

OECD Public Governance Reviews



Facilitating the Implementation of the Mexican Supreme Audit Institution's Mandate

AUDITING THE GOVERNANCE OF INFRASTRUCTURE



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Foreword

Public infrastructure is a common good that can be harnessed for multiple benefits, including sustained, inclusive, and green growth; productivity and competitiveness; and greater equality through better access to public services. In the pursuit of post-COVID economic recovery, OECD countries are heavily relying on infrastructure investments. In fact, as highlighted in the *OECD Government at a Glance 2021*, although the latest data were collected while the pandemic was still unfolding in January 2021, 21 OECD countries (70% of the 30 surveyed) had already adopted an economic stimulus or recovery package. Of these, over three-quarters considered that infrastructure would play an important role in the recovery. For instance, in Chile, Costa Rica, Hungary, Ireland, New Zealand and Slovenia, 30% or more of the economic stimulus packages was allocated to investments in infrastructure.

COVID-19 has had a significant impact on Mexico's growth outlook. The economy is projected to expand by 2.5% in 2023, after growing by 5.9% in 2021. Medium-term growth prospects have weakened and growth over the past two decades has been low (*OECD Economic Surveys: Mexico 2022*). Furthermore, the *G20 Global Infrastructure Hub* estimates that Mexico's infrastructure gap is much higher than in other Latin American countries or in countries of similar size and degree of development. In this context, infrastructure becomes a powerful tool for strengthening growth and reversing the negative impacts of the pandemic. However, good governance of infrastructure is crucial to ensure projects are delivered in time and on budget, are of the quality required, and achieve value for money.

Supreme audit institutions (SAIs) are ideally placed to ensure integrity, efficiency, and value for money in infrastructure investments. Recognising this, Mexico's Superior Audit of the Federation (*Auditoría Superior de la Federación*, ASF) asked the OECD to share experiences from other countries that would help ASF broaden its approach to auditing public works, including strengthening infrastructure governance to maximise the success of infrastructure investments.

The report analyses good practices in other OECD countries' SAIs, such as the UK National Audit Office, and in Latin America, such as Brazil's Federal Court of Accounts (TCU). It assesses different strategic considerations for the new unit for infrastructure audits to be established in ASF's Special Audit for Financial Compliance (*Auditoría Especial de Cumplimiento Financiero*, AECF), including objectives and resources. Finally, it analyses infrastructure auditing practices in the context of emergencies.

ASF's engagement in infrastructure governance provides an opportunity for an objective and independent assessment to help ensure the success of major projects and investments, as well as of the policies deployed to ensure integrity in infrastructure management. Furthermore, ASF could contribute to improving value for money, resilience, and emergency preparedness, considering Mexico is highly exposed to risks related to, for example, natural disasters.

This report was produced under the leadership of Elsa Pilichowski, Director, OECD Directorate for Public Governance (GOV), János Bertók, Deputy Director for Public Governance, and Julio Bacio Terracino, Head of the Public Sector Integrity Division (PSI). The report was drafted by Jacobo Pastor Garcia Villarreal, Senior Policy Analyst in PSI, with important contributions from Gavin Ugale. Meral Gedik supported editing and formatting, and Charles Victor and Aman Johal provided administrative assistance.

The report builds on nearly a decade of collaboration between the OECD and the ASF. The OECD expresses its gratitude to ASF for its fruitful co-operation and leadership. In particular, the OECD would like to thank David Colmenares Páramo, Supreme Auditor; Eber Betanzos, Technical Secretariat; and Claudia María Bazúa, Financial Compliance Special Auditor; as well as their teams. Soo Jung Koh Yoo, Director for Multilateral Relations, in the ASF Technical Secretariat Office, served as the contact point for the project.

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The report was reviewed by the OECD Working Party of Senior Public Integrity Officials (SPIO) on 13 April 2022 and approved by the Public Governance Committee on 13 May 2022. The Secretariat prepared the report for publication.

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Abbreviations and acronyms

| Acronym | English | Spanish |
|-----------|---|---|
| AECF | Special Audit for Financial Compliance | Auditoría Especial de Cumplimiento Financiero |
| ASF | Superior Audit of the Federation (Mexico) | Auditoría Superior de la Federación (México) |
| BIM | Building Information Modelling | Modelado de información de construcción |
| CFE | Federal Electricity Commission (Mexico) | Comisión Federal de Electricidad (México) |
| CoST | Construction Sector Transparency Initiative | Iniciativa para la Transparencia en el Sector de la Construcción |
| CPEUM | Political Constitution of the United Mexican States | Constitución Política de los Estados Unidos Mexicanos |
| CSO | Civil Society Organisations | Organizaciones de la Sociedad Civil |
| DGAIFF | General Directorate for Auditing Federal Investments | Dirección General de Auditoría de Inversiones Físicas Federales |
| EFSE | SAIs in the federal states | Entidades de fiscalización superior estatales |
| EUROSAI | European Organization of Supreme Audit Institutions | Organización de las Entidades Fiscalizadoras Superiores de Europa |
| GAO | Government Accountability Office (United States) | Oficina de Rendición de Cuentas Gubernamental (Estados Unidos) |
| GDP | Gross Domestic Product | Producto Interno Bruto (PIB) |
| ICT | Information and communication technologies | Tecnologías de la información y las comunicaciones (TIC) |
| IMSS | Mexican Institute for Social Security | Instituto Mexicano del Seguro Social |
| INTOSAI | International Organization of Supreme Audit Institutions | Organización Internacional de las Entidades Fiscalizadoras Superiores |
| IPA | Infrastructure and Projects Authority (UK) | Autoridad de Infraestructura y Proyectos (Reino Unido) |
| ISSAI | International Standards of Supreme Audit Institutions | Normas Internacionales de las Entidades Fiscalizadoras Superiores |
| LFRCF | Auditing and Accountability Act | Ley de Fiscalización y Rendición de Cuentas de la Federación |
| MXN | Mexican pesos | Pesos mexicanos |
| NAO | National Audit Office (United Kingdom) | Oficina Nacional de Auditoría (Reino Unido) |
| OCE | Control bodies of the federal states | Órganos de Control Estatales |
| OECD/OCDE | Organisation for Economic Co-operation and Development | Organización para la Cooperación y el Desarrollo Económicos |
| PAAF | Annual Audit Programme for the Public Account | Programa Anual de Auditorías para la Fiscalización Superior de la Cuenta Pública |
| PEF | Expenditures budget (Mexico) | Presupuesto de Egresos de la Federación (México) |
| PEMEX | Mexican Petroleum | Petróleos Mexicanos |
| PFAC | INTOSAI Policy, Finance, and Administration Committee | Comité de Políticas, Finanzas y Administración de la INTOSAI |
| PND | National Development Plan | Plan Nacional de Desarrollo |
| PPP | Public-private partnerships | Alianzas público-privadas |
| ROI | Return on investment | Retorno de la inversión |
| SAI | Supreme Audit Institutions | Instituciones de Fiscalización Superior |
| SDG | Sustainable Development Goals | Objetivos de Desarrollo Sostenible |
| SEDENA | Ministry of National Defence (Mexico) | Secretaría de la Defensa Nacional (México) |
| SFP | Ministry of Public Administration (Mexico) | Secretaría de la Función Pública (México) |
| SiCAF | System for the Control, Administration and Audit of Federal Expenditure Resources | Sistema de Control, Administración y Fiscalización de los Recursos del Gasto Federalizado |
| SICSA | Audit, Control and Follow up System | Sistema de Control y Seguimiento de Auditorías |

| Acronym | English | Spanish |
|----------------|------------------------------------|--|
| SNAC | National Anti-corruption System | Sistema Nacional Anticorrupción |
| SNF | National Auditing System | Sistema Nacional de Fiscalización |
| SOE | State-owned enterprises | Empresas propiedad del Estado |
| TCU | Federal Court of Accounts (Brazil) | Tribunal de Cuentas de la Unión (Brasil) |
| TESOFE | Federation Treasury (Mexico) | Tesorería de la Federación (México) |
| UAA | ASF Audit Units | Unidades de Auditoría de la ASF |
| UK | United Kingdom | Reino Unido |
| USD | United States dollars | Dólares de los Estados Unidos de América |

Executive summary

Main findings

The *G20 Principles on Quality Infrastructure Investment* highlight that “sound infrastructure governance over the life cycle of a project is a key factor to ensure long-term cost-effectiveness, accountability, transparency, and integrity of infrastructure investment”.

Given the need to improve both the levels of infrastructure investment and the quality of its infrastructure, Mexico cannot afford to lose any resources to corruption or mismanagement. Indeed, the core functions of Mexico’s Superior Audit of the Federation (*Auditoría Superior de la Federación*, ASF) include auditing public works and infrastructure spending; however, it has traditionally concentrated on the financial side; analysing the governance of infrastructure is hence a major opportunity to improve the broader impact of infrastructure projects.

While the legal framework grants ASF the powers to audit public works, such audits take place *ex post* and there is no explicit reference to the wider governance of infrastructure as a key enabler of the success of projects. ASF does not usually audit and review infrastructure projects at the project preparation or investment appraisal stages; it tends to concentrate on the tendering, execution, and contract management stages, and to some extent on the evaluation stage. Indeed, the orientation of the legal mandate influences the scope and focus of ASF’s audits, hindering a broader approach that could steer ASF’s strategies and policies.

Another feature of ASF’s audits of public works is that they are compliance-oriented, i.e., they aim to ensure compliance with the legal framework, but they do not necessarily focus on achieving value for money. In addition, the compliance-oriented approach focuses on identifying irregularities and correcting damages, instead of on preventing those irregularities and damages from occurring in the first place. A wider governance approach to infrastructure audits would facilitate prevention by, for example, defining accountability and control mechanisms throughout the different layers of management of a project. In addition, assessing the transparency and disclosure measures of infrastructure projects could prevent the undertaking of projects with weak social and economic justifications.

Limitations on carrying out real-time audits force ASF to be more reactive than proactive, which also limits its ability to take preventive action or conduct audits before receiving complaints. But being able to do so would help strike a better balance between prevention and the long-term success of infrastructure projects, on the one hand, and sanctioning, on the other, and promote early interventions. Real-time audits in infrastructure would not only help prevent risks of ineffective use of resources or plain corruption, but would also allow ASF to play a role in ensuring that infrastructure projects are planned and designed for success from the early stages.

ASF follows the same process for conventional infrastructure audits as for audits during emergencies, except for the planning stage. Infrastructure audits during emergencies can produce strategic insights and foresight, contributing to good governance and well-being in three ways: i) assessing risks; ii) upgrading preparedness and crisis management practices; and iii) documenting lessons learned during emergencies.

Recommendations

- **Even though the legal framework grants ASF wide powers to audit infrastructure, such audits tend to be compliance oriented and do not pay enough attention to achieving value for money and other wider governance issues:**
 - ASF could promote the review of its regulatory framework to explicitly mandate it to audit the governance of infrastructure projects taking a comprehensive, whole-investment-cycle approach.
 - ASF could raise the issue with the Legislative Commission for ASF Oversight so that legislators recognise the potential for a reform.
- **ASF could better balance its focus on corruption prevention and the long-term success of infrastructure projects:**
 - ASF could assess the degree of transparency of the different impact and feasibility studies used to select specific infrastructure projects.
- **ASF could undertake a gap analysis to understand the resources and technologies required to fulfil its strategic objectives relative to auditing infrastructure governance:**
 - It is important to have an assessment of the resources and equipment required to deepen the work on infrastructure governance and meet strategic objectives, particularly on elements such as performance and resilience.
 - ASF could carry out such an assessment and develop an investment plan aligned with the goal of widening the portfolio of infrastructure audits.
- **The same kind of gap analysis is pertinent for human resources, not only in terms of staff numbers, but also of capacities and skills. ASF should pursue the following actions:**
 - Allow for the establishment of multidisciplinary working groups to advance comprehensive audits.
 - Train and certify staff on infrastructure auditing and implementation of audit techniques following international standards.
- **Real-time audits would allow ASF to intervene in a timely way at the different stages of infrastructure projects:**
 - Congress should review ASF's legal framework and expand its powers to undertake real-time audits, particularly on infrastructure.
- **ASF could apply criteria on the impact on well-being to select infrastructure audits:**
 - ASF could select infrastructure audits based on their contribution to the well-being of citizens and incorporate such contributions in the estimation of its benefits.
- **ASF could review its infrastructure audits during emergencies to make sure they provide insight and foresight in terms of resilience and preparedness.**
- **ASF could develop a framework tailored to emergencies for infrastructure audits, aiming to build a portfolio that achieves balance between the timeliness of public responses and an adequate level of accountability and control:**
 - The framework should consider audit standards and guidelines to be used during emergencies, particularly on remote auditing and the transparency of emergency works procurement. It should also pay attention to criteria such as the “no harm” principle, comprehensiveness, and timeliness.
- **Real-time infrastructure audits are particularly relevant in emergencies and should be part of ASF's portfolio to control risks and maximise its deterrent effect:**
 - ASF should anticipate the resources needed to facilitate quick reporting and useful feedback to the infrastructure agencies responding to crises.
 - Real-time infrastructure audits in emergencies are powerful means to maximise the deterrent effect of audits and send a clear message that abuse will not be tolerated.

1

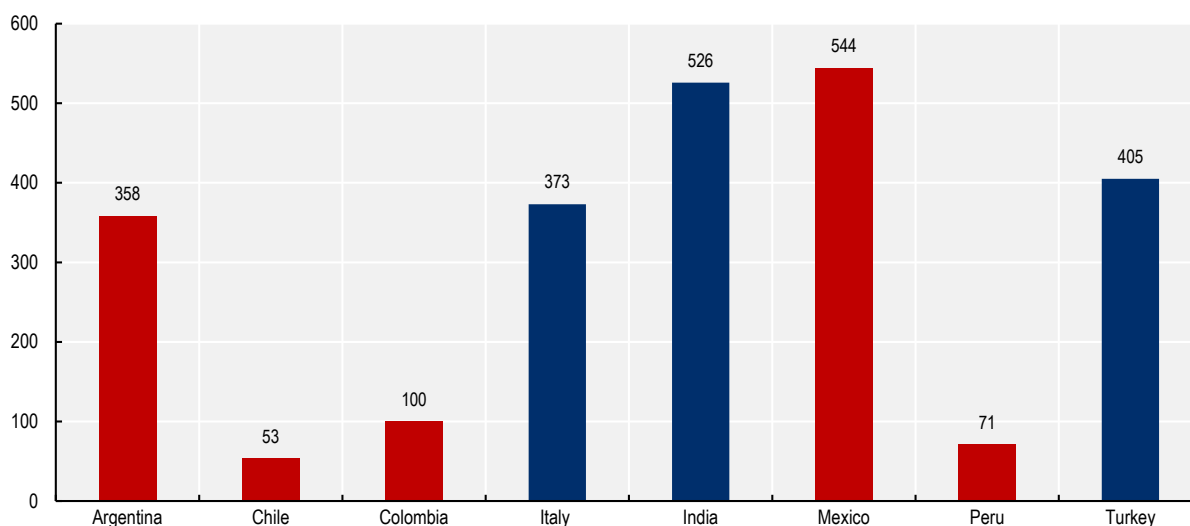
Introduction: The public investment cycle and integrity risks

This chapter sets the context for the discussions throughout the report. It analyses why infrastructure investment is so important and the challenges Mexico faces in terms of addressing its infrastructure gap and upgrading the quality of its infrastructure. Likewise, it discusses integrity risks throughout the public investment cycle.

Public infrastructure is a common good with multiple benefits, direct and indirect. First, infrastructure in sectors such as energy, transport, water and telecommunications is the backbone of our economies, essential for sustained and inclusive growth and for meeting the Sustainable Development Goals (SDGs). Second, infrastructure boosts the competitiveness of economies by increasing productivity and decreasing costs for transport, communications, and trade. Third, infrastructure allows reversing inequality by facilitating access to public services by citizens.

Despite its importance and net benefits, an infrastructure gap remains in many countries. During fiscal year 2021, Mexico's expenditures budget (*Presupuesto de Egresos de la Federación*, PEF) allocated MXN 828.9 billion for public works related to infrastructure investments, which represents 13.17% of the total budget (MXN 6 295.7 billion).¹ Despite such investment, the *G-20 Global Infrastructure Hub* estimates that Mexico's infrastructure gap amounts to USD 544 billion, which is much higher than in other Latin American countries or in countries of similar size and degree of development (see Figure 1.1).

Figure 1.1. Infrastructure gap in selected countries (USD billion)



Source: (G-20, 2021^[1]).

As illustrated by these numbers, expenditures to build new infrastructure or maintain old ones have generally not been enough to address countries' needs, which in turn may slow down the post Covid-19 economic recovery and hinder development efforts. In fact, the latest *OECD Economic Outlook* estimates that Mexico will only recover to pre-pandemic GDP per capita by the third quarter of 2023. Only Saudi Arabia, South Africa, and Argentina will take longer among G-20 countries (OECD, 2021^[2]).

The infrastructure gap is not exclusively a question of quantity; the quality of infrastructure should also be taken into account (OECD, 2016^[3]). Although the quality of Mexico's infrastructure compares reasonably well with that of Latin America, it does not compare favourably with, for example, Europe (Global Infrastructure Hub, 2020^[4]).

In this context, the international experience indicates that one of the major issues distorting the governance of infrastructure is corruption, which not only diverts resources from investment in infrastructure, but it may also lead to "white elephants" and poor quality of the works. The Construction Sector Transparency Initiative (CoST) estimates that 10 to 30% of the investment in publicly funded projects in the world may be lost through mismanagement and corruption (OECD, 2016^[5]). Furthermore, integrity failures can take place in any stage of the public investment cycle (see Figure 1.2 and Table 1.1).

Figure 1.2. The public investment cycle



Source: (OECD, 2016^[3]).

Table 1.1. International experiences indicate that integrity failures may occur in the different stages of the public investment cycle

| Stage | Integrity failures |
|---|---|
| Needs definition and project preparation | <ul style="list-style-type: none"> • Interest groups such as lobbyists, political coalitions and/or trade unions use unethical and/or corrupt tactics to influence decision makers towards their specific interest. • Decision makers are influenced to adopt an investment or purchase that is unnecessary. • Decision makers are influenced to vote for the development of new infrastructure, instead of maintaining existing ones. The reason could be the search for the political prestige attached to new infrastructure being developed during one's mandate or the promise of financial gain, as contracts for new infrastructure are more expensive than maintenance. • Public officials are bribed by a potential interest group to obtain confidential information on the government policy priorities or strategic government documents before these are made public. • Exchanges between project designers and intermediaries, involving the public bodies that provide or obtain funds for the project(s), may have an impact on the planning of public works per se and can lead to the introduction of inaccurate policy requirements. • Elected officials choose a specific public investment to benefit contractors who contributed to a political campaign. • Elected officials favour public investment that will be carried out through concessions or public-private partnerships (PPPs) to benefit a private operator who contributed to their political campaigns. • A specific public investment is selected because the public official responsible for approving the public investment has received a bribe from a potential contractor. • A specific public investment is selected because the public official or his family member is part of the board of the potential company developing, building, or participating in the construction of the public investment. • A specific public investment is selected because the public official has allegiance (previous employment or business relationships) with the potential company developing, building, or participating in the construction of the public investment. |
| Appraisal | <ul style="list-style-type: none"> • A consultancy firm in charge of the feasibility study intentionally provides an under-estimation of the costs while overestimating the benefits. • Consultants extend the life of projects as a way to make profits and maintain their networks. |

| Stage | Integrity failures |
|--|--|
| | <ul style="list-style-type: none"> • A public official presents incomplete or false information regarding the social, economic and/or environmental feasibility studies to ensure the public investment is approved. • A public official or the intended contractor/private operator bribes the person (or firm) carrying out the social, economic and/or environmental feasibility studies to ensure the public investment is approved. • The investor's financial risk assessments may be negated or manipulated to downplay the risks associated with the contractor. • The potential private operator of a PPP or a concession bribes a public official to not carry out a proper risk allocation, sensitivity analysis or other guarantee measures. • The potential private operator of a PPP or a concession bribes a public official for him not to secure the land where the project will be carried out and to disclose information about the location so the potential private operator of a PPP or a concession can buy the land and increase the price of expropriation. • A financial institution or agent, such as a bank, pays a bribe to a public official in charge of the public investment in return for the institution or agent being awarded the contract to finance the investment. |
| Planning and document design | <ul style="list-style-type: none"> • Needed goods, services, or maintenance costs are over- or under-estimated to favour a particular potential bidder. • Hidden mistakes and fictitious positions can be built into the project calculation and design, affecting the terms of reference, which leaves openings that can later be used to conveniently account for increased costs, influence the selection process or the selection procedure. • The terms of reference are developed to be excessively confusing in order to hide manipulations and corruption and to make monitoring difficult. • The contractor bribes a public official in order to obtain planning permits for the public investment, or to obtain approval for a design that does not meet relevant building regulations. • Companies bribe a public official or local authority to obtain confidential information about the planning and design process. • Potential bidders collude to ensure that the design of the tender will only favour one of the bidders (cartels). • A company bribes public officials or the authority responsible for the design of the public investment to tailor the design for itself and disqualify other potential bidders. • A company bribes decision makers to favour a direct "emergency" contract, circumventing open competition. • The design firm, architect or engineer has a close relationship with the public official in charge of the public investment (e.g. family or former colleagues), the contractor or the consultants. • The tender is artificially split into several lots, in order to stay below certain procedural thresholds. • Estimates for the infrastructure works are kept low, in order to shift important expenses to the maintenance and after-sale phase. In this way, the investment is more likely to take place, and the most important gains go to the maintenance contractor. |
| Tendering | <ul style="list-style-type: none"> • Bidders bribe a public official or the consultant engineer to obtain confidential information about the process, the tender documents, and the reference price, resulting in asymmetry of information for all potential bidders. • A bidder bribes the public official in charge of the public investment in order to reject another properly qualified bidder at the pre-qualification stage. • The bidder bribes a public official, in return for which the public official ensures that the bribing bidder wins the contract. • The official ensures that there is no competitive process. The public official may announce false reasons to justify a direct award (e.g. emergency or national security). • The bidder provides a contribution to the ruling party to ensure that he will obtain the procurement contract or the concession without competition or that the evaluation method will benefit him only. • Bidders collude to give the appearance of competition through bid-rigging schemes such as cover bidding, bid suppression, bid rotation, and market allocation. • The public official awards contracts to companies owned by his family members or to companies with which he has a relationship (e.g. previous or future employer). |
| Implementation and contract execution | <ul style="list-style-type: none"> • The contractor has many ways to defraud the public budget: rendering of fictitious work, inflating the work volume, changing orders, using lower quality materials than specified in the contract, supplying goods of a lower price and quality than quoted, rendering contracted services in an improper way, etc. • Renegotiations of the contract and terms of references are allowed after the contract was awarded, changing the initial requirements. • The contractor bribes the public official and/or the consultant engineer to allow "change orders", modifications to the public investment increasing the scope, time and costs, resulting in higher prices paid. • The contractor bribes the public official and/or the consultant engineer to approve defective or non-existent work. • The contractor provides false invoices and bribes the public official and/or the consultant engineer to approve or overlook the discrepancy. • The contractor misprices the goods or services and bribes the public official and/or the consultant engineer to approve or overlook the discrepancy. |

| Stage | Integrity failures |
|----------------------|--|
| Evaluation and audit | <ul style="list-style-type: none"> • The contractor does false reporting of work time and qualification of his staff to increase or justify the cost paid by the government and bribes the public official and/or the consultant engineer to not verify the validity. • Auditors are bribed to overlook faults in financial risk assessments by the contracting entity that would otherwise point to risks in awarding the contract to the winning bid. • A stakeholder falsifies information about the financing, processes and/or results in order to have falsely positive evaluations. • Stakeholders forge financial documentation requested by the auditors. • Information is purposely not publicly disclosed in order to avoid evaluation by civil society. • Internal or external auditors are complicit in limiting the information they request as part of the audit execution. • Actors are complicit in fragmenting contracts to avoid meeting the financial threshold that requires an <i>ex ante</i> audit, in order to move ahead with projects that have not been structured in compliance with regulations. • The public official hires a company with which he has close relationship to ensure that the auditor will not report the findings. • The contractor and/or the public official bribe the auditor to ensure that the auditor will not report legitimate findings of non-compliance and substandard performance. • Auditors are bribed to report favourable audit observations. |

Source: (OECD, 2016^[3]).

In this context, the role of Supreme Audit Institutions (SAIs) is key to ensure integrity, efficiency, and value-for-money in infrastructure investments. This is the case in Mexico, which cannot afford to spare any resources in corruption or mismanagement. In fact, Mexico's Superior Audit of the Federation (*Auditoría Superior de la Federación*, ASF) core powers and functions include auditing public works and infrastructure spending, but it has traditionally concentrated on the financial side and analysing the governance of infrastructure is hence a major opportunity.

This report aims to support ASF in the incorporation of governance issues into its public works audits. It will illustrate ASF efforts through the analysis of good practices implemented in other OECD countries' SAIs, such as the UK National Audit Office, and in Latin America, such as Brazil's Federal Court of Accounts (TCU). It will assess different strategic considerations for the new unit for infrastructure audits that would be established in ASF's Special Audit for Financial Compliance (*Auditoría Especial de Cumplimiento Financiero*, AECF), including objectives and resources. Finally, it will analyse infrastructure auditing practices in the context of emergencies.

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Note

¹ Information provided by ASF.

2 Regulatory framework and ASF powers to audit infrastructure in Mexico

This chapter discusses the regulatory framework and ASF's attributions to audit public works and infrastructure. It analyses how such regulatory framework influences the orientation and objectives of ASF's audits and suggests reforms to incorporate a wider infrastructure governance approach, beyond mere compliance.

ASF's legal framework and mandate

Even though the legal framework grants ASF wide powers to audit infrastructure, such audits tend to be compliance oriented and do not pay enough attention to value-for-money and other wider governance issues

ASF's attributions are mainly established in Mexico's Constitution and in the Auditing and Accountability Act (*Ley de Fiscalización y Rendición de Cuentas de la Federación*, LFRCF). Title III, Chapter II, Section V of the Political Constitution of the United Mexican States (*Constitución Política de los Estados Unidos Mexicanos*, CPEUM) regulates ASF and the audit of the public accounts. It establishes that ASF is granted technical and management autonomy to carry out its functions and decide about its internal organisation, functioning, and resolutions. One of its main responsibilities is ex post auditing of revenues, expenditures and debts; the management, custody, and allocation of funds and resources of the branches of government and federal public entities, as well as the performance relative to the objectives of federal programmes.

In line with the Constitutional mandate, the LFRCF establishes in Article 14 the objectives of the audit of the public accounts, which refers, among others, to the audits of public works, including:

I. Assessing the results of the financial management:

- a) Reviewing that expenditure was carried out following the authorised concepts and budget lines, including, among others, the procurement of services, public works, and goods, leasing, subsidies, contributions, donations, transfers, contributions to funds, and other financial instruments.
- b) Compliance with the applicable legal framework on government accounting; procurement of services, public works, goods, leasing, maintenance, use, destination, and sale of movable goods and buildings, warehouses, and other assets; material resources; and other rules applicable to the expenditure of public resources.

Likewise, Article 17, bullet VIII, of the LFRCF, refers to the ASF powers in the field:

VIII. Verifying public works, goods, and services procured by the audited entities to determine if the resources invested and spent were exercised according to the applicable rules.

The Internal ASF Bylaws (*Reglamento Interior de la Auditoría Superior de la Federación*) complement the regulatory framework by establishing that the General Directorate for Auditing Federal Investments (*Dirección General de Auditoría de Inversiones Físicas Federales*, DGAIFF) is in charge of auditing to verify that the planning, programming, budgeting, award, delivery, progress, and destiny of the public works and the procurement relative to federal investments were aligned with the applicable rules; that the expenditure is adequately demonstrated and justified, and that fiscal requirements were fulfilled. Likewise, DGAIFF verifies if procured public works, goods, and services were applied efficiently and according to the rules to fulfil the objectives and goals of the corresponding programmes.

The regulatory framework grants on ASF wide powers to audit the public works procured and executed with federal funding by the entities of the federal, state, and municipal public administrations, including planning, programming, budgeting, procurement, delivery, and termination. The sectors in which infrastructure is developed include, among others, energy, communications and transport, education, health, social development, environment, tourism, water, and government.

While the legal framework grants on ASF the powers to audit public works, such audits take place ex post and there is no explicit reference to the wider governance of infrastructure as a key enabler to projects' success. Even though there is an increasing trend, it is not a common practice for ASF to audit and review infrastructure projects at the stages of project preparation or investment appraisal (stages 1 and 2 in the public investment cycle), as it usually concentrates on the tendering, execution, and contract management stages, and to some extent in the evaluation (stages 4, 5, and 6 of the cycle). Indeed, the orientation of

the legal mandate influences the scope and focus of ASF's audits, hindering a wider approach that could steer ASF strategies and policies. This is so despite the fact that ASF recognises that public works in Mexico should be assessed beyond their economic dimensions and consider:

- if the execution of such public works renders benefits to society
- if they contribute to economic, social, and urban development
- if they contribute to fulfil the objectives and goals of the National Development Plan (*Plan Nacional de Desarrollo*, PND), i.e. to what extent they facilitate national development and strong, sustained, and sustainable growth.

Box 2.1. Results of the audits of the monument Trail of Light (*Estela de Luz*)

Trail of Light is a monument built in the iconic Reforma Avenue of Mexico City to commemorate the 200th anniversary of Mexico's independence and the 100th anniversary of the revolution. ASF carried out 10 audits of the project during 2009-11 to ensure the construction was performed efficiently, effectively, and economically, according to the applicable regulations. As a result of the audits, ASF issued 106 observations, leading to 142 actions, 36 recommendations, 1 request for fiscal justification (*promoción del ejercicio de la facultad de comprobación fiscal*), 11 observation files, 86 files of sanctionable administrative responsibility (*responsabilidad administrativa sancionatoria*), and 2 fact reports (*denuncias de hechos*). Out of these audits, two were public works audits corresponding to the public accounts 2010 and 2011.

The main issues identified in the audits were the following:

- Procurement of services with companies whose objectives were not aligned with the service requested or without the capacity to provide them, leading to outsourcing and the selection of procedures different from a public tender.
- Unduly approval of exceptions to public tenders to carry out restricted invitations to procure works.
- Modification and inclusion of additional works concepts in the catalogue presented by the project architect without technical justification and authorisation.
- Modifying agreements leading to a significant cost overrun in the construction (from MXN 394.4 million to 1 146 million).
- Excess and unjustified payments for MXN 248.9 million.
- Delays in the presentation of technical documents for the execution of the works, leading to unnecessary deferrals and postponements.
- Procurement of technical studies whose specifications did not meet the requirements for the adequate delivery of the works.
- Formal authorisation to kick off the construction based on inadequate technical studies, which eventually led to cost and time overruns in the construction.

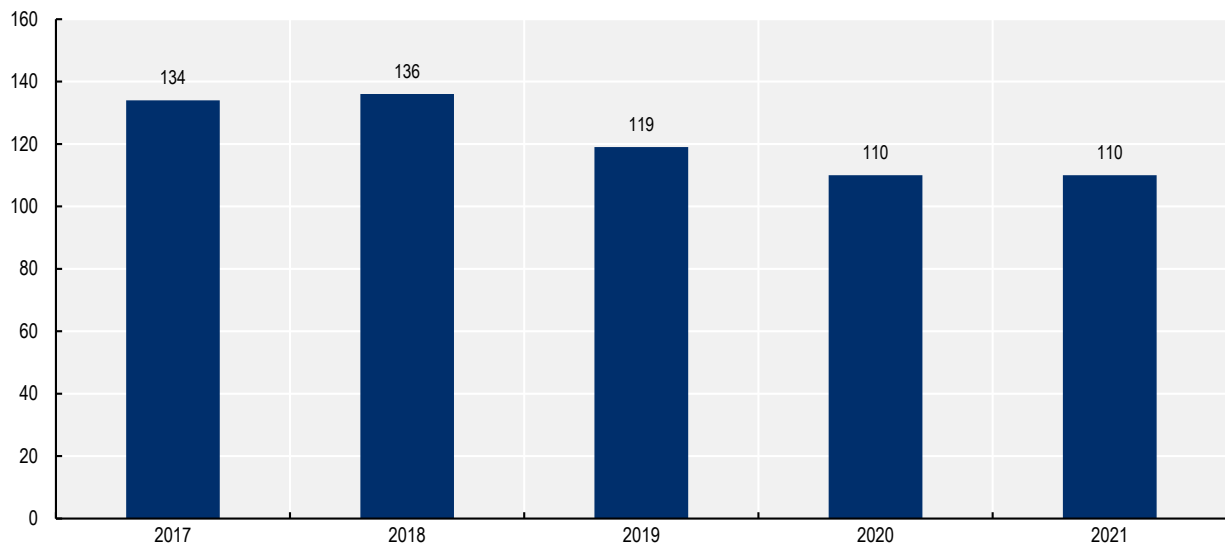
Source: (ASF, 2012^[11]).

Hence, a first recommendation consists on reviewing the ASF regulatory framework to explicitly mandate it to audit and review the governance of infrastructure projects from a comprehensive point of view and a whole investment cycle approach. In fact, as it will be discussed later, early engagement is key to improve the chances of success of infrastructure projects. ASF could raise the issue to the Legislative Commission for ASF Oversight (*Comisión de Vigilancia de la ASF de la Cámara de Diputados*) so that legislators

recognise the potential for a reform that would empower ASF to advance audits on the wider governance of infrastructure projects. If such a reform were approved, it would then be up to ASF to adapt its strategies and policies to facilitate its implementation.

Another feature of ASF audits is that they are compliance oriented, i.e. they aim to ensure compliance with the legal framework relative to public works, not necessarily to create value-for-money. Articles 14, bullet I, index b, and 17, bullet VIII of the LFRCF, as well as the Internal Bylaws, are very explicit on ensuring that public works are undertaken according to the legal framework and applicable regulations. Indeed, over the last years, the infrastructure audits have concentrated on financial compliance (see Figure 2.1).¹ This does not necessarily entail that value-for-money considerations will be a concern for auditors or even for the public officials with management responsibilities in public works and infrastructure projects. In fact, OECD has found that, in some cases, procurement officials in Mexico tend to worry more about compliance with the regulatory framework than with creating value-for-money (see Box 2.2). ASF audits should be more comprehensive to reverse this trend.

Figure 2.1. Evolution of ASF's audits on physical investments compliance



Note: The number of audits in 2020 and 2021 were limited due to the restrictions stemming from the COVID-19 crisis and audit staff limitations.
Source: Information provided by ASF.

Box 2.2. Compliance approach of public procurement officials in the State of Nuevo León, Mexico

There is a difficult balance to strike between flexibility and control. At the national and state level in Mexico, there is a faulty assumption that more regulation will lead to less corruption. In fact, the strong compliance approach has limited the ability of procurement officials to seek value-for-money.

Indeed, the 2018 OECD review *Public Procurement in Nuevo León, Mexico: Promoting Efficiency through Centralisation and Professionalisation* found that, when undertaking procurement, public officials in Nuevo León privilege a compliance approach, rather than value-for-money. There are several reasons for this. First, procurement operations in Nuevo León are overregulated because of an incorrect assumption that more regulation leads to fewer opportunities for corruption. Second, audit findings have sparked high levels of public mistrust of government officials. This has in turn driven these officials to protect themselves by strictly observing the letter of the law – even if it hinders the potential for reaping value-for-money for the public sphere.

This close attention to legal compliance may be counterproductive, as officials sometimes end processes out of fear of not being able to meet a high level of legal compliance. They fear reprisal, or simply want to “be on the safe side”, i.e. they refrain from doing anything that is associated with the slightest risk of violating a law.

Source: (OECD, 2018^[2]).

In line with the first previous recommendation, ASF could take the initiative to promote legislative reforms to prominently incorporate criteria for its audits beyond legal compliance, such as value-for-money and wider governance considerations for infrastructure projects. This would not only help to ensure projects' success and contributions to national economic and social objectives, but it would also prevent a concentration on legal requirements even when the projects do not significantly contribute to meet such objectives. These recommendations are consistent with ASF's plans to suggest reforms to widen and strengthen its powers relative to auditing public works and would empower it to build capacities and design tailored strategies. The UK National Audit Office (NAO), for example, has changed its approach to auditing infrastructure projects and programmes to focus on the underlying issues leading to project failure, while still routinely looking at the biggest and riskiest projects (Table 2.1).

Table 2.1. NAO's audit approach to infrastructure projects and programmes

| Traditional approach | Revised approach |
|--|---|
| <ul style="list-style-type: none"> Value-for-money reports focused on a single project or programme within a department. Tended to be undertaken at completion or prompted by a significant failure. Focused on exploring the particular circumstances surrounding project failure or, on a particular aspect of the project rather than assessing overall performance in delivery. Methodology tended to be unique to the report or the team undertaking the study. Made it difficult to draw insights or get a clear view of performance across government. | <ul style="list-style-type: none"> Value-for-money reports and investigations undertaken at key stages so that NAO comments during the life of a project and clients can adopt recommendations. More varied mix of products: traditional deep dives; lessons learned reports (<i>Lessons Learned from Major Programmes</i>); commentary on systemic issues (<i>Optimism bias, Assurance for major projects</i>). More consistent approach to auditing major projects (<i>Framework to review programmes</i>). Focus on infrastructure and re-organisation of the NAO to concentrate on bringing together and share knowledge (<i>Major Project Delivery Hub</i>). |

Source: Presentation by NAO officials during the OECD webinar “Auditing the governance of infrastructure”, held on 2-4 June 2021.

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- ASF (2012), *Informe sobre la Fiscalización Superior del Monumento Estela de Luz 2009-2011*, [1]
https://www.asf.gob.mx/uploads/56_Informes_especiales_de_auditoria/Estela_Luz_Nv.pdf.
- OECD (2018), *Public Procurement in Nuevo León, Mexico: Promoting Efficiency through Centralisation and Professionalisation*, OECD Public Governance Reviews, OECD [2]
Publishing, Paris, <https://doi.org/10.1787/9789264288225-en>.

Note

¹ Audits carried out by the DGAIFF on infrastructure works are called “audits on physical investments compliance” (*auditorías de cumplimiento a inversiones físicas*).

3

Strategic considerations for ASF's unit to audit infrastructure in Mexico

Building on the previous section, this chapter analyses alternatives for ASF's audits to contribute to the success prospects of infrastructure projects through early interventions and consideration of the principles of the OECD Recommendation on the Governance of Infrastructure. It also discusses strategic considerations for ASF's unit to audit infrastructure, including those relative to equipment, technologies, and human resources. Finally, it assesses the importance of real-time interventions to maximise the impact of infrastructure audits.

ASF's contributions to the success of infrastructure projects

ASF could better balance its focus on corruption prevention and the long-term success of infrastructure projects

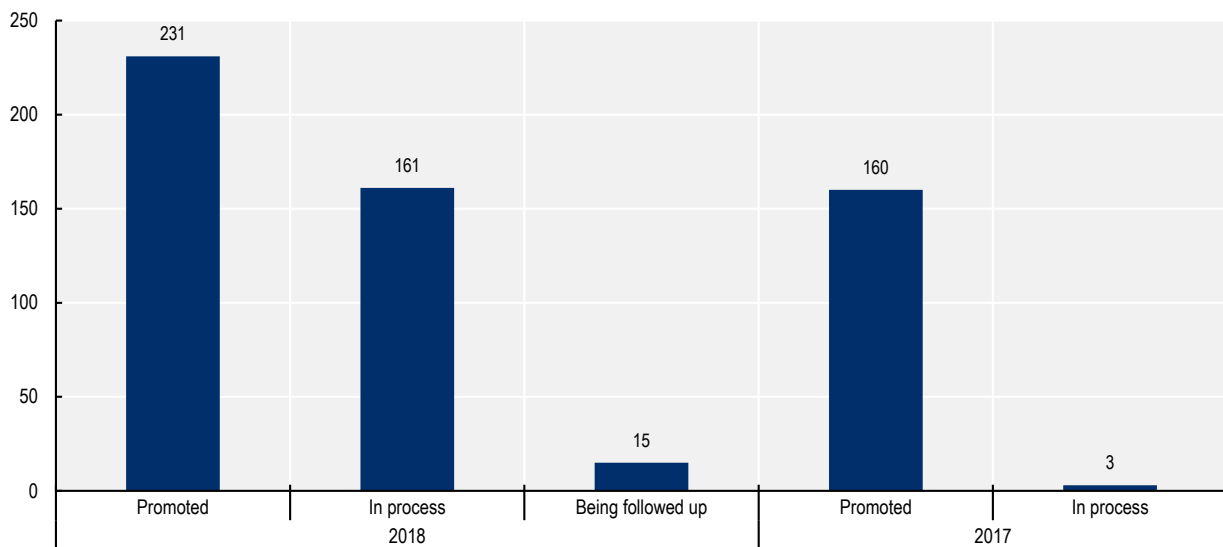
The objectives and the value proposition of public works and infrastructure audits should balance better corruption prevention and the long-term success of projects, on the one hand, and sanctioning, on the other, and promote early interventions.

ASF's Organisation Manual defines the objectives of the DGAIFF, namely:

- Reviewing the public works, services, and acquisitions related to federal physical investments included in the public accounts and the Financial Management Progress Report (*Informe de Avances de Gestión Financiera*) authorised in the Annual Audit Programme for the Public Account (*Programa Anual de Auditorías para la Fiscalización Superior de la Cuenta Pública*, PAAF).
- Auditing resources obtained through financing by the federal states and municipalities, guaranteed by the Federation, for physical investments to determine if such resources were applied legally and efficiently to fulfil the objectives and goals of approved policies and programmes.
- Determining irregularities detected in audits to the planning, programming, budgeting, award, delivery, and payment of public works, services, and acquisitions relative to federal physical investments and undertaking the actions needed to remedy the damages.

The strategic reorientation of public works and infrastructure audits should aim to balance better prevention vis-à-vis sanctioning objectives. Here again, it is easy to identify the compliance oriented approach and the focus on “determining irregularities” and “remedy damages”, instead of preventing those irregularities and damages from the beginning. This is not to say that enforcement and sanctioning integrity and other kind of breaches are irrelevant. Sanctions can indeed become powerful deterrents of corrupt behaviour, in the understanding that corrupt acts depart from rationalisation (i.e. estimating the balance between benefits and costs stemming from the corrupt act and the chances of being caught). However, beyond that, a wider governance approach of infrastructure audits would facilitate prevention by, for example, defining accountability and control mechanisms throughout the different layers of management of a project.

Figure 3.1. Evolution of administrative sanctions filed by ASF



Source: Information provided by ASF.

In addition, transparency and disclosure measures, for example, could prevent the undertaking of projects with weak social and economic justifications. To ensure the need and viability of future projects, ASF could assess, as part of its audits, the degree of transparency of the different impact and feasibility studies to select specific infrastructure projects. Indeed, public opinion has been particularly critical on the lack of transparency of the feasibility studies for projects like the Felipe Ángeles International Airport, one of the major infrastructure undertakings of Mexico's current federal administration. For example, the aeronautical studies, which are key to demonstrate feasibility, have not been disclosed and are not accessible through the project's website (<https://www.gob.mx/nuevoaeropuertofelipeangeles>), even though some technical studies are available (i.e. environmental impact, archaeology, etc.). Regarding this project, during February 2020, ASF signed an agreement with the Ministry of National Defence (*Secretaría de la Defensa Nacional*, SEDENA) to follow up the construction of the Airport. The agreement aims to strengthen ASF's advanced and preventive interventions.

While this agreement illustrates the potential for preventive interventions by ASF, there is margin to allow for earlier interventions. Indeed, the earlier governance factors are considered, the better chance that issues will be prevented during the execution of the project and the higher the likelihood of a project's long-term success. This is explicitly recognised, for example, in the UK's Project Initiation Routemap (see Box 3.1).

Box 3.1. The Project Initiation Routemap: Improving Infrastructure Delivery

In order to realise the benefits from infrastructure investment, the UK Government created the Infrastructure and Projects Authority (IPA) as the centre of expertise for project development and delivery. The IPA's Cost Review and the National Audit Office (NAO) report on delivering major infrastructure projects identified the early stages of the project cycle as a common source of failures.

To address common pitfalls, the UK Government, working collaboratively with industry and the University of Leeds through the Infrastructure Client Group, developed the Project Initiation Routemap, which is a tool for strategic decision making. It supports the alignment of the sponsor and client organisations' capabilities to meet the degree of challenge during initiation and delivery of a project. It provides an objective and systemic approach to project initiation founded on a set of assessment tools to determine:

- Complexity and context of the delivery environment.
- Capabilities of current and required sponsor, client, asset manager, and market.
- Key considerations to enhance capabilities where complexity-capability gaps exist.

The Routemap helps organisations understand their current delivery environments and create the ones required. The intention is addressing issues as early as possible in the project life cycle. As Prof. Denise Bower, Executive Director of the Major Projects Association, put it "The issues that lead to poor execution of major projects are not usually rooted in individual shortcomings, they are systemic failures that should have been addressed during initiation".

Source: (IPA, 2016^[11]).

In a special report published in October 2017, ASF also advanced the preventive features of its work, suggesting particular risks for heightened attention by public managers and auditors, although not for a specific project. The ASF report *General issues relative to public works and services related 2011-16 (Problemática General en Materia de Obra Pública y Servicios Relacionados con las Mismas 2011-2016)* analyses 92 infrastructure projects whose procured amounts exceeded MXN 100 million and which suffered adjustments of at least 30% in the investment amount or the execution timeline (ASF, 2017^[12]).

This report follows up a previous one that had analysed 80 projects executed during 1999-2010. The major sources of issues for infrastructure delivery were classified in four categories:

- **Planning and programming:** Incomplete planning relative to the scope of the project, its value-for-money, poor contract design, lack of definition of procurement procedure, and payment, considering insufficient funding, as well as lack of co-ordination to obtain the required licenses and permits and decisions based on political criteria, rather than technical ones.
- **Technical:** Insufficient development of executive projects, which leads to engineering failures, lack of definition of the technology to be used in the execution of the works, or insufficient detail of the site of the works. Other technical shortcomings identified include lack of or poor previous studies (i.e. soil, environmental, geology, etc.), lack of definition of technical and quality norms, as well as general and particular specifications for the works, inadequate awards out of poor assessments, and lack of technical staff to prepare the projects and assess the bids submitted.
- **Economic:** Delays in the allocation and availability of resources, late transfers between programmes, downsized budget during the execution stage, lack of capital by contractors, cost and timeliness in the delivery of supplies.
- **Execution:** Unreal timelines or projected costs, which do not correspond to the complexity of the works, late processing of advanced payment, poor compliance by contractors and supervisors, lack of control in subcontracting, technical issues due to misalignment with construction specifications and quality standards for supplies and materials, delays in the formalisation of modification agreements, authorisation of cost adjustments, broken suppliers, poor supervision and control of the works, poor quality or unfinished works, social or union issues, and untimely operation tests.

The issues identified in the report are similar to the common causes of programme/project failure described in the UK Cabinet Office Review Guidance (see Box 3.2).

Box 3.2. The common causes of programme/project failure identified in the Cabinet Office Review Guidance

- Lack of clear link between the project and the organisation's key strategic priorities, including agreed measures of success.
- Lack of clear senior management and ministerial ownership and leadership.
- Lack of effective engagement with stakeholders.
- Lack of skills and proven approach to project management and risk management.
- Too little attention to breaking development and implementation into manageable steps.
- Evaluation of proposals driven by initial price rather than long-term value-for-money.
- Lack of understanding of and contact with the supply industry at senior levels in the organisation.
- Lack of effective project team integration between clients, the supplier team, and the supply chain.

Source: (IPA, 2016^[11])

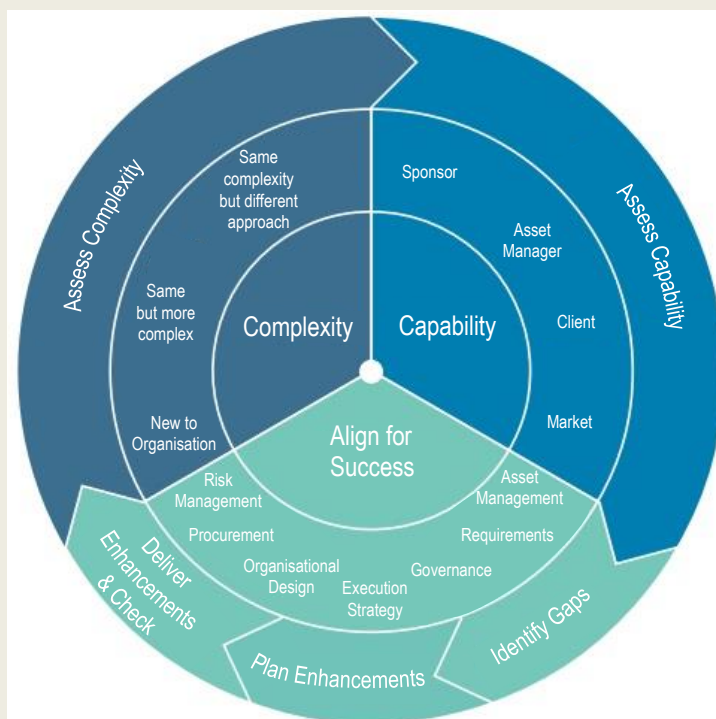
This work is extremely valuable as it provides guidance to infrastructure project managers and auditors on important considerations to avoid problems during the different stages of the project cycle. In fact, this work could be the basis for ASF to develop a guide for auditors to carry out early interventions with specific criteria to review, just like the criteria enlisted in the Project Initiation Routemap (see Box 3.3).

Box 3.3. The Project Initiation Routemap: Criteria for Assessment

The Routemap tools assess the capabilities of the sponsor, client, asset managers, and the market, as well as the complexity of the project environment. The analyses facilitate the identification of areas of alignment and misalignment. It contains detailed checklists to use during the initial assessment steps, advice on how to undertake the gap analysis and what to include in the plans to enhance the project environment.

- Complexity assessment: A set of 12 factors that determine complexity, which are strategic importance, stakeholders, requirements and benefit articulation, stability of overall context, financial impact and value-for-money, execution complexity, interfaces, range of disciplines and skills, dependencies, extent of change, organisational capability, and interconnectedness.
- Capability assessment:
 - Sponsor: Improving the understanding of the requirements for the sponsor's capability during the investment and delivery planning process.
 - Asset manager: Analysing key operational constraints and requirements.
 - Client: Considering the ability of the client organisation to engage effectively with the supply chain and manage the delivery outcomes.
 - Market: Understanding market ability and appetite to respond to requirements.
- Align for success modules: Provide organisations (sponsors and clients) with advice to enhance capabilities relative to requirements, governance, execution strategy, organisational design and development, procurement, risk management, and asset management.

Figure 3.2. Organisation of the Project Initiation Routemap



Source: (IPA, 2016_[1])

Leveraging on the OECD Recommendation on the Governance of Infrastructure

ASF could guide its efforts to audit the governance of infrastructure based on the OECD Recommendation

The *G20 Principles on Quality Infrastructure Investment* highlight that “sound infrastructure governance over the life cycle of a project is a key factor to ensure long-term cost-effectiveness, accountability, transparency, and integrity of infrastructure investment” (G20, 2019^[3]).

The governance of infrastructure depends on multiple institutional, social, economic, and environmental factors, and it should align with a framework that ensures strategic planning, performance, and resilience of public infrastructure throughout the life cycle of projects. Indeed, the governance of infrastructure projects has been recognised as a key determinant of success (or failure).

According to the UK Office of Government Commerce (OGC), five out of the eight causes of project failure identified in 2005 were attributable to weak governance. In contrast, OGC found that seven out of the ten common causes of confidence identified in 2010 were attributable to good governance. Similarly, PwC’s 2012 *Global Study on Project Management Trends* identified that weak governance was the main contributor to project failure. Likewise, the *Infrastructure UK Cost Review Report 2010* and the NAO’s *Guide to Initiating Successful Projects* stress the importance of good governance by highlighting the need for a greater focus on the early stages of projects to ensure that they are set up to succeed, establishing the right delivery environment and capability to match the complexity of the project (OECD, 2015^[3]).

In light of this, after a broad consultation that included internal and external stakeholders and that collected more than 426 comments from 67 participants from 29 countries, the OECD Council adopted the *Recommendation on the Governance of Infrastructure* on 17 July 2020. This is a tool to support governments to invest in infrastructure projects in a way that is cost effective, affordable, and trusted by investors, citizens, and all stakeholders. It introduces 10 principles that relate to how governments prioritise, fund, budget, deliver, operate, and monitor infrastructure assets (OECD, 2020^[3]). As is the case with other OECD Council Recommendations, the one on the governance of infrastructure stems from policy dialogue, the experience and good practices of member countries and, in this sense, it indicates where country policies should converge.

The Recommendation emphasises the development of a long-term strategic vision for infrastructure and a coherent and accountable institutional framework to ensure a well-functioning infrastructure investment system. Additionally, it stresses the need for fiscally sustainable decision making throughout the planning, budgeting and delivery stages of infrastructure projects taking into account the entire life cycle costs. Strengthening public procurement processes in infrastructure and meaningful stakeholder engagement are also key aspects. The Recommendation further promotes coherent and efficient regulatory frameworks and a whole-of-government approach to manage threats to integrity. Finally, it encourages Adherents to ensure infrastructure is up to date with the impacts of technology and promotes harnessing digital technologies and data analytics to ensure evidenced-based decision making (see Figure 3.3).

Figure 3.3. The 10 principles in the OECD Recommendation on the Governance of Infrastructure



Source: (OECD, 2020^[2])

Brazil's Federal Court of Accounts (TCU) adopted a governance approach to audit the country's electric sector (see Box 3.4). Likewise, United Kingdom's IPA recognises the value of good governance assurance to determine:¹

- Whether the project/programme has appropriate decision-making processes and structures in place with defined responsibilities.
- Whether mandates at all levels exist so there is clarity over who is responsible for what, and who accounts to whom for what.
- Whether decisions are being made at the appropriate level in accordance with mandates.
- Whether project/programme governance arrangements are evolving as the programme matures to reflect varying stakeholder requirements and emerging needs.
- Whether project/programme governance is linked with the governance arrangements within the parent or target business.

IPA has focused on the governance of infrastructure, particularly in the early stages, and issued its Principles for Project Success (see Box 3.5).

Box 3.4. TCU audits of the governance of Brazil's electric sector

TCU's Department of External Control – Electric Power Infrastructure (*SeinfraElétrica*) and the Department of Special Operations in Infrastructure (*SeinfraOperações*) adopted a governance approach to audit the country's electric sector. *SeinfraElétrica* is a team of 38 auditors who oversee the formulation and conduction of public policies, regulation, and privatisation of the electric and nuclear sectors. It also oversees the management and enterprises of State-owned companies (SOE's). Some examples of *SeinfraElétrica* audits are the following:

- Structuring of large hydroelectric projects.
- Participation by thermoelectric plants in the national electric matrix.
- Public policies on renewable energy.
- Subsidies in electric bills.
- Nuclear thermoelectric plant Angra 3.
- Emergency activities related to COVID-19.

TCU conclusions indicate that sector plans are technical and transparent and the main principles applied are objective and up-to-date. However, TCU also points out several shortcomings, such as:

- Long-term planning does not define expected results and scenarios.
- Lack of indicators in sector plans.
- Lack of co-ordination between sector institutions.
- Absence of a forum to discuss strategic issues.
- Lack of impact assessment studies before relevant decisions.

Source: Presentation by TCU officials during the OECD webinar “Auditing the governance of infrastructure”, held on 2-4 June 2021.

Box 3.5. IPA's Principles for Project Success

The Principles for Project Success are intended as core propositions or “basic truths” to guide thinking and behaviour in project delivery. They are designed as short, memorable headlines supported by explanatory bullets and further resources. The basic assumption behind the Principles is that project success or failure is often determined in the early stages and whilst successful project initiation can take more time at the start, it will be repaid many times over later on in delivery.

The eight principles were developed following widespread consultation with project professionals across government and other sectors.

1. Focus on outcomes
2. Plan realistically
3. Prioritise people and behaviour
4. Tell it like it is
5. Control scope
6. Manage complexity
7. Be an intelligent client
8. Learn from experience

Source: (Infrastructure and Projects Authority, 2020^[3])

Strategic considerations for ASF's unit to audit infrastructure

ASF could undertake a gap analysis to understand the resources and technologies required to fulfil its strategic objectives relative to auditing infrastructure governance

ASF is considering the implementation of new mechanisms and tools to enhance its infrastructure audit work. An important first step in this endeavour is defining strategic objectives for the adoption of such technologies, including building the capacities for remote audits. Indeed, surveys conducted within the SAI community concerning the impacts of the COVID-19 crisis revealed that the main challenge has been the lack of ICTs to conduct remote audits.²

Some of the most important tools ASF is considering include equipment for physical verification such as drones and GPS to quantify the volumes. These tools would support ASF in presenting results based on better evidence and assessing if the execution of the works met the objectives. Likewise, they will be useful to determine their performance and resilience, which are part of the OECD *Recommendation on the Governance of Infrastructure*. Other anticipated equipment include distance meters, odometers and bathymetric catamarans.

While these resources will certainly improve ASF capabilities, it is important to have an assessment of those that would be required to deepen the work on infrastructure governance and meet strategic objectives, particularly on elements such as performance and resilience. ASF could complete such assessment and develop an investment plan aligned with perspectives to widen the portfolio of infrastructure audits.

The same kind of gap analysis is pertinent for human resources, not only in terms of staff numbers, but also of capacities and skills

According to the International Organisation of Supreme Audit Institution (INTOSAI) Development Initiative's *Strategic Management Handbook for SAIs*, assessments can be carried out as a step in strategy development, so that capacity gaps are determined in relation to defined objectives and outputs (INTOSAI, 2020^[5]).

Currently, the team to audit infrastructure is composed by 206 officials, including 33 of senior level management, 147 auditors, and 26 support staff. The prevailing expertise of the team to audit infrastructure is on architecture and civil engineering, but there are as well specialists on accounting, law, chemical and oil engineering, territorial planning, urban studies, communications, and hydraulics.

In order to strengthen its human capacities to audit infrastructure and public works, ASF should pursue the following actions:

- Growing the staff base to allow for the establishment of multidisciplinary working groups to advance comprehensive audits including technical, legal, accounting, financial, and scientific issues to strengthen audit impact.
- Training staff on infrastructure auditing and implementation of audit techniques following international professional standards, particularly for the construction of infrastructure relative to roads, dams, rail, airports, hospitals, energy production and transmission, telecommunications, ports, and residual water management, among others.
- Certifying staff to increase results-based audit capacities.

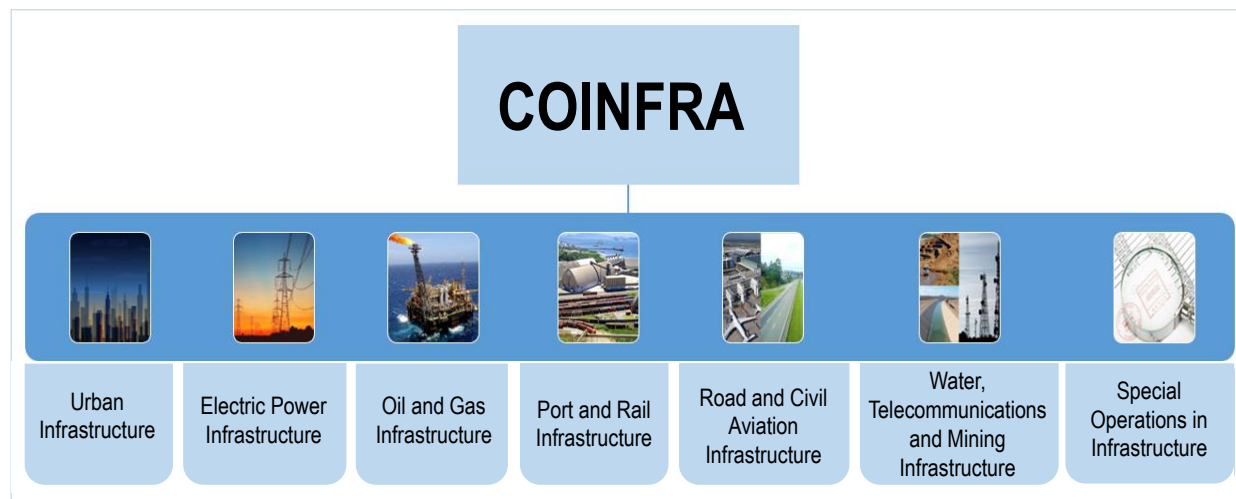
While the plans to upgrade ASF's staff base and infrastructure audit capacities and powers are ambitious, the senior leadership also recognises obstacles, such as the following:

- Budget restrictions to hire staff and procure equipment, as well as to fund training initiatives.
- Complex processes for legislative reforms.
- Tight deadlines that restrict the time to review audit projects and outcomes.
- The fact that real-time audits are subject to reports.
- Strict timing criteria for the review and determination of actions hindering ASF capacities to recover resources or promote sanctions.
- Lack of a homogeneous regulatory framework for public works.³

A wider approach to infrastructure audit, prescribed by law, would provide ASF with elements to make the case for stronger infrastructure audit capacities and therefore to ask Congress the required resources. More comprehensive infrastructure audits would pay for themselves by facilitating early interventions and increasing the chances for infrastructure projects success, thereby avoiding investments in poorly justified projects and advancing value-for-money.

Regarding the organisational structure of the infrastructure audit team, it can be arranged according to sectors, such as in TCU's organisational structure. The TCU Office of the General Coordinator for the Infrastructure Sector (Coinfra) is divided into seven branches for its 267 auditors, spread in the five regions of Brazil (see Figure 3.4).

Figure 3.4. Coinfra's organisational chart



Source: Presentation by TCU officials during the OECD webinar "Auditing the governance of infrastructure", held on 2-4 June 2021.

Box 3.6. Skills and expertise in support of NAO's strategy

NAO developed a five-year strategy to ensure it provides effective support to Parliament in scrutinising public sector performance, while making insights available to those responsible for public services. Its strategic priorities are i) improving support for effective accountability and scrutiny; ii) increasing impact on outcomes and value-for-money; and iii) providing more accessible and independent insight. One of the strategic enablers to accomplish this strategy is attracting, retaining, and developing high quality people. In this context, NAO defined key areas of cross-cutting expertise:

- Analysis
- Commercial
- Digital
- Financial and risk management
- People and operations
- Major project delivery

Skills are developed through several mechanisms, including on-the-job learning, seminars, support to teams, training, embedding experts, and links with external organisations.

Source: Presentation by NAO officials during the OECD webinar "Auditing the governance of infrastructure", held on 2-4 June 2021.

The potential of real-time audits

Real-time audits are key to allow ASF to timely intervene at the different stages of infrastructure projects

During interviews, ASF staff recognised that the fact that real-time audits can only be launched after legally justified reports of irregularities is a significant obstacle for timely interventions. The timing of audits was also recognised as a major challenge by NAO officials who participated in an OECD workshop on "auditing the governance of infrastructure" in June 2021.

As the 2021 OECD *Progress report on the implementation of the Mexican Superior Audit of the Federation's mandate: Increasing impact and contributing to good governance*⁴ stresses, limitations to real-time audits render ASF reactive and unable to take preventive actions or conduct audits before receiving complaints. This capacity would be key to address the recommendation to balance better prevention and the long-term success of infrastructure projects, on the one hand, and sanctioning, on the other, and promote early interventions. In this sense, the reforms ASF could implement to advance its powers to conduct real-time audits would be key to adopt a wider governance approach in infrastructure auditing.

Not only real-time audits in infrastructure would help preventing risks of ineffective exercise of resources or plain corruption, but would also allow ASF to play a role in ensuring that infrastructure projects are planned and designed for success from the early stages. For example, real-time audits would allow the timely identification of inefficiencies (e.g. overspending on specific portfolios which might not be a priority for a major infrastructure undertaking) or red flags (e.g. several contracts awarded to the same construction firm) and suggest corrective measures, as well as maximise the deterrent effect of audits.

Congress should take prompt actions to review ASF's legal framework and expand its powers to undertake real-time audits, particularly on infrastructure. This could take place by anticipating a broader set of triggers

for real-time audits, beyond the report of irregularities, or by granting ASF *ex ante* audit powers.⁵ This is more relevant than ever in light of the questions surrounding the success perspectives of major infrastructure projects such as the Felipe Ángeles International Airport and the Dos Bocas Refinery. ASF is well placed to feed an evidence-based discussion on such perspectives through its independent and objective assessment. Furthermore, the infrastructure investment planned in the draft Expenditures Budget for 2022 can be a powerful lever for economic recovery, but will only see its impact maximised if the success of the projects and a timely execution are guaranteed. The fact that most observations in public works audits during 2015-17 refer to the execution stage (see Chapter 4 on “Risk analysis to inform audit programming and selection”) calls to allow ASF to undertake real-time audits.

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Notes

¹ Presentation by IPA officials during the OECD webinar “Auditing the governance of infrastructure”, held on 2-4 June 2021.

² INTOSAI Policy Finance and Administration Committee’s COVID-19 Initiative (forthcoming), *Coronavirus Pandemic: Initial Lessons Learned from the International Auditing Community*.

³ Currently, there are different legal regimes according to the funding sources of public works. If they are financed with federal resources, then the federal framework applies. However, if public works are financed with state or municipal resources, then the corresponding state legal framework applies. There are 32 federal states in Mexico and therefore 32 different state legal frameworks for public works. Additionally, the state productive enterprises, PEMEX and the Federal Electricity Commission (*Comisión Federal de Electricidad*, CFE), as well as Mexico’s National Autonomous University (*Universidad Nacional Autónoma de México*), the Metropolitan Autonomous University (*Universidad Autónoma Metropolitana*), and the legislative and judicial powers, have their own regulatory frameworks for public works.

⁴ Available at <https://www.oecd.org/governance/ethics/progress-report-on-the-implementation-of%20the-Mexican-Superior-Audit-of-the-Federation-s-mandate.pdf>.

⁵ OECD has found that the idea of granting SAIs *ex ante* powers is controversial in some Latin American contexts given the potential for abuse of power.

4 Risk analysis to inform audit programming and selection in Mexico

This chapter takes stock of ASF's initiatives to collect data to identify shortcomings in infrastructure management and delivery and how these efforts can feed into a wider governance approach. It also suggests specific criteria and methodologies to strengthen audit programming and selection, which in turn could influence the assessment of the impact of ASF's work.

Infrastructure audits programming and selection

ASF could apply criteria relative to impact on well-being to select infrastructure audits

ASF's risk analysis to inform public works audits selection and programming is based on the following criteria:

- Public accounts: Ministries and entities (*dependencias y entidades*) which got the highest budgets for public works (Chapter 6000).
- Strategic works: Ministries and entities with major projects in terms of social and economic impact.
- Statistics: Ministries and entities with previous observations or repetition of observations in audits.

ASF may also include in the PAAF those public works capturing significant media attention or where congressional and citizen requests exist.

As acknowledged in the 2021 OECD Progress Report, ASF has established the practice of measuring the results of its work by estimating the Return of Investment (ROI). In fact, the report documents a decreasing ROI for the period 2016-18. However, as suggested, ASF could also consider its qualitative contributions to good governance and well-being. This applies perfectly to infrastructure audits, meaning that ASF could select audits based on their contribution to the well-being of citizens and incorporate such contributions to the estimation of its benefits. For example, in the current context of COVID-19 and in order to improve the number of hospital beds per inhabitant, ASF could prioritise works aimed to develop infrastructure in the health sector.¹ Likewise, ASF could consider works necessary to avoid catastrophic losses as a result of natural disasters. Mexico is highly exposed to natural disasters (i.e. earthquakes, floods, hurricanes, etc.) and infrastructure (i.e. dams, ports, etc.) can strengthen its resilience and protect citizens in high-risk areas.

One way to assess the contributions to well-being in the cases mentioned above would be to apply counterfactual analysis. Counterfactual analysis enables evaluators to attribute cause and effect between interventions and outcomes. The counterfactual measures consist on what would have happened to beneficiaries in the absence of an intervention, and impact is estimated by comparing counterfactual outcomes to those observed under the intervention. ASF could employ counterfactual analysis to complement other sources to measure its impact, such as performance audits and ROI.

Box 4.1. Counterfactual impact evaluation

Questions related to the sign and magnitude of programme and infrastructure impacts arise frequently in evaluation. For example, does investment in new public infrastructure increase housing values? The evaluation problem has to do with the "attribution" of the change observed to the intervention that has been implemented. Is the change due to the policy or would it have occurred anyway?

The challenge for quantifying the effect is finding a credible approximation to what would have occurred in the absence of the intervention, and to compare it with what actually happened. The difference is the estimated effect, or impact, of the intervention on the particular outcome of interest (in this case, housing values).

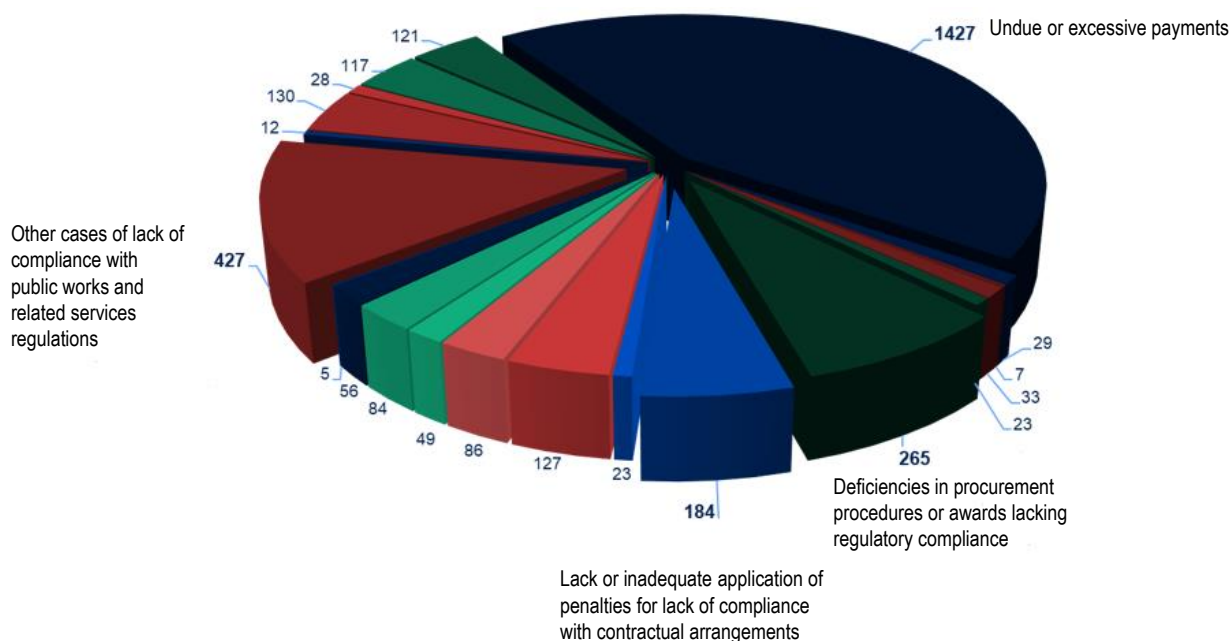
There are two basic ways to approximate the counterfactual: i) using the outcome observed for non-beneficiaries; or ii) using the outcome observed for beneficiaries before they are exposed to the intervention. However, caution is due in interpreting these differences as the "effect" of the intervention. Likewise, comprehensive evaluation should rely on different methods that complement each other.

Source: (European Commission, n.d.[1]).

ASF has systematically collected data to identify the most common failures in infrastructure delivery, which should be helpful to focus resources on preventive interventions in the different stages of the infrastructure cycle

In addition to the findings and recommendations of the ASF report *General issues relative to public works and services related 2011-16* (see section 3.1), ASF has continued strategically tracking recurrent observations related to public works. For example, out of a sample of 3 233 observations stemming from the audits to the public accounts 2015-17, there are four main categories concentrating 71.23% of the observations (2 303 observations), which are i) undue or excessive payments; ii) deficiencies in procurement procedures or awards lacking regulatory compliance; iii) lack or inadequate application of penalties for lack of compliance with contractual arrangements; and iv) other cases of lack of compliance with public works and related services regulations (see Figure 4.1 and Table 4.1).

Figure 4.1. Top recurrent observations relative to public works stemming from the audit of public accounts 2015-17



Source: Information provided by ASF.

Table 4.1. Recurrent observations relative to public works stemming from the audit of public accounts 2015-17

| Observation | Public account | | |
|--|----------------|--------------|------------|
| | 2015 | 2016 | 2017 |
| Lack or expiration of manuals, internal rules, or legal guidelines | 7 | 1 | 4 |
| Lack or inadequate formalisation of contracts, agreements, or requests | 51 | 49 | 30 |
| Inadequate setting, control, or archive of files | 6 | 15 | 7 |
| Lack of authorisation or justification for expenses | 51 | 32 | 34 |
| Lack of documents justifying expenses or documents not fulfilling fiscal requirements | 63 | 41 | 17 |
| Undue or excessive payments | 580 | 510 | 337 |
| Lack of or late reimbursement of resources or interests to the Federation Treasury (TESOFE) or state treasuries | 13 | 11 | 5 |
| Lack of retention or payments of taxes, fees, or any other fiscal obligation | 5 | 0 | 2 |
| Lack of execution of advanced payments, credit titles, guarantees, insurances, or debts | 15 | 7 | 11 |
| Lack of, insufficiency, late delivery, or inadequate formalisation of advanced payment guarantees, compliance. hidden vices, etc. | 10 | 7 | 6 |
| Deficiencies in procurement procedures or awards lacking regulatory compliance | 160 | 89 | 16 |
| Lack or inadequate application of penalties for lack of compliance with contractual arrangements | 90 | 54 | 40 |
| Unneeded purchasing of goods and services | 10 | 10 | 3 |
| Inadequate planning, authorisation, or programming of the works | 50 | 50 | 27 |
| Deficiencies in the management or control of the works schedule and inadequate supervision | 35 | 24 | 27 |
| Lack of or deficiencies in the termination of works contracts or in the acceptance/approval of works | 20 | 19 | 10 |
| Poor quality works | 20 | 41 | 23 |
| Lack of or deficiencies in licenses, land use permits, feasibility studies, construction permits, environmental impact assessments, and structural estimations | 31 | 16 | 9 |
| Lack of operation of finished works | 2 | 3 | 0 |
| Other cases of lack of compliance with public works and related services regulations | 186 | 160 | 81 |
| TOTAL | 1 405 | 1 139 | 689 |

Source: Information provided by ASF.

The strategic collection and analysis of data has been useful to identify critical risks to guide audit selection. For example, the analysis of the observations in the public accounts audits of 2015-17 indicate that many of the weaknesses in infrastructure delivery are found in the contract management phase. This fact would lead to pay special attention during audits to the work of supervisors. Findings like this stress once again the need to take a wider governance approach to infrastructure audit, encompassing all the stages of the public investment cycle, in this case the execution stage. It also highlights the importance of reforms to carry out real-time audits to continually review the execution of the infrastructure.

Likewise, there are plenty of observations focusing on early stages (i.e. planning), which calls for early ASF interventions to ensure that infrastructure projects are set for success. For example, if ASF could perform real-time audits, it could make sure projects meet all regulatory requirements (i.e. licences and permits), feasibility studies, and even sustainability considerations, therefore addressing different principles of the OECD *Recommendation on the Governance of Infrastructure*. Issues such as compliance with regulatory requirements (i.e. feasibility and environmental studies, licenses, etc.) could also be the subject of periodic performance assessments, linking project success with the findings of such studies. This would also provide valuable insights as to the extent to which such requirements are fulfilling the policy objectives they pursue.

Finally, there are also many observations dealing with the tender stage (i.e. assessment of bids, award of contracts, etc.). The OECD experience in working with public procurement (including in infrastructure development) shows that a sound procurement system includes:

- procurement rules and procedures that are simple, clear and ensure access to procurement opportunities
- effective institutions to conduct procurement procedures and conclude, manage and monitor public contracts
- appropriate e-Procurement tools and coverage
- suitable, in numbers and skills, human resources to plan and carry out procurement processes
- competent contract management.

When auditing the procurement procedures applied in infrastructure development, ASF could also rely on the principles of the *OECD Recommendation on Public Procurement* (see Box 4.2).

Box 4.2. The OECD Recommendation on Public Procurement

The *Recommendation on Public Procurement* is the overarching OECD guiding principle that promotes the strategic and holistic use of public procurement. It is a reference for modernising procurement systems and can be applied across all levels of government and state-owned enterprises. It addresses the entire procurement cycle while integrating public procurement with other elements of strategic governance such as budgeting, financial management and additional forms of services delivery. It recommends adherents to:

1. Ensure an adequate degree of **transparency** of the public procurement system in all stages of the procurement cycle.
2. Preserve the **integrity** of the public procurement system through general standards and procurement-specific safeguards.
3. Facilitate **access** to procurement opportunities for potential competitors of all sizes.
4. Recognise that any use of the public procurement system to pursue secondary policy objectives should be **balanced** against the primary procurement objective.
5. Foster transparent and effective stakeholder **participation**.
6. Develop processes to drive **efficiency** throughout the public procurement cycle in satisfying the needs of the government and its citizens.
7. Improve the public procurement system by harnessing the use of digital technologies to support appropriate **e-procurement** innovation throughout the procurement cycle.
8. Develop a procurement workforce with the **capacity** to continually deliver value-for-money efficiently and effectively.
9. Drive performance improvements through **evaluation** of the effectiveness of the public procurement system from individual procurements to the system as a whole, at all levels of government where feasible and appropriate.
10. Integrate **risk management** strategies for mapping, detection and mitigation throughout the public procurement cycle.
11. Apply oversight and control mechanisms to support **accountability** throughout the public procurement cycle, including appropriate complaint and sanctions processes.

Source: (OECD, 2015^[2]).

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Note

¹ In 2019, Mexico had one hospital bed per 1 000 inhabitants, being the OECD country with the lowest ratio (OECD, 2021^[3]), *Hospital beds* (indicator), <https://doi.org/10.1787/0191328e-en> (accessed on 22 September 2021).

5 Auditing infrastructure during emergency situations in Mexico

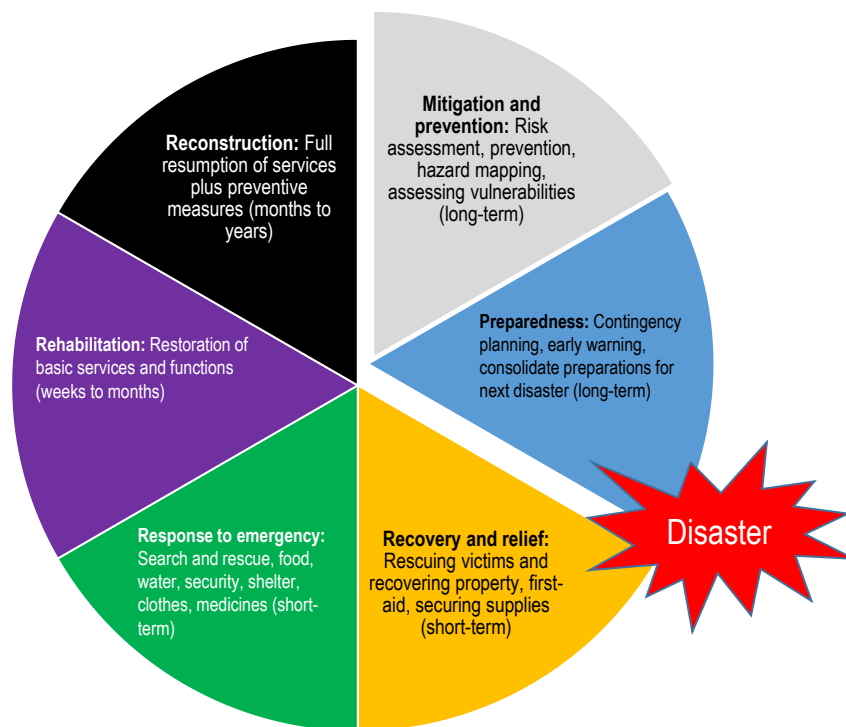
This chapter discusses how ASF can maximise the impact of its infrastructure audits during emergencies, for example, by developing a strategic framework to build a portfolio of emergency audits and by leveraging on the National Auditing System to organise a working group to facilitate the exchange of approaches, experiences, and solutions to common problems. It also analyses how this work could be useful to ASF to provide insight and foresight on resilience and emergency preparedness.

By nature, the audit of infrastructure is a complex and multi-faceted activity, particularly in the case of megaprojects where early shortcomings cascade down with significant impacts in later stages. Complexity is exacerbated in emergencies, where authorities are under intense pressure to react quickly and control the damages and risks created by, for example, natural disasters, pandemics, or the effects of climate change.

Emergencies can lead to environments where controls are relaxed or bypassed in an attempt to timely react to the consequences of the disaster. This can lead to increased risks of waste, fraud, and corruption at times when government agility and public resources are precious. SAIs have a critical role in resisting the attempts to weaken accountability, but they should also strive to facilitate a timely reaction to crises. This is a delicate and hard to achieve balance.

The disaster management cycle, as conceived by the 5500 series of International Standards of Supreme Audit Institutions (ISSAI), illustrates the complexities of auditing infrastructure during emergency times (see Figure 5.1).

Figure 5.1. The disaster management cycle



Source: (INTOSAI, 2019_[1]).

The cycle groups the different stages in two blocks: previous and after the disaster. On the one hand, the activities before the disaster concentrate on assessing and mitigating risks, as well as on preparedness and building resilience, all of them under a long-term approach. On the other hand, the post-disaster activities refer to the immediate responses, as well as those dealing with rehabilitation and reconstruction (medium to long-term). For example, the EUROSAI Audit of Response to COVID-19 Pandemic Project Group organised the responses to the pandemic in four stages: Preparation, response, exit strategy, and management of long-term effects.¹ As a cycle, every step should provide feedback to the others and here is where SAIs can play a critical role in improving performance, enhancing transparency, ensuring accountability, promoting public trust, and fostering the efficient and effective use of public resources.

Insight and foresight from infrastructure audits during emergencies

ASF could review its infrastructure audits during emergencies to make sure they provide insight and foresight in terms of resilience and preparedness

While the traditional role of SAIs lies on oversight and holding government to account for the use of public resources, the OECD has found that their activities have recently evolved to provide a broader perspective as to how programmes function, what works, and what does not. Indeed, previous OECD work with SAIs found that they are taking more cross-cutting views to identify systemic issues and trends in the short-term (insight) and forecast policy implications and anticipate risks in the medium and long-term (foresight) (OECD, 2016^[2]).

Insight and foresight are valuable governance contributions, as governments need evidence to assess the impact of their investments and programmes and SAIs are well positioned to provide an objective and independent perspective on programme formulation, implementation, and evaluation. On the contrary, public managers may be influenced by biases and incentives that do not always favour good infrastructure governance, for example, in the selection of projects (see Box 5.1). In fact, INTOSAI's Policy Finance and Administration Committee's COVID-19 Initiative recommends SAIs should consider serving in an advisory role to their national governments in the mitigation of emergencies.²

Box 5.1. Biases and incentives of public managers in justifying infrastructure projects

Evidence suggests that public managers may be subject to soft (psychological) and hard (political) pressures to justify the undertaking of infrastructure projects. On the psychological side, as recognised by the Economics Nobel Laureate Daniel Kahneman, public managers tend to overestimate their opportunities and overvalue their estimations. For example, a public manager may conclude in his feasibility study that building a railway can be concluded in two years at a cost of 2 million per kilometre, even when similar projects have not taken less than 6 years and the cost has never been below 3 million per kilometre. Unless a technological revolution has taken place, there is no reason to believe that the project under assessment will be more efficient than previous ones.

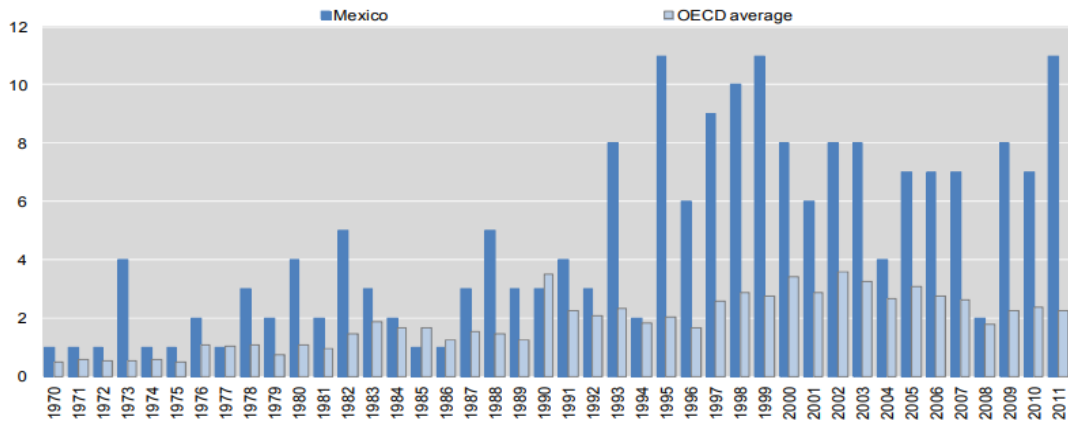
On the political side, there are integrity issues such as strategic embellishment. As public managers overestimate benefits and underestimate costs to justify projects, they ensure the “survival of the less fitted” in an attempt to secure funds for their institutions. In the competition for resources, the projects that claim the best cost-benefit balance will get the resources but when such balance is fictitious, the public interest suffers. Furthermore, embellishment may be motivated by bribes from contractors who will be benefitted by specific projects.

Source: Presentation by TCU officials during the OECD webinar “Auditing the governance of infrastructure”, held on 2-4 June 2021.

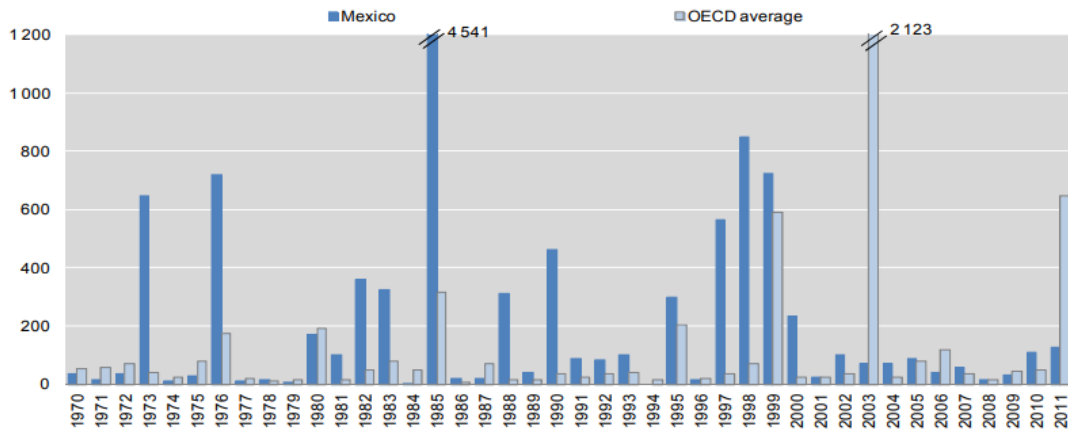
Insight and foresight stemming from infrastructure audits are key for Mexico as its exposure to emergencies such as natural disasters is significant, with important costs in terms of lives and economic consequences (see Figure 5.2).

Figure 5.2. Disasters preceded by natural hazards in Mexico and OECD countries (1970-2011)

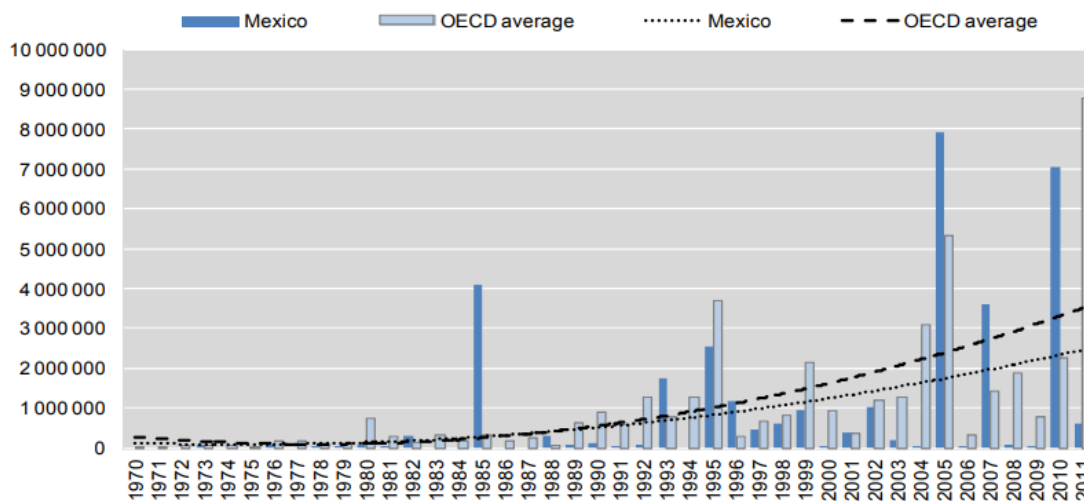
Panel A. Number of disasters



Panel B. Number of deaths



Panel C. Economic losses (USD billion)



Source: (OECD, 2013_[2]).

Infrastructure audits can produce strategic insight and foresight contributing to good governance and well-being in three ways:

- **Assessing risks:** Infrastructure audits can be useful to identify systemic risks affecting the resilience of critical infrastructure. For example, ASF could evaluate the risks stemming from materials in seismic regions, the quality and integrity controls applied to such works, and the scope to apply innovations such as Building Information Modelling (BIM)³ and those related to “smart infrastructure” (see Box 5.2). Indeed, in a Deloitte survey⁴ of 351 executives from around the world conducted in April-May 2020, 90% of respondents felt that management could benefit from audits to assess risks stemming from “black swan events”.⁵ For example, strong internal control and entrenching a culture of ethics and integrity can help infrastructure agencies remain resilient and control corruption risks.
- **Upgrading preparedness and crisis management practices:** After emergencies, ASF can contribute to preparedness and crisis management through audits of the resilience of infrastructure and government responses to control damages. For example, ASF could analyse the efficiency, integrity, and effectiveness of repairs of critical infrastructure immediately after emergencies. Likewise, ASF could evaluate the use of specific tools to build preparedness to respond to crises, for example, framework agreements to quickly mobilise contractors for repairs and the usefulness of the e-procurement platform CompraNet. Furthermore, ASF could assess the interdependencies of preparedness plans across sectors (e.g. the resilience of dams and water management infrastructure might affect hospitals and other health infrastructures, as just happened in September 2021 in the city of Tula, Hidalgo).⁶
- **Documenting lessons learned from emergencies:** While emergencies challenge the capacities of state institutions and societies in general, they also create opportunities to identify areas for improvement. The audit of infrastructure during emergency times can build on lessons learned regarding, for example, emergency building regulations, abuse of emergency procedures, the functioning of national or regional emergency plans, the effectiveness of whole-of-government co-ordination, compliance, and integrity failures. ASF audits could look specifically at issues such as adherence to procurement procedures and inadequate management and maintenance of infrastructure assets.

Box 5.2. The potential of “smart infrastructure”

Smart infrastructure refers to the use of digital technologies, sensors, and data to mitigate risks and improve the conditions and structures that impact citizens’ daily lives. By leveraging such tools, governments can identify issues with highways, buildings, bridges and other forms of infrastructure before they become acute dangers.

For example, smart infrastructure systems can identify risks stemming from deferred maintenance. Sensors in roads, bridges, and sewer systems can target these problems, allowing governments to allocate funding where it is most needed. The sensors and other smart technologies can alert public managers about issues before they become a serious hazard, even in cases when physical inspections are not effective for the purpose. Furthermore, as the changing climate leads to extreme weather and natural disasters, the safety and resiliency of infrastructure is a growing concern. Sensor systems and other intelligent infrastructure technologies can identify and mitigate these problems, saving money and lives.

Smart infrastructure applies to different kinds of works. For example, it can be used in sewer systems to monitor the water quality, in major highways to control speed limits, or to reduce the carbon footprint of a project.

Source: (Goldsmith and Betsy Gardner, 2021^[3]).

Leveraging on the National Auditing System

ASF could leverage on the National Auditing System to organise a working group on auditing infrastructure during emergencies

Mexico's National Auditing System (*Sistema Nacional de Fiscalización*, SNF) brings together national and sub-national accountability actors, including the SAIs and internal control bodies of the federal states, providing a platform for co-ordination, information sharing, and strategic steering. ASF co-presides over the SNF, along with the Ministry of Public Administration (*Secretaría de la Función Pública*, SFP). The SNF has established working groups to carry out its different initiatives. In this context, ASF could organise a working group to take stock of lessons learned relative to infrastructure audit practices during emergencies.

In order to gather the most relevant experiences, the working group could include the SAIs and the internal control bodies of those federal states more exposed to natural disasters and those which have found themselves in the middle of emergencies most recently. The initial objectives of the working group may include the following:

- Assessing sub-national SAIs capacities to carry out infrastructure audits during emergencies, based on recent experiences.
- Identifying good practices and resources that could be shared to enhance capacities throughout the country.
- Taking stock of issues, lessons learned, and solutions to common challenges, contributing to insights and foresight produced by ASF.
- Analysing legal and operational limitations to carry out timely, effective, and efficient infrastructure audits during emergencies.
- Providing inputs to develop a national framework for the auditing of infrastructure during emergencies (see Section on “An emergency-tailored framework for infrastructure audits”).

In order to put together the working group, ASF could take advantage of the experience of the U.S. Government Accountability Office (GAO) in organising a COVID-19 lessons learned discussion group under the auspices of INTOSAI (see Box 5.3).

Box 5.3. The COVID-19 Lessons Learned Discussion Group

Background

In April 2020, the Comptroller General of the United States established the INTOSAI COVID-19 Initiative under the auspices of the INTOSAI Policy, Finance, and Administration Committee (PFAC). One goal of the initiative was to develop a high-level lessons learned document for interested stakeholders that would focus on mitigating and minimising similar situations in the future. To carry this effort forward, GAO put together a Comptroller General COVID-19 Lessons Learned Discussion Group.

Key issues

The Comptroller General formed this Discussion Group to establish and maintain a dialogue on lessons learned with interested parties both inside and outside of INTOSAI. It focuses on the following activities:

- Sharing perspectives and best practices among members.
- Demonstrating how SAIs and other Discussion Group members can contribute to preparing for and mitigating the next disaster.

- Highlighting and institutionalising lessons learned including through the development of an updated lessons learned document.

Membership

The Comptroller General of the United States leads the Discussion Group. Membership includes the following categories of organisations:

- INTOSAI and SAIs.
- Supranational international organisations such as the OECD and the United Nations.
- Healthcare, aviation, and transportation-focused international organisations.
- Other interested organisations.

Expected results

The expected results of the Discussion Group are to:

- Share lessons learned from the current pandemic that could help prepare for future emergencies by creating a network of key stakeholders, sharing insights from the auditing community's first lessons learned report and compiling additional lessons learned from Discussion Group participants.
- Issue a lessons learned report in the spring 2022.

A first draft of the lessons learned report identified a set of measures that can be implemented to minimise the impact of future emergencies:

- Establishing clear goals and plans, and defining roles and responsibilities for the wide range of government entities and other key players are critically important to address unforeseen emergencies with a whole-of-government response.
- Developing a transportation preparedness plan that could enhance co-ordination.
- Establishing transparency and accountability mechanisms early on provides greater safeguards and reasonable assurance that public funds reach the intended audiences for the intended purposes, help ensure integrity, and address fraud risks.
- Providing clear and consistent communications in the midst of an emergency is key.
- Collecting and analysing adequate and reliable data can inform decision making and future preparedness.

Source: Terms of Reference of the Comptroller General COVID-19 Lessons Learned Discussion Group.

An emergency-tailored framework for infrastructure audits

ASF could develop an emergency-tailored framework for infrastructure audits aiming to build a portfolio that achieves balance between the timeliness of public responses and an adequate level of accountability and control

ASF follows the same process for conventional infrastructure audits as for audits during emergencies, except for the planning stage. As a first step, ASF audit units (UAA) formalise the audits and kick off the work through an initiation act (*acta de inicio*). Auditors then carry out the audit and obtain the evidence to support the results, recording it in audit fiches (*cédulas de auditoría*). UAAs conclude the audit procedures preparing a results fiche (*cédula de resultados*) and a preliminary report and verifying fulfilment of the

objectives, scope, and audit procedures. If the results fiche and the preliminary report meet the requirements, UAAs will organise a meeting for the presentation of final results and preliminary observations. The minutes of the presentation (*acta de presentación de resultados*) are then drafted. If there is a need for adjustments, UAAs document the analysis in a modified results fiche (*cédula de resultados modificada*) and a modified preliminary report, which closes the execution stage.

The next step is preparing the audit report. UAAs prepare the final audit report and integrate the audit file and the documents for review. UAAs review the reports and turn them to the general directors and the Special Auditors for authorisation in the Audit Control and Follow up System (*Sistema de Control y Seguimiento de Auditorías*, SICSA). Once the electronic authorisation is granted, the reports enter the editorial process.

ASF could review this process to develop a new framework for infrastructure audits during emergencies, which defines the scope of its work responding to emergencies and responds to legislative concerns to establish appropriate plans and roles in advance. The framework should consider audit standards and guidelines to be used during emergencies, particularly about remote auditing and the transparency of emergency works procurement activities. It should also pay attention to the following criteria:

- “No harm” principle: ASF will need to define how much data it needs to request from infrastructure agencies addressing emergencies and through which means to ensure “no harm” (i.e. hindering or delaying emergency responses) during its audit work. That said, OECD does recommend subjecting specific emergency procedures, such as those related with works procurement, to audit and oversight.
- Leveraging ICTs: In its stocktaking report of integrity in country responses to the COVID-19 crisis, OECD recommended adapting audit and oversight strategies, as well as analyses of potential corrupt patterns in relation to the emergency (OECD, 2020^[6]). Given that agility and even remote exchanges may be necessary during crises, ICTs become ideal tools to simplify and speed up the audit processes and the related collection of comprehensive and quality information and evidence. This is consistent with the Moscow Declaration, issued after the INTOSAI Congress in 2019, which calls for using IT instruments and open data resources for auditing practices, as well as building remote auditing capacities.⁷ In fact, leveraging ICTs will support the “no harm” principle. ASF has already taken steps to leverage ICTs through a Digital Mailbox (*Buzón Digital*) and *TransferASF*, which allow audited entities to electronically share large numbers of documents. Likewise, ASF is working with several platforms, such as the System for the Control, Administration and Audit of Federal Expenditure Resources (*Sistema de Control, Administración y Fiscalización de los Recursos del Gasto Federalizado*, SiCAF) to share information with ministries and entities of the public administration (OECD, 2022^[7]).
- Comprehensiveness: Responses to crises may involve not only public resources, but also private ones managed by charities, funds, civil society organisations (CSOs), and even private institutions. Unfortunately, these funds are also subject to risks of fraud and corruption. In fact, for example, news outlets casted doubts on the management of funds for relief from the 2017 Mexico City earthquake. Such questions may undermine responses by weakening trust. While ASF mandate does not include auditing or controlling those funds, the regulatory framework of ASF could be reformed to allow it to support the accountability of the institutions managing them. Indeed, in many countries, the SAI does not automatically have the mandate to audit donor funds or private resources. A solution in some countries has been to provide the SAI with a temporary mandate to audit all development funds during crises; however, this kind of measure should be mindful of limited resources (INTOSAI, 2020^[7]). ASF could opt for a “softer” approach in which it shares lessons learned and helps building capacities for CSOs and private institutions to be able to control and advance accountability for their funds invested in responses to emergencies.

- Co-ordination: In order to avoid duplication, widen the audit universe, and strengthen the message that abuse will not be tolerated, infrastructure audits under emergencies would benefit from co-ordination between the different control and audit bodies such as ASF, the SFP, the SAIs in the federal states (*entidades de fiscalización superior estatales*, EFSE), and the control bodies of the federal states (*órganos de control estatales* (OCEs). The National Anti-corruption System (*Sistema Nacional Anticorrupción*, SNAC) and the National Auditing System (*Sistema Nacional de Fiscalización*, SNF) could also play a role in enhancing co-ordination.
- Timeliness: Real-time audits are key to ensure the timeliness of SAI's interventions during emergencies, hence the next recommendation.

Real-time infrastructure audits are particularly relevant in emergencies and should be part of ASF's portfolio to control risks and maximise its deterrent effect

Infrastructure audits in emergencies are called to be fully justified to observe the “no harm” principle and add value as the response to the crisis unfolds. The SAI capacity (i.e. legal and operational) to carry out real-time audits allows it to provide quick and timely feedback on how responses are working and the risks and challenges faced. For example, they can concentrate on works procurement for reconstruction and maintenance after a natural disaster, contract management, and payment controls to identify potential sources of malpractice. ASF, for example, could look at the unequal impact of access to critical infrastructures for different segments of the population.

By definition, infrastructure audits during emergencies will be activities out of the formally planned audit cycle and with shorter timeframes. ASF should pursue the capacity to carry out real-time audits (without the need for a claim or report) to ensure timeliness. Likewise, it should anticipate the resources needed to facilitate quick reporting and useful feedback to the infrastructure agencies responding to crises and, in that way, contribute to tackle issues that may hinder the impact of responses. Short and special audit reports stemming from infrastructure audits in emergencies, including simplified messages, have the potential to control risks, strengthen resilience, and improve the quality of the infrastructures and/or repairs undertaken after emergencies.

Real-time infrastructure audits in emergencies are also powerful means to maximise the deterrent effect of audits and send a clear message that abuse will not be tolerated. The audits would impact not only by letting government officials know that they are being observed, but also by reinforcing positive behaviours:

- Ensuring government officials are clear if and when emergency expenditure rules (including for works procurement) are applicable.
- Reminding officials about integrity rules in the use of public money, the need to be clear about authority to approve contracts and spending, and to keep verifiable evidence of contracts entered into, payments made, fund flows, and works delivered.
- Ensuring management teams physically check that key controls are actually being applied.
- Deterring against corruption by maintaining an expectation that use of public money during the emergency will be subject to transparency, scrutiny and oversight, and those in authority will be held accountable in due course. This means ensuring that auditors have the right, responsibility and access to records to audit emergency spending (INTOSAI, 2020^[6]).

The first point above is particularly relevant. Emergency measures should include sunset clauses establishing specific periods during which extraordinary procedures are applicable, for example, non-competitive works procurement. Then, the SAI can jump in and warn officials that it will verify that such limits are respected and abuse is punished. For example, ASF's Superior Auditor could issue a public statement after emergencies to remind infrastructure ministries and entities about the importance of integrity in the responses and providing reassurance that ASF will be vigilant, just like the Auditor General of New Zealand did in 2020 (see Box 5.4).

While the message should be clear about the importance of respecting the rules and procedures for emergency responses, it should also provide reassurance that ASF will strive to not hinder the response by adapting its infrastructure audit procedures, for example, by leveraging on the Digital Mailbox and *TransferASF*.

Box 5.4. The message of New Zealand's Auditor General during the response to COVID-19

In April 2020, the Auditor General of New Zealand wrote a message to the chief executives of public agencies about the governance of the responses to the COVID-19 crisis. Key issues raised included the following:

- Maintaining strong governance and effective systems and controls.
- Getting the authority and approvals clear, documented and communicated especially in situations where emergency expenditure is incurred or emergency powers are exercised. Audit New Zealand issued a reminder about expectations when using emergency procurement procedures.
- Documenting spending and reporting it accurately.
- Raising awareness about increased fraud risks if controls are undermined while the emergency takes priority.
- Being mindful of sensitive expenditure and clear about what is and what is not an appropriate use of public money.
- Managing risks in ongoing projects while the organisation is focused on the emergency response, particularly mega projects and initiatives that already imply significant risks.

Source: (Controller and Auditor-General of New Zealand, 2020^[4]).

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Notes

¹ U.S. Comptroller General Discussion Group on COVID-19 Lessons Learned, Summary of the virtual meeting of 25 May 2021.

² INTOSAI Policy Finance and Administration Committee's COVID-19 Initiative (forthcoming), *Coronavirus Pandemic: Initial Lessons Learned from the International Auditing Community*.

³ Building information modelling is a process supported by various tools, technologies, and contracts involving the generation and management of digital representations of physical and functional characteristics of places.

⁴ Deloitte (2020^[7]), *Building Resilience: The importance of audit during times of disruption*, available at <https://www2.deloitte.com/bg/en/pages/audit/articles/the-importance-of-audit-during-times-of-disruption.html>.

⁵ A black swan event is an unpredictable event that is beyond what is normally expected of a situation and has potentially severe consequences.

⁶ On 6 September 2021, the river that crosses the city of Tula, Hidalgo received discharges from the Metropolitan area of Mexico City, which led to the flooding of the city, including a hospital of the Mexican Institute for Social Security (IMSS). As a result, electricity in the hospital failed and the ventilators of several COVID patients stopped, resulting in their deaths.

⁷ U.S. Comptroller General Discussion Group on COVID-19 Lessons Learned, Summary of the virtual meeting of 25 May 2021.

OECD Public Governance Reviews

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AUDITING THE GOVERNANCE OF INFRASTRUCTURE

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