SUPREME AUDIT INSTITUTION
INFORMATION TECHNOLOGY MATURITY ASSESSMENT

SAI ITMA

Version 2.0

June 2024

EXECUTIVE SUMMARY

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1. Background information about SAI ITMA

The 2019 International Congress of Supreme Audit Institutions (INCOSAI), among its general resolutions, called on SAIs to make better use of Information Technology (IT) in carrying out their mandates, through planning specific IT audits, developing IT analytical skills, and introducing new IT techniques into public auditing practice.

These new dynamic underscores the relevance of knowing the level of maturity in terms of the use of IT, based on the evaluation of a set of measures or activities implemented by SAIs in order to promote, monitor and maintain specific IT-related activities where such controls or activities are framed within the INTOSAI Framework of Professional Pronouncements (IFPP).

This challenge is considered greater for SAIs in developing and transition countries due to their limited technical, financial and human resources. This is why measuring the degree of maturity becomes as important for SAIs as for Development Partners (DP), whose contribution could be instrumental in supporting the continuous development of the technological capacity of these SAIs.

SAI ITMA provides a method for objectively and transparently assessing the performance of SAIs. It reports on the state of the SAI's institutional capacities concerning technology adoption, including both internal information systems and external information system auditing capabilities. The framework also encompasses areas such as strategic planning, and the technical, budgetary, and human resources aspects that require strengthening. The importance of measuring institutional maturity in IT lies in its ability to provide senior management with an assessment of various elements critical to achieving objectives. This includes productivity, the specific equipment required for tasks, and the suitability of job profiles

Short timeline of the SAI ITMA development:

- **2019 - SAI ITMA was originally conceived** by the Sector Programme "Good Financial Governance" (SP GFG), implemented by the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH on behalf of the Federal Ministry for Economic Cooperation and Development (BMZ) of Germany, with support from external experts[1].

- **2020** - with support from the Organisation of Latin American and Caribbean Organisation of Supreme Audit Institutions (OLACEFS), SAI ITMA was piloted (in Chile, Colombia and Guatemala) and enhanced to include aspects of geotechnology.

- **2022-2023** – SAI ITMA was piloted in AFROSAI-E region. Namely, the assessment was done in the following SAIs: Malawi, Ethiopia, Zimbabwe, Ghana, Tanzania, Rwanda.

- **2023-2024** – SAI ITMA was updated by GIZ with the support from an external expert[2]. Combined feedback from the AFROSAI and OLACEF region, and the INTOSAI Development Initiative (IDI) was considered when preparing the updated model.

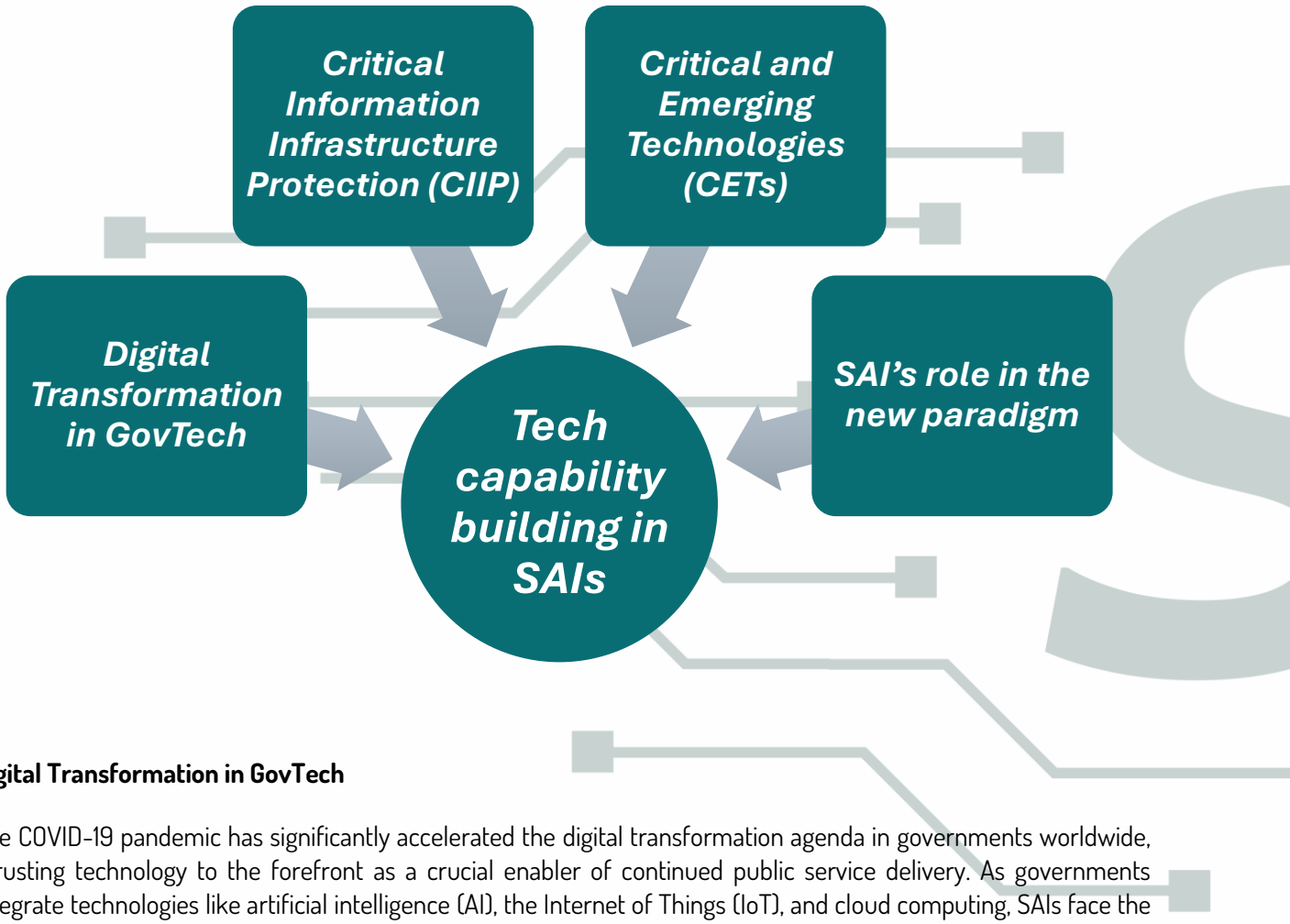
Bearing in mind the, this document is presented with the main objective of providing a general guidance that facilitates the understanding of the SAI ITMA methodology and its application.

[1] SAI ITMA model was elaborated by the consulting company "FPO World". Team Leader: Ferdinand Pot, subject matter expert: Davit Shavgulidze.
[2] SAI ITMA V2 was elaborated by the external expert Davit Shavgulidze.

2. Motivation for the updated SAI ITMA

The rapid pace of technological advancement **catalysed by the global pandemic** has triggered an era of significant digital transformation across all sectors, including government operations, known collectively as **GovTech**. This transformation is not only about adoption of new technologies but also about rethinking old business models and paradigms to foster more **resilient, transparent, and efficient systems**. Supreme Audit Institutions (SAIs), as the "watchdogs" of government performance and accountability, find themselves at the crossroads of technological adoption and governance.

In 2024, Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH **has updated the Supreme Audit Institutions Information Technology Maturity Assessment (SAI ITMA) model** in accordance with the aforementioned challenges to **support SAIs in building their technological capabilities**. In updating the ITMA model, the following additional factors were considered:



Digital Transformation in GovTech

The COVID-19 pandemic has significantly accelerated the digital transformation agenda in governments worldwide, thrusting technology to the forefront as a crucial enabler of continued public service delivery. As governments integrate technologies like artificial intelligence (AI), the Internet of Things (IoT), and cloud computing, SAIs face the dual challenge of auditing these complex systems while also harnessing these technologies to enhance their own operations. The transformation extends beyond mere adoption; it includes the integration of digital solutions into the core functional strategies of governments, thereby creating new avenues and challenges for audit institutions in maintaining accountability and transparency.

Critical and Emerging Technologies (CETs)

With national security and economic competitiveness at stake, governments are increasingly turning to Critical and Emerging Technologies (CETs) to secure their technological sovereignty and future-proof their economies. Countries define specific technologies to be critical for their national interests, like Artificial Intelligence, Cloud Computing, Deep Tech, Blockchain etc. Adoption of CETs is a long-term process, which fosters innovation and enables efficient use of tech for the benefit of the society. The SAIs face a new challenge related to CETs: oversight and auditing of the CET adoption efforts to ensure they are effective and efficient, while the same technologies can also be adopted by the SAIs to audit GovTech systems.

Critical Information Infrastructure Protection (CIIP)

As digitalisation of the government and private sector deepens, so does the vulnerability of critical information infrastructures (CIIs) to cyber threats and attacks. The protection of these infrastructures is paramount, not only for national security but also for ensuring the reliability and availability of essential public services. SAIs are increasingly involved in auditing the government-owned critical infrastructures, necessitating a deep understanding of information, operation and cyber security auditing practices. Hence, the role of the SAIs in auditing CIIP efforts and reporting the state of CII resilience to the parliaments increases. The rapid evolution of cyber threats poses a constant challenge to SAIs, requiring them to adapt their audit practices and methodologies continuously to address these risks effectively.

SAI Response to Technological Advancements

The infiltration of advanced technologies into traditional governance processes presents both opportunities and challenges for SAIs. On one hand, technologies such as Big Data and AI offer new tools for enhancing transparency and efficiency in audits. On the other hand, the integration of such technologies into auditing processes demands significant shifts in skills, mindset, and methodologies. SAIs must therefore embrace a culture of continuous learning and innovation to remain effective in their oversight roles.

Tech capability building in SAIs

To keep pace with rapid technological changes and increasingly complex governance ecosystems, SAIs must focus on building their maturity in handling advanced technologies. This involves not only upgrading their technical capabilities but also enhancing their strategic thinking regarding technology's role in governance and audit. Developing a strategic approach to technology adoption and audit, supported by training programs and international standards, is crucial for SAIs aiming to maintain relevance and effectiveness in a digital age.

3. The SAI ITMA Methodology

The Supreme Audit Institution Information Technology Maturity Assessment (SAI ITMA) is an instrument created to support the **measurement of the degree of maturity** of a **SAI in the use of information technology for internal and external work**. With this instrument, once the maturity level has been determined, it is possible to determine the logic and design of the interventions that the SAI requires in terms of technology.

Figure 1 presents the SAI ITMA methodological framework.

Figure 1 - SAI ITMA methodological flowchart

In turn, each pillar includes a series of requirements grouped into five levels that cover both the administrative elements of information systems and the capacity for auditing information technologies.

Thanks to the assessment through SAI ITMA, the inputs of the participants contribute to determine their SAI's maturity level, also having as a reference the EGDI index (E-Government Development Index) of the evaluated country. This index helps to determine the minimum degree of maturity to be reached by the SAI, which allows identifying some possibilities for change and generating suggestions for concrete actions or interventions.

Pillars and Assessment Criteria

The assessment is made by responding to each of the requirements (or criteria) for each maturity level. All must be answered with the appropriate values – i.e. YES when they are met and NO when they are not fully met. There is no intermediate score, as the objective is to verify full compliance with the criterion.

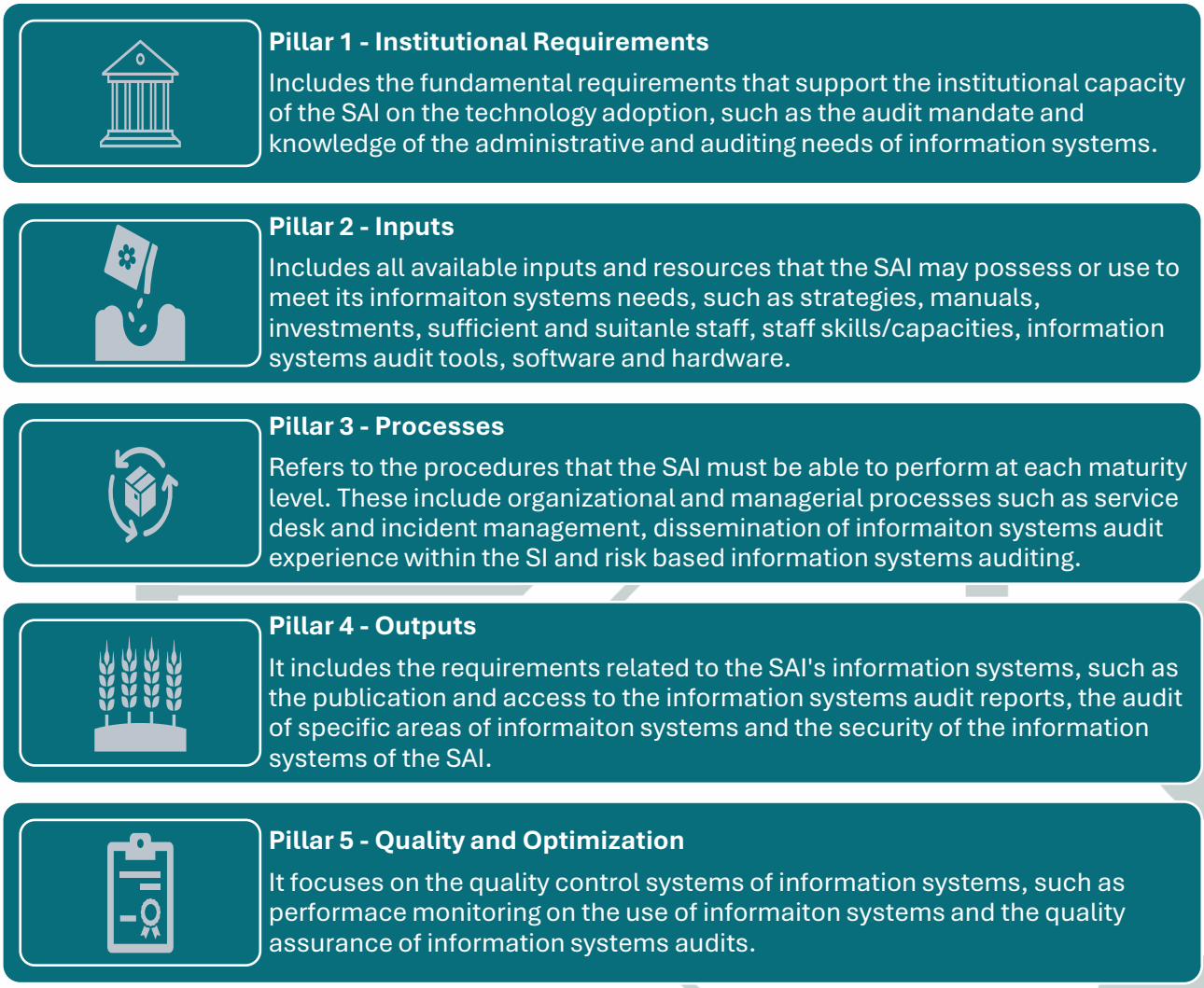


Figure 2: SAI ITMA pillars

Country Context – EGDI

After the process that involves the analysis and assessment of the five pillars shown above (Figure 1), the process of obtaining the maturity level of the SAI continues. In this regard, it is worth mentioning the Electronic Government Development Index (EGDI), as it is a measure of the use of information systems by central government institutions in the provision of public services.

In the SAI ITMA conceptual model, EGDI serves as a reference value, and it is relevant because it reflects the national context in which SAIs operate. The comparison of the EGDI with the value obtained in each pillar serves as a guideline to know which SAI capacities need to be enhanced.

The reference to the national context provided by EGDI can also serve as guidance for DPs, on the direction of their support when it comes to the digital modernization of the SAI.

Challenges for non-compliance

It should be noted that the application of SAI ITMA allows the identification and analysis of the challenges that caused non-satisfaction of requirements when applying the tool during the five-pillar assessment. The model recognizes 5 main challenges, namely:

Figure 3: Challenges for non-compliance

The step-by-step explanation of the use or operation of the SAI ITMA tool, under the Microsoft Excel-based application, is developed in the document called "SAI ITMA User Guide (*Handbook*)," which includes illustrations and how to operate or apply it in detail.

4. Application and Assessment Process

Assessment Team

The focus of the institutional maturity assessment through SAI ITMA is to verify, under the moderation of personnel trained in the application of the tool, that the measures provided for in each of the pillars are properly implemented by the SAI and that they operate effectively and coordinated. It also seeks to identify the challenges for non-compliance, so that they are addressed, resolved or optimized, according to each case.

For this reason, it is relevant, in the initial planning stage of the assessment, to define the profile of the participants of the SAI ITMA Application Workshop, communicate it to Senior Management and convene the most relevant staff members. In general terms, it is recommended to convene people with sufficient knowledge and operational experience, so that they can fully address the questions or criteria evaluated in the aforementioned pillars. In this way, it is expected that a multidisciplinary team of between five and fifteen people will be integrated (the number will depend on each institutional context, the knowledge and/or experience of the staff convened, as well as the level of depth agreed upon for the evaluation). See Table 1 for a description of the suggested profiles and areas of performance for this call.

Table 1: Recommended job profiles for SAI ITMA assessment

Profile	Performance areas of the participants (crosscutting)	SAI ITMA Pillar
Audit Managers / IT Managers / IT Audit Managers	• Legal bases and SAI strategy • Audit planning • Audit process (Information Systems, Financial, Compliance, Performance) • Quality assurance, supervisory assessment Data Analysis (includes geographic ones) • External communication (includes audit reports) • Information systems, processes, hardware and software for internal use (administrative and audit) • HR management: recruitment, selection and training /professionalization	**Pillar 1:** Institutional Requirements **Pillar 2:** Inputs **Pillar 5:** Quality and Optimization
Audit Staff /IT audit staff		**Pillar 3:** Process **Pillar 4:** Outputs
Business analysts, Project Managers, Product Owners, etc.		**Pillar 2:** Inputs **Pillar 3:** Process **Pillar 4:** Outputs
IT/GIS/DB/BI specialists		**Pillar 2:** Inputs **Pillar 3:** Process
Information Security Manager, Service Delivery Manager, etc.		**Pillar 3:** Process **Pillar 5:** Quality and Optimization

Application Phases

For maximum use of the SAI ITMA tool, the application methodology considers different phases, with specific activities and times for data preparation, analysis and processing, reading and interpretation of results, as well as generating recommendations and formulation of an ad hoc action plan for the SAI.

1. Start of the application

The initial stage corresponds to the institutional agreement to participate in the assessment. This phase includes the dialogue with representatives of the SAI's senior management, the identification of moderators or facilitators, as wll as the agreement with possible development partners. The relevance of this assessment in the SAI is made known and the characteristics of the assessment are addressed, including its benefits, work objective, assumptions, pillars and phases to be developed, expected results, profile of required participants, as well as other requirements for the success of the assessment.

2. Profiling

Senior management determines the people who will participate in the assessment, based on the profile of participants suggested by hte facilitators. The number, experience, responsibility and other characteristics of each participant is the prerogative of the SAI, but their choice determines to a large extent the results and the use of the evaluation. It is recommended that, for each of the pillars, a discussion or intervention "leader" be defined.

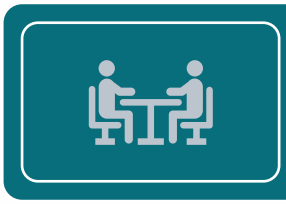
3. What is it and how are we going to collaborate

The facilitators - consultants or staff of another SAI (or of the same) - provide the necessary guidance to the participants, including the institutional aspects and the work scheme. In this phase, the instrument with the questions or criteria to be assessed in each pillar is shared with the participants to prepare them.

4. Questions and answers

Support from the facilitators and resolution of doubts.

5. Application workshop



To assess each criterion, the SAI representative team should meditate, exchange ideas, provide evidence and offer the corresponding inputs, as well as choose (in the tool) the options that are convenient and that faithfully represent the current state of affairs of the SAI regarding the use of information systems and information systems auditing.

6. Drafting of the report

Phase of analysis of the information and evidence provided by the participants. The report is written with an emphasis on the findings and results of the SAI ITMA application. The experience of the participants, as well as the facilitators, is essential for the formulation of recommendations for the consideration of senior management (and potential cooperators).

7. Presentation and follow-up results

Executive presentation of the results and recommendations to the SAI's senior management. A commitment of the senior management is promoted not only to generate an action plan, based on available resources, priorities and institutional strategies, but also to include a plan and team responsible for monitoring.

5. Assessment modalities

With regard to the SAI ITMA application methods, three modalities have been identified, for which the interested SAI could opt to seek the support of Development Partners:

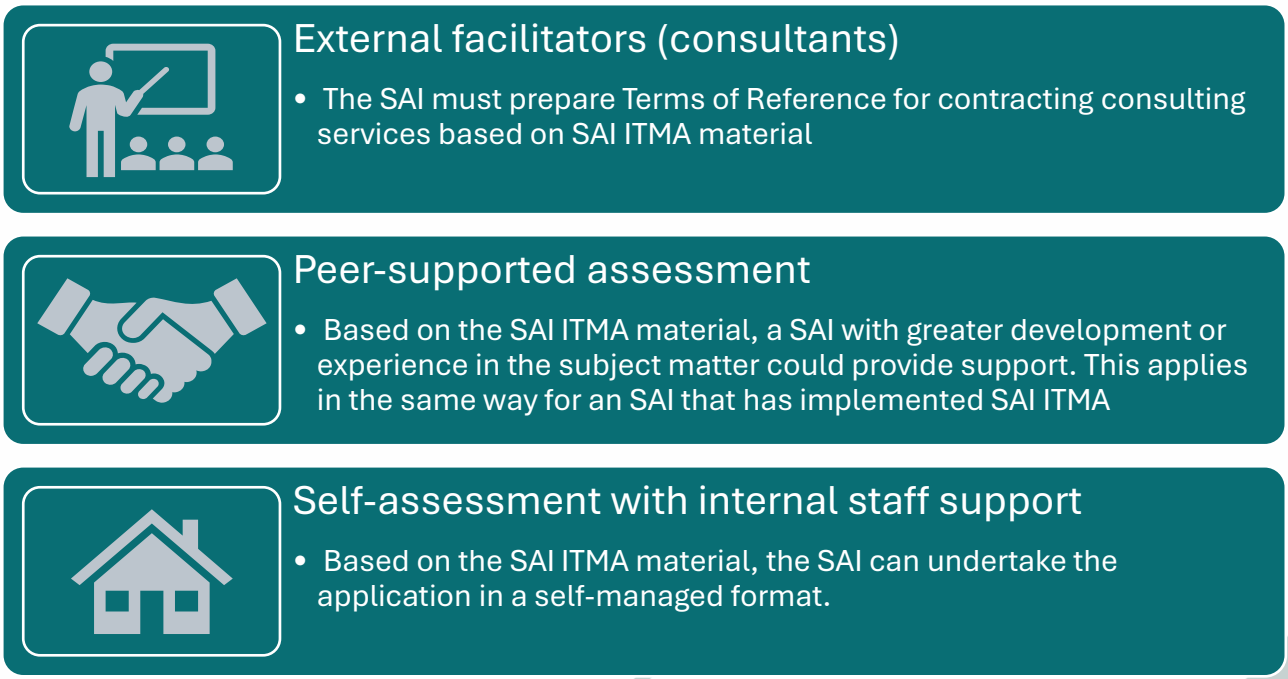


Figure 4: Assessment modalities

It should be noted that the SAI ITMA application methodology considers both In Situ (face-to-face) and online implementation. In both modalities, the basis for the success of the assessment lies in the collaboration scheme defined, the responsibility assumed by the Senior Management in the SAI to support the process, the leadership of the facilitators to guide the assessment, the flow of electronic communications, as well as the agreements reached in terms of activities and times following the phase-by-phase methodology.

6. Findings and recommendations

The main findings and recommendations resulting from the SAI ITMA application should be integrated considering a systemic vision, since each of them has different dimensions (administrative, financial, operational and strategic). The identification of findings and the formulation of recommendations is possible with the input and active participation of the participants, guided by the facilitators. This process is also assisted by the tool itself, since it has a configuration that allows the data resulting from the assessment of each criterion to be parameterized and to provide results (values, graphs and even minimum recommendations) automatically.

The recommendations made are presented for the consideration of SAI's Senior Management. It will make the decisions it deems appropriate based on its capabilities, available resources, institutional policies or strategy, priorities, and timelines. However, it is expected that from the executive report and presentation to Senior Management, the facilitators will provide an overview and strategic suggestions based on their experience and technical mastery. The accompaniment of Development Cooperants is recommended, given the technical contribution and complementary support that their participation in the evaluation can represent, as well as in the most important phase: the application of the recommendations presented.

It is recommended that, among the measures to be presented to the SAI's Senior Management, the following be included:

- ***Generation of an action plan, based on priorities, resources and institutional strategy, which includes the allocation of relevant staff and resources, as well as the definition of deadlines and milestones.***
- ***Definition of internal controls or measures to ensure follow-up on the implementation of the action plan.***
- ***Promoting the periodic performance of this assessment.***