



GREENLINES

A newsletter of the INTOSAI Working Group on Environmental Auditing

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Message from the Chair



Dear Colleagues,

In this first trimester of 2019, I am pleased to provide you with the latest volume of Greenlines, highlighting WGEA activities in 2018.

The year 2018 was the midway point for WGEA's 2017-2019 Work Plan. During the year, WGEA held the 18th Assembly Meeting in Bandung, Indonesia, and the 16th Steering Committee

Meeting in Prague, the Czech Republic. Both meetings successfully met their objectives, and I am delighted to report to the WGEA community that the various project activities listed in the Work Plan have been progressing very well in accordance with schedule milestones. With us being a step away from accomplishing yet another successful Work Plan, I would like to thank all project leaders, co-leaders, and members for their tireless effort thus far.

To keep the WGEA machine running, the time has come for us to prepare for the new 2020-2022 Work Plan. As agreed at the 2018 Prague meeting, WGEA intends to use the full potential of our products to promote innovative environmental auditing for the years to come. Further discussions on this issue will be held at the 19th INTOSAI WGEA Assembly Meeting in Bangkok on August 5 through 9, 2019. We invite you to bring innovative and fresh ideas on environmental audit projects to the meeting.

Thank you!

Dr. Moermahadi Soerja Djanegara, CPA, CA
Chairman
Audit Board of the Republic of Indonesia

Feature Story

Auditors' Burning Question: Why?

How learning to apply root cause analysis can increase impact of audits



By the Canadian Audit and Accountability Foundation

A government's climate change program is failing to meet international commitments. The risks of an oil spill are not being properly managed. A ministry does not have the data needed to measure the effectiveness of its wildlife conservation efforts. But why?

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Root cause analysis can help ensure lasting solutions

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Environmental audits and other performance audits typically identify a number of deficiencies or weaknesses like these. When they do, the burning question is “why?” Why do the deficiencies occur? Why are entities not in compliance? Why are risks not being managed or intended results not being realized?

Often these types of audit findings are symptoms or manifestations of much deeper, more systemic factors. Analyzing the underlying—or root—causes of observed deficiencies helps to delve below the surface, beyond the symptom, to answer these “why?” questions.

The [Canadian Audit and Accountability Foundation’s](#) (CAAF) new course, “Root Cause Analysis in Auditing,” teaches participants how to apply root cause analysis to produce audits that address these underlying causes—these audits can therefore have a far greater impact.

CAAF’s focus on root cause analysis

At CAAF, we believe that audit offices have an opportunity to add more value to their performance audits by answering this burning question of “why?”

Using root cause analysis, audit offices can develop audit recommendations aimed at correcting the underlying causes of the reported findings or deficiencies. The ultimate goal is to ensure that lasting solutions can be designed and put in place by management so as to avoid repetition, report after report, of the same audit finding.

Our course builds upon our 2014 Discussion Paper, [Better Integrating Root Cause Analysis into Legislative Performance Auditing](#), which itself expands on a concept first presented in another CAAF paper, [How to Increase the Impact of Environmental Performance Audits](#).

“Root cause analysis has been, and will continue to be, a priority area of focus for us,” said John Reed, President and CEO of CAAF. “We strongly believe in the potential of this approach to increase the impact of audit offices’ work.”

We are beginning to see uptake of these techniques in various legislative audit offices, with the Office of the



Participants in the pilot delivery of the CAAF “Root Cause Analysis in Auditing” course for AFROSAI-E.

Auditor General (OAG) of Alberta leading the way in Canada. It was the OAG of Alberta that first inspired our work in this area, and the OAG took part in the development of the Discussion Paper and the course.

Like all of our training offerings, this new course was developed by auditors, for auditors, and is grounded in CAAF’s research and methodology. With the Discussion Paper as our starting point, a team of audit experts from across Canada convened to share ideas for the course contents and exercises. We then held pilot deliveries of the course for the OAG of Alberta and AFROSAI-E, testing the course materials for both Canadian and international audiences.

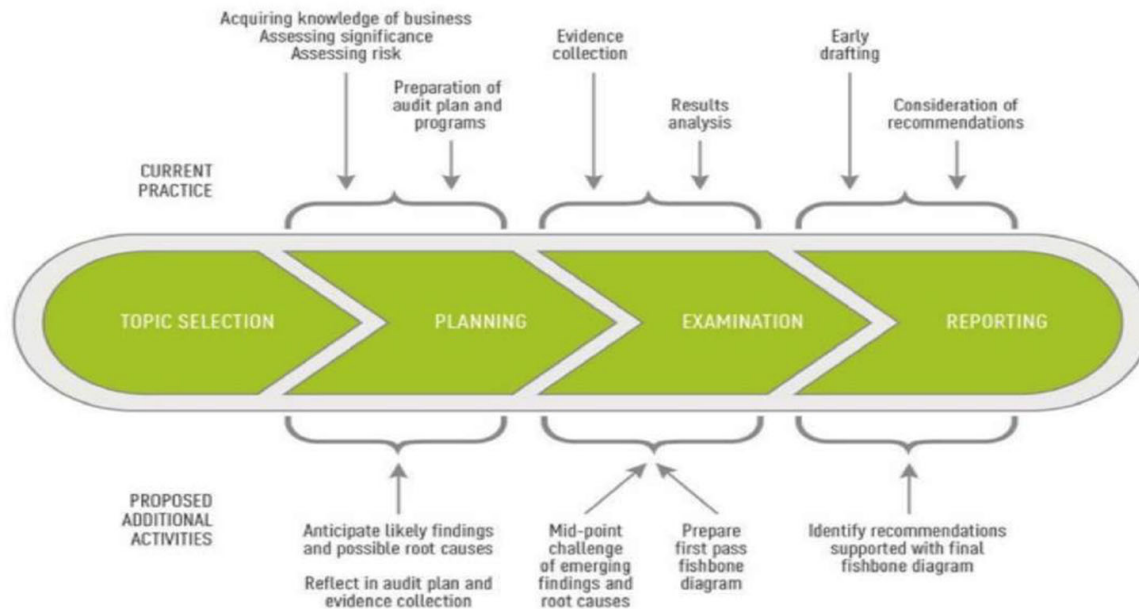
“Applying root cause analysis, in an environmental audit or any performance audit, is all about getting to the best recommendations,” said Terry Hunt, CAAF Vice-President for International Programs. “This course is a strategic investment for our international program — it will help auditors develop better recommendations that, in turn, help governments better manage scarce resources in our partner countries.”

The development of the course was partially funded by the Canadian government, through Global Affairs Canada’s support of CAAF’s international program.

Mr. Hunt led our first pilot delivery of the course, in South Africa, with John Affleck, a CAAF training

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Feature Story



The Canadian Audit and Accountability Foundation has proposed analysis activities that can be performed at each stage of an audit to help make the most meaningful recommendations.

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Associate and formerly a Principal at the Office of the Auditor General of Canada. The 39 participants, from across the AFROSAI-E region, were highly engaged and participated actively in the course’s many hands-on exercises.

“The participants were excited to see the difference this innovative approach could make in their audits,” Mr. Affleck said.

Applying root cause analysis in the audit process

Root cause analysis is an approach to understanding why something happened or how a situation developed, such as an industrial accident, a defective product, or a program deficiency. While it originated in the private sector, when applied in legislative performance auditing, it can help auditors identify underlying problems in public sector programs, with the same objectives—understanding why something happened, driving efficiency, eliminating waste, and improving processes.

Applying root cause analysis is part art, part science. It encompasses a body of qualitative and quantitative tools and techniques and is an iterative process that involves exercising considerable professional judgement while considering a mixture of factors.

Our course encourages auditors to adopt a “root cause mindset” that informs their work in all phases of the audit process. Different phases may require different depths of analysis, but by having this mindset, auditors

can always be thinking about the need to make actionable recommendations that target root causes and that will bring about real impacts and benefits for citizens.

Auditors may already do some root cause analysis implicitly or informally, but it is not “hard-wired” into the performance audit process. Also, when such analysis is done, it is usually only toward the end of the examination phase or early in the reporting phase when recommendations are being formulated. If root cause analysis is not planned and started early, it may not be carried out well or at all.

We recommend that root cause analysis be integrated into the audit process, at all phases. As shown in the diagram above, CAAF proposes analysis activities that can be performed at each stage of the audit—planning, examination, and reporting—all leading toward the goal of making the most meaningful recommendations.

Tools and techniques

In the course, participants learn to apply four main root cause analysis tools and techniques:

- **Pareto charts** help to identify the “vital few”—variables that have the greatest impact and where attention is likely to yield the greatest benefit.
- **The “Five Whys” technique** helps to separate the symptoms from the causes of a problem by

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asking the question “why?” five times about a given event, problem, or significant audit finding.

- **Fishbone diagrams** depict the multiple causes leading to a specific event, with the problem at the “head” of the fish, the main categories of causes at the end of the “bones,” and secondary causes placed within this skeleton.
- **Cause mapping** visually connects individual cause-and-effect relationships to reveal the system of causes within an issue. It can expand to accommodate as many “why?” questions as necessary and has been referred to as “Five Whys on Steroids.”

“By using these tools in your audits,” Mr. Hunt said, “you often end up in a different place than you otherwise would have. They help you to dig deeper to reveal underlying issues you might have missed.”

When examining environmental topics, auditors may also want to use the Drivers Pressures State Impacts Responses (DPSIR) analytical framework. It can help auditors to understand and diagnose what is happening to the environment and why, what the consequences are, and what measures the government has put in place. Using this framework may lead auditors to focus the audit on the measures taken by government to address the drivers and pressures that cause the degradation in the first place, not just on the measures put in place to deal with the degradation. (See [How to Increase the Impact of Environmental Performance Audits](#) for more.)

To learn more

After the successful pilot deliveries of the course with AFROSAI-E and the OAG of Alberta, we are now beginning to give this training across Canada and in the countries participating in our international program. The course is also available to any other audit offices interested in this innovative technique.

For more information about the Root Cause Analysis course and CAAF’s other training offerings, research, and methodology, please visit www.caaf-fcar.ca.

The CAAF is a not-for-profit organization dedicated to promoting and strengthening public sector performance audit, oversight, and accountability in Canada and internationally through research, education, and knowledge sharing.

Supreme Audit Office of Czech Republic hosts WGEA Steering Committee Meeting

The 16th INTOSAI WGEA Steering Committee Meeting took place from October 22 through 25, 2018, in Prague, the Czech Republic.

Thirty-eight participants from 13 SAIs attended the meeting and discussed the 2017–2019 WGEA projects covering five audit guidance documents, four research projects, and three training tools. In addition, Steering Committee members also brainstormed and discussed potential projects to undertake in the upcoming Work Plan.

In conclusion, the meeting participants decided that WGEA projects agreed upon in Prague will be circulated to all WGEA members for their final input and approval before being endorsed at the 19th WGEA Assembly in August 2019 in Bangkok, Thailand.

19th INTOSAI WGEA Assembly Meeting set for August 5-9 in Bangkok, Thailand

The State Audit Office of the Kingdom of Thailand will host the 19th INTOSAI WGEA Assembly Meeting from August 5 through 9, 2019, in Bangkok, Thailand.

On this year’s meeting agenda, members will endorse WGEA products under the 2017–2019 Work Plan and discuss the 2020–2022 Work Plan. As has been the tradition thus far, prominent guest speakers and SAIs will share the latest issues on environmental auditing.

As a special feature of the Assembly Meeting, a one-day training on Greening the SAIs will be presented on August 5, 2019. It is open to the first 30 registered applicants.

The 19th INTOSAI WGEA Assembly Meeting will be an important milestone to kick-start the WGEA 2020-2022 Work Plan. Hence, we invite all SAIs to actively take part and not miss this important gathering.

EUROSAI cooperative audits on energy efficiency, air finalized

*By the EUROSAI WGEA Secretariat,
National Audit Office of Estonia*

European SAIs finalized two cooperative audits in the EUROSAI WGEA Strategic Plan for 2017-2020.

First, EUROSAI WGEA reported on the energy efficiency of public sector buildings in October 2018. Eight European SAIs—from the Flanders region of Belgium, Bulgaria, Estonia, Hungary, Latvia, Lithuania, Portugal, and Slovakia—concluded that their respective governments could have been more systematic and ambitious in securing a leading role in the energy efficiency of public sector buildings. Audit findings and recommendations touched on several issues, including the design of financial instruments, requirements for nearly zero-energy buildings, and monitoring and control systems for buildings' energy performance.

Second, 14 European SAIs, the SAI of Israel, and the European Court of Auditors reported in January 2019 on a collaborative audit on air quality. Auditors found wide discrepancies between countries' compliance with relevant air quality standards, showing that national audit offices can play an important role in monitoring compliance with environmental legislation. In March 2019, representatives of the audit leaders—the SAIs of the Netherlands and Poland—presented relevant findings to a meeting of the European Commission on an update of the Ambient Air Quality Directive.

These audit reports and links to press releases are at <https://www.eurosaiwgea.org/audits>.

Massive online open course on auditing water issues goes live

EUROSAI WGEA's massive open online course (MOOC) on auditing water issues went live in November 2018. The e-course and course materials grew from a cooperative effort by the SAIs of Albania, Austria, Belgium, Bulgaria, Cyprus, Estonia, Malta, North Macedonia, and Turkey.

More than 280 participants from 57 countries signed up for the course. After 6 weeks of study, 185 students from 47 countries received digital certificates from the University of Tartu. Most of the graduates came from

SAIs, but there were also participants from universities, other government institutions, and private companies.

The water MOOC will open again in fall 2019 for its second run. In the meantime, course materials will remain available at <https://sisu.ut.ee/water/avaleht>.

EUROSAI WGEA Annual Meeting addresses climate change and impact of audits

SAI Slovakia hosted the EUROSAI WGEA Annual Meeting in Bratislava in September 2018. More than 70 representatives from 33 SAIs attended the meeting, which addressed climate change and the impact of environmental audits. A one-day seminar on climate change data preceded the meeting.

Experts from the European Commission, European Environment Agency, Organisation for Economic Cooperation and Development (OECD), Comenius University, and the World Resources Institute spoke at the meeting.

SAI representatives provided an overview of continuing cooperative environmental audits in Europe and introduced recent audits related to climate change and increasing the impact of environmental audits. Working group members discussed future cooperative audits starting in 2020 and beyond.

Some reflections from the meeting include:

- official and independent sources of climate change data can be relevant for auditors;
- SAIs can contribute to addressing challenges that include policy coherence, cooperation, and investments;
- auditors should keep audit impact, translation of technical topics, and cooperation with NGOs in mind at all stages of an audit; and
- making environmental audits more visible should increase public debate, public awareness, and transparency. Increasing the visibility of SAI work is a prerequisite to increasing audit impact.

Read more from the report of the Annual Meeting at <https://www.eurosaiwgea.org/meetings/Pages/16th-Annual-Meeting.aspx>.

Other EUROSAI WGEA Events

May 7-8, 2019. EUROSAI WGEA Spring Seminar on waste management and circular economy. In Kalopanayiotis, Cyprus.

October 22-24, 2019. 17th Annual EUROSAI WGEA Meeting. Hosted by the European Court of Auditors in Luxembourg.

Pacific Association of SAIs logs record MOOC participation

By Jonathan Keate, RWGEA coordinator, New Zealand Office of the Auditor-General

The Australasian Council of Auditors-General (ACAG) Pacific Association of Supreme Audit Institutions (PASAI) regional working group on environmental auditing (RWGEA) held its biennial meeting in May 2018 in Brisbane, Australia. At the meeting, PASAI members asked the group to develop an environmental auditing training program for the region to build capacity in environmental auditing.

As a first step, the group encouraged PASAI and ACAG members to participate in online training opportunities. Twenty-seven staff from PASAI passed the 4-week massive open online course (MOOC) on “Introduction to Environmental Auditing in the Public Sector,” held in September and October 2018.

The 27 PASAI participants were from the following audit offices:

- Western Australia’s Office of the Auditor General;
- Samoa’s Audit Office;
- Tonga’s Office of the Auditor General;
- Fiji’s Office of the Auditor General;
- Solomon Islands’ Office of Auditor General;
- Vanuatu’s National Audit Office;
- New Zealand’s Office of the Auditor-General;
- New South Wales’ Audit Office; and
- Micronesia’s Office of Public Auditor.

Participants found the course to be a very useful introduction to environmental auditing and a good platform to take part in other online training courses.

Encouraged by the value of the first MOOC, 28 PASAI participants then completed and passed an “Auditing Water Issues” MOOC held in November and December 2018, and several completed the February 2019 MOOC on auditing infrastructure issues.

Members look forward to participating in future MOOCs as they are offered and will consider other training opportunities for the PASAI region in the lead-up to the next RWGEA meeting in May 2020.

The RWGEA received positive feedback from the Samoa Audit Office on the first MOOC, with the whole performance audit division participating in the course and finding it very educational and informative.



Members from SAI Samoa who completed the “Auditing Water Issues” online course.

MOOC journey: Samoa’s perspective

Six members of the Performance, Compliance and Environmental Audit (PCEA) unit in Samoa’s Audit Office (SAO) took part in the “Introduction to Environmental Auditing in the Public Sector” MOOC.

The participants found the course educational and very informative. The materials were easy to read and follow, and the 4-week duration was perfect—not too short nor too long. The MOOC platform was friendly and approachable, with different languages available.

The PCEA team learned a lot during the course, which offered sessions on

- understanding environmental good governance and the integration of Sustainable Development Goals (SDGs);
- learning to plan performance audits through the use of an audit design matrix; and
- comprehending the execution and development of audit reports.

As part of SAO’s monthly in-house training, members of the PCEA team shared a presentation on the audit design matrix and its use in planning and designing a performance audit.

The team will share more information with staff to help them gain a fair understanding of environmental issues, especially climate change, SDGs, and the 2030 United Nations Agenda.



AFROSAI-E

Cooperative Audit of Coastal and Marine Environments in Africa

A joint audit was coordinated by the African Organisation of English-speaking Supreme Audit Institutions (AFROSAI-E) and found that coastal and marine environments in Africa have been neglected and ineffectively managed by their governments.

Supreme Audit Institutions (SAIs) are uniquely positioned to perform audits to assess and provide assurance to the public that governments have done their duty to protect and manage coastal and marine ecosystems. AFROSAI-E, which has 16 member-countries that are coastal states, initiated the cooperative project to audit coastal and marine environments with support from the Deutsche Gesellschaft für Internationale Zusammenarbeit.

The more than 30,500 kilometers of African coastline include exceptionally vulnerable ecosystems such as mangroves, lagoons, and coral reefs. The audit focused on the protection of coastal areas with an emphasis on coastal management governance, monitoring and enforcement, climate change, over-fishing, and coastal pollution and degradation.

Six SAIs within AFROSAI-E—Liberia, Mauritius, Namibia, Seychelles, Sudan, and Tanzania—participated in the collaborative audit using a mix of both performance and compliance audit principles and methodology. Each SAI produced an individual audit report that outlined country-specific findings, risks and recommendations.

Common findings identified by the six participating SAIs were captured in a consolidated publication, which is available on our website (www.afrosai-e.org.za).

These reports have generated awareness about environmental risks within the participating SAIs and their governments. For example, a documentary film based on the SAI Liberia audit was widely shared with stakeholders and citizens. Other participating SAIs are planning similar activities to bring more attention to the findings of the audit.

For more information on the findings of this cooperative coastal and marine environmental audit or to access the e-learning program, please contact Melissa Reddy at melissa@afrosai-e.org.za.



Australia

Audits of Renewable Energy Policy and Great Barrier Reef Funding

The Auditor-General for Australia, assisted by the Australian National Audit Office, recently provided the Australian Parliament with two environmental performance audits. The first audit examined the Clean Energy Regulator's effectiveness in administering the Renewable Energy Target (RET) policy, while the second examined funding for the Great Barrier Reef Foundation.

The Australian government established the Renewable Energy Target in 2001 to encourage additional electricity generation from sustainable and renewable resources and reduce greenhouse gas emissions. The December 2018 audit concluded that the Clean Energy Regulator had effectively administered the RET policy but that the regulator's investigations unit could improve the quality and implementation of its procedures.

The full report is available at

<https://www.anao.gov.au/work/performance-audit/administration-renewable-energy-target>.

The second audit examined whether the Australian Government's decision to award AUD \$443.3 million funding for restoration work on the Great Barrier Reef was informed by appropriate departmental advice and through processes that complied with the grants administration framework. The Great Barrier Reef is the world's largest coral reef system and is considered one of the world's premier natural resources. The January 2019 audit concluded that all decisions in the process through which the government awarded and paid the Reef Foundation in 2018 were informed by departmental advice.

The full report is available at

<https://www.anao.gov.au/work/performance-audit/award-4433-million-grant-great-barrier-reef-foundation>.

For further information, please contact Mark Rodrigues at mark.rodrigues@anao.gov.au.

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Botswana

Performance Audit of Regulation
of Municipal Solid Waste Program

In 2018, the SAI of Botswana published a performance audit report on the regulation of municipal solid waste by the Department of Waste Management and Pollution Control (DWMPC). The report's objectives were to assess the extent to which the DWMPC regulates, monitors, and coordinates issues related to municipal solid waste management.

The audit focused on DWMPC's planning, implementation, monitoring and evaluation, performance measurements, reporting, and enforcement activities related to waste management in urban and suburban areas.

The key findings included:

- DWMPC had not developed an integrated strategy for the waste management sector to determine suitable activities, projects, and programs for achieving the long-term objectives within Botswana's Strategy for Waste Management Framework;
- the Waste Management Act was outdated and there were no regulations developed to aid its implementation;
- DWMPC did not have complete and comprehensive data about the quantity of the various kinds of waste generated in Botswana;
- there was no clear ownership of waste issues at either the central or local government level, thereby leading to inadequate accountability;
- there were noncompliance issues related to landfills, waste transportation, and illegal dumping of waste; and
- there was no systematic and transparent process for monitoring waste management activities.

The full report is available for interested parties. Please contact Keneilwe Senyarelo at ksenyarelo@gov.bw.



Bulgaria

Audit of Oversight of Implementation
of Regional Development Policy

SAI Bulgaria audited the effectiveness of the process for planning and monitoring the implementation of the country's regional development policy from 2012 through 2016.

The audit examined actions the government took to comply with the Regional Development Act related to reducing inter-regional and intra-regional differences in economic, social, and territorial development.

In particular, the SAI assessed actions with regard to the (1) institutional capacity for planning regional development, (2) availability of resources, (3) implementation of statutory procedures and deadlines for developing and adopting strategic planning documents for regional development, and (4) process for monitoring and evaluating strategy implementation.

The audit concluded that the government had taken actions to develop and adopt strategic planning documents for regional development at national, regional, district, and municipal levels, but the government had not created the necessary conditions for achieving balanced and sustainable regional development.

Moreover, the process for planning and following up on the implementation of regional development documents was incomplete and inconsistent. For example, the audit found that documents setting out a strategy for integrating spatial development and taking into account territorial potential and the principles of balanced sustainable development had not been developed due, in part, to a lack of financial resources.

In addition, the SAI reported that the adoption of some key documents, such as the *National Regional Development Strategy 2012-2022*, was delayed and not in compliance with statutory deadlines.

The SAI also found inconsistencies between the regional development strategy documents and the strategies developed for specific sectors because the sectoral strategies were not associated with regional policy and did not have a territorial dimension.

Overall, the SAI reported that the partnership principle, which is fundamental to implementing state policy on regional development, had not been effectively followed.

The full report is available in Bulgarian on the BNAO's webpage at:

<http://www.bulnao.government.bg/bg/articles/dokladi-128>.

For further information, please contact Rada Paskova, Chief Auditor, Performance Audits Directorate, at rpaskova@bulnao.government.bg; intrel@bulnao.government.bg.

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Costa Rica

Effectiveness and Efficiency of Water Supply Service in Vulnerable Communities

An audit team conducted an audit on water supply service in vulnerable communities, which include rural and indigenous communities that are socially excluded and have low human development indices.

The objective of the audit was to determine the extent to which the water supply service in these communities met quality standards and supported the economic, social, and environmental development of these communities as called for by United Nations Sustainable Development Goal (SDG) 6.

Using multi-criteria analysis, the audit team analyzed several indicators to determine the extent to which water supply service provided by 29 operators in 104 vulnerable communities met quality standards.

The indicators were related to the

- state of the water catchment area;
- condition of infrastructure;
- quality of water;
- sustainability of supply; and
- storage capacity.

In addition, the team interviewed stakeholders, including service users, to obtain their perspectives in accordance with the United Nation's 2030 Agenda principle on inclusiveness.

The audit team found that water supply service in vulnerable communities did not meet quality standards, with a rating of 4.45 out of a possible 10, because of a lack of infrastructure investment and operators' failure to follow best management practices.

In addition, water supply service in these communities did not employ a differential and intercultural approach or consider the needs and cultural differences of these communities. As a result, vulnerable communities are exposed to diseases at higher rates, their ability to engage in productive activities is restricted, and their water consumption is unsustainable. These factors can exacerbate poverty and exclusion.

The audit team made several recommendations to ensure that governmental authorities prioritize

vulnerable communities and develop medium and long-term goals based on a differential and intercultural approach.

For further information, please contact Mrs. Lilliam Marín Guillén, Manager of the Environmental and Energy Area, at lilliam.marin@cgr.go.cr.



Egypt

Environmental Audit on Reducing Emissions from Industrial Processes

Egypt has engaged in efforts to prevent or reduce air pollution that may harm human health, other living organisms, and the environment through various efforts, including environmental audits. These efforts have taken into account the need to reduce emissions that lead to global warming and air pollution.

On this issue, Egypt has been working under the umbrella of federal law No. 4 of 1994 and its amendments, as well as international and regional conventions. These efforts address United Nations SDG 11, which aims to make cities and other types of human settlements inclusive, safe, and sustainable, and SDG 6, which aims to reduce the negative effect on air quality from municipal waste management and other processes by 2030.

The Accountability State Authority (ASA) of the Arab Republic of Egypt pays great attention to environmental audits based on general auditing and accounting standards such as INTOSAI environmental standards, technical standards related to auxiliary raw materials used in production and manufacturing processes, and maximum permissible air pollution rates. To inform its audits, ASA also refers to environmental protection laws and regulations, and Egyptian Environmental Affairs Agency (EEAA) and Ministry of Health reports.

To address the issue of raw materials used in production processes, ASA conducts audit activities such as verifying the procedures used by facilities to safely store hazardous materials and reduce emissions. As part of this process, ASA may also examine an organization's environmental accounting estimates and environmental record. For example, ASA reviews organizations' financial documents to identify any line items related to environmental activities. ASA may

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review their environmental costs, liabilities, and assets to assess the adequacy of these records. In addition, ASA will also interview organization officials to obtain testimonial information on the organization's environmental protection efforts.

ASA has received positive responses for the findings in its environmental audits. For example, ASA has reported on the environmental records of organizations, environmental cost systems, and the negative environmental effects resulting from production activities.

In response to such findings, entities have submitted a plan to the EEAA on reducing emissions. ASA has recommended steps to minimize gas leaks by installing chimney filters and periodic maintenance to ensure their effectiveness. It has also recommended establishing self-monitoring networks in some areas of facilities to continuously monitor air quality and emissions and to link these networks to the National Monitoring Network in EEAA.

The effective cooperation and partnership between the ASA and the EEAA has resulted in the successful development of solutions to some of the nation's environmental problems. For example, ASA and EEAA were able to address and curb the problem of the dust emitted from cement industry vehicles.

However, ASA faces many difficulties in carrying out its environmental auditing workload. For example, the agency relies on inadequate information systems to plan its audits. It also does not have an appropriate tool to effectively measure and analyze environmental costs, such as the cost of pollution. This would help determine environmental responsibility and allow for proper evaluation of organizational performance. Lastly, some companies have delayed developing accounting systems that could help adequately measure changes in natural resources and the environment.

For further information, please contact ASA at ircdept@yahoo.com.



Finland

Audits Assess Government as a Promoter of Cleantech Acquisitions

One of the objectives of Prime Minister Juha Sipilä's government was to make Finland a pioneer in cleantech. The government aimed to promote this policy objective by creating markets for sustainable cleantech solutions through public procurements.

Public procurements could have considerable impacts, as the value of public procurement in Finland totals around EUR 35 billion each year, which accounts for approximately 17 percent of the country's gross domestic product.

In its audits, Finland's National Audit Office (NAOF) assessed how well the government has achieved the policy objectives set for cleantech acquisitions and how it could further develop the related procurement process. NAOF also investigated what kinds of practical problems cleantech acquisitions can solve and what practices could be useful in implementing cleantech procurements.

According to NAOF, the government has not created any significant market opportunities or achieved its objectives. Achieving the common objectives is challenging because the responsibility for the development of procurement activities is dispersed to a number of actors across the public sector. Municipalities, which operate relatively independently of the state, make the majority of cleantech acquisitions. At the central government level, cleantech acquisitions are also dispersed to a number of different ministries.

To improve the commitment of different central and local government actors to the common objectives, NAOF recommended a national procurement strategy and concrete, systematically monitored long-term environmental objectives.

Similarly, NAOF recommended enhanced coordination between different administrative branches. Furthermore, NAOF recommended that government units engaged in public cleantech procurement activities use different risk management tools, such as acquisition impact assessments and organisational management models, while engaging stakeholder groups in the procurement process.

For further information, please contact Matti Vedenkannas at matti.vedenkannas@vtv.fi or Markku Turtiainen at markku.turtiainen@vtv.fi.

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Finland

Review of Preparatory Process
for Finnish Bioeconomy Strategy

There has been a great deal of focus on bioeconomy in Finland in recent years. Between 2016 and 2018, Prime Minister Juha Sipilä's government allocated a total of EUR 323 million to the priority area "Bioeconomy and Clean Solutions." The key projects in the priority area were partially based on the May 2014 *Finnish Bioeconomy Strategy*.

The National Audit Office of Finland (NAOF) performed an audit to determine whether the *Finnish Bioeconomy Strategy* was prepared in accordance with the principles of transparency and good governance so that the drafting process would create a basis for achieving the goals set out in the strategy.

NAOF found that the preparatory process provided, as a whole, a good basis for achieving the objectives laid out for the strategy. The audit found the strategy was drafted in a cross-administrative process with participation from a large number of stakeholders. This broad-based participation of ministries and stakeholders made it easier to reach political consensus. A process involving a wide range of participants also makes the implementation of the strategy easier because parties with differing views and conflicting interests can reach agreement in the preparatory stage.

NAOF found room for improvement, however. For example, the strategy's alternatives were not systematically reviewed or compared. Moreover, the risks that could arise from implementing the strategy were not properly evaluated, and risk management was not adequately planned.

As a result, NAOF recommended the ministries formulate strategy alternatives, assess their economic impacts, and make systematic comparisons of alternatives when drafting strategies. Furthermore, the ministries should review and prepare for the risks connected with the strategies and other similar programmes in a systematic manner.

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Indonesia

Performance Audit on Contributions
of New and Renewable Energy

In 2017, the Audit Board of Indonesia (BPK) conducted a performance audit of the Ministry of Energy and Mineral Resources (MEMR) and other related agencies to assess the contribution of new and renewable energy in the national electrification and energy mix from 2015 through 2017. The electrification ratio measures the number of people, out of the total population, who have electricity and serves as an indicator of energy security.

The audit assessed the government's efforts to increase and develop new and renewable energy sources, especially in the electricity sector, with a focus on planning, implementation, monitoring, and evaluation activities. The audit found that the electrification ratio in Indonesia reached 92.80 percent in mid-2017, exceeding the original ratio of 92.75 percent in 2015. The contribution of new and renewable energy was 10.90 percent in 2017 and is targeted to increase to 23 percent by 2025.

The audit found several ways in which the government needed to better manage new and renewable energy, including

- developing a roadmap with targets in the planning phase;
- developing infrastructure and improving the use of new and renewable energy by the state electrical company and coordinating investment with other parties; and
- improving monitoring and evaluation of results relative to the targets.

Based on these findings, BPK recommended that MEMR improve coordination with other ministries, agencies, and infrastructure stakeholders to establish and implement policies related to the energy sector. This coordination should include developing regulations to support the use of new and renewable energy sources for electricity. In addition, the ministry should develop provisions on periodic investment coordination, report on new and renewable energy developed by the private sector and other ministries, and implement monitoring and evaluating activities related to the national energy mix.

The full report is available upon request. Please send your request to ksbhumas@bpk.go.id.

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Lithuania

Audit Report on Hazardous Waste Management System

Hazardous waste can cause harm to human or animal health and the environment. While it is impossible to completely avoid generating hazardous waste, we can manage it in a way that does not endanger human health or harm the environment.

In 2018, the National Audit Office of Lithuania reported on “The Management of Hazardous Waste.” The objective of the audit was to assess whether the nation’s hazardous waste management system ensures that such waste is effectively managed to avoid adverse effects. The audit found shortcomings in Lithuania’s system for identifying, collecting, using, and eliminating waste:

Hazardous waste has been misclassified. Decisions on the classification of three-quarters of the chemicals have not been taken. Manufacturers or importers have different approaches to classifying the dangers of the same chemicals, which allows waste holders to classify hazardous waste as non-hazardous.

Nearly half of the hazardous waste generated by households ends up in municipal waste streams.

Residents do not sort all their waste, some municipalities operate only half the bulk waste disposal sites that they should, and 40 percent of municipalities do not collect hazardous waste generated by households.

The right to handle hazardous waste is granted without appropriate assurances. The National Public Health Centre does not have the means to independently verify estimates of the pollution that may result from the waste, nor does it rely on data provided by external experts to verify these estimates.

Leftover waste is managed using public funds. When waste management activities are unexpectedly terminated, the remaining unprocessed hazardous waste is managed with public funds. From 2012 through 2017, three waste managers ceased operations, leaving 2,542 tons of unprocessed hazardous waste. Managing these hazardous wastes has cost millions of euros.

The full report in Lithuanian and summary in English is available at http://www.vkontrole.lt/audito_ataskaitos_en.aspx?tipas=15.

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Mexico

Performance Audit on the Environmental Impact of Mexico City’s New Airport

The environmental impact assessment is one of the most accepted environmental management instruments in the world and a fundamental instrument of environmental policy. In Mexico, this assessment is referred to as the Regional Environmental Impact Statement, or *MIA-R*.

In 2018, the SAI of Mexico conducted a performance audit of the environmental impact of the new international airport developed by the Mexico City Airport Group (GACM). This project is aimed at solving the needs of air travel in the center of the country for the next 50 years.

The audit evaluated the (1) impact statement carried out by environmental authorities; (2) protection, preservation, and restoration of air, water, soil, biodiversity, and archeology by the airport group; and (3) environmental inspection of the airport construction, including coordination among the participating bodies.

The audit showed that guidance for preparing impact assessments is outdated, which, in part, prevented a comprehensive evaluation of the work executed by GACM and by agencies responsible for water and communications systems linked to the airport. The audit also found that indicators in the *MIA-R* did not meet criteria and, thus, prevented an accurate evaluation of environmental impacts and mitigation.

While GACM designed a system to follow up on the mitigation and conditioning measures envisaged in the *MIA-R*, it only recorded information on the activities carried out by the suppliers and did not generate reports on the progress in mitigating the environmental impact.

In addition, regarding inspections, the authority responsible for monitoring compliance with environmental regulations lacked a comprehensive inspection strategy and did not visit the airport project. Instead, it only reviewed one of the eight complementary projects and inspected 15 of the 28 participating supplier companies.

Finally, even though opinions related to project coordination were issued during meetings of the environmental monitoring committee, no agreements were reached or actions taken.

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Morocco

Review of Preparedness for Implementing 2030 Sustainable Development Agenda

The Moroccan Court of Accounts reviewed preparedness for implementing the 2030 SDGs. The review evaluated coordination and the capacity of information systems to produce data and indicators and ensure timely reporting and monitoring of the SDGs implementation process.

The review demonstrated Morocco's strong commitment to the 2030 Agenda. That commitment is enhanced by a positive and supportive constitutional and legislative framework.

A national meeting in 2016 triggered debate among stakeholders concerned with implementation of the SDGs. The meeting also resulted in a report on the first steps taken to implement the SDGs, along with associated recommendations.

The Court of Accounts' review revealed that Morocco has initiated a number of national sectoral strategies whose objectives intersect with the SDGs. In addition, Morocco has adopted a National Strategy for Sustainable Development (NSSD), which could be considered a first response to its commitment to implement the 2030 Agenda. However, the review noted that the pace of convergence, alignment, and coherence of the National Strategy and the sectoral strategies with the SDGs needs to be accelerated.

In terms of collecting indicator data, the Court of Accounts found that the National Statistical System is fairly efficient and highly decentralized. It meets international standards and has the capacity to generate indicators relevant to SDGs.

However, the review also noted that the National Statistical System needs to overcome the lack of coordination and harmonization of actions and statistical operations carried out by its various components. To reach this goal, there is a need to further engage the Coordinating Committee for Statistical Studies, establish the National Statistical Council, and increase cooperation with institutional data providers.

The Court of Accounts also found that the final list of indicators to be produced by the National Statistical System has not been established. A preliminary diagnosis concluded the statistical system has the capacity to produce only 48 percent of the 2030 agenda indicators.

The main recommendations of the review are to

- establish an entity and a mechanism that involve and mobilize stakeholders implementing the SDGs to coordinate, monitor, and report on their achievements;
- expand consultation to all stakeholders at the national, regional, and local levels and establish a national advocacy and communication strategy to ensure effective involvement in the SDGs by all;
- formalize and disseminate the results of the contextualization and prioritization of the SDGs and ensure roles and responsibilities are assigned at the national and local levels;
- adopt more convergent and coherent national and sectoral strategies to implement sustainable development;
- establish and validate action plans required to implement the SDGs and ensure that initiatives undertaken by ministerial departments and other partners are considered; and
- engage the Coordination Committee for Statistical Studies and encourage stakeholders to respect the prerogatives assigned to this committee, with a view to going beyond sectoral approaches in collecting and producing statistics, particularly those relating to the SDGs.

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Pakistan

Assessment of Disaster Management Agencies' Preparation for SDGs

SAI Pakistan conducted a study to assess disaster management agencies' preparations for achieving the SDGs. The study also aimed to assess the efficiency of coordination mechanisms between national-, provincial-, and district-level disaster management agencies.

SDGs are cross-cutting targets that involve all levels of government as well as other stakeholders. Therefore, SAI Pakistan selected a sample of national-, provincial-, and district-level disaster management organizations to review.

The study identified non-adherence to SDGs at all government levels, lack of coordination and integration among disaster management agencies, weak operational capacity, lack of preparation to conduct vulnerability assessment surveys, and lack of contingency planning.

The study concluded that there is a need to improve understanding of SDGs at all government levels. In addition, all levels need to improve risk assessment and use hazard mapping to gauge the vulnerabilities of different demographic groups.

Pakistan's disaster management organizations are lagging in taking structural measures for disaster mitigation. These specific actions, if taken, will help agencies achieve the objectives of the SDGs.



Thailand

Cooperative Audit on Water Environmental Protection, Public Water Projects

At the 6th Working Meeting of the Asian Organization of Supreme Audit Institutions (ASOSAI) WGEA in January 2018 at Kho Yai National Park, Thailand, ASOSAI WGEA approved the launch of the *Cooperative Audit on Water Environmental Protection*.

SAI China, the Chair of ASOSAI WGEA, proposed the project, and SAI Thailand volunteered to be the leading SAI. The main objectives of the cooperative audit were to promote the implementation of policies on water environmental protection and to improve the performance of public water projects. The cooperative audit successfully facilitated the exchange of experiences and practices related to water environmental protection auditing among SAIs in Asia.

Nine SAIs participated in the cooperative audit: Bangladesh, China, Indonesia, Iraq, Jordan, Kuwait, Malaysia, Nepal, and Thailand.

Each SAI presented results of their national audit report on compliance with their own standards and guidelines. Likewise, the SAIs reported audit findings and recommendations to their audit entities under their mandates. In addition, each participating SAI submitted audit methodologies, audit results, and lessons learned to SAI Thailand, which then prepared the compendium report.

An important lesson that SAI Thailand learned in the project was how to create a suitable model for cooperative audits in ASOSAI. Certainly, we can share with and learn from our colleagues in ASOSAI. Likewise, we can share and learn about models of cooperative audit from other regional SAIs such as PASAI and EUROSAI.

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