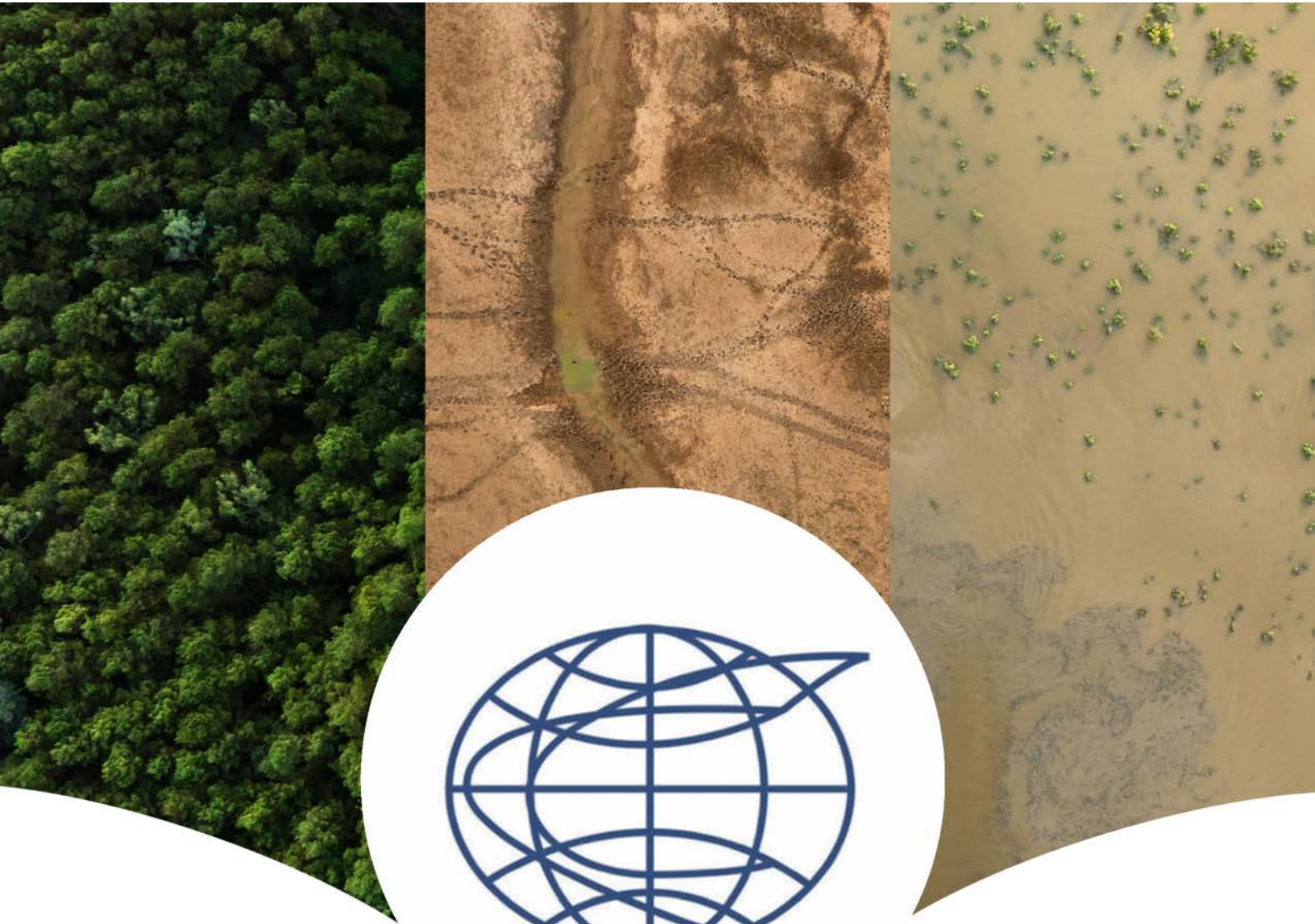

INTERNATIONAL JOURNAL OF GOVERNMENT AUDITING

Climate Change Adaptation and Audits: International Initiatives and Innovative Approaches

Q4 2024 intosaijournal.org

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INTERNATIONAL JOURNAL
OF GOVERNMENT AUDITING

Q4 2024 - Climate Change Adaptation and Audits: International Initiatives and Innovative Approaches
Vol. 51, No. 4

The International Journal of Government Auditing is published quarterly in Arabic, English, French, German and Spanish on behalf of the International Organization of Supreme Audit Institutions (INTOSAI). The Journal, which is an official organ of INTOSAI, is dedicated to the advancement of government auditing procedures and techniques. Opinions and beliefs expressed are those of individual contributors and do not necessarily reflect the views or policies of the organization.

The editors invite submissions of articles, special reports, and news items, which should be sent to the editorial offices at:

U.S. Government Accountability Office
441 G Street, NW, Room 7814
Washington, D.C. 20548
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Given the Journal's use as a teaching tool, articles most likely to be accepted are those that deal with pragmatic aspects of public sector auditing. These include case studies, ideas on new audit methodologies, or details on audit training programs. Articles that deal primarily with theory would not be appropriate. Submission guidelines are located at https://intosaijournal.org/submit-an-article/.

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EDITORIAL

The Lead Author, Hussain Niyazy - Auditor General of SAI Maldives and Vice Chair of INTOSAI WGEA. Source: SAI Maldives

Transformational Change in Environmental Auditing: Journey of SAI Maldives

Lead Author: Hussain Niyazy – Auditor General of SAI Maldives and Vice Chair of INTOSAI WGEA

Co-Authors: Ibrahim Aiman – Assistant Auditor General, Performance and Special Audit Division; Rauhath Hussain – Director, Performance Audit Department; Mohamed Ibrahim Jaleel – Manager, Environmental Audit Unit

Introduction

From an aerial view, the Maldives appears as a dazzling pearl necklace, with its scattered islands forming intricate atolls in the Indian Ocean. Yet, the true heart of our nation lies beneath the surface—our extensive and vital reef system. Spanning 4,513 square kilometers, these reefs are the seventh largest globally, sustaining a diverse ecosystem of over 1,200 marine species. For our small island nation, these pristine waters, vibrant marine life, and sandy beaches are not just natural treasures but the backbone of our economy. Furthermore, our reefs act as crucial barriers, protecting our low-lying islands—80% of which are less than one meter above sea level—from the ocean's relentless forces.

A Transformative Mission: Elevating Environmental Accountability

Despite their critical role, our reefs are deteriorating rapidly. This highlights the essential function of our Supreme Audit Institution (SAI) in ensuring environmental accountability. Our mission extends beyond maintaining economic stability; it encompasses safeguarding the future for generations to come. Confronted with severe climate change impacts—such as rising sea levels, ocean warming, acidification, and increasingly intense weather events—our SAI has embarked on a transformative journey to enhance its environmental auditing capabilities. We have conducted audits on coastal erosion, water management, disaster risk reduction, fisheries diversification, sewerage system management, and SDG preparedness. Our ongoing audits also cover biodiversity, waste management, climate change adaptation, and SDG implementation.

Hands-On Learning: From Theory to Field Experience

A core element of our strategy has been the recognition that effective environmental auditing demands more than theoretical knowledge. Our audit team, headed by an environmental expert and initially comprised mainly of accounting professionals with limited environmental expertise, underwent extensive practical field experiences. These included island-wide groundwater testing, unmanned aerial surveys, and assessments of diverse ecosystems. This hands-on experience has deepened our team's understanding of environmental challenges and their impacts. The transition from desk-based roles to fieldwork has significantly transformed the team's perspective, fostering a profound appreciation for the environmental resources they are tasked with protecting and enhancing their ability to tackle complex challenges. This shift has led to more informed interactions with technical personnel from audited entities and a strengthened engagement with environmental auditing.

Source: SAI Maldives

Community Integration: Expanding Audit Horizon

Community involvement in the audit process was limited prior to our strategic change. Our new approach integrated local youth as enumerators, involving them through a training-of-trainers (ToT) session. The youths were involved in conducting social surveys and public perception in the environmental performance audits. This inclusion expanded the scope and inclusivity of our audits, culminating in a report reflecting a comprehensive community perspective and marking a significant advancement in our audit practices.

Source: SAI Maldives

Leveraging Technology: GIS and Data Analytics

To address financial constraints related to extensive physical exploration, we incorporated training in Geographic Information Systems (GIS) and data analytics. By leveraging an existing subscription to an online learning management platform, our team developed GIS expertise, which has been applied in audits to identify issues such as non-compliance with environmental impact assessments. This technical capability has enabled us to publish critical findings related to gaps between resource needs and implementation, risk assessment and environmental compliance in the performance audits of Fuvahmulah city water and sanitation project and Performance audit on dry season water supply in Maldives. Further, we are integrating this assessment even in our ongoing environmental audits.

Source: SAI Maldives

Future-Ready Auditing: Foresight Sessions and Internship Programs

Recognizing the need for ongoing relevance in our auditing practices, we conducted foresight sessions that exposed our team to emerging and critical audit topics through engagement with subject matter experts. These sessions informed our work plans, including topics like the decline of northern fisheries and Climate change adaptation planning. We also established an environmental internship program to connect with students in environmental fields. Feedback from interns emphasized the need for specialized environmental auditing education and suggested incorporating auditing modules into environmental management curricula.


Source: SAI Maldives

Effective Communication: Raising Awareness and Sharing Knowledge

A crucial aspect of our strategy was effectively communicating audit findings to stakeholders, particularly the younger generation. We conducted multiple awareness sessions across various islands, adapting to challenges such as adverse weather by using online platforms. We also started submitting translated audit summaries to the INTOSAI Working Group on Environmental Auditing (WGEA) database, contributing to the international knowledge base.

Source: SAI Maldives

Global Recognition: Embracing International Collaboration

Our commitment to addressing global challenges has been marked by our entry into the INTOSAI WGEA in 2022 and our hosting of its 21st assembly in the island Ukulhas, Maldives. This event underscored the urgent need for global resilience against climate change. We remain actively involved in INTOSAI WGEA work packages, such as climate scanner, climate change adaptation actions, and environmental accounting.

The success of our strategy has been made possible through the invaluable support of the Chair of the SAI Finland and other Supreme Audit Institutions (SAIs) on the steering committee of the WGEA. Their efforts in transforming the governance structure of the Working Group have enabled even less resourceful SAIs, such as Small Island Developing States (SIDS) like ours, to contribute meaningfully to its management. We are deeply appreciative of this support, which has been instrumental in our appointment to the role of Vice Chair of the INTOSAI WGEA by the Steering Committee. This role reflects not only our enhanced capabilities but also the collaborative spirit fostered within the international auditing community. As Vice Chair of INTOSAI WGEA, we are committed to representing Small Island Developing States (SIDs) perspectives in global discussions on environmental audit practices and sharing our experiences with other SAIs.

Source: SAI Maldives

Our ongoing dedication to environmental auditing is further demonstrated through journal publications on related topics. Recent articles include “Auditing Plastic Waste: Case of The Maldives” in the Asian Journal of Government Audit and “Small Island Developing States and Climate Challenges: Perspectives from the INTOSAI WGEA, PASAI, and the Maldives” in the INTOSAI Journal.

Conclusion: A Commitment to Excellence and Global Impact

The strategic changes implemented by the Auditor General’s Office of the Maldives have significantly advanced our environmental auditing capabilities. By investing in team development, community engagement, and technical expertise, we have established ourselves as leaders in environmental audit practices. Our achievements highlight the effectiveness of our strategy and our transformative impact both internally and within the global auditing community. We would like to extend our gratitude towards the key stakeholders that enabled this transition, namely, the Chair of INTOSAI, SAI Brazil through bilateral support and emphasis on SIDs SAIs development, the Chair of INTOSAI WGEA, SAI Finland and the steering committee members of the working group, the Intosai Development Initiative through their SAI Young Leader program which facilitated critical components of the change strategy and SAI India through numerous capacity building opportunities and bilateral support.

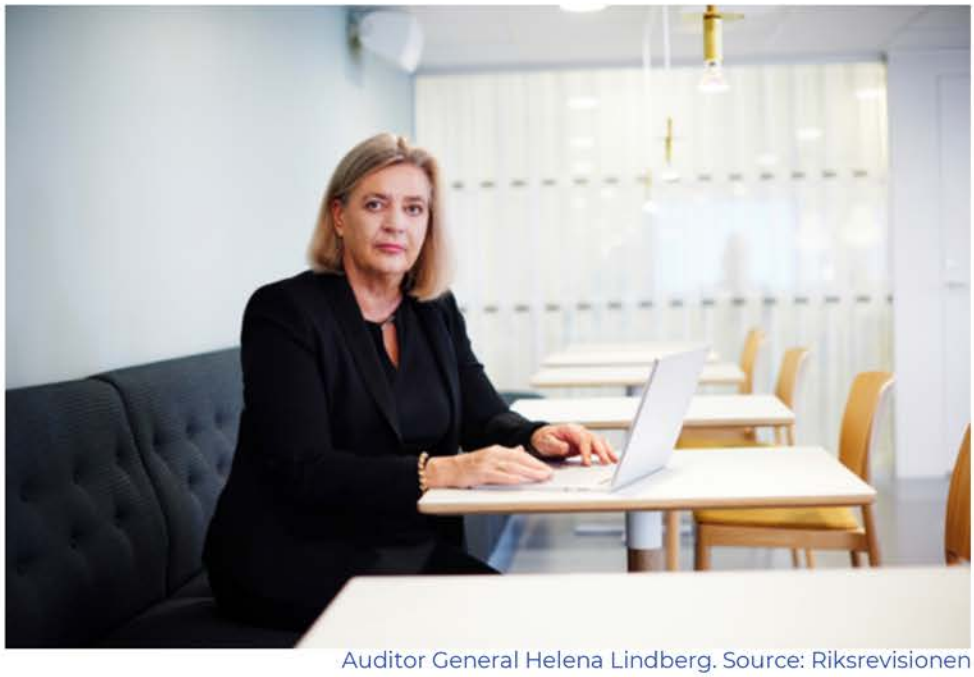
Source: SAI Maldives

The recognition as Vice Chair of the INTOSAI WGEA is a testament to our enhanced role and unwavering dedication to advancing environmental auditing and accountability. It reflects our commitment to spearheading global efforts in this vital area, ensuring that our work continues to drive positive change and inspire action on a global scale.

Source: SAI Maldives

The coauthors (from left to right): Ibrahim Aiman – Assistant Auditor General, Performance and Special Audit Division; Rauhath Hussain – Director, Performance Audit Department; Mohamed Ibrahim Jaleel – Manager, Environmental Audit Unit. Source: SAI Maldives

EDITORIAL



Auditor General Helena Lindberg. Source: Riksrevisionen

The Role of Supreme Audit Institutions in a Changing World

By Auditor General Helena Lindberg, Riksrevisionen

Introduction

As Auditor General, I have had the privilege of overseeing our national audit office during a period of change and significant challenges. As I reflect on my seven years in office, there are several key themes and lessons learned that I find to be essential for the ongoing development and effectiveness of Supreme Audit Institutions (SAIs) globally.

The journey of being an Auditor General is one of continuous learning and adaptation. We encounter an ever-changing landscape of challenges and opportunities. However, with a clear vision, strategic thinking, and a committed team to help us, we can navigate these complexities and make a meaningful impact.

Aspects to consider when managing Supreme Audit Institutions

An issue facing SAIs today is the rapidly evolving arena of public sector governance. Governments are struggling with complex and interconnected global challenges, such as climate change, cyber-security threats, and public health crises. These challenges necessitate a more agile and forward-thinking approach to auditing, while we simultaneously remain loyal to our main task as auditors.

I have found some aspects that I would like to share for Supreme Audit Institutions to remain relevant and deliver on our important task.

Positive internal culture

Within our organisation, fostering a positive internal culture has been paramount. An inclusive and supportive environment in which employees feel valued and trusted is essential for change. Over the years, we have prioritised building a culture of trust and innovation. Under my motto "One Audit Office that lies at the forefront", my aim has been to instil a sense of unity and a drive towards common goals. This has not only improved employee morale and engagement, it has also driven innovation in our audit processes and methodologies. We have introduced initiatives that encourage collaboration, knowledge sharing, and continuous learning, which are critical for staying ahead in a rapidly changing world.

Strategic thinking

Strategic thinking is another key element of our success. When I assumed the role of Auditor General, our organisation faced several challenges, including a fragmented structure and a lack of cohesive strategic direction. We embarked on a comprehensive strategic planning process, which involved setting clear goals and objectives, aligning our resources and efforts, and continuously monitoring and adjusting our strategies. This strategic approach has enabled us to better anticipate and respond to emerging risks and opportunities, ensuring that we remain relevant and impactful in our work.

Digitalisation

The digital revolution has transformed the way we conduct our audits. Digital tools and technologies have enhanced our ability to collect, analyse, and interpret vast amounts of data, leading to more robust and evidence-based audit findings. We have invested in building our digital capabilities, including data analytics, AI, and blockchain technologies, which have enabled us to conduct more efficient and effective audits. However, this digital transformation also brings new challenges, such as ensuring data security and privacy, which we must continuously address.

Independence and a good relationship with parliament

The independence of SAIs is fundamental to their credibility and effectiveness. The Swedish legal framework guarantees our operational independence, allowing us to conduct our audits without undue influence or interference. It has been equally important to maintain a constructive and transparent relationship with parliament. By engaging in open dialogue, providing clear and accessible reports, and offering evidence-based recommendations, we were able to help build trust and support for our work in parliament, enhancing our impact.

Source: International Journal of Government Auditing

Developments in INTOSAI and the Capacity Building Committee

The International Organization of Supreme Audit Institutions (INTOSAI) plays a pivotal role in promoting collaboration, knowledge sharing, and capacity development among its members. During my term as Auditor General and vice chair of the INTOSAI Capacity Building Committee (CBC), I have seen INTOSAI develop in a very positive way. I would especially like to mention our latest strategic plan, which is clearer and more concise and realistic than previously. In the area of capacity development, I am also very proud of our Goal 2 Operational Plan which I trust will help focus INTOSAI resources and initiatives better, in line with regional priorities. I have also seen INTOSAI's structure for standard-setting improve and find its formats, which I hope will result in even more efficient processes and better standards in the future.

Developments in INTOSAI and the Capacity Building Committee The International Organization of Supreme Audit Institutions (INTOSAI) plays a pivotal role in promoting collaboration, knowledge sharing, and capacity development among its members. During my term as Auditor General and vice chair of the INTOSAI Capacity Building Committee (CBC), I have seen INTOSAI develop in a very positive way. I would especially like to mention our latest strategic plan, which is clearer and more concise and realistic than previously. In the area of capacity development, I am also very proud of our Goal 2 Operational Plan which I trust will help focus INTOSAI resources and initiatives better, in line with regional priorities. I have also seen INTOSAI's structure for standard-setting improve and find its formats, which I hope will result in even more efficient processes and better standards in the future.

The future ecosystem of accountability

Looking ahead, the accountability ecosystem will continue to evolve. While the role of SAIs will probably remain the same, we must adapt our approaches to address emerging issues, leveraging new technologies and methodologies while maintaining our core values of independence, transparency, and accountability. Close collaboration and interaction with other organisations will grow even more essential in the future.

As I will soon be leaving the Swedish National Audit Office, I was asked to give some advice to my colleagues. It is not an easy task, since you are all highly qualified for your jobs. However, if I were to give some humble advice, it would be the following: embrace change and innovation, foster a culture of trust and collaboration within your organisations, and maintain a strategic focus on the long-term impact of your work. Stay connected with your peers through forums like INTOSAI and leverage the collective knowledge and experience of the global audit community. Finally, never lose sight of the importance of independence and transparency, which are the bedrock of our profession.

Source: INTOSAI Working Group on Environmental Auditing

Climate Change: A Rising Priority for Supreme Audit Institutions

Author: Vivi Niemenmaa, Secretary General of the INTOSAI Working Group on Environmental Auditing, National Audit Office of Finland

The INTOSAI Working Group on Environmental Auditing (WGEA) has observed an increasing diversity in audits on climate action. In addition to climate change mitigation, Supreme Audit Institutions (SAI) are increasingly auditing climate change adaptation and social aspects. At the same time, developing country SAIs are becoming more engaged. The latest INTOSAI WGEA survey shows that SAIs' interest in environmental audits and auditing climate action continues to grow.

INTOSAI WGEA has mapped the state of environmental auditing for the 11th time in its triennial surveys. Environmental auditing is not a new topic for most survey respondents: over half of the 82 respondent SAIs have conducted environmental audits for over ten years, most often as performance audits.

The 11th survey shows that the popularity of climate audits continues to rise. Firstly, SAIs consider climate change to be the most pressing environmental issue. Secondly, climate change adaptation was most popular environmental audit topic in 2021-2023, followed by agriculture and waste. Furthermore, in 2024-2026, SAIs will continue to prioritize climate change adaptation, followed by climate change mitigation (reduction of greenhouse gases) and protected areas.

What SAIs plan to audit 2024-2026: TOP TEN	Comparison to the 10th survey
1. Climate change adaptation	→
2. Climate change mitigation	↑
3. Protected areas and natural parks	↓
4. Drinking water: quality and supply	→
5. Renewable energy	↑
6. Water quantity management/management of watersheds	↑
7. Agriculture	↓
8. Forestry and timber resources	↓
9. Energy efficiency	↑
10. Domestic environmental funds and subsidies	↑

Source: INTOSAI Working Group on Environmental Auditing

There will be more audits in global South and on adaptation

But let's first look into the past. In the sphere of the WGEA, the climate change had established itself by 2010. Most of the audits back then were, however, conducted in the global North, and with a predominant focus on climate change mitigation. For example, the global coordinated audit on climate in 2010 included only few audit cases on adaptation.

As the impacts of climate change have become evident, international climate policy has started to stress the need to adapt to the changing climate. With the development national adaptation policies and funding, audits on assessing their implementation have also increased. The ongoing global Cooperative Audit on Climate Change Adaptation Actions, powered by the INTOSAI Development Initiative and involving around 50 SAIs, will increase the number of adaptation audits. Together with another major global project, ClimateScanner initiated by SAI Brazil, the number of reviews and audits will also increase in global South. In the context of ClimateScanner, while reviewing their governments' activities on climate, SAIs have a marvelous opportunity to identify further audit topics.

Audits have covered whole policy areas and sector-specific action

SAIs have approached climate action in various ways and audits have covered whole policy areas and sector-specific actions. For example, SAI France dedicated its last annual report for adaptation, while SAI UK has audited government's net zero targets. Additional approaches include SAI Canada's review of its earlier reports and federal government's track record on climate change since 1998, whereas SAI USA has developed a disaster risk resilience framework and applied it in several audits. However, it is more typical to audit the implementation of actions in specific sectors, such as transport, agriculture or energy. For example, many small island developing states in PASAI region are currently assessing actions to protect islands from sea level rise, while SAI Finland has audited international climate finance from the donor perspective.

Recently, some SAIs have audited the social aspects related to climate change, such as the implementation of policies supporting a just transition, i.e. attention to those who might suffer from the phasing out of the fossil fuel economy. Consequently, audits on climate change have become more diversified.

The overall conclusions of performance audits in the INTOSAI WGEA database are not much different from performance audits in other policy sectors. SAIs call for better risk management and impact assessments, a more strategic approach, effective implementation of policies and improved cost-consciousness, better coordination between government sectors and levels, as well as better monitoring and reporting. SAIs also stress more transparent information on investment needs, climate spending and taxation, as well as tax reliefs that have a negative impact on climate.

Many of the audit findings on climate action are not much different from performance audits in other policy sectors. However, some specific features of climate-related audits include the rapid development of the science base, the fact that climate risks appear in many sectors, the need for long-term considerations and risk assessments, as well as the difficulty in measuring some aspects, such as progress in adaptation.

INTOSAI WGEA will continue the work on climate and policy coherence

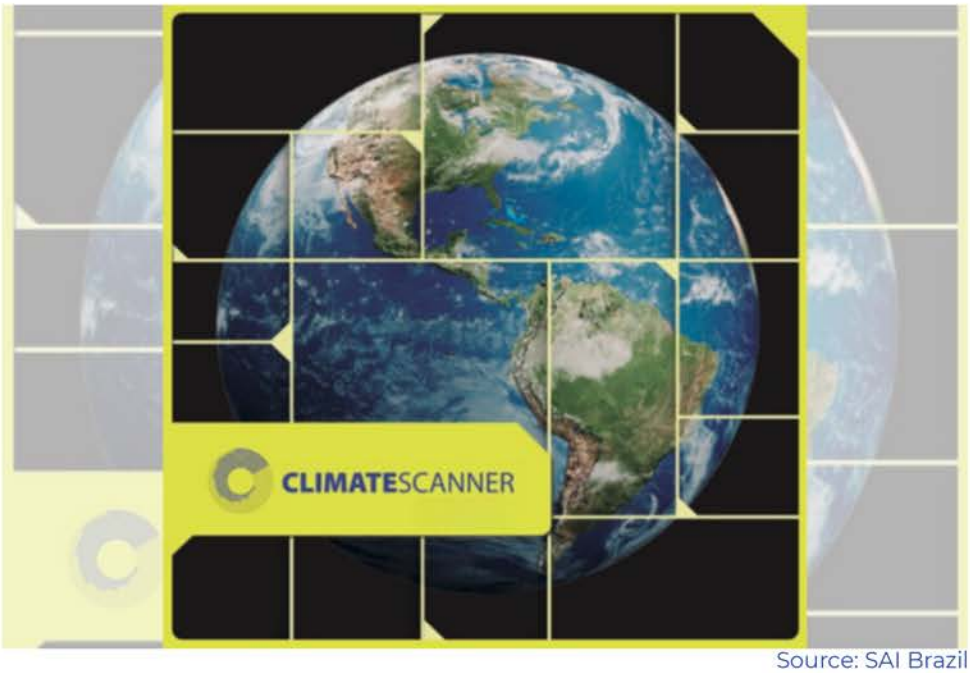
Besides the coordinated audit on climate change adaptation actions and ClimateScanner, the INTOSAI WGEA works with the nexus between climate and biodiversity. The main trade-offs seem to appear in the renewable energy field. For example, hydropower provides clean energy but has often negative consequences on biodiversity and local communities. The WGEA project led by SAI Canada will provide guidance for SAIs on how to take biodiversity concerns into account in their audits on climate action.

Another thematic hub for INTOSAI WGEA is the green economy. Climate appears strongly, for example, in sustainability reporting as climate disclosures are currently the driving force in the reporting field. The WGEA project led by SAIs of Thailand and Indonesia is topical particularly for financial auditors, as some jurisdictions have started to legislate the assurance of sustainability reports.

Source: INTOSAI Working Group on Environmental Auditing

The 11th INTOSAI WGEA survey results guide the further WGEA work, and climate change will stay on the agenda. Some emerging discussions will also influence future work, such as the interconnected nature of topics. For example, there is a growing discussion on whether climate change mitigation and adaptation should be addressed more often together. Another topic developing in an unfavourable direction is the policy incoherence between climate action and subsidies to fossil fuels. While some SAIs have audited this area, there is need for further audits and global projects within the SAI community.

INTOSAI WGEA warmly welcomes climate-related audit submissions to the audit database. Please contact the Secretariat for further information: intosaiwgea@vtv.fi , or visit www.wgea.org .



Source: SAI Brazil

ClimateScanner – An Innovative Methodology For SAIs to Monitor Government Action on Climate Change

Authors: Paula Hebling Dutra, Hugo Chudyson Araújo Freire, Carlos Eduardo Lustosa da Costa, Dashiell Velasque da Costa, Rafael Lopes Torres, Cintia Zaira Messias de Lima, João Paulo Jorge de Oliveira, Cintia Alvim Lage, Deiane Rodrigues dos Reis.

Introduction

Climate change has emerged as one of the most urgent and critical challenges of our time, with profound implications for ecosystems, economies, and societies globally. This multifaceted issue not only affects weather patterns but also poses serious threats to human health, food security, and long-term sustainability. As climate-related disasters become more frequent and severe, it is increasingly evident that addressing climate change requires robust action and innovative solutions on a scale previously unseen.

Limiting the temperature rise and adapting to the effects of the changing climate, as aspired by the Paris Agreement, will require a major joint effort involving civil society, academia, corporations and all levels of government.

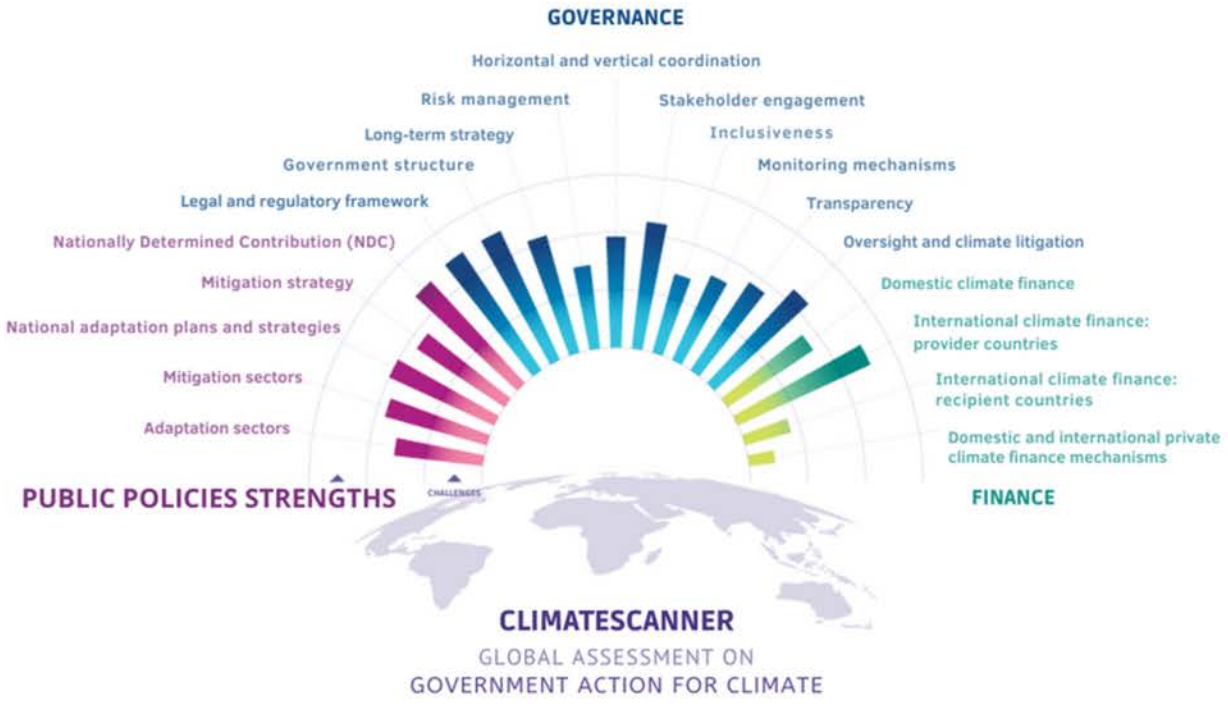
National governments play a prominent role in climate action by allocating public resources, designing and implementing public policies, and orchestrating different actors through governance mechanisms in pursuit of a common goal: mitigating greenhouse gas emissions and promoting adaptation to the impacts of climate change.

Supreme Audit Institutions (SAIs) should also join in this effort. SAIs hold a significant responsibility in ensuring accountability and transparency in all areas of government, as well as in climate initiatives. SAIs can provide reliable and independent information on the use of public resources and the performance of policies in climate change, contributing to the improvement of those policies.

The characterization of climate change as a "wicked problem" underscores the necessity for coordinated international responses, as its impacts are far-reaching, with important impact to public budgets, and require a collective effort that transcends national borders. The development of international frameworks, such as the Paris Agreement (under the United Nations Framework Convention on Climate Change) and the Sustainable Development Goals (SDGs)—with SDG 13 focusing specifically on Climate Action—provides a critical foundation for national efforts and incentivizes governments to commit to ambitious climate strategies.

Areas like climate change, in which international agreements heavily shape government's national action provide an opportunity for mutual learning, exchange and more importantly, coordinated work to boost impact.

In this context, the ClimateScanner emerges as an innovative tool for SAIs to track, assess, and monitor national governmental actions concerning climate change. The methodology offers insights into three pivotal areas: governance, public policies, and finance, disaggregating these dimensions into 19 components and 62 items that are evaluated based on their implementation levels. The standards used in the evaluation are common and applicable to all countries and takes into consideration specificities of domestic policies.



Source: SAI Brazil

Opportunities and Challenges of the ClimateScanner Approach

- **Time**. The ClimateScanner's design is based on a rapid assessment logic, which is intensive, team-based qualitative/quantitative inquiry using triangulation, iterative data analysis, and additional data collection to develop an evidence-based understanding of a situation.

- **Broad Coverage**. While the broader scope afforded by ClimateScanner provides a very comprehensive view of climate action, it also differentiates itself from traditional audits by not delving deeply into specific issues. However, it appears as a new way to conduct horizontal and systemic analysis. This advantage eases the burden on auditors, allowing them to capture a wide-ranging understanding of climate governance without the long processes typical of full-scale audits.

- **Trustworthiness.** However, the assessment's approach does present a challenge: balancing the need for quick insights with the imperative of maintaining assessment rigor and trustworthiness. In order to maintain the high quality of the analysis, auditors will many times have to rely on their professional judgment. Also, the conclusion of the assessment in certain topics maybe that there is need for further work to be able to ensure a reliable assessment.

- **Applicability.** One of the significant advantages of the ClimateScanner methodology is its applicability to all SAIs, whether large or small. The common framework it offers means that smaller institutions that may have more limited capacity to deal with complex climate issues, can easily adopt the methodology with minimal resources. This encourages inclusivity in climate accountability efforts across varying contexts and capacities.

- **Flexibility and Adaptability.** International climate commitments—such as those outlined in the Paris Agreement—provide a uniform standard for countries, establishing a baseline for climate action expectations. However, the flexibility of the ClimateScanner methodology ensures that assessments can be tailored to each country's specific circumstances. This adaptability is crucial for meaningful engagement with national climate policies and provides the potential for countries to learn from each other's experiences.

- **Global Consolidation.** Moreover, the ClimateScanner supports data consolidation, allowing for both national, regional and global analyses. Even as it accommodates specific national conditions, the aggregation of data from diverse contexts enables insights and perspectives on overall progress toward climate goals.

- Confidentiality. Nonetheless, the challenge of maintaining confidentiality of sensitive information persists; some data collected for national assessments may not appear in public reports yet still contribute to broader analyses. SAIs must navigate this delicate balance to ensure comprehensive reporting while respecting privacy and national security considerations.

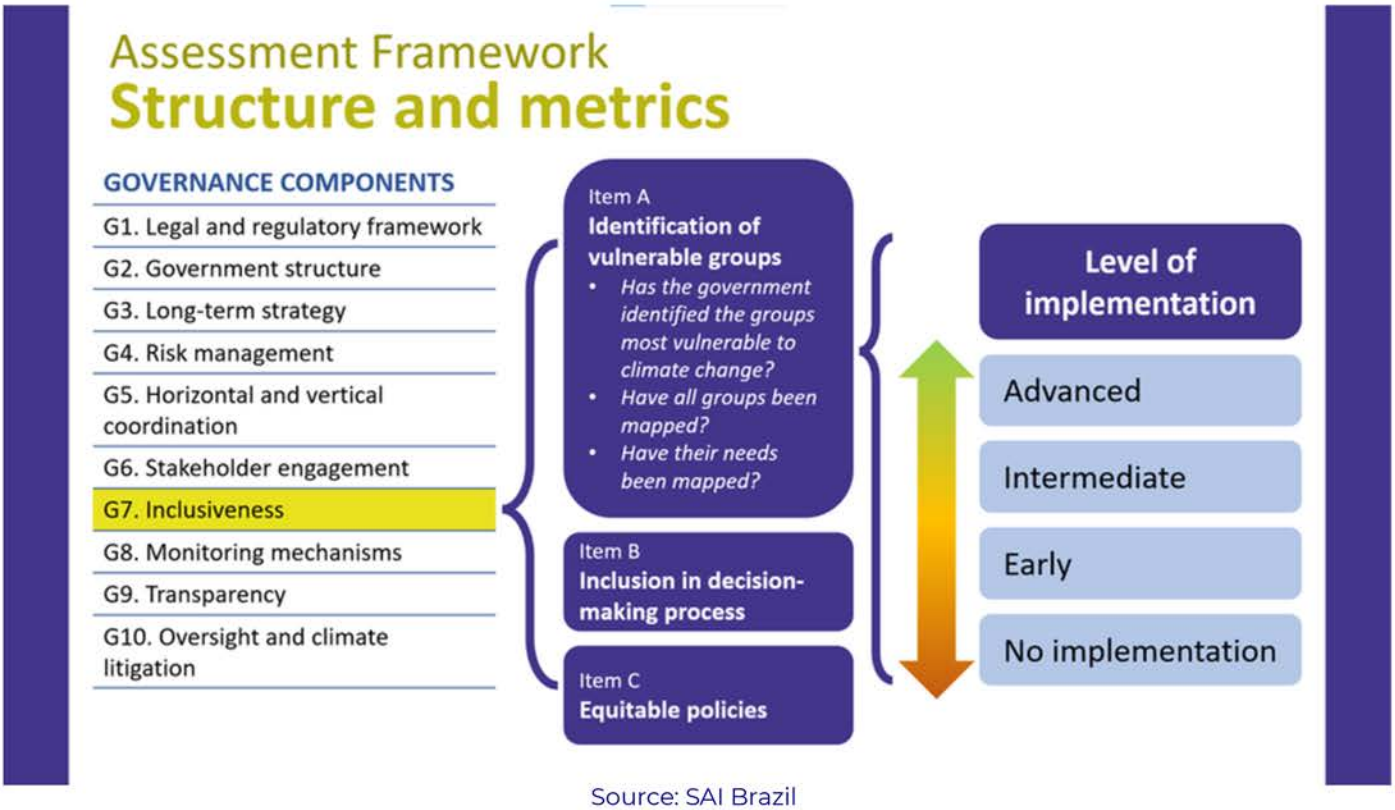
- **Periodicity.** By allowing periodic assessments, ClimateScanner facilitates ongoing tracking of climate governance, policy, and finance over time. This enables SAIs to assess progress in an objective manner, induce changes in policy and hold governments accountable for their commitments.

- **International Cooperation.** However, a critical challenge lies in maintaining the momentum of these efforts; although 144 SAIs and 240 auditors have been trained in 2024, the ongoing mobilization of the SAI community requires sustained engagement through active collaboration in INTOSAI and regional organizations. Peer-to-peer support and resource sharing will be essential to fostering an active and informed SAI community dedicated to climate change issues.

- **Communication.** The implementation of ClimateScanner also opens new channels of communication for SAIs, facilitating engagement with society, academia, and other stakeholders. By acting as an effective communication tool, SAIs can ensure that climate action strategies are clearly conveyed and that policymakers are held accountable for their commitments. The provision of reliable and easily understandable information on complex climate policies and finance serves to boost transparency and accountability in government actions, as well as to reach broader audiences like members of parliament, media, and think tanks, among others.

- **Planning.** ClimateScanner is not merely a tracking tool but also a mechanism to design a strong strategy for SAIs in the area of climate change. Information collected in the assessment can also greatly facilitate audit planning and the monitoring of recommendations from previous audits.

In Brazil, the pilot version of ClimateScanner proved invaluable in refining the audit planning process for climate governance. By significantly reducing the time needed for planning, ClimateScanner enables auditors to focus on substantive issues rather than procedural hurdles. This efficiency not only bolsters the quality of audits but also maximizes the use of resources within SAIs.



Source: SAI Brazil

Lessons Learned So Far

There has been a notable interest within the SAI community regarding climate change issues, as shown by the high number of SAIs attending the training workshops. This raises awareness around the importance of efficient governance and accountability in environmental matters. Various SAIs have begun to prioritize climate-related audits, signaling a commitment to ensuring that public sector entities effectively manage their environmental responsibilities. This keen interest reflects a broader understanding that SAIs play a critical role in promoting transparency and accountability in governmental responses to climate challenges.

Regional integration has been reinforced through seven regional training workshops conducted in 2024, creating a platform where countries can collaboratively tackle common climate challenges. The collaboration among SAIs has opened doors to effective learning-by-doing opportunities. This exchange fosters a culture of learning that not only strengthens the individual capacities of each institution but also the collective efficacy of the SAI network in addressing climate change.

The introduction of ClimateScanner provides a standardized framework for SAIs to communicate about climate change. This innovative tool allows for a unified approach to assessing climate risks and opportunities, enabling SAIs to engage more effectively with stakeholders. By fostering a common language, ClimateScanner simplifies complex discussions and accelerates the exchange of information, ensuring that all members of the SAI community are aligned in their efforts.

Collaborations with major actors such as the United Nations, development banks, and climate think tanks have enriched the dialogue. These external partnerships provide SAIs with additional insights, resources, and frameworks for understanding the complexities of climate-related challenges, ultimately enhancing the quality and relevance of their audits.
As SAIs evolve in their roles concerning climate change, it's essential to consider how the ClimateScanner model can be adapted to other areas of institutional activity. For example, could this structure be applied to social audits addressing poverty alleviation or health governance? The lessons learned from climate change initiatives may serve as a blueprint for mobilizing and organizing SAI actions in various fields, addressing broader systemic issues that require similar levels of accountability and transparency.

The lessons learned by the SAI community in the realm of climate change unveil crucial insights into the importance of collective action, partnerships, and innovative tools. The engagement of SAIs in this vital area signifies not only a commitment to ensuring environmental accountability but also highlights the ongoing evolution of these institutions as they adapt to emerging global challenges. By continuing to learn from one another and fostering collaboration, SAIs can further enhance their impact in promoting a sustainable future.

Source: INTOSAI Journal

United Nations- INTOSAI Symposium Engages Discussion on the Role of SAIs on Climate Action

Author: Toni Gillich, INTOSAI Journal Secretary, U.S. GAO

The 26th United Nations(UN)/INTOSAI Symposium 2024 took place in Vienna, Austria, from 16 to 18 April 2024. Jointly organized by the UN and INTOSAI, the biennial symposia provide capacity building for Supreme Audit Institutions through the exchange of subject-specific experiences and information in all relevant fields of public sector auditing. The theme of this year's event was the implementation of Strategic Development Goal 13 (SDG13) on climate action, and the role, contributions and experiences of SAIs. Nearly 200 participants from 80 countries across the INTOSAI community gathered for 2 and half days of robust discussion of an array of issues related to conducting audits that contribute to the climate agenda.

The Symposium was opened by the Secretary General of INTOSAI, Margit Kraker; the Chair of INTOSAI; Under-Secretary-General for Economic Development, Li Junhua, and Chair of the INTOSAI Governing Board, Bruno Dantas—President, SAI Brazil.

Source: INTOSAI Journal

Day 1 featured multiple panels focused on the subtheme of SAI practices in auditing the impact of climate change. The discussions were wide-ranging, providing participants numerous perspectives on auditing the various impacts. Mr. de Dieu Rakotondramihamina, President of SAI Madagascar described the SAI's first experience with a climate change audit, covering the negative impacts of water scarcity and soil erosion. Dr. Benitez Aldana of SAI Paraguay explained the key role citizen participation played in a climate and public health audit on highly-publicized issues related to petrol stations. Auditor General Klesic of SAI Croatia discussed how assessing the Croatian adaptation plan has helped the Croatian government take concrete actions. Furthermore, Auditor General Gutale of SAI Somalia discussed the creation of a performance audit unit, and highlighted pilot audits of climate-related matters such as water and crisis-recovery projects. Director General Sinha of SAI India underscored the complexity of the financial landscape for climate mitigation and the need for stakeholder involvement. Presentations from SAI Angola, SAI China, Indonesia, SAI Iraq, SAI France, SAI Portugal and SAI UK addressed additional key issues which supported the comprehensive assessment of critical issues.

Source: INTOSAI Journal

During Day 2, discussion covered two subthemes and raised important questions for SAIs to consider when undertaking audits related to SDG13 implementation. The first subtheme of the day examined the enabling conditions for auditing climate action. President Bruno Dantas, SAI Brazil, discussed the progress of the ClimateScanner initiative and noted that more training to increase capacity of auditors in auditing climate action and national assessments are underway. The results of these and other key efforts will be presented at the 2024 UN Climate Change Conference which convene in November 2024 in Baku, Azerbaijan. President Duisenberg described progress on climate targets and audits on electric car tax incentives and carbon storage under the North Sea aimed at reducing greenhouse gas emissions. The INTOSAI Development Initiative (IDI), SAI Egypt, and SAI Germany rounded out the discussion with several salient observations.

Source: INTOSAI Journal

Proving inspirational to all participants, was discussion featured in a special panel on auditing national climate action in small island developing states (SIDS). Auditor General Pamela Monroe of SAI Jamaica highlighted ongoing audit work assessing the extent to which the government is on track its climate change adaptation plans and actions, citing the need for more data and resources to support additional work. Auditor General Niyazy shared experiences in climate auditing and underscored the challenges of auditing climate impacts in SIDS, from the perspective of the world's lowest-lying country. Undeterred by the daunting nature of taking on climate audits in the face of very limited staff and expertise in this area, SAI St. Kitts and Nevis described how one of its first performance audits is covering climate issues and is supported by IDI. SAI St. Lucia described progress on SDG13 targets and key collaboration with the World Bank. Additional perspectives on capacity building and relevant points in regarding climate action came from IDI.

Source: INTOSAI Journal

The third subtheme addressed impacts of climate change audits. Comptroller General Yalta of SAI Peru shared insights into how his office is tackling issues related to deforestation through compliance audits and anticipates future work in other climate action topics. Auditor General Macijauskas warned of the dangers of "green washing" which are actions that create the appearance of meeting climate action goals rather than genuine action and sustainability. Key observations were also shared by SAI Bulgaria, SAI Canada, the European Court of Auditors, and the INTOSAI Working Group on the Environment/SAI Finland.

The final day of the symposium began with a summary of the rigorous discussion carried out of the previous days. The participants adopted conclusions and recommendations of the implementation of SDG13 and the role, contribution, and experiences of SAIs, which strengthen climate action. The final and speaker, Åsa Persson, PhD, Research Director and Deputy Director, Stockholm Environment Institute and Adjunct Professor, Linköping University, encouraged participants to engage scientific academia and leverage tools they use to enhance climate-related audits. In closing, Dr. Kraker and Mr. Le Blanc of United Nations Department of Economic and Social Affairs recognized the both the unique and shared challenges of SAIs of all sizes and experiences and the need for new methods, tools and expertise to achieve the goal of SDG 13.

View the full photo album from the event here: https://buff.ly/44prm8y .

Source: INTOSAI Development Initiative

A Global Cooperation for holding governments to account in Climate Change Adaptation Actions

Author: INTOSAI Development Initiative

Climate change has, and will have, an impact on every single resident of planet earth. Extreme weather events, such as flooding, severe winds, droughts, or cold temperatures all cause disruptions in agricultural practices, global supply chain, and security. And that only scratches the surface.

The World Economic Forum published a report early in 2024, highlighting the "urgency and necessity of drastic action from both governments and corporations to combat climate change effectively and deliver on commitments." The Bold Measure to Close the Climate Action Gap: A Call for Systemic Change by Governments and Corporations report urges governments to deliver practical solutions and policies that will enable private sector actors to make a meaningful impact and deliver green solutions in their area of influence.

Supreme Audit Institutions (SAIs) are playing a key role in holding governments accountable for their proposed solutions and adaptation measures. Their work is crucial in contributing to the accountability, transparency, effectiveness and inclusiveness of climate action thereby having a positive impact for people and planet.

The INTOSAI Development Initiative (IDI), together with the (INTOSAI) Working Group on Environmental Audit (WGEA), are facilitating a Global Cooperative of Climate Change Adaptation Actions (CCAA). This audit initiative supports 48 SAIs across INTOSAI regions in providing a relevant response to climate change adaptation actions. IDI-WGEA support aims to facilitate not only high-quality audits as per performance audit ISSAIs but also encourages SAIs to mainstream audit impact considerations throughout the audit process. The audit model also encourages SAIs to engage with key stakeholders throughout the audit process to facilitate audit impact and demonstrate value.

“Climate change is the most pressing issue of this century,” says Einar Gorrissen, Director General of IDI. “Our vision is to strengthen the performance auditing capacity for SAIs on climate change efforts so that improved results lead to positive impact for society and the future.”

Recognizing the diversity of adaptation actions across countries, supports SAIs in auditing four key thematic areas - disaster risk reduction, water resource management, sea level rise and coast erosion, and implementation of climate change adaptation plans or actions (SDG 13). Each of these thematic areas represents cross-cutting opportunities for deeper examination. Participating SAIs have each selected one or more areas and signed a statement of commitment for the audits. IDI-WGEA provide blended support through an integrated education and audit support platform hosted on the IDI’s learning management system.

Besides online education modules, SAIs have access to social learning opportunities, where the SAI teams interact with different stakeholders. SAIs also has access to expert feedback at different stages of the audit process, shared online workspaces during an audit, and meaningful engagement to support effective report-writing.

Source: INTOSAI Development Initiative

CCAA is available in English and Spanish, with 237 participants from 48 SAIs, and with the support of respective mentor teams for both languages. English-language participants started online learning in mid-2023 with theme-based webinars facilitated by subject matter experts from SAIs and WGEA. A highlight of the CCAA's support is the peer-to-peer exchange and mentorship by experts from WGEA that benefit SAIs at various stages of learning.

In August 2024, IDI organised a webinar on fostering innovation in reporting government actions on climate change adaptation. Mr. Orville Grey of the National Adaptation Plan (NAP) Global Network shared his thoughts on how SAIs and NAP Teams ensure effective, accountable, and inclusive reporting on climate change adaptation actions. Monitoring, Evaluation and Learning (MEL) is crucial along with planning and implementation, and it is important to integrate MEL activities at different stages of the process.

Given that climate change particularly affects Small Island Developing States (SIDS), the CCAA initiative has a specific focus on SAIs in SIDS and includes 11 participants from such countries.

"As I watched the 79th Session of the United Nations General Assembly in New York, I am cognizant of the fact that most, if not all, of the world leaders spoke on some aspect of climate change. It is on the forefront of everyone's mind," says Ms. Carla Pike, Director of Audit for the National Audit Office of St. Kitts. "The CCAA audit was not only timely but very beneficial to small SAIs such as St. Kitts and Nevis. The training material adequately prepared us for the audit of an area that would have otherwise presented a challenge to us. This gave us a thorough understanding of climate change issues and it allowed us to assess how efficiently and effectively our government is working to tackle climate change issues. We appreciated the assistance and feedback of our mentors from the very beginning of the process. By producing a high-quality report, we aim to hold our government accountable for the international commitments made to tackle this great global challenge."

"The involvement of the IDI has truly raised the standard of our work, ensuring that we meet the highest levels of professionalism and accountability," says Rodrigo Paulo Rodrigues da Silva, Federal External Control Auditor from the Federal Court of Accounts (TCU) of Brazil. "Furthermore, the training and guidance provided through the Global Cooperative Audit of Climate Change Adaptation Actions (CCAA) project have been fundamental to our progress. The mentorship and resources have greatly enhanced our team's development, both in terms of knowledge and the overall quality of the report. The skills we've gained during this process will undoubtedly contribute to our future audits and to our continuous improvement as an audit body."

IDI and WGEA anticipate that the results of CCAA audits will be a fantastic opportunity to reflect on lessons learned in 2025, and to collaborate on a global publication on the results, insights, and key takeaways from this global cooperative audit.

CCAA is just the start of IDI's engagement with climate action. Next year, IDI will bring its work on sustainability reporting and assurance under the climate action umbrella. IDI will explore new areas of SAI priorities in auditing climate action, and the WGEA survey and upcoming results from Climate Scanner will lay the foundation for the future.

Source: INTOSAI Development Initiative, INTOSAI Working Group on Environmental Auditing

Source: EUROSAI Working Group on Environmental Auditing (EWGEA)

EUROSAI Working Group on Environmental Auditing Engages Auditors in Key Activities Throughout 2024

Author: Iwona Zubrzycka-Wasil, State Audit Office of Poland

SAO of Poland Extends Term as Chair of the EUROSAI Working Group on Environmental Auditing (EWGEA)

EUROSAI Working Group on Environmental Auditing (EWGEA) celebrated its 25th anniversary during its Spring Session on 15-17 May 2024, hosted by the National Audit Office of Malta. The EWGEA Chair received many words of appreciation on this occasion from both previous EWGEA Chairs:, the Auditor General of Norway and Auditor General of Estonia.

In June 2024, having the green light from the EWGEA members and its Steering committee, the State Audit Office (SAO) of Poland has applied for the second term of office, presenting the current progress report and the strategic work plan for next three years. The EUROSAI Governing Board and Congress considered the SAO of Poland efforts aimed at supporting professional cooperation and facilitating knowledge and experience sharing in the EWGEA and decided to appoint the SAO of Poland for the second term of office as the EWGEA Chair. The Secretariat is both honored and grateful to EWGEA Members for their confidence and we promise to do our best to come up to their expectations.

Alan Saliba

Source: EUROSAI Working Group on Environmental Auditing (EWGEA)

The EWGEA Engages European Audit Offices and Stakeholders in Knowledge Sharing During Spring 2024 Meeting

The EWGEA Spring meeting in Malta focused on the topic of the auditors' perspective on the energy security was widely discussed at brainstorming sessions and workshops. The meeting, organised in a hybrid format, was attended by representatives of the European Commission Directorate General for Climate Action, Adaptation & Resilience, Communication and Civil Society Relations, the European Institute of Innovation and Technology – Knowledge Innovation Community – Climate KIC, the University of Malta and the Head of Secretariat of INTOSAI WGEA, as well as 82 auditors from 31 EWGEA member SAIs, out of which 46 were present in person in Floriana. During the EWGEA Spring Session the results of the latest audits on energy security and supply were presented and discussed, including:

- securing reliable electricity distribution network in Malta,
- the security of electricity supply in Estonia,
- the European Court of Audit (ECA) audits, specifically, in the field of energy security in the context of European Union key policy developments and on the security of gas supplies with a focus on assessment of key risks,
- energy audits in the light of the Italian Recovery and Resilience Plan,
- security of supply of energy resources in Poland,
- cybersecurity in power supply sector and escalating cyberattacks in Norway and securing access to the grid and growing demand for grid access in Norway,
- auditing the UK government's energy security policies, and
- an overview of energy security audits in the Netherlands.

Additionally, SAI Ukraine presented a report on ensuring energy security – activities of state bodies in determining damages and losses caused by the Russian aggression on Ukraine.

Representatives of the ECA, SAI Poland, SAI Netherlands and SAI Malta moderated workshops on risks assessments for audits in the field of energy security supplies, security of energy infrastructure and challenges of auditing energy security through renewable energy and energy efficiency measures. Potential audit questions were also formulated during the workshops. The perspective on using climate justice criteria in energy audits was also discussed during an online workshop moderated by auditors from the Netherlands.

EWGEA Contributes to INTOSAI's ClimateScanner Initiative

In June 2024, the EWGEA contributed to the Climate Scanner regional training workshop moderated by colleagues from the Brazilian Federal Court of Accounts in which 40 auditors from 25 European SAIs participated, including EWGEA family members. The outlook of global Climate Scanner assessment shall be presented by SAI Brasil and Climate Scanner executive group during the upcoming United Nations Framework Convention on Climate Change (UNFCCC) Conference of Parties (COP) 29 in Baku, Azerbaijan in November 2024.

EWGEA Annual Meeting Discusses Extreme Weather Events and Preparedness

On 3-4 October the EWGEA held its annual meeting in Baku, also in a hybrid formula, hosted by the Accounting Chamber of Azerbaijan. The meeting focused on the extreme weather events and preparedness strategies, and was attended by 81 auditors representing 36 EWGEA SAIs, including 44 auditors in Baku. Introductory presentations were delivered by representatives of the European Commission, the European Space Agency and the Polish Institute of Meteorology and Water Management, as well as representatives of SAIs.

The EWGEA Annual Meeting in Baku opened with a presentation given by a representative of the Joint Research Center of the European Commission on the possibilities of the Copernicus satellite observation program to support preparedness for extreme weather events, including: forecasting, assessment of risk of occurrence and severity, risk management and analysis of the removal of the effects of extreme weather phenomena and disasters.

The second day of the meeting had four workshops moderated by representatives of the European Court of Auditors, the Czech and Belgian SAIs. Key takeaways of the workshops were that in the areas particularly exposed to natural disasters, it is most crucial to precisely forecast upcoming extreme events, such as heavy floods, hurricanes, droughts and increased risk of fires. The condition for minimizing damages caused by disasters are precise and timely forecasts, without which it would not been possible to send warnings and calls for evacuation from endangered areas. To be able to meet the challenges posed by the scale of extreme weather events in recent years and prevent damage to people and the environment, advances in weather prediction technology are crucial. For more information and links to the powerpoint presented at the EWGEA meetings this year, please visit www.eursaiwgea.org or contact eurosaiwgea@nik.gov.pl.

EUROSAI Working Group on Environmental Auditing (EWGEA) Annual Meeting - Baku. (Source: EWGEA)

Source: Adobe Stock Images, doidam10

Is your climate strategy strong enough? The power of smart spending

Author: Mr. Keith de Jong LL.M MBA ML Managing Director, 4SAI

Introduction

Have you ever wondered what happens when public funds meant to mitigate climate change are not spent wisely? Or how legal compliance in the use of these funds could make or break our efforts to build resilient communities? As auditors, we often find ourselves at the crossroads of these crucial questions. In a world increasingly defined by climate change impacts, the role of Supreme Audit Institutions (SAIs) has never been more vital. We are the guardians of not just accountability but also of ensuring that every dollar and every decision counts toward a sustainable future.

The high stakes of climate change auditing

Imagine this: Public funds are allocated to a climate resilience program, but due to a lack of legal oversight and inefficient spending, the program fails to deliver. The consequences? Vulnerable communities remain exposed to risks, taxpayer money is wasted, and trust in public institutions erodes.

Is there a way to prevent this scenario? Absolutely! The answer lies in strong and resilient auditing practices that emphasize legal compliance and efficiency. But how do we achieve this?

A practical roadmap for SAIs

Source: 4SAI

Let's explore a practical methodology that SAIs can adopt to ensure public funds related to climate change are used effectively and in full compliance with legal frameworks:

1. Understand the legal landscape

Start by mapping out the relevant legal frameworks governing climate change programs. This involves not just national laws but also international agreements and regulations. Ask yourself: Are the laws clear and aligned with the program's objectives? Do they provide a solid foundation for accountability?

2. Risk assessment

Conduct a thorough risk assessment focusing on legal and financial vulnerabilities. This step is crucial. Consider what are the potential risks of non-compliance? How might inefficient spending amplify the impacts of climate change? Identifying these risks early allows us to direct our auditing efforts where they are needed most.

3. Audit planning with a climate lens

Integrate climate change considerations into your audit planning. This means going beyond traditional audits. Reflect on questions like: How is the program addressing the specific climate risks it was designed to mitigate? Is there evidence that funds are being spent in ways that enhances resilience?

4. Engage stakeholders

Collaboration is key. Engage with stakeholders like government agencies, NGOs and community leaders to gather insights and build a full picture of the program's effectiveness. Think about it: How can these perspectives enhance the audit's findings and recommendations? What can we learn from those on the ground?

5. Focus on outcomes, not just outputs

Shift your audit focus from simply tracking whether funds were spent (outputs) to evaluating whether the spending led to desired outcomes. Ask: Did the expenditure achieve its intended impact in terms of climate resilience? How can this be measured? This approach secures that we are not just auditing for compliance, but also for effectiveness.

6. Report and recommend

Your audit report should be more than a compliance check—it should offer actionable recommendations. Consider how your findings can drive improvements. What best practices can be shared? How can lessons learned be applied to future programs? Remember, our goal is to encourage continuous improvement.

7. Follow-up and monitor

Audits should not end with a report (!). Implement a follow-up mechanism to safeguard that recommendations are acted upon. Ask yourself: Are changes being made? Is there evidence of improvement? Continuous monitoring ensures that our work has a lasting impact.

I would be remiss if I failed to mention the ClimateScanner initiative, a groundbreaking effort that provides SAIs with a tool to assess and compare climate-related governance and performance across different countries. The ClimateScanner exposes areas where improvement is needed and provides invaluable insights into how public funds are being managed in the fight against climate change. Integrating this initiative into our auditing processes means we create the possibility to track progress, increase accountability, and ultimately drive more effective climate action globally.

Conclusion

As auditors, we stand at the forefront of making sure that public funds dedicated to combat climate change are spent wisely and legally. The stakes are incredibly high—our audits can shape the effectiveness of climate resilience efforts worldwide. I believe that following this roadmap (or your own similar roadmap), we can seriously increase our role as stewards of public trust, and secure that every dollar (or any other currency for that matter) is used to build a more sustainable and resilient future.

So, the next time you embark on an audit of a climate change program, ask yourself: Are we doing everything we can to safeguard legal compliance and efficient
spending? The answers could make all the difference.

About the Author: *Mr. Keith de Jong (LL.M MBA ML) is an accredited public performance auditor and Managing Director at 4SAI, an advisory firm dedicated to providing expertise to Supreme Audit Institutions internationally, helping them enhance their oversight and governance capabilities and meeting global standards of accountability and transparency.*

Source: State Audit Bureau of Kuwait

Auditing Climate Change: Impact, Risk, and Resilience

Author: Dalal Alwuhaib, Auditor, State Audit Bureau of Kuwait

Introduction

The threat of climate change looms large in today's world of rapid global change, altering the social, economic, and environmental landscapes at a rate never seen before. As the effects of this global catastrophe become more obvious, it is critical that communities and organizations fully recognize, evaluate, and manage the risks involved. This thorough research uses real-world case studies and scenarios to provide a greater knowledge of this important topic as it investigates the key role that auditing plays in assessing the effect, risk, and resilience of entities in the face of climate change.

The Worsening Effects of Global Warming

All throughout the world, the effects of climate change are already being felt: Increasing frequency and severity of extreme weather events, shifting precipitation patterns, and rising global temperatures events have had a substantial impact on a variety of industries, including infrastructure, agriculture, and public health. These changes are real, visible phenomena that are altering people's lives, economies and societies all around the world. They are more than simply theoretical concepts.

One devastating example is the 2021 heat wave, which ravaged North America's Pacific Northwest, smashing temperature records and killing hundreds of people due to heat- related illnesses. Similarly, the devastating floods that plagued Pakistan in 2022 destroyed homes, infrastructure, and crops, affected over 33 million people and served as a stark reminder of the devastation that climate-related calamities can cause.

Climate Change Risk Assessment: An Essential Project

Examination Auditing is critical for evaluating and managing climate change risks. Entities can ensure their long-term sustainability and prosperity by identifying their vulnerabilities, assessing the possible impact of climate-related events, and developing measures to strengthen their resilience through thorough audits with risk assessments.

One noteworthy example of an efficient climate change audit is the City of Vancouver in Canada. In 2019, the city commissioned a comprehensive audit of climate change risk and resilience, which investigated how the city's infrastructure, services, and vulnerable people might be impacted. The audit identified major hazards, such as the increasing frequency and intensity of heat waves, wildfires, and flooding, and made recommendations for improving the city's resilience, such as improving disaster planning, funding infrastructure improvements, and launching targeted initiatives for marginalized groups. Another example is the Port Authority of New York and New Jersey's 2016 climate change risk assessment. The research looked at how storm surges, sea level rise, and extreme weather will damage the region's critical transportation infrastructure. As a result of the audit results, a comprehensive adaptation plan was developed, which includes initiatives such as increasing essential assets, upgrading flood protection systems, and extending emergency response skills.

Climate Change Risk Assessment: An Essential Project

Examination Auditing is critical for evaluating and managing climate change risks. Entities can ensure their long-term sustainability and prosperity by identifying their vulnerabilities, assessing the possible impact of climate-related events, and developing measures to strengthen their resilience through thorough audits with risk assessments.

Copenhagen, Denmark, is leading the way in climate change adaptation. In 2011, the city assessed its vulnerability to floods, heat waves, and other climate-related hazards as part of a comprehensive audit on climate change adaptation. The audit led in the development of a comprehensive adaptation strategy, which includes initiatives such as investing in green infrastructure, legislating energy-efficient building codes, and developing early warning systems for extreme weather.

In a similar line, the Dutch city of Rotterdam has gained recognition for its efforts to improve climate resilience. In 2013, the city conducted a climate change adaptation audit, which examined the potential consequences of storm surges, heavy precipitation, and sea level rise on the city's residents and infrastructure. The audit served as the foundation for the city's comprehensive adaptation strategy, which includes steps like as building flood defences, investing in green spaces, and developing community-based resilience projects.

Overcoming Obstacles and Considerations

While it is clear how important climate change audits are, there are several challenges and variables that companies must consider in order to conduct these critical examinations. The complexities and unpredictability of climate change estimates pose a significant challenge, making it difficult to correctly evaluate risks and develop practical adaptation measures. The auditing process may become increasingly challenging due to the dynamic and iterative nature of climate science, as well as the heterogeneity in regional effects.

Another consideration is the need for sector-wide coordination and collaboration. Climate change's effects typically span organizational and jurisdictional lines, demanding collaboration among institutions to develop and implement comprehensive solutions. In this scenario, building partnerships and encouraging information flow can be critical.

Source: Adobe Stock Images, piyaset

Furthermore, there may be challenges owing to the financial and technical resources required for full climate change audits, particularly for smaller organizations, businesses or towns with limited budgets and capacities. Overcoming these hurdles may depend in major part on finding and exploiting financial resources, developing internal abilities, and recruiting outside aid.

Conclusion

To summarize, making climate change audits a top priority for a sustainable future understanding and resolving the challenges posed by a changing environment necessitates audits of climate change impact, risk, and resilience. The case examples presented in this study demonstrate the immense value of thorough audits in identifying vulnerabilities, evaluating risks, and developing plans to improve resilience.

Climate change auditing must be prioritized by entities, as the effects of climate change intensify and become an integral part of their risk management and adaptation plans. This allows firms to ensure the long-term survival and profitability of their enterprises and communities while also better planning for the challenges that lie ahead. Now is the moment to act. By embracing the promise of climate change auditing, organizations and communities can take proactive measures to secure their futures, assist worldwide efforts to mitigate and adapt to this grave threat, and create a more resilient and sustainable world for future generations.

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Source: Adobe Stock Images, Savvapanf Photo.

Systematic Approaches to Performance Audits of Environmental Policies

By KIM Burmshik, Deputy Director, and JEON Hyeong Cheol, Director, The Land and Maritime Affairs Audit Division III, The Board of Audit and Inspection

Introduction

Auditing the performance of government environmental programs is concerned with the three E's, Economy, Efficiency, and Effectiveness, like most performance audits. However, it is very difficult to set up performance indicators and select adequate methodology to analyze the performance results for auditing in various environmental programs.

In this paper, a performance audit case of an environmental policy conducted by the Board of Audit and Inspection (BAI), the supreme audit institution of Korea, is introduced to share with INTOSAI advisable ways of systematic approaches to performance audit.

Background

The Korean government's budget allocated for managing fine dust, defined as particulate matter under 2.5μm diameter (PM2.5), was 491.7 billion KRW (approx. 491.7 million USD) in 2016. But in 2019, it was dramatically increased to 2.17 trillion KRW (approx. 2.17 billion USD). However, there was still a concern over the effectiveness of government programs managing fine dust across the whole country, and some even pointed out that the effectiveness of the detailed measures of the program was not being analyzed scientifically and sufficiently.

Audit Design and Approach

In Korea, the central government establishes a comprehensive management plan for fine dust based on the research results regarding the current contamination status by fine dust in the ambient air. Then, local governments establish their own plans for implementing the central government's plan in their regions, execute allocated budgets accordingly, and report the results of their implementations regularly to the central government, mainly the Ministry of Environment (MoE).

The plan of the central government is established in the following manner: the central government (1) analyzes the current status of fine dust concentration in the ambient air, and evaluates the contribution ratio of each air pollutant emission source to the concentration; (2) sets the goal of fine dust concentration level and the reduction amount of total air pollutants needed to achieve the aim of fine dust concentration in the target year; and finally, (3) establishes implementation plans for reducing the emission amounts of each pollutant source to meet the required total reduction amount of air pollutants.

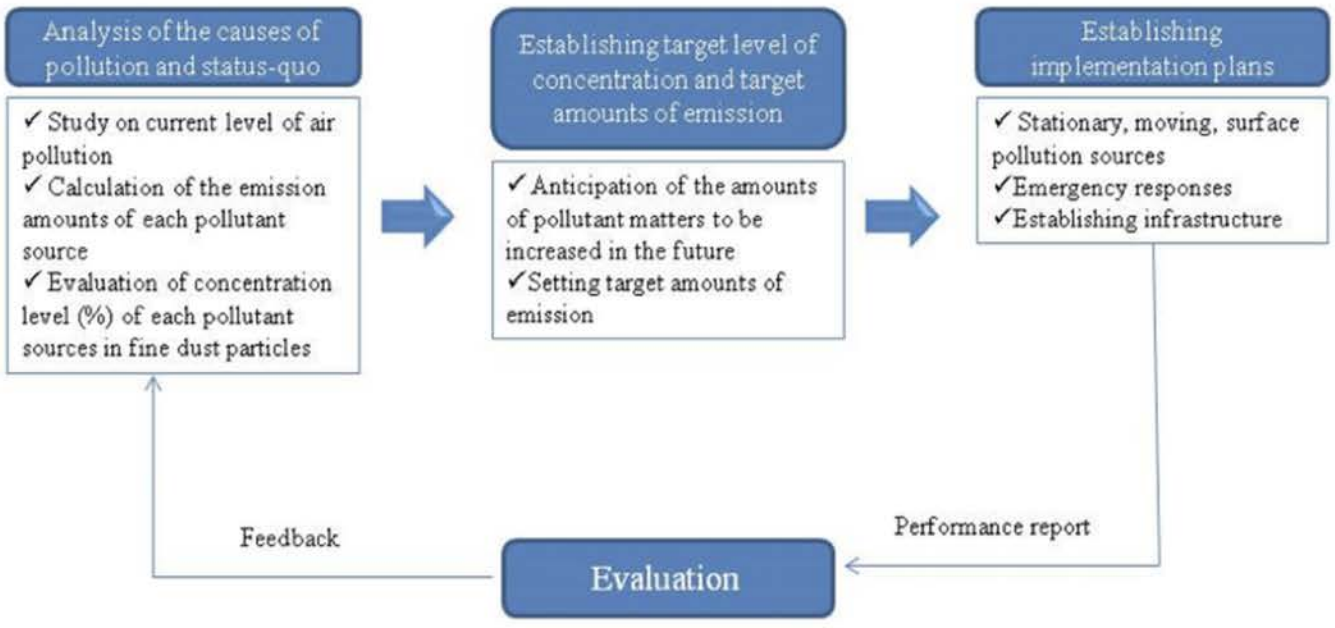


Figure 1. Establishment of management plans for fine dust and implementation process.
Source: Board of Audit and Inspection, Korea

Therefore, in order to oversee the government's implementation of its plan for fine dust, it is a requisite for BAI auditors to be able to inspect scientifically what the pollution sources are and examine systematically whether the implementation plans are effective and efficient. To this end, BAI auditors approached this issue in the following ways.

First, the auditors took a linear approach. They reviewed the whole process of the policy cycle step by step from design, execution, to performance evaluation, to see how each step was implemented as time progressed. This approach can also be interpreted as a vertical analysis, in the sense that it analyzes the implementation plans of all parties, from the most top-tier level to the working-level, and how the plans were implemented and checked by them.

To make this approach successful, BAI auditors: (a) probed scientifically the accuracy of evidence materials used for establishing the comprehensive plan of MoE, in close cooperation with expert groups, including academic societies; (b) evaluated the actual implementation of each level's plan through interviews with the public officials in charge of implementing the plans; (c) identified problems and difficulties in the plans through exchanging feedbacks with the public officials; and (d) took a survey to realize citizens' awareness on fine dust management issues, held workshops with non-governmental organizations to understand how the public policies for managing fine dust were being thought by the society, and then utilized the results to set up the main focus for this audit.

Second, the auditors took a point analysis approach. It was to identify the difficulties, if any, in the process of implementation to examine the effectiveness of each fine dust policy, and to find solutions for improvement. This approach can also be interpreted as a horizontal analysis, in the sense that all stakeholders of fine dust policies should gather to give their opinions on the implementations of government policies and share the performance of the policies.

To make this approach successful, BAI auditors: (a) conducted a poll among the public officials of central and local governments on the structural difficulties with implementing each policy and possible ways to improve them; (b) held workshops with the public officials to hear about structural difficulties with implementation of fine dust policies and possible solutions; and (c) organized two workshops, one with businesses with air pollutant-emitting facilities and the other with specialized environmental construction businesses, to identify the problems around the policies of the MoE found by them on-site, and hear from them whether the problems can be overcome using the current available technology. Based on the results of these efforts, the main points to check in this audit were established.

In order to set up a questionnaire for performance auditing using these two approaches, BAI auditors analyzed the progress of the policy cycle, from design to execution, to identify potential risks of each phase of the policy cycle. The questionnaire was prepared to: (a) secure the accuracy and timeliness of background data used in the public policies for managing fine dust; (b) examine the reliability of the anticipated effects of government plans; and (c) look into the basis of performance evaluation used in executing the plans and check whether any supplementary plans were established to improve flaws or problems of implementation plans.

Category	Approach	Risk Point	Questionnaire
Planning	Linear approach	Accuracy of background data for the policy	Is the accuracy of the emission amounts of each pollutant source, which are the basis of government plans for managing fine dust, constantly checked and secured?
Pollution source management	Point analysis approach	Effectiveness of policies	Is there a systematic follow-up management mechanism for checking those vehicles retrofitted with diesel particulate filters?

Table 1. Example of how a questionnaire is set for performance auditing. Source: Board of Audit and Inspection, Korea

Audit Results and Recommendations

As a result of auditing the government's policies for managing fine dust with the aforementioned two approaches, it was found that it is still difficult for ordinary citizens to feel the effectiveness of the government policies for reducing the concentration of fine dust in the air, because even if the government spends an immense amount of budget in controlling the domestic situation, there were still limitations, as 50% of the fine dust comes from abroad.

In this audit, it was demonstrated that the MoE applied correct data of emission amounts of pollutant sources in establishing their plans for reducing fine dust. It was as accurate as the cases of other countries. However, there were some flaws in certain parts of the government's plans. For example, some pollutant sources were omitted, some target amounts of emission were under-estimated due to the inaccuracy of source data; some of the individual implementation plans were executed without verifying the effectiveness of the plan; and it became difficult to expect effectiveness of some implementation plans due to the lack of proper follow-up management. Details of these problems are shown in Table 2.

Category	Approach	Main flaws and solutions
Establishment of implementation plans and management mechanism	Linear approach - Whole policy cycle, from policy design to execution, was reviewed to analyze risk factors of each phase of the policy cycle.	- Some of the emission amounts of pollutant sources were calculated inaccurately and untimely → The calculation system for emission amount should be improved. - The comprehensive management plan for fine dust contained improper implementation plans → The comprehensive plan should be revised.
Management plans for each pollutant source	Point Analysis - The effectiveness and efficiency of each implementation plan were examined to analyze the causes of problems and find solutions for improvement.	- The effectiveness of managing old diesel vehicles is not secured → The follow-up management plan should be improved. - The effectiveness of the plans for reducing fine dust in subway stations and at schools was not verified sufficiently → Implementation plans should be improved after verifying the anticipated effects of the plans.

Table 2. How audit results were drawn from each approach. Source: Board of Audit and Inspection, Korea

Lessons Learned and Conclusion

In conducting performance audit of government environmental programs, it is useful and proper to employ both the linear approach and point analysis approach. The linear approach enables auditors to analyze each phase of the policy cycle, whereas the point analysis makes it possible to analyze the effectiveness and efficiency of each implementation program.

When employing these approaches in auditing, it is important to keep in mind that auditors should have full knowledge of given audit subjects, engage external experts directly and indirectly in the process of audit, and identify problems based on scientific analysis to establish alternative solutions.

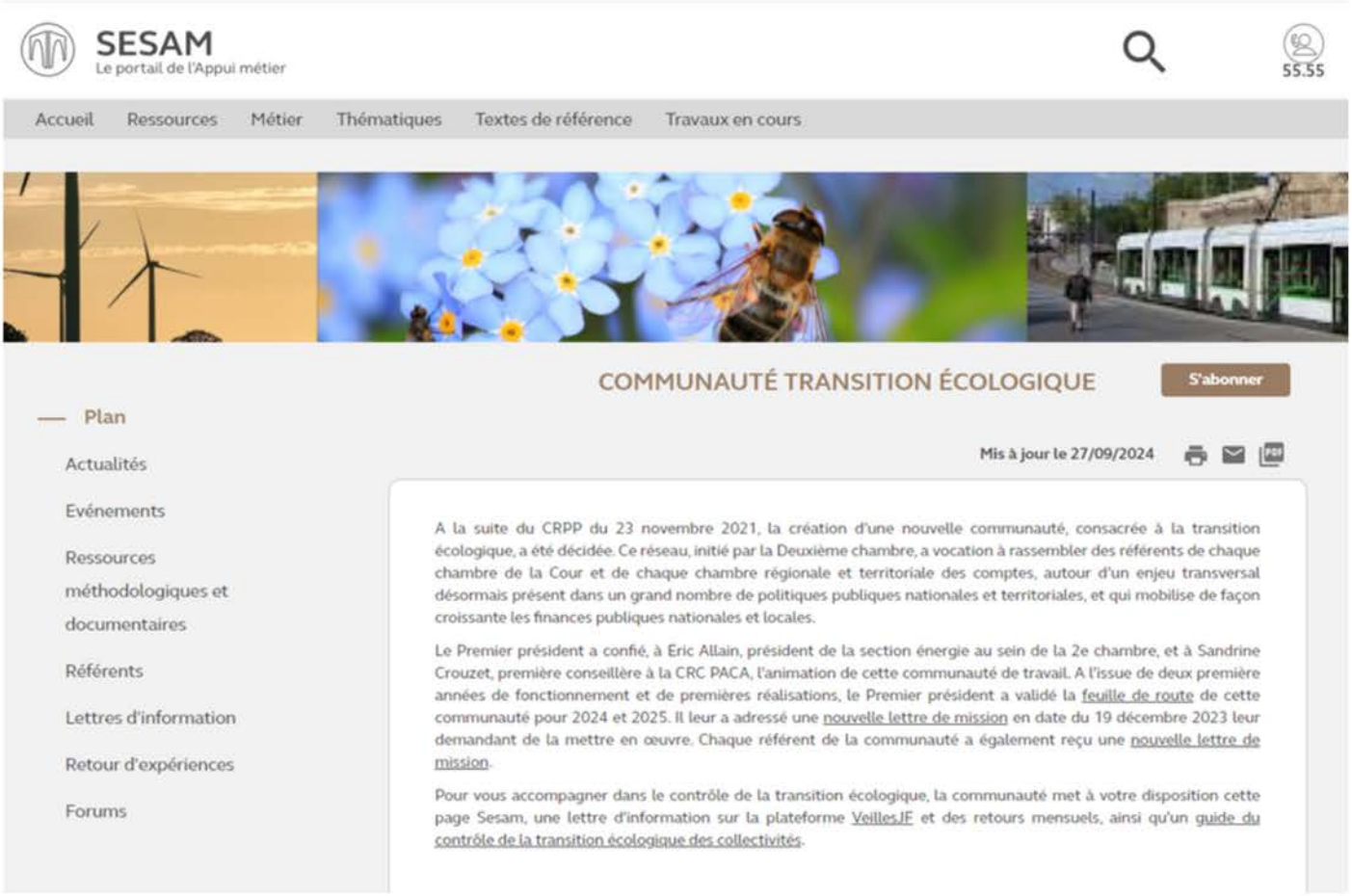
Source: Adobe Stock Images, Jiw Ingka

An "Ecological Transition Community" fuels the French Cour des Comptes with Tools

By Éric Allain, Senior auditor, President of the Energy Division, and Sandrine Crouzet, Regional Audit Chamber First Advisor.

Considering the rise in environmental concerns and the growing importance of ecological transition issues in all national and local public policies, the French Cour des comptes, the supreme audit institution (SAI) that forms the financial jurisdictions with the regional and territorial audit chambers (CRTCs), has organized with the latter to strengthen the relevance of their audit and assessment work in these areas, which already account for a growing share of their scheduled work.

While the aim is to step up the pressure of audits on these subjects, which represent growing public financial stakes (in terms of budget spending, taxation, but also "ecological debt"), it is also necessary to strengthen auditors' capabilities on these complex, sometimes controversial subjects. An original approach has been taken, in the form of an "Ecological Transition Community" (ETC).



The ecological transition community has a portal on the financial jurisdictions' intranet. Source: French Cour des comptes

The financial jurisdictions' ecological transition community was created in February 2021 with the aim of promoting and fostering ecological transition control, whether at the level of the French Court's chambers or CRTCs.

The community is made up of two co-leaders, one a magistrate at the Court and the other at the CRTC, and referents (or representative) within each chamber (Court and CRTC), the General Prosecutor's Office and each of the Court's support departments.

Cour des comptes — Chambres régionales & territoriales des comptes

Lettre d'information

COMMUNAUTÉ TRANSITION ÉCOLOGIQUE

vendredi 27 septembre 2024

N°31 - Septembre 2024

La lettre de la Communauté Transition écologique vous propose tous les mois les actualités sur le sujet.
Eric Allain, président de la section énergie au sein de la 2ème chambre, et Sandrine Crouzet, première conseillère à la CRC PACA, responsables de l'animation de cette communauté de travail.
Documentaliste référent : Olivier Le Cocguen

Un document à faire connaître, une information à signaler ?
communautetransitionecologique@ccomptes.fr

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Décarbonation de l'industrie
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Adaptation au changement climatique
Ressources naturelles

Transition écologique

Un nouveau ministère de la Transition écologique élagué et recentré sur l'énergie

Si son intitulé est rallongé, son périmètre, lui, a bien diminué. Le nouveau ministère de la Transition écologique, de l'Énergie, du Climat et de la Prévention des risques est occupé par Agnès Pannier-Runacher. À l'image de sa ministre, il est fortement marqué par la problématique énergétique quitte à délaisser les éléments clés de la transition écologique comme le logement, le transport ou encore la cohésion des territoires qui ne dépendent plus de lui.

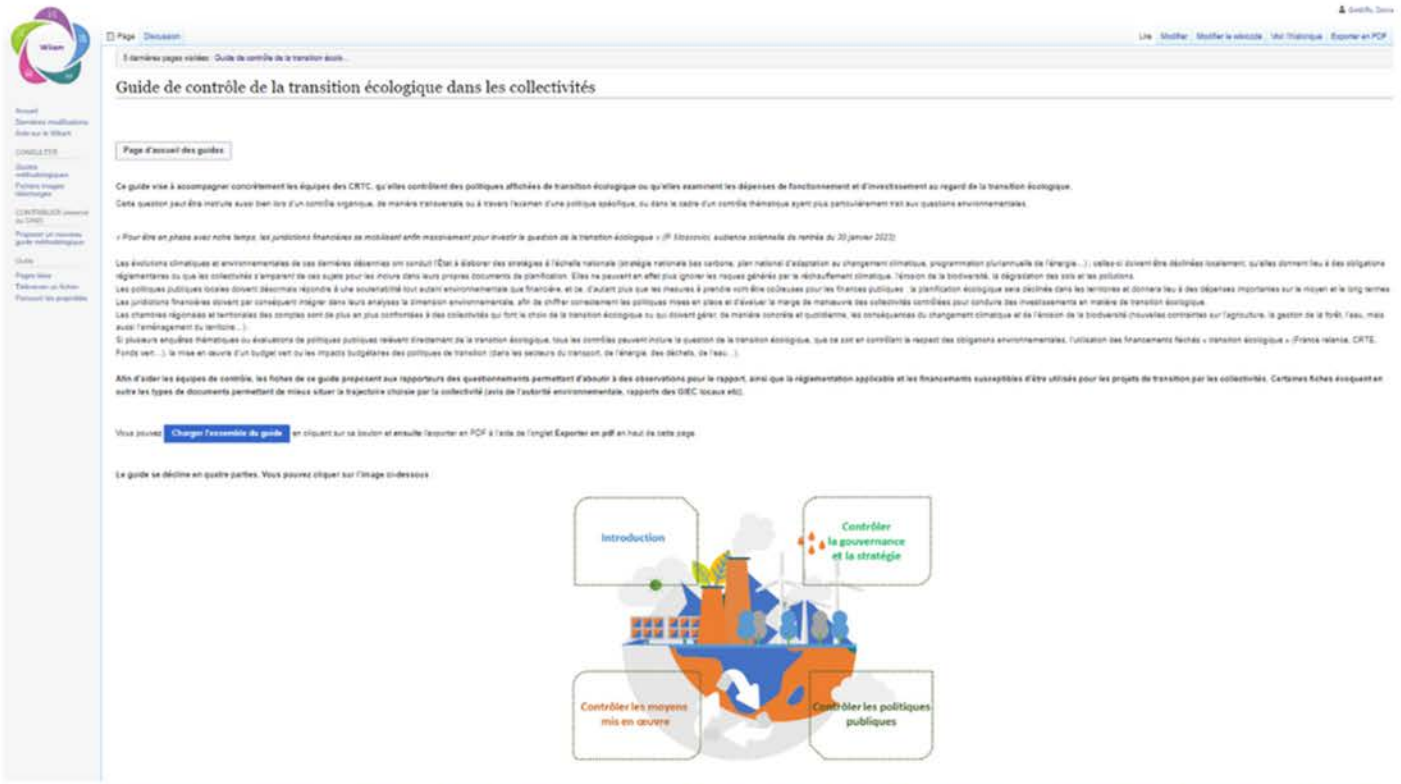
Source : *Acteurs Publics - lundi 23 septembre 2024*

Michel Barnier déconnecte le secrétariat général à la planification

The ETC publishes a monthly newsletter. Source: French Cour des comptes

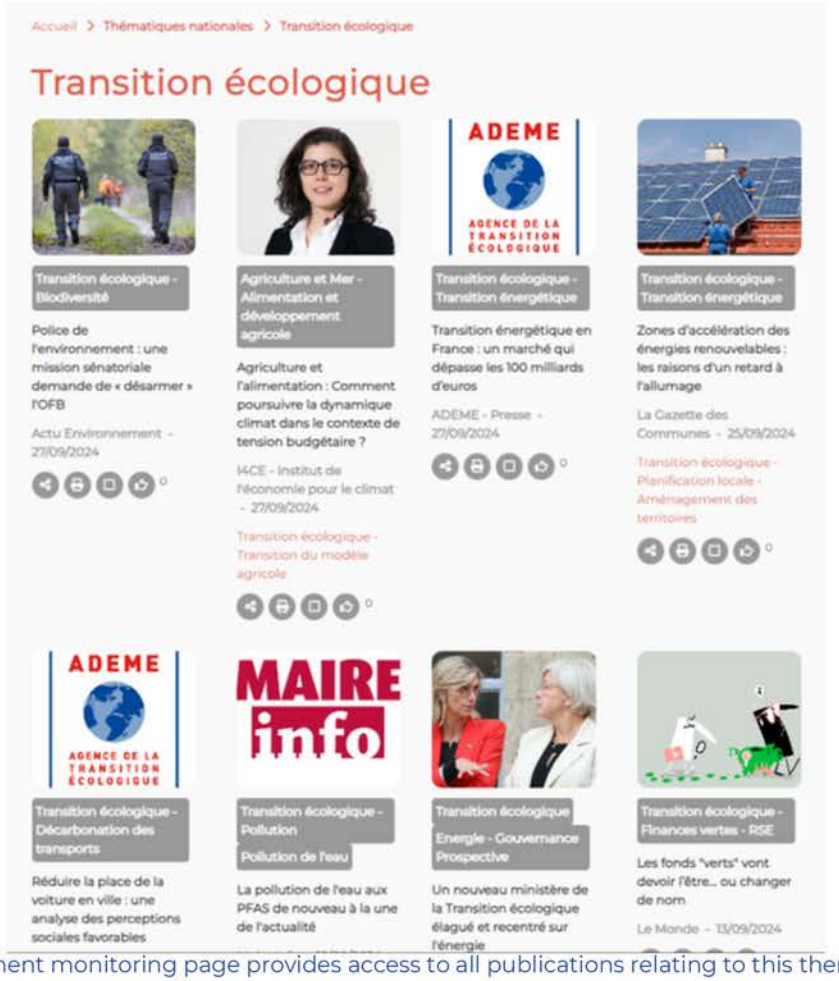
Meeting on a monthly basis and also divided into working groups, the ecological transition community provides all control teams with tools to help them better master the challenges of ecological transition and include this cross-functional dimension in their controls:

- A monthly newsletter, with articles on the ecological transition, global warming, decarbonization of several sectors (energy, agriculture, transport) and regional planning for the transition;
- Feedback from audits in the form of meetings/video conferences/other events held at the Court or at CRC on an area of ecological transition. This monthly feedback is open to all;
- A guide in "wiki" format that is collaborative, for auditing the ecological transition of local authorities. Each of the guide's sheets sets out the issues at stake in the topic covered, recalls the regulatory obligations for carrying out a regularity audit, and proposes a questionnaire that can be reused by audit teams. The guide also presents a methodology for integrating the transition audit into all the aspects usually present in an audit of accounts and management (financial analysis, human resources, budget steering, assets). The guide has been available to audit teams since November 2023.



The “wiki” collaborative guide to auditing the ecological transition in local authorities includes sheets offering audit teams questions to help them make observations for their report, as well as the applicable regulations and funding that may be used for transition projects by local authorities. Some of the sheets also mention the types of documents that can be used to better situate the trajectory chosen by the local authority. Source: French Cour des comptes

- Conferences or webinars, two or three times a year, during which external speakers present financing mechanisms for the ecological transition, think-tank reports on the subject, evaluation mechanisms, etc.
- Training, in conjunction with the job-support center, either on the ecological transition itself or on sectoral ecological transition control methods
- A documentation area for easy access to all these tools.



The ETC's intranet document monitoring page provides access to all publications relating to this theme. Source: French Cour des comptes

The ETC works continuously to improve existing tools: the format chosen for the control guide allows for the addition of sheets, links with other thematic control guides including sections on the ecological transition, and regular updating of regulatory references. A working group, made up of referents and non-referents, drafts and reviews the sheets on a collegial basis.

The more recent creation of two other working groups is increasing the community's thinking on transition control:

- an "international" working group, with the participation of the Court's international department, will identify the methodologies and best practices applied in other supreme audit institutions, interview foreign experts and strengthen the participation of French financial jurisdictions within INTOSAI and other international institutions gathering SAIs, as well as in existing partnerships;
- a think-tank on environmental accounting and green budgets has also been set up, with the aim of looking into control methods that are still little-known today*(1)* and joining in current discussions on how to take account of the ecological transition in accounting.

(1) The French government has had an environmental assessment of the finance bill since 2020, and local authorities will have to produce an appendix of the same type as of their 2024 administrative accounts.

Since the creation of the community, the number of referents per chamber has increased (up to three referents appointed by the Chairman of the Chamber). Some CRTCs have also set up internal ecological transition centers. Their role is to propose audits on this theme in their chamber's programming, to support colleagues wishing to introduce an ecological transition component into their audits, and to set up in-house training programs to enhance agents' skills.

The work carried out over the past two years by the ecological transition community, now well identified within the financial jurisdictions, will serve as a basis to facilitate everyone's work with a view to the annual report on ecological transition, announced by the First President of the Cour des comptes and scheduled for publication in September 2025. This prospect encourages the community to refine its tools and promote local training through referents.

The increase in the number of referents, as well as in the number of participants in the monthly feedback sessions, demonstrates the growing interest of our colleagues in these issues. In this sense, the community has achieved part of its objectives: it has demonstrated that transition control is not the exclusive domain of certain control teams, but can, and indeed should, be practiced by all; it has strengthened the capacity for action of financial jurisdictions in this field. These efforts must be maintained to ensure that the ecological transition becomes as systematic an area of control as human resources, financial analysis, gender equality or real estate policy. The next step will be to make the ecological transition not just an area of control, but a cross-cutting issue in all aspects of financial and management controls, and in all public policy evaluations.

The authors, Éric Allain, Senior auditor, President of the Energy Division (left), and Sandrine Crouzet, Regional Audit Chamber First Advisor (right). Source: French Cour des Comptes

Source: Adobe Stock Images, Jiw Ingka

Applying Strategic Foresight in Performance Audit: Case Study of Audit of Energy Transition in Indonesia

Authors: Pemut Aryo Wibowo, Normas Andi Ahmad, Audit Board of the Republic of Indonesia

Abstract

Future uncertainty, driven by factors such as climate change, technological advancements, and global dynamics, poses challenges that require organizations and governments to adopt more flexible, adaptive, and resilient approaches to planning. SAIs play a crucial role in addressing climate change and future uncertainty by providing insights into the effectiveness of climate-related initiatives and fostering greater accountability and transparency. Strategic foresight in auditing is essential for anticipating and preparing for future uncertainties, enabling organizations to navigate risks and opportunities proactively.

Applying a six-step foresight framework in auditing the energy transition, particularly in the electricity sector, allows auditors to evaluate progress, identify gaps, and provide recommendations for more sustainable and resilient energy policies. By integrating strategic foresight into auditing practices, organizations can better prepare for the complexities of a rapidly changing world and build resilience against future uncertainties.

I. Role of SAIs in Addressing Climate Change and Future Uncertainty

Climate change is one of the factors that exemplifies a powerful force driving future uncertainty. The unpredictability of climate-related events, such as extreme weather, rising sea levels, and shifting ecosystems, introduces a level of uncertainty that challenges traditional models of planning and decision-making. As these factors interact with other global challenges like geopolitical tensions and technological advancements, the future becomes increasingly difficult to predict, making it essential for organizations and governments to adopt more flexible and adaptive approaches to planning.

Supreme Audit Institutions (SAIs) play a pivotal role in addressing the challenges posed by climate change and future uncertainty. As independent entities tasked with evaluating government policies and expenditures, SAIs are uniquely positioned to assess the effectiveness of climate-related initiatives and ensure that public resources are being used efficiently and effectively (INTOSAI, 2019). In the face of growing uncertainty, SAIs can provide critical insights into how well governments are preparing for the impacts of climate change, from mitigation efforts to adaptation strategies. SAIs can also foster greater accountability and transparency in how governments address climate change and manage uncertainty. Through rigorous audits, they can hold governments accountable for their commitments to climate action, ensuring that targets are met and resources are not misallocated.

The Audit Board of the Republic of Indonesia (BPK), as the nation's supreme audit institution, plays a vital role in promoting effective climate governance and management. In a country as diverse and dynamic as Indonesia, addressing climate change while maintaining a balance between economic growth, social progress, and environmental sustainability is a significant challenge. BPK actively engages in this complex task by ensuring that climate-related policies and actions are both effective and aligned with the principles of sustainable development. By conducting thorough audits of climate initiatives and policies, BPK provides a crucial oversight function that helps to ensure that Indonesia's approach to climate change is both robust and equitable.

As organizations face complex challenges such as technological disruption, climate change, and shifting geopolitical landscapes, there is a growing need for audits that not only assess the present but also anticipate the future (Butaka, 2022). This is where strategic foresight becomes invaluable, offering a proactive approach to auditing that enables organizations to navigate uncertainties and align their strategies with potential future scenarios. By integrating foresight into the audit process, auditors can identify emerging risks, trends, and opportunities that may impact the organization in the long term (Hay, 2019). This proactive approach helps auditors to not only assess current performance but also to evaluate how well an organization is positioned to adapt to future challenges.

II. Strategic Foresight in Auditing

One of the strategic foresight frameworks is the six-step foresight framework developed by Hines and Bishop (2007). This framework is compatible with auditing process as it offers enhanced decision-making by providing insights into the long-term implications of different scenarios on targets achievement and organizational operations, thereby ensuring that the organization remains resilient and adaptable over time (Kramer, 2023). The process begins with framing, where the main issues and scope, considering the broader context of the government's strategic goals and the uncertainties it faces, are defined. This step sets the stage for scanning, which involves gathering information from various sources to identify trends, signals, and emerging issues that could impact the government or institutions. Scanning process helps auditors to build a comprehensive understanding of potential future developments, enabling them to identify relevant risks and opportunities that may not be apparent through traditional auditing methods. It provides a more organized perspective on the major trends and shifts happening in an organization's environment, helping to inform policy decisions (Habegger, 2010).

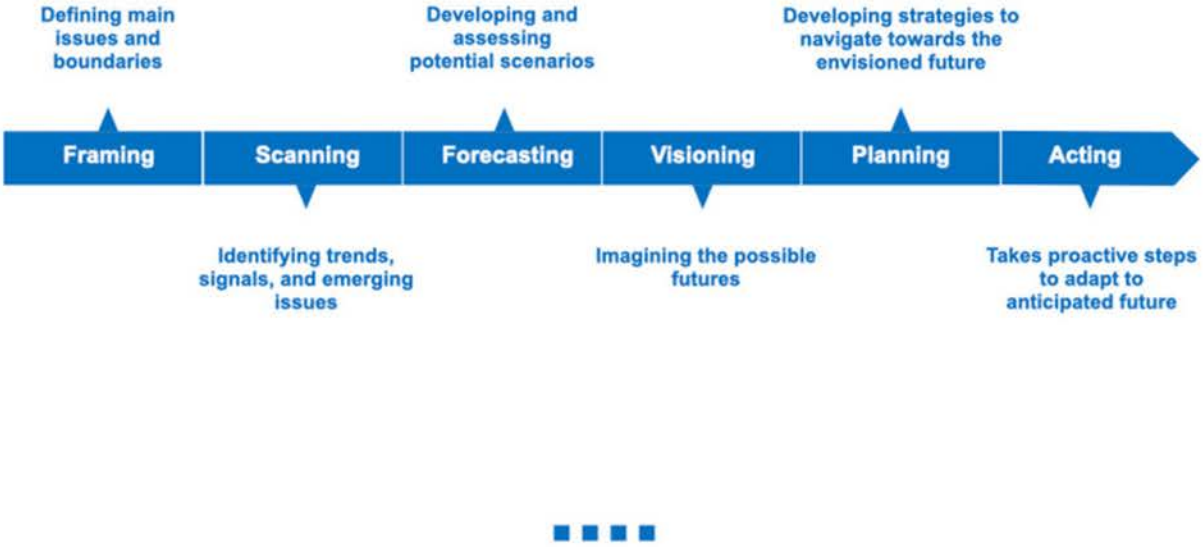


Figure 1. Six-Step Foresight Framework (Adopted from Hines and Bishop, 2007). Source: Wibowo and Ahmad

The next steps, forecasting and visioning, involve developing potential scenarios based on the information gathered and imagining the possible futures. Moreover, forecasting can be used to assess the scenarios to predict how different variables might affect the achievement of the strategic goals (FasterCapital, 2024). Visioning, on the other hand, helps auditors and stakeholders to articulate a desired future state, considering the best-case scenarios. Planning then involves developing strategies to navigate towards the envisioned future, including risk mitigation and resource allocation. Finally, acting is the implementation phase, where the government and institutions takes proactive steps to adapt to anticipated changes. By integrating this foresight framework, auditors can move beyond retrospective analysis, providing valuable insights that help organizations to be resilient and adaptive in the face of uncertainty.

III. Applying Strategic Foresight in the Audit of Energy Transition

Energy sector is the largest contributors to global greenhouse gas emissions, making it a focal point in the fight against climate change (Climate Watch, 2024). Energy transition is a critical pathway to mitigating climate change, representing a shift from fossil fuel-based energy systems to more sustainable, renewable sources. In Indonesia, the energy sector accounted for 59.19 percent of the country's greenhouse gas emissions in 2022, with power generation contributing 40.7 percent of the emissions within the energy sector (Ministry of Environment and Forestry, 2024).

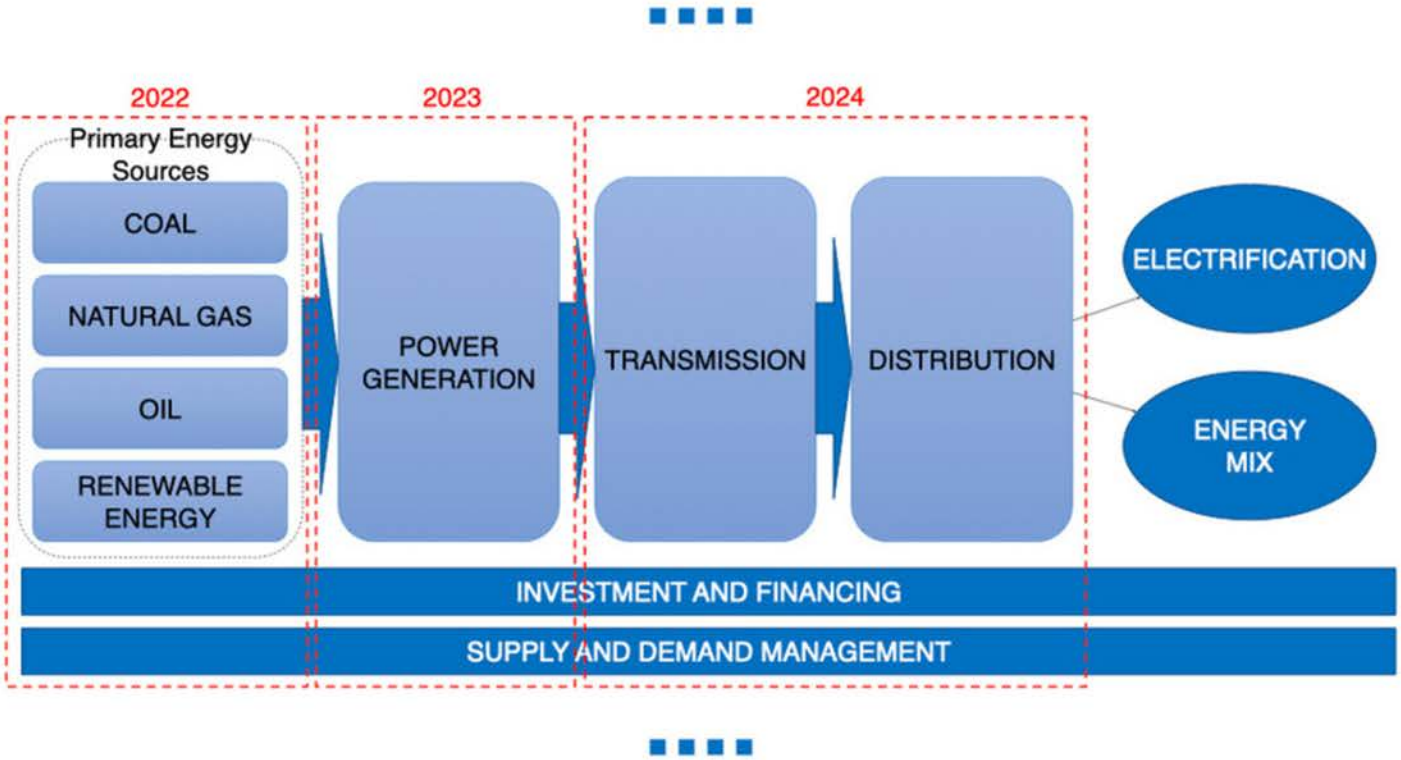


Figure 2. Electricity Management and Development in Indonesia. Source: Wibowo and Ahmad

The implementation of strategic foresight framework in performance audit is piloted in the audit of energy transition, especially in power generation. The foresight process will involve a series of audits starting from 2022 to 2024 and the comprehensive foresight on energy transition is expected to be issued in 2025. In the first year, the audit concentrated on the management of energy sources, including coal, natural gas, and renewable energy, to assess how well these resources are being utilized and managed. The second year focused on power generation and the final year will be focused on transmission and distribution.

In the framing stage, the main objective and scope of energy development are defined. They include key stakeholders, potential risks, and the specific aspects that need scrutiny, such as policy implementation, infrastructure development, or financial investments. The balance among the three aspects of the energy trilemma—energy security, energy affordability, and environmental sustainability—is also considered as one of the main issues. The process is then followed by scanning, where influential data are gathered from various sources, which include technological trends, geopolitical risks, regulatory changes, and environmental impacts. This comprehensive information gathering helps in identifying emerging issues, opportunities, and challenges that could influence the energy transition. In the forecasting phase, auditors analyze the gathered data to assess potential future scenarios, considering different paths the energy transition might take. These scenarios are then used in the visioning stage to outline desirable future states, helping to set long-term goals that align with energy transition objectives and national energy policies.

The audit result is expected to positively influence the actionable strategies to achieve the envisioned outcomes, incorporating risk management and resource allocation in the planning stage. Finally, in the acting stage, auditors monitor the implementation of these strategies and recommendations, providing feedback and making adjustments as needed to ensure that the energy transition progresses smoothly and effectively, while also meeting regulatory and sustainability targets. The final results of the series of audit will then be compiled into a comprehensive report that provide a strategic foresight of Indonesia's energy transition to address climate change.

Figure 3. Strategic Foresight Integration in the Audit. Source: Wibowo and Ahmad

IV. Results and Analysis

For the first year, the audit produced forward-looking and future-oriented results that emphasize the need for strategic adjustments to current energy policies (BPK, 2023). The audit revealed that while there has been notable progress in adopting sustainable energy system, existing infrastructure and regulatory frameworks may struggle to accommodate the rapid changes expected in the near future. The potential gaps and rooms for improvement that highlighted in the audit include:

1. Potential increase in energy subsidies that needs to be mitigated due to the anticipated shift towards renewable energy, which is likely to elevate electricity production costs. Given that the electricity sector in Indonesia is still subsidized by the Government and assuming there will be no tariff increases in the near future, this rise in production costs would significantly impact the subsidy amount required. Without adjustments to tariffs, the Government would need to allocate more resources to cover the higher generation costs, thereby increasing the financial burden of subsidies.

2. Despite several commitments made toward financing the energy transition in Indonesia, there remains a significant gap in identifying and mobilizing the necessary funding schemes and sources for key projects. The Government has yet to specify how it will finance the early retirement of coal power plants, a critical step in the transition process. Furthermore, a comprehensive analysis of the energy transition's impact on state finances has not been undertaken. This lack of clarity and planning around funding and financial impacts poses challenges to the successful implementation of Indonesia's energy transition goals, potentially hindering progress and long-term sustainability.

3. Early coal retirement initiative lacks a thorough cost and benefit analysis, which is crucial for evaluating its long-term viability and impact. The initiative has not adequately considered alternative energy sources, including their reliability and affordability, which are essential for ensuring a stable energy supply post-transition. Additionally, the potential issue of stranded assets resulting from the retirement of coal power plants has not been fully addressed. Without these critical evaluations, the initiative risks creating economic and energy security concerns that could undermine its intended benefits.

4. According to the Net Zero Emission roadmap, a significant portion of future economic activities in Indonesia is expected to be powered by solar panels. However, a critical dependency on foreign imports is identified, with about 70 to 80 percent of solar power plant components still being sourced from other countries. This reliance highlights a significant gap in the domestic industrial capacity, as local industries are not yet prepared to produce the necessary components to support the large-scale development of renewable energy in Indonesia. The lack of domestic production capabilities not only raises concerns about supply chain vulnerabilities but also limits the potential economic benefits of the energy transition, such as job creation and technological advancement within the country.

5. The progress of electricity infrastructure development has been delayed, raising concerns about the stability and reliability of the electrical system in several regions. The predictive analysis indicates that if this slow pace of development continues and is not effectively mitigated, it could severely impact the security of the electrical grid. Insufficient infrastructure development could lead to power shortages, disruptions, and an inability to meet rising energy demands, especially as the country transitions to renewable energy sources.

The audit contributed valuable insights that help define the main issues and scope of the energy transition and identify key issues and information that need to be considered. By leveraging data and findings from audits, the process is better equipped to pinpoint emerging risks, opportunities, and trends. The audit results also play a crucial role by offering data-driven analyses that aid in predicting future challenges and opportunities. Ultimately, the outcomes of BPK's audits inform the development and implementation of strategies, ensuring that they are aligned with the strategic goals and sustainability principles.

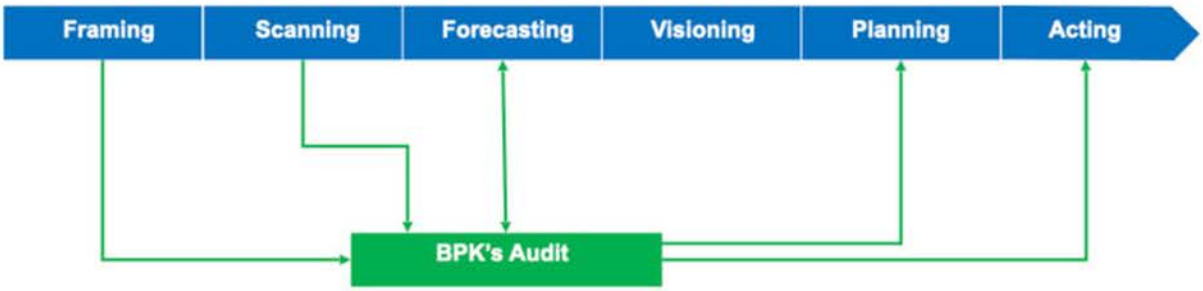


Figure 4. Linkage Between the Audit and Foresight Framework. Source: Wibowo and Ahmad

V. Conclusion and Way Forward

The pilot audit demonstrated that integrating the six-step strategic foresight framework into the auditing process significantly enhances decision-making capabilities. This approach not only offers valuable insights into the long-term implications of various scenarios on target achievement and organizational operations but also strengthens the organization's ability to remain resilient and adaptable over time. By aligning audit outcomes with forward-looking perspectives, organizations can better anticipate and prepare for future challenges, thereby improving the overall effectiveness of their strategic planning and execution.

Given the success of the pilot audit, the subsequent audits are expected to assess other critical aspects as well as to monitor the implementation of recommendations of previous audit. The use of this approach is expected to provide a more robust and comprehensive foundation for understanding the complexities and future impacts of energy transition on strategic state goals. Following the completion of these series of audits, a comprehensive foresight report will be compiled and launched, offering an in-depth analysis of the findings and their implications. This report is expected to serve as a critical resource for guiding future decisions and strategies, ensuring that the organization is well-positioned to navigate the evolving energy landscape. By synthesizing the insights from the audits, the report will offer actionable recommendations that align with emerging trends, helping the government to proactively address challenges and seize opportunities in the dynamic energy sector.

About the Authors

Mr. Pemut Aryo Wibowo

Mr. Wibowo holds a master degree in accounting from Gajah Mada University. He is currently the Director of Audit in the Audit Board of the Republic of Indonesia who is responsible for overseeing audits on energy, environment, and natural resources management.

Mr. Normas Andi Ahmad

Mr. Ahmad is a senior auditor who has a Masters degree in Environment and Sustainable Development from Glasgow University. He is experienced in leading teams of audit on energy and natural resources management, as well as SDGs related audits.

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Source: U.S. GAO

Leaders as Teachers: The U.S. GAO's Adjunct Faculty Program Expands Auditors' Capacities

Author: Kevin Copping, Adjunct Faculty Program Manager, U.S. GAO

Docendo discimus." When we teach, we learn. Has your Supreme Audit Institute (SAI) considered developing a "Leaders-as-Teachers" program?

Under a Leaders-as-Teachers program, experienced analysts and auditors step into the classroom to teach newer staff how to perform key audit tasks. Effective teaching by experienced auditors who have "been there and done that" helps staff to learn, remember, and, most importantly, apply the course material. Building on adult learning principles that adults learn best when they are interested and involved, instructors facilitate discussion of the material through thoughtful, probing questions and they teach using dynamic, on-point lectures, vivid language, illustrative examples, and storytelling with messages that stick. The result is curious, engaged learners who are excited to learn more about the topic.

When an SAI implements a Leaders-as-Teachers program, instructors hone their competencies in collaboration, influence, and inclusiveness; newer staff feel more engaged and learn SAI-specific skills and knowledge; and the SAI benefits from the organizational growth that comes from fostering a culture of learning.*(1)* SAIs also benefit because their training centers do not need to detail staff away from audit work for long periods of time or seek outside contract support to teach the classes.

The U.S. Government Accountability Office (GAO) has had a Leaders-as-Teachers program, or "Adjunct Faculty Program," in place for nearly 20 years. Under this program, more than 200 certified instructors teach classes on topics ranging from internal controls and report message development to thinking on your feet in difficult situations and providing effective feedback. GAO's instructors also teach courses on leadership; applied computer skills; research methods; and other cross-cutting professional topics. Unlike in a train-the-trainer program in which instructors learn how to teach specific content, instructors come to the Adjunct Faculty program with expertise on a particular subject matter but focus on becoming proficient in adult learning theories and teaching techniques that they can apply in multiple courses.

It all starts with GAO's learning culture. To meet GAO's Government Auditing Standards (the "Yellow Book") requirement that all of GAO's 2,580 analyst staff obtain continuing professional education credits every year, GAO's Learning Center develops in-person, virtual, and hybrid courses that range from 1 to 16 hours; e-learnings; training materials; tip sheets; and more. In GAO's fiscal year 2023, the Learning Center sponsored more than 800 class sessions. While Learning Center staff and contractors teach some classes, more than half of the classes are taught by certified instructors in the Adjunct Faculty Program.

To solicit staff to be instructors, the Adjunct Faculty Program Manager*(2)* conducts a yearly "Open Season" process in which interested staff with relevant expertise obtain management approval and submit an application that details their interest in teaching. The Learning Center then selects qualified staff to enter the program. To prepare staff to teach, the Adjunct Faculty Program requires participation in a 10-hour course on adult learning theory and techniques, taught by the Adjunct Faculty Program Manager, over 2 days. The instruction focuses on four performance standards: setting the stage for effective learning, presenting information in an easy-to-understand manner, facilitating participation so that participants are actively involved in their learning, and managing classroom challenges with poise.*(3)* The participants then try out their teaching skills in a practicum session in which they teach a 15-minute segment from their "target class" and receive immediate feedback from their peers in the session and from the Adjunct Faculty Program Manager. The feedback is in the form of "glows" that highlight what the instructor did well and "grows" that highlight areas for instructor improvement. In the week following the practice session, the staff view a recording of their session and send the Adjunct Faculty Program Manager their reflections on the session.

Source: U.S. GAO

After completing the training, over the next year, new instructors:

- observe an experienced instructor teach the target class and take notes on the teaching techniques they see in use,
- teach the class once or twice,
- teach again and are observed by the Adjunct Faculty Program Manager or designee for certification based on the performance standards, and
- participate in in a 1-hour coaching and feedback session.

After this session, new instructors are either certified or observed again if they need to improve particular skills. Once certified, instructors are expected to teach at least twice a year to maintain their status. When the instructor has taught 100 hours or more, the instructor can apply for certification as a Senior Instructor.

After the initial training and certification, the Adjunct Faculty Program supports instructors with continuing education opportunities through:

- An Advanced Instruction Curriculum. Instructors can take classes that help them to deepen their knowledge of adult learning theory and sharpen their teaching techniques. Topics for these 1-hour sessions include facilitation techniques, storytelling, effective debriefing, and using evaluations to improve teaching.

- A Lunch-and-Learn Series on Topics in Adult Learning. This is a series of workshops in which one instructor researches an aspect of adult learning and works with the Adjunct Faculty Program Manager to create a session for eight instructor participants. Past topics have included the expert effect, learning myths, the beginner's mind, cognitive science and learning, and emotional intelligence and learning.

- An Instructor Toolbox. The Adjunct Faculty Program has 33 "Instructor Tools" or tip sheets that are available on-demand on the GAO intranet to remind instructors who are preparing to teach about adult learning theories and techniques.

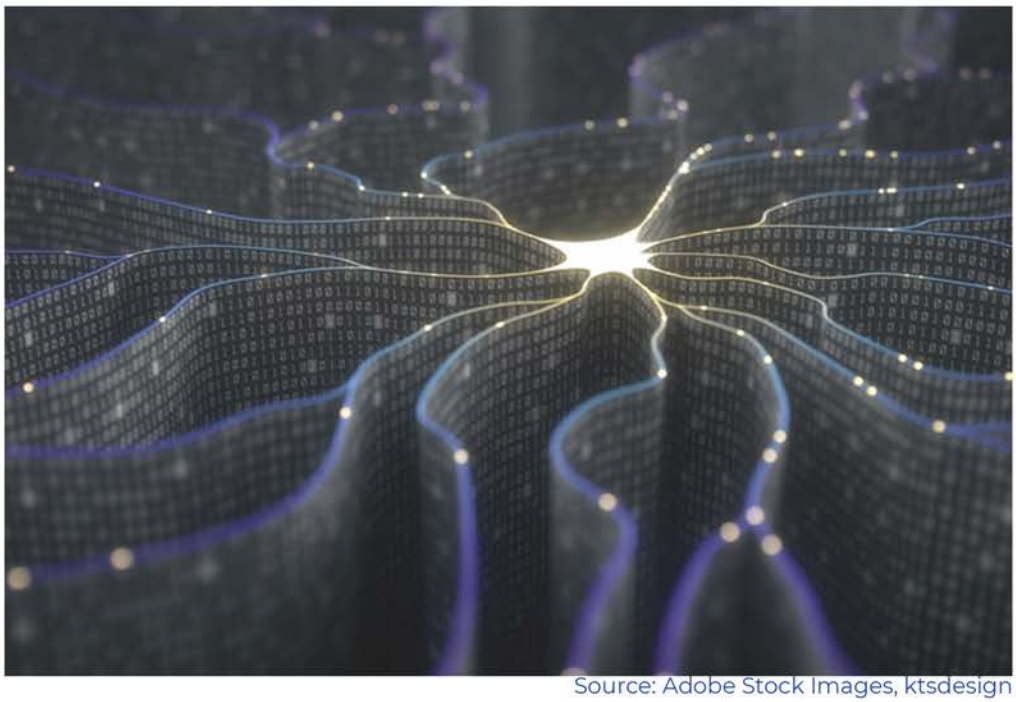
- An Instructor Newsletter. The Adjunct Faculty Program issues a monthly Instructor Newsletter with teaching tips, spotlights on specific Instructor Tools, and links to articles on teaching and program news.

- Opportunities for Feedback, Coaching, and Check-in Observations. Certified Instructors can arrange to be observed any time they teach. In addition, every 3 years the Learning Center's automated learning management system informs instructors that they are due for a "Check-in Observation" when the Adjunct Faculty Program Manager will observe them and provide a feedback and coaching session.

Are you interested in setting up an Adjunct Faculty Program at your SAI? Would you like to see a more detailed program description? Contact Ruth Strande, Chief Learning Officer, U.S. Government Accountability Office by emailing media@gao.gov.

Footnotes

1. Leaders as Teachers, Engaging Employees in High-Performance Learning, The Training Associates in cooperation with ATD Research.
2. GAO's Learning Center has dedicated a full-time Adjunct Faculty Program Manager to administer the program, teach the classes for new instructors, and provide feedback and coaching.
3. Adapted from the International Board of Standards for Training, Performance, and Instruction.



Source: Adobe Stock Images, ktsdesign

Leveraging AI to Transform the Ex-Ante Audits of Government Procurement Contracts

Author: Adnene Maali, State Audit Bureau- Qatar

Role of SAIs in Ex-Ante Government Procurement Contract Audits

In the government procurement process, multiple bodies play a role in ensuring compliance and accountability before contracts are finalized. Government procurement oversight bodies such as ministries, authorities, and other specialized agencies are often tasked with the ex-ante audit or approval of public procurement contracts. They ensure that contracts align with legal requirements, financial thresholds, and tender specifications before they are signed. They often maintain a centralized contracts database, which holds records of procurement agreements from all government entities.

Some Supreme Audit Institutions (SAIs) have the mandate to perform ex-ante audits of procurement contracts. To manage the volume of these contracts efficiently, sampling methods are often employed. Contracts subject to ex-ante audit may be selected based on financial thresholds—for example, contracts exceeding a certain amount—or based on their type, such as those related to public tenders or strategic projects. This approach allows SAIs to focus on high-risk or high-value contracts, ensuring that potential issues are identified early without overwhelming resources.

However, challenges remain. SAIs must perform these audits under time constraints, and coordination with other ex-ante audit entities can lead to conflicting opinions. If a SAI disagrees with another body's prior approval during a post-audit, it can result in delays or legal challenges, especially if significant resources have already been committed. Therefore, while ex-ante audit enhances preventive controls, it requires a strategic and collaborative approach to balance thoroughness with efficiency.

AI as a Transformative Tool in Ex-Ante Contract Reviews

Artificial Intelligence (AI) has transformed how legal organizations and contract-intensive businesses handle agreement reviews. Law firms, for instance, use AI tools like Kira Systems to analyze contracts and flag inconsistencies or legal risks through Natural Language Processing (NLP). Additionally, some government entities have adopted AI algorithms, such as those used by Palantir Technologies, to scan historical procurement data for fraud patterns, like repeated contract winners without competitive bidding. SAIs can apply these AI-driven practices, which are already transforming legal and forensic audits, to revolutionize government procurement contract audits. AI enables SAIs to process vast volumes of data faster and more accurately than human auditors, unlocking several key benefits:

1. **From Sampling to Comprehensive Data Audits:** In many jurisdictions, regulations or procedures limit SAIs to auditing contracts based on financial thresholds, focusing on higher-value contracts due to time and resource constraints. This reliance on sampling leaves lower-value contracts unexamined. AI overcomes these limitations by enabling the review of all contracts, regardless of their value, ensuring full compliance coverage across the procurement process.

2. **Enhancing Compliance and Efficiency:** AI's ability to automatically identify compliance risks, such as non-compliant clauses or missing key terms, improves the overall efficiency of the audit. This enhances the detection of irregularities, allowing auditors to focus on higher-risk contracts that might require further scrutiny. For example, AI systems flag contracts that are missing essential clauses like performance guarantees or liability terms, streamlining compliance checks for auditors.

3. Preventive Fraud Assessment: AI plays a vital role in identifying early red flags that could indicate potential fraud in procurement contracts. By using machine learning algorithms, AI can detect anomalies such as unusual payment schedules, significant deviations in pricing, or irregularities in bidder behavior—warning signs that warrant closer scrutiny. Rather than detecting fraud after it occurs, the ex-ante audit process focuses on identifying these red flags proactively, allowing auditors to address potential risks before they escalate.

4. Proactive, Real-Time Audits: One of the most transformative aspects of AI is its ability to provide real-time monitoring. AI tools can continuously scan newly uploaded contracts, flagging issues as they arise. This proactive approach strengthens risk management, enabling auditors to address potential issues earlier in the procurement cycle rather than waiting for post-contract audits.

5. Valuable Insights for Audit Planning: AI-driven ex-ante audit contract reviews can provide crucial insights that help SAIs better plan their future audits. By analyzing contract data, auditors can identify key risks, control weaknesses, or patterns that can inform the selection of entities for annual audit plans. Additionally, this insight can guide auditors in determining the focus areas for specific audit assignments of the contracting entities, enhancing the overall effectiveness of the audit process.

Source: Adobe Stock Images, TarikVision

Implementing AI in the Contract Ex-Ante Audit Process

SAIs may consider the following steps in implementing AI into the contract ex-ante audit process.

1. Building a Digital Foundation for AI-Powered Audits: The first and most crucial step toward leveraging AI in government procurement audits is the complete digitization of contracts. Transitioning from paper-based contracts to digital formats allows for easier access, centralized data management, and improved transparency. Technologies like Optical Character Recognition (OCR) play a vital role here by converting scanned paper documents into machine-readable text, ensuring that even non-digital contracts can be analyzed by AI systems. The digitization process should ideally be initiated and maintained by procurement oversight bodies, as many local legislations centralize government procurement contract data within these organizations. However, SAIs can act as champions of digitization, urging these stakeholders to initiate and expedite the process to ensure comprehensive and transparent audits. At the same time, SAIs can choose to develop their own digital systems as per their mandate, particularly when such centralized databases do not fully meet their needs or when they require specific features for advanced audits.

2. Enhancing Digital Collaboration Between SAIs and Procurement Oversight Bodies: For Supreme Audit Institutions (SAIs), establishing strong data integration with regulatory bodies is crucial, particularly in accessing centralized procurement data. By setting up electronic linking systems, SAIs can connect directly to databases maintained by the government procurement oversight bodies. This eliminates the need for SAIs to invest significant resources in developing their own databases or working directly with the audited entities, especially when auditing smaller contracts or agencies. Such electronic integration ensures that SAIs can perform real-time audits, access the latest contract data, and focus their resources on higher-value contracts or more complex audits. This streamlined approach enhances audit efficiency while reducing the administrative burden on both auditors and the audited entities.

3. Automated Data Extraction: Once contracts are digitized and direct access is established by SAIs, AI tools can automatically extract essential information—such as contract terms, financial amounts, and involved parties. This capability enables auditors to swiftly identify potential risks and prioritize their efforts on areas flagged by the system. Automating data extraction eliminates the manual and time-consuming process of reviewing contracts for relevant details, allowing auditors to concentrate on high-risk areas that necessitate more thorough examination.

4. AI-Driven Data Analysis: After key data is extracted from procurement contracts, the next step is to utilize this information for comprehensive analysis. AI's capacity to generate detailed statistics, identify patterns, and create visual summaries equips auditors with invaluable insights. By examining large datasets, AI uncovers trends and hidden correlations that may reveal underlying risks or inefficiencies within the procurement process. For instance, AI can pinpoint frequently occurring non-compliant clauses, enabling auditors to focus on potential systemic issues. This thorough analysis offers clear audit trails, facilitating the detection of irregularities and supporting evidence compilation for further investigation.

5**. AI-Powered Anomaly Detection:** AI employs machine learning algorithms to identify anomalies in contract terms, pricing, and clauses that diverge from standard procurement patterns. These deviations may signal potential fraud, mismanagement, or non-compliance with tender requirements. For example, unusual pricing structures, advance payment schedules, or the lack of liquidated damages clauses can be flagged automatically. By effectively highlighting such irregularities, AI ensures that auditors can address these concerns promptly, thereby enhancing the overall scrutiny of procurement contracts.

6. AI-Powered Anomaly Categorization and Alerts: After detecting anomalies in contracts, AI systems can categorize them based on severity, type, and destination. This smart categorization enables the system to automatically notify the appropriate authority—whether it's an oversight body, audit team, or public investigation agency. By assigning responsibility based on the nature of the anomaly, AI ensures that findings are addressed efficiently and by the right experts. For instance, AI could identify a minor contractual inconsistency to be handled by the subject entity, while more serious findings like possible fraud could be immediately escalated to investigative authorities.

Conclusion

The integration of AI into government procurement contracts audit presents a game-changing opportunity for SAIs. By leveraging AI's advanced capabilities, SAIs can not only address long-standing challenges such as resource limitations, audit sampling, and delayed risk detection but also improve the real-time, comprehensive audit process. This shift in approach from post-factum reviews to proactive and preventive strategies enhances public accountability and transparency.

The adoption of AI by SAIs is not just a technical shift but one that could reshape the audit landscape entirely. However, for AI to realize its full potential, existing mandates and legislations governing SAIs must evolve. These frameworks should accommodate AI-driven processes, allowing SAIs to embrace new audit capabilities previously unachievable. By doing so, SAIs will be empowered to enhance their role as custodians of transparency and public trust, leading to more effective oversight of government procurement activities.

INTERNATIONAL JOURNAL

OF GOVERNMENT AUDITING