infrastructure development goals and priorities of SAI20 nations

The reported infrastructure development goals and priorities of SAI20 nations vary according to country-specific factors but broadly cover three categories, namely:

- **Infrastructure development** – Reported public infrastructure development goals and priorities of the SAI20 nations vary according to each country's development priorities, with prioritised investments spanning energy, water, transport, renewable energy and telecommunications infrastructure towards boosting economic growth, driving higher employment and promoting environmental sustainability. In addition, bridging the infrastructure gap in rural areas also came up as an inclusive growth priority for some of the countries, with an emphasis on expanded access to essential services such as water, sanitation, and electricity;
- **Infrastructure maintenance** – In some countries, the challenge has been noted as not predominantly one of rolling out new infrastructure but rather one of maintaining existing infrastructure in order to avoid regression and prematurely incurring replacement spend obligations;

- **Digital infrastructure** – While countries report differing stages of advancement in this regard, the development and roll-out of digital infrastructure also features prominently with investments in smart cities, 5G networks, and artificial intelligence (AI)-driven services as some of the long-term goals of SAI20 nations.

Factors shaping the current context of infrastructure development in SAI20 nations

The current infrastructure development context within SAI20 nations is broadly characterised by the following key factors:

Infrastructure governance

Infrastructure governance and accountability frameworks serve to ensure that critical roleplayers in the infrastructure ecosystem align projects with national strategic imperatives, that the right projects are identified, and that decision-making is transparent. Despite a general acknowledgment thereof, some of the SAI20 nations reported persistent inefficiencies in financial management, weak governance structures, corruption, and misallocation of funds. These inefficiencies in turn served to hinder project effectiveness and impede foreign direct investment which requires countries to have structured, effective and reliable governance in place.

Infrastructure planning

The majority of SAI20 countries report that their governments have developed infrastructure plans that detail their long-term priorities. Although those plans are reported to provide a clear roadmap of the country's visions towards infrastructure development, the coordination and monitoring of such plans is reported to not have matured adequately. In most countries, the monitoring role has been decentralised to different sectors and as a result overall progress on governmental infrastructure priorities is difficult to track. Other reported challenges relate to misalignment between national strategies and implementation, limited use of prioritisation methodologies in budget processes, and inadequate needs assessments impacting project selection.

SAI20 nations have also reported increased application of data-driven decision making as a key enabler of efficient planning, particularly as part of implementing risk assessment models and deploying digital monitoring tools. Some countries have also started to explore the creation of interactive project registers to enhance infrastructure planning, ensure real-time tracking of ongoing, planned, and incomplete projects and to improve risk assessment and governance.

Planning for infrastructure resilience, particularly in response to climate change, has also started to gain increasing prominence in the infrastructure plans of some SAI20 nations. To this end, climate resilience has begun to be integrated into infrastructure planning.

Infrastructure project delivery

Some SAI20 nations report that their audits of infrastructure projects have revealed a variety of project execution challenges, key amongst these being implementation delays, cost overruns, and quality issues. Such inefficiencies have served to derail infrastructure development plans which has knock-on effects to economic growth objectives and the improvement of citizens' access to basic services. Some of the key symptoms of the underlying issues in the infrastructure delivery system have been identified as:

- chronic lateness in the delivery of projects due to delays
- poor planning leading to delays in acquiring land, securing environmental clearances and governance gaps continuing to hinder timely execution
- weaknesses in feasibility study processes

- project risks are not allocated to suitable project managers with adequate skills
- cash flow problems due to late payments
- cost overruns due to unexpected costs and scope changes with financial impact
- misallocation of funds and lack of accountability.

Governments' failures to deliver on long-term infrastructure investment objectives have further been cited as being key contributors to the escalation of uncertainty for potential investors, thus adversely impacting their willingness to fund government projects.

Infrastructure operation and maintenance

SAI20 nations report poor maintenance and management of existing infrastructure as one of the key factors constraining their abilities to close gaps resulting in a variety of undesirable consequences such as greater risks of infrastructure failure, especially of ageing infrastructure; increased risk of accidents and extraneous costs. Reasons cited for poor maintenance are budget constraints; ineffective planning where performance does not include measures to track the maintenance and management of such infrastructure; and a culture of being reactive rather than proactive in dealing with maintenance issues.

Infrastructure resilience

For those SAI20 nations where infrastructure resilience features as a focus area, it has primarily been with regards to:

- **Climate resilience** – SAI20 nations report increasing integration of climate adaptation measures into infrastructure planning as a means of enhancing resilience and mitigating risks. This takes the form of measures that include commitments to climate neutrality and the incorporation of disaster risk reduction strategies.
- **Cybersecurity** – Cybersecurity and infrastructure protection feature as growing concerns for SAI20 nations with digital threats and risks of hybrid warfare posing challenges to infrastructure resilience. SAI 20 nations report that cybersecurity vulnerabilities in digital infrastructure are a big concern as they could lead to critical breaches in the data security of government institutions.
- **Population growth** – In some countries, population growth and the extent to which it is placing pressure on existing infrastructure, is cited as contributing to a widening gap, as the rate of new infrastructure delivery lags behind the rate at which the population is growing.

Factors shaping the current context of infrastructure funding in SAI20 nations

How infrastructure is financed

SAI20 nations report infrastructure development and investment as a priority. There is also broad consensus around the need for infrastructure funding frameworks that make provision for the utilisation of a combination of governments' own funds, private-sector funding and foreign investment. Despite this, SAI20 nations report that governments generally fund infrastructure development projects, with heavy state investment in public services and reliance on national revenues.

Where SAI20 nations report tapping into sources other than their own, public-private-partnerships and foreign investment stand out as the most relied upon sources of financing. These are, however, not without their complexities:

- **Foreign funding** – Concerns raised by some nations regarding foreign funding, for instance, have included financial sustainability concerns linked to the ability to afford the funding, concerns about developing over-reliance on international funding, such as with renewable energy projects in some countries and excessive conditionalities attached to such funding.

- **Blended finance models** – In order to diversify infrastructure funding sources, SAI20 nations report that they are making use of or are in the process of exploring the use of blended finance models that combine domestic resources, international aid and private sector contributions. PPPs are looked to as more popular blended finance options for filling infrastructure funding gaps. Countries are thus implementing incentives and policy measures to encourage private sector participation. Hurdles and regulatory fragmentation do, however, serve to limit their effectiveness by slowing adoption despite the legal frameworks that are designed to enhance their use. To facilitate increased efficiency with respect to PPPs, SAI20 nations report that they are introducing mechanisms such as PPP-based procurement and regulatory framework for PPPs. Beyond PPPs, countries are tapping into or exploring the use of other financing mechanisms such as loans from development finance institutions (DFIs), while some countries are establishing government banks that prioritise infrastructure funding.

Infrastructure funding gap

Most of the SAI20 countries report a funding gap, which is contributing to a widening infrastructure development gap. These gaps are also said to be exacerbated by inefficiencies and poor governance with financial mismanagement, corruption and misallocation of resources negatively impacting budgets and resulting in funding leakages.

Infrastructure financing risks

Key risk factors that SAI20 nations have identified as affecting their governments and investors' willingness to finance infrastructure development, include:

- weak governance structures
- corruption
- lack of accountability
- financial mismanagement.

Furthermore, private investment is reported to tend to be further dissuaded by:

- regulatory and institutional weaknesses
- inconsistent frameworks
- complex procurement and contract management regulations, which delay infrastructure implementation
- lack of data to promote transparency, such as the lack of transparent systems for tracking public funds and poor data collection and management which pose challenges for effective oversight and accountability.

Capacity and expertise shortages in the government institutions to effectively implement infrastructure projects is also a key risk area while rising construction costs, logistical barriers, and lack of advanced construction technology, all tend to place upward pressure on project expenses and constrain the ability to deliver projects within standard affordability parameters. Currency risks and weak financial markets further aggravate those factors which introduce further obstacles to cost-effective project execution.

Private sector financing

Some SAI20 nations have started to introduce incentives to encourage greater private sector participation in infrastructure development while others have established dedicated investment funds and implemented innovative financing mechanisms to attract private capital by derisking large-scale projects, such as in transportation and energy, for private capital.

Infrastructure development gap

Causes of the infrastructure development gap and its persistence

The infrastructure development gap's existence, widening and persistence is reported by SAI20 nations to be a function of both infrastructure demand and supply factors:

- **Infrastructure demand factors** – The rapidly changing demographics in G20 countries remain a constant factor that causes increased demand for infrastructures such as roads, railways, ports, and potable water. Regional and urban-rural disparities also remain a challenge, with rural areas experiencing significant infrastructure gaps leading to higher inequalities.
- **Infrastructure supply factors** – Despite SAI20 nations investing heavily in infrastructure sectors that are experiencing increased demand, their growth rate towards sustainability is reported as being relatively slow and low. Failure by some governments to implement infrastructure projects due to delays, cost overruns, and poor-quality that does not meet the required standards despite funds being fully utilised is another aggravating factor. Ageing infrastructure due to underfunded government institutions further results in its deterioration leading to the additional fund requirements from the fiscus to restore such infrastructure.

The persistence of these infrastructure gaps is reported to limit economic growth, widens social disparities and inequalities and contributes to high rates of unemployment. Social and health impacts, in turn, are increased health risks e.g. limited access to potable water, especially by low-income communities. Accessibility and mobility limitations also serve to hinder economic opportunities, with poor transportation networks, high living costs, and road safety concerns negatively impacting productivity and connectivity. Energy security challenges in turn affect economic stability and development, with electricity shortages, increased costs, and reliance on ageing infrastructure creating supply constraints in that regard.

Efforts for addressing the infrastructure development gap

To address the infrastructure gap and its widening and persistence, SAI20 nations are undertaking a variety of initiatives, including:

- enhanced funding mechanisms to strengthen infrastructure financing, with efforts focused on expanding public-private-partnerships
- exploring large-scale investment initiatives
- updated investment frameworks
- sector-specific funding projects such as the efforts of some of the countries in desalination
- increasing adoption of technological and data-driven solutions in order to improve project oversight and efficiency
- the use of data analytics platforms, geo-spatial tools, and specialised technical support teams to enhance real-time monitoring and risk assessment
- regulatory and governance reforms to improve infrastructure project implementation, including updates to PPP guidelines, integrated information systems, and legal frameworks aligning with anti-corruption standards to enhance transparency and accountability
- leveraging collaborations with institutions such as the World Bank and regional financing institutions.

SAIs and the infrastructure development gap

The unique nature and role of supreme audit institutions

The International Organization of Supreme Audit Institutions (INTOSAI) describes supreme audit institutions (SAIs) as public assurance providers which audit governments' use of public funds. They serve as a critical link in a country's accountability chain. Some of the key characteristics of SAIs ideally include:

(a) having an all-of-government perspective as they audit all public institutions;
(b) legislatively enshrined independence;
(c) by scrutinising public financial management and reporting, they provide assurance that resources are used as prescribed;

(d) mostly derive their mandate from the constitution and/or legislation;
(e) empowered to audit the: (i) use of public monies, resources, or assets, by a recipient or beneficiary regardless of its legal nature; (ii) collection of revenues owed to the government or public entities; (iii) legality and regularity of government or public entities accounts; (iv) quality of financial management and reporting; (v) economy, efficiency, and effectiveness of government or public entities operations; and (vi) government performance (in some jurisdictions);
(f) being a credible source of independent and objective insight and guidance to support beneficial changes in the public sector;
(g) undertake financial audits of organisations' accounting procedures and financial statements, and compliance audits reviewing the legality of transactions made by the audited body. They also conduct performance audits to scrutinise the efficiency, effectiveness or economy of government's undertakings;
(h) have adequate powers to obtain timely, unfettered, direct and free access to all necessary documents and information, for the proper discharge of their statutory responsibilities;
(i) have the right and obligation to report on their work and the freedom to decide the content and timing of audit reports and to publish and disseminate them – their audit reports and recommendations contribute to accountability and transparency in public finance management, and in turn to good governance;
(j) through delivering on their mandates, SAIs may uncover irregular conduct (non-compliance), misspending, mismanagement, and poor performance. They also consider risks for misuse, evaluating entities' control environment, and uncovering weaknesses (or red flags) that may be indicative of corruption and fraud;
(k) examine the effectiveness of other assurance providers and governance structures such as internal audit, audit committees and boards of directors;
(l) submit their reports to the legislature, one of their commissions, or an auditee's governing board, as appropriate, for review and follow-up on specific recommendations and corrective actions
(m) enable those charged with public sector governance to discharge their responsibilities in responding to audit findings and recommendations and taking appropriate corrective action;
(n) expert capabilities in identification, assessment and mitigation of risks to the economy, efficiency and effectiveness of government's use of public funds.

Relevance of SAIs to the infrastructure development and funding challenge

On the one hand, understanding the myriad of issues pertaining to the infrastructure investment and funding challenge; and on the other hand, also understanding the role, mandate, capabilities and perspectives that SAIs have – particularly on the workings of government and the outcomes thereof – these institutions are uniquely positioned to support their governments in addressing the infrastructure gap in the following key ways:

Project origination and governance factors

(a) Providing government with assurance and recommendations regarding infrastructure delivery to optimise infrastructure spend and thus increasing the rate by which government might narrow the infrastructure gap through identifying wastage, inefficiency and resource leakage in the delivery of infrastructure projects and recommending appropriate controls to mitigate those;
(b) Providing government with assurance and recommendations regarding the compliance of prioritisation, planning and funding processes to best practice and compliance to regulations and making recommendations on enhancing process efficiency and effectiveness;
(c) Providing government with assurance and recommendations regarding the alignment between current priorities, plans and funding decisions and long-term infrastructure strategies and plans;
(d) Providing government with assurance and recommendations regarding the application of and compliance with relevant guidelines and best practices relating to public-private-partnerships;
(e) Providing government with assurance and recommendations regarding the use of project preparation funds;
(f) Reporting on shortfalls in infrastructure spending by government and linking those to the adverse implications for growth, job creation and productivity;

(g) Providing government with assurance and recommendations on the quantity and quality of infrastructure relative to resources spent and outcomes expected;
(h) Reporting on the existence of concrete investment strategies, policies and action plans to improve the investment ecosystem and the alignment thereof with global best-practice, principles and frameworks;
(i) Providing government with assurance regarding infrastructure governance and recommendations on how it might be strengthened;
(j) Providing government with assurance regarding the effectiveness, efficiency and security of technology use across the entire infrastructure lifecycle;
(k) Sharing individualised and/or consolidated insights with legislative oversight bodies to assist them to better understand and exercise appropriate governance over infrastructure investment activities;
(l) Evaluating changing and emerging risks in the infrastructure sector and designing procedures to promptly respond to these risks such as inadequate maintenance that results in dilapidated infrastructure and increased refurbishment costs or funding approval;
(m) Providing assurance on government infrastructure-related performance reporting by commenting on general performance reports that include infrastructure, specific infrastructure performance reports, performance reports to funders/donors relating to infrastructure, reports on infrastructure-related financing.

Financing factors

(a) Provide assurance and recommendations regarding government's investment readiness for potential multilateral development banks and private sector infrastructure funding and the existence and significance of possible impediments thereto;
(b) Provide government with assurance and recommendations and create transparency with regards to infrastructure debt sustainability;
(c) Provide assurance and recommendations and create transparency with regards to the risks associated with government's potential or actual use of innovative financing mechanisms;
(d) Provide government with the independent assurance required to enable access to multilateral development bank and private sector infrastructure funding and facilities;
(e) Provide government with assurance and recommendations relating to technical capability requirements of infrastructure projects *vis-à-vis* actual capability on delivery team. Recommendations can include guidance on the appropriate technical assistance to seek out.

Private sector involvement

(a) Providing government with assurance and recommendations with regards to processes for procuring and selecting private sector funders and partners;
(b) Provide government with assurance and recommendations regarding private sector partner profile and compliance with terms of partnership;
(c) Provide government with assurance and recommendations regarding adherence and alignment of PPP processes to relevant laws, regulations and standards;
(d) Provide government with assurance and recommendations with regards to adherence to gender inclusivity considerations across the infrastructure lifecycle.

Low income, emerging and developing countries

(a) Providing government with assurance and recommendations regarding risks posed and opportunities offered by long-term infrastructure investment;
(b) Provide government with assurance and recommendations with regards to susceptibility of country's infrastructure spend capacity to crisis.

Sustainability factors

(a) Provide government with assurance and recommendations with regards to the sustainability and resilience of infrastructure;
(b) Provide government with assurance and recommendations with regards to occurrence, efficiency and alignment to standards of infrastructure maintenance activities;
(c) Provide government with assurance and recommendations with regards to protection of infrastructure.

Force multipliers of infrastructure investment

(a) Provide government with assurance regarding alignment of infrastructure-to-infrastructure connectivity standards;
(b) Provide government with recommendations on how to optimise its balance sheet in order to boost ability to mobilise infrastructure funding;
(c) Leverage insights into individual projects, organs and agencies to highlight opportunities for enhanced collaboration and to facilitate knowledge sharing.

The role SAIs of the SAI20 nations are playing in supporting their countries to address the infrastructure development gap

Infrastructure stands out as a prioritised audit focus area across most of the SAI20 SAIs with them reporting a variety of specific interventions and approaches to enhance their abilities to fulfill their mandates and support their countries with respect to infrastructure development and funding:

- **Project lifecycle model** – The majority of SAIs follow the project lifecycle model that entails auditing project planning, implementation, and utilisation. SAI20 SAIs report that this approach has allowed their auditors to maintain overall, end-to-end perspectives of how projects have been implemented throughout their lifecycles;
- **Risk-based and preventative auditing** – Some of the SAIs have also adopted risk-based and preventative auditing to improve financial oversight and reduce vulnerabilities in project implementation. These audits often incorporate numerous site visits to inspect the progress of and the quality of infrastructure projects;

- **Technology and data-driven audits** – Advancements in technology are reported to be driving a deepening in the integration of technology and data analytics in audits to enhance audit effectiveness through increased accuracy, efficiency, and transparency. Modern audit techniques, including digital tools and data-driven approaches enable real-time monitoring and risk identification, improving oversight and decision-making. For example, to achieve efficiencies in the inspection of projects, SAIs report that they are leveraging a variety of technologies such as geographic information systems (GIS), remote sensing (RS), global positioning systems (GPS), and AI. Auditors also report that they are leveraging technology in order to enable quick retrieval information from massive datasets relevant to audit objectives, detect deep-seated suspicions, and rapidly identify major problems such as irrational distribution of facilities and slow progress of projects, thus significantly improving audit efficiency;
- **Experts** – SAIs also report themselves as increasingly investing in recruiting experts in fields beyond audit-based competencies, such as civil engineers, construction engineers, data analysts, and fraud specialists;
- **Collaboration** – To ensure that more infrastructure projects are being subjected to audit, other SAIs have collaborated with internal audit units;
- **Targeted audits** – Some SAIs report that they conduct targeted audits of donor-funded projects to ensure transparency and accountability;
- **Information sharing** – To strengthen the oversight role of legislatures, insights obtained from infrastructure audits conducted by some of the SAIs are subsequently shared with their legislatures to allow them to make informed decisions relating to their oversight on implementation of the infrastructure projects. Such results are also being shared with the public through infrastructure reports to assure the public of how government funds have been utilised.

To ensure that the messages land on the right platforms, other SAIs directly engage with regulators, professional bodies and civil society organisations to deliver the insights extracted from the audits in order to influence them to act within their mandate to deal with infrastructure challenges.

A range of proposals to accelerate efforts to unlock and leverage public infrastructure funding for equality, sustainable growth and bringing improvement to the lives of citizens

To G20 nations

Infrastructure governance

1. Develop and implement comprehensive frameworks and guidelines for assessing infrastructure financing to enhance SAIs' oversight role. These frameworks can empower SAIs to provide actionable insights and recommendations that address fiscal constraints, institutional inefficiencies, market barriers, and infrastructure delivery gaps, thereby supporting governments in unlocking infrastructure financing and driving sustainable development;
2. Undertake coordinated efforts among governments, international organisations, and civil society to create robust systems that can effectively manage and audit public infrastructure funding;
3. Establish clear legal and institutional frameworks that emphasise transparency and accountability;
4. Implement anti-corruption measures and ensure strict enforcement of regulations. The use of the standards, measures and rules stemming from the United Nations Convention Against Corruption (UNCAC) and organisational integrity tools such as INTOSAINT are good starting points;
5. Sponsor peaceful negotiations within national and international conflict zones to enhance peaceful intercountry infrastructural development;
6. Assess the efficiency of programmes and projects before, during and after their implementation and based on clearly defined objectives. Programmes and projects should be prioritised on this basis. Inefficient programmes and projects should not be implemented;
7. Mitigate the impact of political or other reasons in repeatedly leading those involved to ignore or be ignorant of the sophisticated sets of rules put in place to assess the efficiency and inform prioritisation, risk management and financing of infrastructure to steer administrative action in the right direction. This hinders implementation, which often fails or is inadequate;
8. Increase quality/capacity of government contracting agencies;
9. Develop integrated, cross-sectoral strategic vision for public investments along with sufficient coordination among sectoral strategies;
10. Allow for public spending and resources to be guided by systematic cost-benefit analyses;
11. Establish adequate legal or regulatory frameworks to systematically evaluate public investment projects using standard methodologies. Such a framework should establish common procedures for all investment projects and define the minimum analysis required based on the size and complexity of the project. Best-practice recommends that large-scale projects undergo independent evaluations to assess costs, risk management, and governance;
12. Develop a coherent set of performance indicators that are measurable and obtained from hard data sources;
13. Create a single interactive register of infrastructure projects, including ongoing, planned and incomplete to help SAIs and governments to identify limitations and risks for budgetary planning;
14. Update procurement laws to facilitate efficient PPPs and align with global anti-corruption standards;
15. Enact federal laws that codify the environment and social safeguards in large-scale infrastructure projects.

SAI mandates with respect to infrastructure

16. Mandate SAIs to evaluate and assess bilateral infrastructure financing agreements between G20 members to provide recommendations for improving transparency and compliance and share best practices and value for money outcomes that align with the country's priorities;
17. Grant SAIs strong authority to audit and report findings, ensuring decisions are made objectively and free from external influence;

18. Sponsor SAIs capacity building in evolving development systems that will enhance good governance of infrastructural investments.

Infrastructure planning

19. Adopt multi-stakeholder, collaborative approaches to infrastructure planning between government (agencies and enterprises) and SAIs in order to identify early signs of problems and help the entities to quickly take corrective actions and minimise losses;
20. Establish centralised procedures for selecting major investment projects based on predefined and unified criteria.

Infrastructure funding

21. To achieve the SDGs, accelerate the use of funding models such as public-private-partnerships that can unlock infrastructure investment and are urgently needed;
22. Leverage PPPs as viable solutions for addressing funding gaps in infrastructure development.

Donor activity in closing the infrastructure gap

23. Increasingly integrate SAIs into donor systems by allowing SAIs to audit infrastructure projects and follow-up on the implementation of recommendations. This will increase stakeholder (donor) trust and in turn attract foreign investment within a shorter timeframe;
24. Donors in G20 can assist in strengthening technical frameworks of SAIs that will enable SAIs, especially in developing countries, to increase transparency, accountability and integrity as well as public trust.

Infrastructure project delivery

25. Adopt best practices in financial planning and management to optimise the use of available resources and ensure that projects are completed on time and within budget – effective financial management and resource allocation are essential for the successful implementation of infrastructure projects.

Use of technology and data across the infrastructure project lifecycle

26. Adopt innovative approaches, such as the use of technology and digital platforms, to improve transparency and citizen engagement in infrastructure projects. Digital tools can facilitate the monitoring of project progress, enable public scrutiny, and promote a participatory approach to infrastructure development;
27. Develop and adopt technologies for efficient data collection, management, and public disclosure. This is essential for tracking the flow of funds and assessing the impact of infrastructure investment;
28. Adopt data-driven decision making – Comprehensive data collection and analysis can provide valuable insights into infrastructure needs, project performance, and the socio-economic impact of investments. Investing in data infrastructure and analytics capabilities can enable governments to make informed decisions and prioritise projects that align with national development goals;
29. Establish integrated information systems for all PPP projects (starting from proposal stage, preparation, implementation to monitoring and evaluation) and use them for planning, budgeting, government support, monitoring and evaluation, as well as for market sounding of PPP projects so that they can be more attractive to investors.

Infrastructure operation and maintenance

30. Place ongoing emphasis on long-term maintenance and asset management; this is critical to ensuring sustainable service delivery over time.

Private sector involvement in closing the infrastructure gap

31. Leverage PPPs to bring in private sector efficiency and expertise while ensuring that these partnerships are transparent and aligned with public interests. The INTOSAI Knowledge Sharing Committee (KSC) is currently developing audit guidance on PPPs;
32. Leveraging private sector expertise and resources to enhance the efficiency and effectiveness of infrastructure projects;
33. Strengthen public-private-partnerships to pool financial and technical resources and ensure the sustainability of infrastructure projects;
34. Clarify the roles and responsibilities of respective government agencies involved in the PPP business process and apply better coordination between them;
35. Simplify PPP business processes.

Community involvement

36. Engage communities in the planning and execution of infrastructure projects to ensure that investments are equitable and reflect the needs of the populace. Engaging communities in planning and execution can enhance their relevance, effectiveness, and sustainability. By involving citizens in decision-making processes, governments can ensure that infrastructure projects address local priorities, promote social inclusion and contribute to poverty reduction. Community engagement can also foster a sense of ownership and responsibility, leading to better maintenance and utilisation of infrastructure assets.

To SAI20 members

Infrastructure governance

1. Evaluate and assess bilateral infrastructure financing agreements between G20 members to provide recommendations for improving transparency and compliance and share best practices and value for money outcomes that align with country's priorities.

Infrastructure planning

2. Review country's integrated infrastructure planning, including financing for infrastructure projects and provide insights on the progress made and its adequacy to achieve the SDGs.

Use of technology and data

3. Promote data transparency to improve the auditing and management of public infrastructure funding. Developing and adopting technologies for efficient data collection, management, and public disclosure is essential for tracking the flow of funds and assessing the impact of infrastructure investments. Open data initiatives can enhance transparency, facilitate public participation, and enable evidence-based decision making. By making data accessible to citizens, governments can foster accountability and empower communities to actively engage in the planning and execution of infrastructure projects;
4. Use big data technology to empower smart auditing – By using technologies such as geographic information systems (GIS), remote sensing (RS), global positioning systems (GPS) and artificial intelligence (AI), auditors can quickly retrieve information from massive data relevant to audit objectives, detect deep-seated suspicions, and identify major problems such as irrational distribution of facilities and slow progress of projects as soon as possible, thus significantly improving audit efficiency;
5. Expand the use of modern technologies – Utilise tools like artificial intelligence and blockchain to enhance the accuracy and efficiency of auditing and oversight processes;
6. Invest in data analytics platforms to sift through large procurement datasets, detect anomalies, and automate parts of the audit process;
7. Incorporate geo-spatial tools to verify the physical progress of major construction projects in real-time.

Private sector involvement in infrastructure

8. Audit public-private-partnerships as infrastructure financing requires substantial investment and relies on private sector involvement.

SAI capacity and capabilities

9. Both government (ministries, departments, and agencies) and SAIs need to invest in training programmes for auditors and financial managers to build expertise in managing and auditing complex infrastructure projects. Enhancing capacity building is another critical component of the solution. Capacity-building initiatives should focus on developing technical skills, promoting best practices and fostering a culture of accountability and transparency. By equipping professionals with the necessary knowledge and skills, countries can improve the efficiency and effectiveness of infrastructure project management;
10. Hire external experts in the fields of water conservancy, electric power, civil engineering, road and construction engineering from professional organisations, scientific research institutes, industry regulators and institutions of higher learning to obtain professional guidance and train auditors. During field auditing, invite experts to provide technical advice and professional guidance, so as to further enhance the quality of auditing work;
11. Develop auditors' competencies in infrastructure audit. This can also include capacity building by enhancing skills and resources within SAIs to conduct effective performance audits;
12. For those infrastructure projects that cannot be examined comprehensively due to constraints in audit resources, utilise the audit resources of internal audit units (IAUs) within public organisations through an established collaboration system. This is one way to reduce possible audit blindspots;
13. High-calibre technical expertise is essential to planning, building and auditing cutting-edge infrastructure. Continuous skills development in engineering, finance, and auditing is needed to keep pace with rapid innovation;
14. Continuously upgrade auditor competencies in project finance, engineering standards and digital tools in order to improve the accuracy and impact of audits;
15. Implement ongoing training programmes in partnership with professional bodies (e.g. ACCA, CFA Institute and the Institute of Internal Auditors) to equip audit teams with advanced project finance, PPP, and ESG knowledge.

Audit frameworks, process and methodologies

16. Adopt a whole-process, penetrating model to enhance audit effectiveness – Through the whole-process tracking of public infrastructure planning, construction, completion, acceptance and use, as well as the whole-process auditing of project fund-raising, management and use, we have penetrated and sorted out the business processes from the central, provincial, municipal and county authorities to the project companies, identified the consequences, causes, historical background, primary responsible entities etc. of the problems. Auditors have thus enhanced the breadth and depth of the problems revealed through auditing, and improved audit effectiveness;
17. Using a risk-based audit approach, which has already been proven as effective, particularly in the case of audit in telecommunication infrastructure projects in remote areas;
18. Takeaways from past experiences as well as audit recommendations can be posed as warnings for other projects and programmes in future;
19. Auditors can benefit from sound criteria-setting in the planning phase of the performance audit as well as providing feasible recommendations;
20. Conducting preventative audits within the framework of the public audit system – i.e. identifying and removing risk factors for each stage before moving on to the next stage so that problematic issues can be prevented at the following stage of the project;
21. Conduct audits primarily on those projects classified as "high-risk" after conducting quantitative and qualitative monitoring;
22. Take into account the whole lifecycle of the infrastructure and develop a set of various support mechanisms and measures tailored to the specific conditions and demands;
23. Real-time auditing of infrastructure projects across the entire infrastructure lifecycle;

24. INTOSAI to develop or enhance current guidelines on auditing infrastructure financing to enhance the value and impact of the work by SAIs;
25. Comprehensive frameworks and guidelines for assessing infrastructure financing are essential to enhancing SAIs' oversight role. These frameworks can empower SAIs to provide actionable insights and recommendations that address fiscal constraints, institutional inefficiencies, market barriers and infrastructure delivery gaps thereby supporting governments in unlocking infrastructure financing and driving sustainable development;
26. Auditing at the planning and procurement phases helps to identify potential risks (e.g. contractual pitfalls, cost overruns, etc.) and can significantly reduce future discrepancies;
27. Establishing processes to track and enforce SAI recommendations ensures that findings lead to tangible improvements in project governance and efficiency.

SAI reporting

28. Continue to share audit insight on leakages in government spending and provide recommendations on how to curb such wasteful expenditure to make more funding available for infrastructure projects and to build confidence. SAIs, which have jurisdictional responsibilities, must utilise their enforcement powers to recover losses that have occurred;
29. Consistent, deliberate and specialised reporting by SAIs on government performance reports on infrastructure development and associated finance;
30. Produce whole-of-government and all-of-infrastructure reports dedicated specifically to infrastructure development and financing in order to create a consolidated view of government performance in infrastructure governance, planning, funding, delivery, operation, maintenance and utilisation;
31. Annual reporting on infrastructure, given its materiality to national development; with a particular focus of integrating the financial and performance aspects related thereto.

Collaboration

32. Enhance international collaboration – Facilitate the exchange of expertise and institutional capacity-building while adopting global best practices in managing and auditing major projects;
33. Collaboration between public and private sectors as well as SAIs;
34. Collaborate with regional professional bodies and regulators to improve the monitoring of infrastructure projects, including the timely identification of inferior workmanship and holding contractors accountable.

SAI mandate

35. Contribute to achieving the SDGs by tracking progress, monitoring implementation, and identifying improvement opportunities.

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