



# GREENLINES

A newsletter of the INTOSAI Working Group on Environmental Auditing

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## Message from the Chair



Dear INTOSAI WGEA Members and other readers,

As I am writing this, the first snowflakes are falling in Finland, however, according to the U.S. National Aeronautics and Space Administration, summer 2023 was recorded as the hottest summer and July 2023 as the hottest month since the global records began in 1880. These record-setting temperatures have resulted in severe consequence from wildfires to extreme flooding. The temperature in the Arctic continues to rise even faster—at three times the global annual average. It is our responsibility

as auditors to hold our governments accountable for their environmental actions.

This January, the National Audit Office of Finland has the pleasure to host the **22nd INTOSAI WGEA Assembly** at the Arctic Circle in Rovaniemi, Finland. The key theme of the meeting—*Auditing the Arctic*—focuses on two topics: Arctic Environmental Change and the Indigenous Knowledge. The Assembly brings together auditors and key stakeholders to discuss these topics while raising awareness of the Arctic issues and audits.

The changing environment is a threat to Arctic nature, which despite the harsh conditions, is a home to more than 21,000 known species. The changes in the Arctic happen in real time and affect the global environment. Understanding these changes can provide solutions to adopting to climate change worldwide.

Indigenous people have inhabited the Arctic for thousands of years. Around the world, they have preserved distinctive understandings on natural environment and specific ecosystems. Indigenous knowledge, which is collective, experiential, and intergenerational, can be an important source of information, for example, on nature-based solutions and help getting into terms with the changing environment.

The Sámi people who live in Sápmi—an area that stretches across the northern part of Finland, the Russian Federation, Norway, and Sweden—are the only indigenous people in the European Union. For those wondering, the resemblance with my name is unfortunately only a coincidence! A warm welcome to the Arctic Circle!

**Dr. Sami Yläoutinen, Chair of INTOSAI WGEA, Auditor General of SAI Finland**

## Feature Story

### Planetary Health

Everyone's mental and physical health is influenced by the choices we make and by our surrounding social and natural environments. Planetary health refers to a concept that describes how people's health depends on the health of ecosystems. Healthy humans can only thrive on a healthy planet. As living beings, we are an inseparable part of ...

### News Briefs from Around the SAI World



**Bulgaria:** Management of Vitosha nature park

**Cyprus:** Greenhouse gas emission reductions

**Egypt:** Plastic waste management in the Nile River

**European Court of Auditors:** Impact of audit work on climate action and the environment

**Finland:** Private forestry subsidies and compensation

**India:** Unveiling the potential of the blue economy

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## Planetary Health

...nature, and despite all the technical and scientific advancements, ultimately, we depend on ecosystem services that provide us with food, water, energy, and materials. We live in a connected world where no one individual is able to maintain services such as healthcare, research, and education. The impacts of climate change, biodiversity loss, and water and air pollution are already affecting the health of people. Planetary health is an emerging concept that brings together researchers and practitioners from different fields to study these complex relationships. This concept can also facilitate a transformation to a healthy and more sustainable future.

Due to climate change, societies are exposed to more extreme heat and heatwaves. Extreme heat leads to more heat-related illnesses and deaths among vulnerable groups such as the elderly, small and newborn children, pregnant women, and outdoor workers. In summer 2022, over 60,000 heat-related deaths occurred in Europe alone.<sup>i</sup> Warmer temperatures and increased rainfall are also associated with an increase in mosquitoes and ticks, which can transmit several diseases including malaria and Lyme disease.<sup>ii</sup>

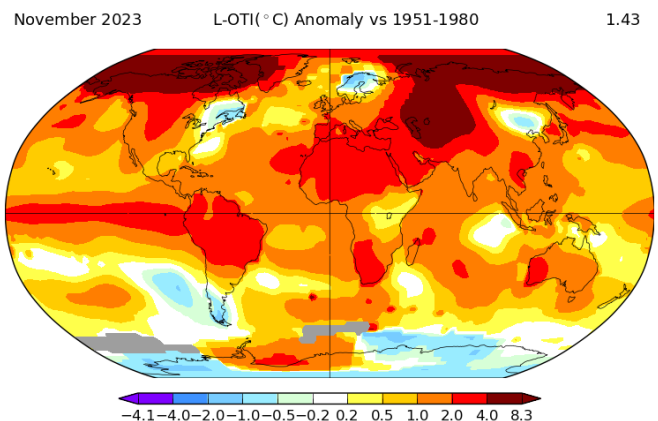
Warmer temperatures and changes in water availability drive changes in vegetation and food production systems. For example, agricultural production models estimate that by 2030, crop yield failures will be 4.5 times higher than the current rates and that by 2050 the likelihood increases by up to 25 times current rates. By mid-century, the world could be facing a rice or wheat failure every other year, with the probability of soybean and maize failures even higher.<sup>iii</sup> Such changes directly affect farmers and in particular small hold producers. However, these changes can cascade through international trade and financial networks affecting other parts of society, known as cascading climate change risks.<sup>iv</sup>

Due to sea level rise, heat, and droughts, some geographical areas will become uninhabitable, forcing people to migrate from their homes and in some case their countries. Despite efforts of some countries to raise walls and fences, history shows us that there is no wall high enough to stop desperate people. International cooperation is needed to support reallocation and

livelihood options for those who are on the move.

To protect the planet and the health and well-being of present and future generations, it is necessary to radically change human-environmental system interactions and transform our economic and production systems to regenerative and circular solutions. Such solutions support ecological restoration of ecosystems and achieving multiple goals of climate adaptation, climate mitigation, biodiversity protection, and food and energy production. To give an example, regenerative agricultural practices maintain land and soil biological production bases with built-in economic and biological stability. These practices have minimal to no impact on the environment beyond the farm or field boundaries.<sup>v</sup>

Scientists agree that if global warming is limited to 1.5° Celsius in comparison with pre-industrial temperature levels, we will be able to adapt to the scale of coming environmental challenges. We have the technology, knowledge, and institutions that make adaptation possible. However, the level of warming that we experience today has already reached about 1.1° C (1.9° Fahrenheit) above the pre-industrial level. The majority of the warming has occurred since 1975, at a rate of roughly 0.15 to 0.20°C per decade. The decade 2012–2021 was the warmest decade on record since thermometer-based observations began. 2016 and 2020 are the warmest years on record.<sup>vi</sup>



Source: <https://data.giss.nasa.gov/gistemp/>

If we do not sharply reduce using fossil fuels as the primary energy source and do not reduce the

corresponding greenhouse gas emissions, including carbon dioxide emissions, the planet will be on a continued warming trajectory and have a much higher average global temperature than has been seen in the past 1.2 million years. This would result in sea levels that would be significantly higher than those seen at any time in the last 12,000 years. Entering such a trajectory would cause serious disturbances to ecosystems, society, and economies.<sup>vii</sup>

Some scientists warn that the unstable climate conditions and massive biodiversity losses we are currently witnessing might actually lead to the end of human civilization as we know it. If the atmosphere warms by 3–4 °C (37.4–39.2° F) by the year 2100, and eventually even by as much as 8 °C (46.4° F) or more, the planet would return to the unstable climate conditions that would make agriculture impossible. Under such conditions, human societies might once again be characterized by their hunting and gathering behavior.<sup>viii</sup>



In order to limit global warming, it is necessary to reduce fossil-fuel extraction and switch to renewable energy sources including primary solar, wind, hydro, and geothermal energy. Fossil fuels contain very condensed carbon that oxidizes in the burning process and is released to the atmosphere as carbon dioxide that is the major anthropogenic gas that drives the global warming. Fossil fuels were formed from the organic material of dead plants and animals that lived on Earth primarily around 419 to 300 million years ago. The temperature on Earth at that time was about 8–10 °C (46.4–50° F), warmer than the average temperature today, and an ocean covered about 85 percent of the globe (as compared to the current 71 percent coverage).<sup>ix</sup> The amount of carbon that we burn every year required about

550 years of photosynthesis to accumulate in living organisms.<sup>x</sup> The amount of extra energy the human species currently releases into the atmosphere each year by burning fossil fuels is equivalent to the amount of energy that would be released if about 189 million nuclear bombs—comparable to those that destroyed Hiroshima in 1945—were detonated simultaneously. This massive amount of energy that was stored for hundreds of millions of years below the Earth's surface has been released within just a few decades. This release of energy is causing rapid changes in the biochemical composition and physical properties of our atmosphere, oceans, and land. We are recreating conditions that existed on Earth millions of years ago, when the natural environment was dominated by simple fish species, invertebrates, and vascular plants. The first of our species appeared on the Earth only about 300,000 years ago.

Profound and exponential changes in human lifestyles, social institutions, governance, infrastructure, and technology are needed to transform our economies and societies to low-carbon systems. Key interventions that can lead to rapid system-wide tipping and reduce greenhouse gas emissions within this decade include removing fossil-fuel subsidies, incentivizing decentralized energy generation, building carbon-neutral cities, pushing fossil fuel divestment, revealing the moral implications of using fossil fuels, strengthening climate education and engagement, and disclosing information about greenhouse gas emissions. These interventions can be applied at different timescales and to different layers of society ranging from the level of market exchange, through to governance, infrastructure technology, policy, and regulatory frameworks, finally to social norms, values, and beliefs.<sup>xi</sup>

Many of the above interventions extend beyond achieving greenhouse gas reductions and have the potential of interlinking with other global policy goals, such as the Sustainable Development Goals and reducing biodiversity loss. They also include a range of well-being and public health co-benefits including for example reduced air pollution and more healthy diets. Solving the climate crisis can be seen as a chance to redesign global socioeconomic institutions toward achieving a more just and equitable future.

Numerous positive examples of progress can be found from around the world. Examples include the decrease in

the price of renewable energy generation in all world regions. For example, Uruguay can generate almost 100 percent of the electricity it requires by using renewable resources. Another example is that of the Dutch organization Social Tipping Point Coalition, which is demanding that the Dutch government abolish subsidies on fossil fuels, introduce mandatory climate certification for products, stimulate citizen initiatives for clean energy, ban fossil fuel advertising, and increase climate change education in schools. One of the organization's first successful actions was to convince authorities in the city of Amsterdam to place a ban on advertising for cheap flights. Examples of this nature give us hope that humans can address the challenge of the climate crisis within the next decade. However, the commitment and cooperation humans need to address this challenge are hindered by increasing inequality, conflicts, and social injustice issues.

There are many warning signs and signals that systems supporting human life on Earth are in distress. We have entered a turbulent time dominated by crises, conflicts, distress, and cascading risks. However, each crisis also offers us an opportunity to restructure and reorganize our lives to increase our long-term resilience. I believe that the starting point for a global transformation is a shift in mindset. We must begin to see ourselves not only as consumers but primarily as citizens who have influence

on their surroundings and can shape their future. We are more than our basic needs to eat food to survive and require a shelter. We are uniquely social beings who communicate, set norms and codes of conduct, and create organizations that can help us thrive. We have the ability to transform our existing norms and structures when they are harmful and are not serving our purposes. The time to act is now. The choices we take today will influence the lives and health of our children and grandchildren. By making wise decisions today and by prioritizing life, we can leave future generations the biggest treasure: a planet that thrives and supports the wellbeing of everyone.

*Ilona M. Otto, Professor of Societal Impacts of Climate Change, Head of the Social Complexity and System Transformation Research Group, Wegener Center for Climate and Global Change, University of Graz, Austria.*



<sup>i</sup> Ballester, J., Quijal-Zamorano, M., Méndez Turrubiates, R.F. et al. Heat-related mortality in Europe during the summer of 2022. *Nat Med* 29, 1857–1866 (2023). <https://doi.org/10.1038/s41591-023-02419-z>

<sup>ii</sup> Swiers et al. 2023 How does climate change affect our society and thus our health? *Zeitschrift für Pneumologie*, 20: 123-132, DOI: 10.1007/s10405-023-00501-4

<sup>iii</sup> Caparas et al 2021 Increasing risks of crop failure and water scarcity in global breadbaskets by 2030. *Environmental Research Letters*, 16: 104013 DOI: 10.1088/1748-9326/ac22c1

<sup>iv</sup> Ringsmuth et al. 2022 Lessons from COVID-19 for managing transboundary climate risks and building resilience. *Climate Risk Management*, 35: 100395 DOI: 10.1016/j.crm.2022.100395

<sup>v</sup> Giller, K. E., Hijbeek, R., Andersson, J. A., & Sumberg, J. (2021). Regenerative Agriculture: An agronomic perspective. *Outlook on Agriculture*, 50(1), 13-25. <https://doi.org/10.1177/0030727021998063>

<sup>vi</sup> NASA, GISS Surface Temperature Analysis, Retrieved from <https://data.giss.nasa.gov/gistemp/> on 02.12.2023

<sup>vii</sup> Steffen, W., et al. (2018) Trajectories of the Earth system in the Anthropocene. *PNAS*, 115 (33): 8252-8259, <https://doi.org/10.1073/pnas.1810141115>

<sup>viii</sup> Gowdy, J. (2020) Our hunter-gatherer future: Climate change, agriculture and uncivilization. *Futures*, 115: 102488 <https://doi.org/10.1016/j.futures.2019.102488>

<sup>ix</sup> Britannica (2022) Devonian life. Available at <https://www.britannica.com/science/Devonian-Period/Devonian-life>, retrieved on 02.08.2022

<sup>x</sup> Ringsmuth, A.K., Landsberg, M.J, Hankamer, B. (2016). Can photosynthesis enable a global transition from fossil fuels to solar fuels, to mitigate climate change and fuel-supply limitations? *Renewable and Sustainable Energy Reviews* 62, 134-163

<sup>xi</sup> Otto, I.M., Donges, J.F., et al. (2020) Social tipping dynamics for stabilizing Earth's climate by 2050. *Proceedings of the National Academy of Sciences* 117 (5), 2354-2365.



## Greetings from the Secretariat

### WGEA COP28 Events

During the last months, the INTOSAI WGEA Secretariat has been preparing for and participating in events. At the time of writing, the WGEA Secretariat was preparing to attend the COP28 UN Climate Change Conference in person to organize two events. The first event was organized in collaboration with SAI United Arab Emirates (UAE) at the COP28's Green Zone, which is open to all conference participants. The 90-minute session, entitled *Impact for Climate Action-Supreme Audit Institutions Call for Effective Implementation of Climate Policies*, includes presentations from SAIs of Brazil, Canada, the European Court of Auditors (ECA), the Maldives, and the U.S., as well as the INTOSAI Development Initiative (IDI).



The second event was part of Finland pavilion where the INTOSAI WGEA organized the session *Value for Money? Auditors for Accountability and Effective Climate Spending*, which discussed how performance audits can assess the implementation of climate policies. The session included speakers from SAIs of Brazil, Canada, Finland, the Maldives, and the ECA.

Additionally, the Secretariat published a new [COP28 bulletin](#), which includes a collection of recent climate-related audits from the INTOSAI WGEA database as well as impact stories on SAI climate audits. Speaking of the database, we kindly encourage all SAIs to submit their environmental audits so that they contribute to the WGEA's future analyses!

### Participation in Regional WGEA Meetings

To ensure successful collaboration, regional WGEAs have been active in organizing meetings in person or in hybrid format after the pandemic. The Secretariat has strived to attend these meetings in person as much as possible, now that it is finally possible to meet face-to-face. In August, Vivi Niemenmaa attended the Asian

Organization of Supreme Audit Institution (ASOSAI) WGEA meeting and presented the WGEA activities. In September, Kati Hirvonen presented the WGEA's ongoing work at the European Organization of Supreme Audit Institutions (EUROSAI) WGEA's 21<sup>st</sup> annual meeting in Prague, Czech Republic. The meeting addressed experiences in auditing sustainable energy. Finally in November, Vivi supported the African Organization of Supreme Audit Institutions (AFROSAI) WGEA meeting by delivering a training on environmental auditing as part of the agenda. In addition, Vivi has provided online presentations to the Special Technical Commission for the Environment (COMTEMA) and many other meetings.

### Planning for 22<sup>nd</sup> INTOSAI WGEA Assembly

The Secretariat has been organizing the upcoming 22<sup>nd</sup> INTOSAI WGEA Assembly in Rovaniemi, Finland. The Assembly, titled *Auditing the Arctic—Environmental Change and Indigenous Knowledge*, will discuss environmental auditing in terms of the Arctic but also provide participants the possibility for peer exchange. The Secretariat's Assembly arrangements have ranged from arranging logistics, reserving venues, producing content, and sending speaker requests to planning internal and external communication. The preparations have certainly kept the Secretariat occupied and hosting the Assembly will mark a significant milestone in our INTOSAI WGEA Chairmanship term.

### Updates on Two Work Plan Projects

Two projects of the current Work Plan—[ClimateScanner](#) and a Cooperative Audit on Climate Change Adaptation Actions—have progressed successfully. Please see an update from SAI Brazil on the ClimateScanner Second Technical Workshop below. In addition, the literature review on [the Climate and Biodiversity Nexus: Relationship of Climate Change Mitigation and Biodiversity Policy Measures](#), implemented as part of the Climate and Biodiversity Nexus project, was published in October. The review was commissioned from the Finnish Environment Institute.

### Interns Join INTOSAI WGEA Secretariat

Finally, the INTOSAI WGEA Secretariat is pleased to announce that the number of employees in the Secretariat has nearly doubled from three to five as Ms. Fanni Kuittinen and Ms. Nella Virkola started their 4-month-long internships in November.

# ASOSAI: The 9<sup>th</sup> ASOSAI Seminar on Environmental Auditing and the 9<sup>th</sup> Working Meeting of ASOSAI WGEA

The 9th Asian Organization of Supreme Audit Institution (ASOSAI) Seminar on Environmental Auditing and the 9th Working Meeting of ASOSAI WGEA completed all the agenda activities and were successfully concluded in Astana, the capital of Kazakhstan, on August 25, 2023.

The meeting presented the second ASOSAI Green Vision Award to the Audit Board of the Republic of Indonesia, discussed two major topics on “Responding to Climate Change and Environmental Protection Audit” and “Drinking Water Safety Audit,” and finalized the Work Plan of ASOSAI WGEA for 2023 to 2024. Delegates were briefed on the latest progress of

ClimateScanner and Climate Change Adaptation Actions Audit, the two global cooperative projects initiated by the INTOSAI WGEA. The forum also discussed mitigating the impacts of climate change, taking into account the related socioeconomic commitment in the Arab region.

The meetings were co-hosted by the National Audit Office of China, as the Secretariat of ASOSAI WGEA, and the Supreme Audit Chamber of the Republic of Kazakhstan. Nearly 50 delegates from 15 ASOSAI WGEA member SAIs, as well as the INTOSAI WGEA Secretariat and the Arab Organization of Supreme Audit Institutions (ARABOSAI) SDGs Committee Secretariat, joined the three-day meeting.



## COMTEMA: Coordinated Audit, ClimateScanner, and DFOG Analysis

### Coordinated Audit on Protected Areas

The 3<sup>rd</sup> edition of the Coordinated Audit on Protected Areas (2022/2023), led by SAI Brazil, involves six SAIs of the Community of Portuguese-speaking Countries (OISC-CPLP): Angola, Cape Verde, Guinea-Bissau, Mozambique, São Tomé and Príncipe, and East Timor. The audit's consolidation workshop was held in Praia, Cape Verde, between September 11 and 15, 2023. The workshop's objectives were to discuss the preliminary consolidated results of the coordinated audit and share knowledge and experiences among the attendees.

The three editions of the Coordinated Audit on Protected Areas took place in a decade time frame (2013-2023) and gathered more than 100 auditors from 34 SAI audit teams and subnational audit institutions. Together the teams assessed over 2,500 protected areas in 24 countries in Africa, America, Asia, and Europe using INDIMAPA. Results of the [first](#) and [second](#) coordinated audit editions are available online, whereas the third edition's communication products are under development.

The 3<sup>rd</sup> edition of the coordinated audit had the technical and financial support of the Program for the

Consolidation of Economic Governance and Public Financial Management Systems in Portuguese-speaking African Countries and East Timor (Pro PALOP-TL SAI Phase II), as well as the German Cooperation Agency, implemented through GIZ.

*For more information, please contact*  
[AreasProtegidas@tcu.gov.br](mailto:AreasProtegidas@tcu.gov.br).

### ClimateScanner Second Technical Workshop

The ClimateScanner Second Technical Workshop took place from September 25th to 29th, 2023, in Abu Dhabi, United Arab Emirates, with representatives from the SAIs involved in the development of the tool as well as experts. Throughout the event, the participants discussed the results of the pilot tests of the framework, the final adjustments to the tool, and the overall implementation strategy, including training activities and communication.

The [ClimateScanner initiative](#) is being coordinated by SAI Brazil (as Chair of INTOSAI) and INTOSAI WGEA, with the collaboration of an Executive Group made up of 18 SAIs from all regions. The initiative is also supported by the United Nations Department of Economic and Social Affairs (UN DESA), the United Nations Development Programme (UNDP), the Inter-American Development Bank (IDB), and the World Bank.

The framework was presented at COP28, the 28<sup>th</sup> Conference of the Parties to the United Nations Framework Convention on Climate Change, held in Dubai from November 30 to December 12, 2023. The execution phase of the initiative will take place in 2024, beginning with a Global Call to the ClimateScanner, to be held at UN Headquarters in New York on March 25-26, 2024 (save the date!), with the objectives of presenting the project to the heads of all SAIs and inviting them to join the project. Afterwards, the participating SAIs will take part in training activities with instructions on how to apply the tool and collect the data throughout 2024.



*For more information, please see*  
<https://sites.tcu.gov.br/climatescanner/ingles.html> or  
contact [climate@tcu.gov.br](mailto:climate@tcu.gov.br).

### DFOG Analysis: A Tool for Policy-coherence Analysis

The Practical Guide for the Application of DFOG Analysis is now available [online](#), in English, Spanish, and Portuguese. “DFOG” stands for Duplication, Fragmentation, Overlap, and Gap. The guide can assist auditors in conducting a policy-coherence analysis of public policies and government agencies. By using this tool, auditors can identify and address misalignments, contradictions, and blind spots that negatively impact the performance of governmental programs, public policies and the achievement of the objectives and expected results.

This guide is inspired by “[Fragmentation, Overlap, and Duplication: An Evaluation and Management Guide](#)”, developed by the U.S. GAO, which dedicated a special message to the DFOG Analysis guide. Since 2016, GAO’s methodology has been adapted to the context of coordinated audits, such as the [Coordinated Audit on the Preparedness of the Latin American Governments for Implementing the Sustainable Development Goals](#) and the [Coordinated Audit on Protected Areas \(2<sup>nd</sup> edition\)](#), led by SAI Brazil, within the Special Technical Commission for the Environment (COMTEMA) of OLACEFS.

Taking these experiences into account, the [DFOG Analysis Practical Guide](#) details the DFOG methodology and adds a fourth category (gaps) to the original typology of fragmentation, overlap, and duplication.

*For more information, please contact*  
[comtema@tcu.gov.br](mailto:comtema@tcu.gov.br).



## EUROSAI WGEA Activities in 2023

The Supreme Audit Office of Poland was the Chair of the European Organization of Supreme Audit

Institutions (EUROSAI) Working Group on Environmental Auditing (EWGEA) in 2023. Over the past year, progress made in climate change adaptation efforts and sustainable energy influenced the activities of EWGEA. 2023 was also the penultimate year of implementation of the group's strategic plan. The majority of the strategic plan's joint activities had already been completed in prior years. Nevertheless, the group managed to encourage and support professional cooperation among its members and continued to facilitate knowledge and experience sharing.

**Spring Session held May 25th-26th, 2023, focused on "Climate Change: Progress Made in Adaptation Efforts."**

The meeting was attended (in person or virtually) by representatives from the European Commission Directorate General for Climate Action, European Environment Agency (EEA), European Regional Centre for Ecohydrology (under the auspices of the United Nations Educational, Scientific and Cultural Organization [UNESCO] and INTOSAI, WGEA Secretariat representatives, and about 100 participants from SAIs.

During the meeting in Warsaw, the results of the latest audits of the ECA and the SAIs were discussed, including:

- transparency of funds for combatting climate change and economic adaptation;
- effectiveness of actions taken in the agricultural sector in Slovenia counteracting desertification;
- participation of SAI Bulgaria in shaping and developing climate policy;
- assessment of adaptation activities of European Union (EU) countries from the perspective of the EEA;
- adaptation to climate change in the energy sector in France; and
- implementation of the Floods Directive, and an integrated approach to ensuring access to clean water in the Netherlands.

A representative of SAI Brazil presented the Climate Scanner project, an initiative aimed at creating a reliable cross-sectional source of information on climate change around the world.



**21<sup>st</sup> Annual Meeting hosted by the Supreme Audit Office of the Czech Republic, held September 25<sup>th</sup>–26<sup>th</sup>, 2023, in Prague**

The meeting was attended by representatives of EEA, the Czech Environmental Information Agency, ECA, and the INTOSAI WGEA Secretariat, and about 70 participants from SAIs. The topic of the EWGEA meeting was sustainable energy. During the meeting, the latest data on the use of sustainable energy sources and prospects for achieving greenhouse gas emission reduction goals were presented by keynote speakers from EEA and the Czech Environmental Information Agency.



Thirteen representatives of SAIs plus members of the EWGEA group presented their recent audit outcomes in the area of renewable energy, energy security, energy efficiency, and green fiscal policy tools. Four workshops were held by representatives of ECA, SAI Czech Republic, SAI Estonia, and SAI Poland. Many topics were discussed, namely: the tools of green fiscal policy, taxes and subsidies for environmental protection,



subsidies for fossil fuels, and the increase in green energy prices with the simultaneous stagnation of fossil fuel production, among others.



Following the seminar, the EWGEA Steering Committee gathered to discuss future plans, joint activities on water quality, restarting the climate project group (an activity co-chaired by SAI United Kingdom and ECA), the outcomes of the workshops held during the XXI Annual

Meeting in Prague, and how to utilise these outcomes in the works of the group. The Steering Committee decided to accept the request from SAI Bosnia and Herzegovina to join the EWGEA.

**What next?** The EWGEA Spring session and Annual Meeting are planned for May 2024 and September 2024, respectively. The topics of these meetings will cover energy security issues, environmental crime, and green accounting. The EUROSAI WGEA Strategic Plan for 2020–2024 ends next year as well, so the Steering Committee is in the process of planning for the next period.

More information may be obtained at:  
[www.eursaiwgea.org](http://www.eursaiwgea.org) or [eursaiwgea@nik.gov.pl](mailto:eursaiwgea@nik.gov.pl).



## PASAI: Australasian Council of the Auditors-General (ACAG) and the Pacific Association of Supreme Audit Institutions (PASAI)

The pressing climate change issues for the Pacific region were a focus of the 11<sup>th</sup> meeting of the ACAG PASAI regional WGEA meeting held in Sydney, Australia, in May 2023. Twenty-two participants from 15 audit offices attended the meeting in person, and 55 additional participants attended online sessions in the group's first hybrid meeting, making for record attendance.

Participants provided updates on their countries' environmental risks, government programs to address these risks, potential limitations and gaps in programs, and recent and planned environmental audits.

Environmental risks identified include:

- environmental contamination from sources such as mineral processing, landfill waste, plastic waste, salmon farming, and even leaking oil from ships sunk during World War II;

- threats to biodiversity including invasive species, forest fires, land clearing, overfishing, and coral bleaching;
- sea level rise, storm surges, coastal erosion, and flooding;
- drought, acidification of soils, and loss of soils due to wind erosion;
- lack of insurance for areas affected by flood, fire, and storm surges;
- exposure of the economy and environment to carbon intensive industries; and
- water and food shortages.

Planned environmental audits cover management of waste and landfills, management of water resources, climate change adaptation, protecting threatened species, coastal management, electric vehicle infrastructure, managing invasive species, controlling plastic waste, and bushfire management and prevention.

### Pacific climate risks and impacts

Filomena Nelson, Climate Change Adaptation Advisor from the Secretariat of the Pacific Regional Environmental Programme, gave some insights into Pacific climate issues, including:

- the Pacific is home to some of the lowest atoll nations in the world;
- adaptation will not be able to prevent all losses and damages resulting from climate change impacts;
- access to climate change finance is challenging due to fiduciary requirements and review processes; and
- technical expertise is often limited to access, mobilize, and manage climate change finances.

Presentations confirmed that small island states in the Pacific and Indian oceans face similar climate challenges. Junior Patrick, Auditor-General of the Republic of the Marshall Islands, and Imase Kaunatu, Auditor-General of Tuvalu, spoke of climate risks and impacts on their low-lying islands, and Mohamed Ibrahim Jaleel, Manager of Environmental Audit for the Auditor-General's Office of the Maldives, spoke of similar issues affecting the Maldives in the Indian Ocean.

The nations raised issues and challenges, including king tides and storm surges combining to inundate low-lying areas; roads going underwater during high tides; and sea level rise and storm surge inundating land and water supplies and causing loss of land, including even causing some smaller islands to disappear.

### WGEA climate projects

The meeting considered opportunities to be involved in two global climate projects: SAI Brazil's ClimateScanner and the IDI/WGEA global climate adaptation actions (CCAA) audit. Since the meeting, eight Pacific nations have agreed to be part of the CCAA audit (Vanuatu, Marshall Islands, New Caledonia, Federated States of Micronesia, Samoa, Tuvalu, Fiji, and the Solomon Islands) with four considering sea level rise, three considering climate adaptation planning, and one considering water security.



**On screen:** Dashiell Velasque da Costa and Fernando Simões dos Reis, Government Auditors from SAI Brazil, talking about the ClimateScanner. **Speaker:** Jonathan Keate, RWGEA Secretariat, Office of the Auditor-General, New Zealand.

### Next Steps

The Regional Working Group on Environmental Auditing (RWGEA) and PASAI secretariat are supporting PASAI members taking part in the CCAA audit and considering how to support the implementation phase of the ClimateScanner in 2024 so that the Pacific region will be represented in these projects. Planning will soon begin for the next RWGEA meeting to be held in September 2024 in Canberra, Australia.

Please contact [Jonathan.keate@oag.parliament.nz](mailto:Jonathan.keate@oag.parliament.nz) for additional information.



### Bulgaria

#### Management of Vitosha Nature Park

Bulgaria's nature protection policy is aimed at the management, control, and preservation of protected areas, including natural parks. Vitosha Nature Park is the oldest park in Bulgaria and on the Balkan Peninsula. Due to its proximity to Sofia, the capital city, it is the most visited protected area in the country.

In 2023, the Bulgarian National Audit Office conducted the performance audit "Effectiveness of the Management of Vitosha Nature Park" for the period from January 1, 2018, to December 31, 2021. The report assessed the effectiveness of the management of Vitosha Nature Park regarding:

- the established legal and institutional framework for the park's management, including: regulatory requirements for the different categories of protected areas, certain powers and responsibilities for the park's management, a structure to implement the Vitosha Nature Park Management Plan, and implementation of the regulatory requirements for updating the Management Plan;
- the coordination and interaction between the authorities and parties interested in the management process;
- the implementation of the goals and tasks of the Vitosha Nature Park Management Plan 2005-2014 and for the period 2018-2021; and
- the control carried out by the authorities within the borders of Vitosha Nature Park.

The audit found that the management of Vitosha Nature Park by the authorities is in accordance with European and national legislation and is aimed at preserving the protected territory. However, to achieve effective management of the protected area, additional efforts need to be implemented by the authorities regarding:

- setting deadlines to update the Management Plan;
- conducting a public discussion on the implementation of the Vitosha Nature Park Management Plan where interested state bodies, regional governors, municipalities, and scientific and non-governmental organizations can discuss the compliance and implementation of the normative requirements of the Protected Areas Act;

- securing and financing the planned activities and tasks;
- following-up and reporting the performed activities and ensuring publicity and transparency;
- establishing order and responsibilities for the management of forest territories at the municipal level and effective implementation of the administrative penal provisions of the Protected Areas Act; and
- achieving effective functioning of the Advisory Council to the Vitosha Nature Park Directorate to address stakeholder interests and balanced development of the park.

To address the identified weaknesses, recommendations were made to the Minister of Environment and Water, Minister of Agriculture and Food, Executive Director of the Executive Forest Agency, and mayors of municipalities on whose territory the nature park is located.

The audit report is published on the Bulgarian National Audit Office's website: [Effectiveness of the Management of Vitosha Nature Park](#).

For further information, please contact Rossena Gadjeva, Director, Performance Audits Directorate at [gadjeva@bulnao.government.bg](mailto:gadjeva@bulnao.government.bg) and Kosta Stoyanchev, Director, International Relations and Projects Directorate at [k.stoyanchev@bulnao.government.bg](mailto:k.stoyanchev@bulnao.government.bg).



### Cyprus

#### Greenhouse Gas Emission Reductions

On May 20, 2023, SAI Cyprus issued a report titled, "Special Report: Have the Actions Promoted by the Republic of Cyprus Achieved the Desired Results to Reduce Greenhouse Gas Emissions?" The topic was chosen by taking into account both the (1) growing environmental awareness to reduce greenhouse gas emissions in order to combat climate change, which is a challenge both at the global and European levels, and (2) the significant revenues that ensue from the Emissions Trading System.

The audit revealed the following items:



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- Several weaknesses regarding the implementation of the Emissions Trading System in Cyprus;
- The lack of an effective mechanism to monitor the implementation of policies and measures with a positive, measured, and assessed impact;
- The evaluation of the contribution of relevant implemented projects; and
- The assessment of efficiency and effectiveness of the actions taken by the Republic of Cyprus to achieve national targets for greenhouse gas emissions reduction.



The training allowed ASA to gain valuable insights into the latest trends and best practices in environmental auditing. It also provided the opportunity for ASA to share its own experiences and expertise with other participants by presenting on “challenges and efforts to combat desertification in Africa” and “design and conduct of audit on desertification.” These presentations highlighted SAI Egypt’s commitment to promoting environmental sustainability in Africa.



### Egypt

#### Plastic Waste Management in the Nile River

Believing in the danger of plastic waste to the environment and human health, the Accountability State Authority of Egypt (ASA) conducted an audit on plastic waste management in the Nile River. The main objective of this audit was to assess the current state of plastic waste management in the Nile and to identify areas for improvement. The scope of the audit included an assessment of the legal and regulatory framework for plastic waste management, as well as an analysis of the current practices for plastic waste collection, transportation, treatment, and disposal.

The audit concluded that there is a need for urgent action to address the issue of plastic waste pollution in the Nile River, as well as a lack of awareness among stakeholders about the negative impacts of plastic waste on the environment and human health.

Based on these findings, the audit provided several recommendations which include strengthening the legal and regulatory framework for plastic waste management, increasing public awareness about the negative impacts of plastic waste pollution, enhancing collaboration among stakeholders, improving funding mechanisms for plastic waste management initiatives, and strengthening monitoring and evaluation systems.

In another context, ASA participated virtually in the AFROSAI WGEA training on auditing climate change mitigation and adaptation from 21-25 August 2023. The training aimed to equip participants with the necessary skills and knowledge to conduct audits on climate change mitigation and adaptation.



### European Court of Auditors

#### Impact of Audit Work on Climate Action and the Environment

In 2021 and 2022, the European Court of Auditors (ECA) published seven performance audit reports that covered topics relevant for achieving SDG 13 on climate action, three for SDG 7 on affordable and clean energy, one for SDG 14 on life on land, and one for SDG 15 on life below water. In addition, there are several ongoing audits in these fields (for more information, see the [ECA Sustainability Report](#) and [ECA Sustainability Report 2022](#)).

Addressing climate change is a key priority for the EU, which set ambitious energy and climate targets and committed to spending a significant share of its budget on climate action. Through its audits, ECA holds managers of EU funds accountable for the results from, and reporting on, climate spending (see [Report 09/2022: Climate Spending](#) and [Report 18/2023: EU Climate and Energy Targets](#)). These audits aim to enhance accountability and transparency of EU climate spending. ECA reports also highlight good practices identified during the audits.

However, measuring the positive environmental and climate impacts of audit reports is inherently challenging. One of the key instruments the ECA uses for measuring the impact of its audits is following up on audit recommendations. Every year, ECA reviews the extent to which auditees have acted in response to past recommendations. ECA's [annual report concerning the financial year 2022](#) concluded that for:

- [Report 8/2019 on wind and solar power for electricity generation](#), that included recommendations on improving the timeliness of statistical data on renewables and simplifying procedures to create a more favourable environment for renewable electricity generation—these recommendations were implemented by the Commission, in collaboration with member states, through measures, including changes to the legal framework.
- [Report 18/2019 on EU greenhouse gas emissions](#), that included recommendations on improving the Commission's review process for the land use, land-use change, and forestry sector and improving the framework for future emission reductions—the Commission implemented these recommendations fully and timely.

ECA also evaluates the impact of its reports by monitoring media reactions, such as the number of media articles mentioning ECA reports. Thus far, as compared to other ECA publications, reports on climate action and spending have relatively high media coverage, including, for example, report [16/2021 on agriculture and climate](#) and report [9/2022 on climate spending](#).

ECA also inquires about the likely impact and usefulness of its work, as perceived by its readers, such as the European Parliament, European Council, European Commission, EU agencies, and EU member states. In its [2022 Annual Activity Report](#), ECA reported that 82 percent of around 450 respondents considered ECA reports useful for their work, and 78 percent felt that ECA reports had an impact.



### Finland

#### Private Forestry Subsidies and Compensation

State funds have long been allocated to private forest owners in Finland to promote wood production and, since 1997, to safeguard biodiversity. In recent years, direct state aid has amounted to approximately EUR 70–100 million and indirect tax subsidies to approximately EUR 170 million a year.

The National Audit Office of Finland (NAOF) conducted a performance audit on state grants to private forest owners. The audit assessed the cost-efficiency—in terms of promoting wood production and safeguarding biodiversity—of three funding schemes that are the largest in euro terms.

According to the audit findings, the results and effectiveness of the schemes are not monitored in all aspects, and in the case of tax subsidies, not at all. The NAOF recommended that the three ministries that oversee the schemes—Finance, Agriculture and Forestry, and Environment—should develop the allocation, conditions, and monitoring of the schemes to maximize objectives set for private forests.

NAOF also found that the fixed-term scheme for financing sustainable forestry (Kemera) has hardly changed since 1997, despite significant changes in the operating environment. Further, the granting conditions for the Kemera subsidies for wood production have included some environmental conditions, but their effectiveness has not been monitored. This has sometimes led to inconsistencies in the use of state funds. For example, subsidies have concurrently been available for ditch network maintenance on the one hand, and for preventing and remedying the damage to biodiversity and waters caused by previous drainage on the other.

In recent years, there has also been over-budgeting of funds to support wood production while the appropriation for nature conservation and forest nature management has been running out.

Some programmes, such as the Forest Biodiversity Programme for Southern Finland, have had regular monitoring and are likely to achieve their quantitative goals. However, NAOF recommended that the ministries

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should together explore ways to further improve the cost-efficiency and effectiveness of the programme.

The summary in English is available at [Private forestry subsidies and compensations – Promoting wood production and safeguarding biodiversity - National Audit Office of Finland \(vtv.fi\)](#). For further information, please contact [tuula.varis@vtv.fi](mailto:tuula.varis@vtv.fi).



### India

#### Unveiling the Potential of the Blue Economy

The Comptroller and Auditor General (CAG) of India Girish Chandra Murmu, as chair of the SAI20 Engagement Group, chose Blue Economy as a priority area for the group under India's G20 presidency. To begin discussions about this priority area, SAI India hosted a seminar to discuss the challenges and opportunities, share knowledge, and gather perspectives from experts in the field of Blue Economy during the SAI20 Summit, held in Goa, India.



Mr. Girish Chandra Murmu, CAG of India, attending the SAI20 seminar on Blue Economy



Governor of Goa, Shri P.S. Sreedharan Pillai, CAG Shri Girish Chandra Murmu, Deputy CAG, Ms. Parveen Mehta and G20India Sherpa Shri Amitabh Kant at the SAI20 Summit

CAG Murmu underscored the Blue Economy's role as a catalyst for sustainable development, and he emphasized that it both aligns with SDG 14, which focuses on ocean

and marine resource conservation, and also significantly contributes to the broader goals of Climate Action (SDG 13), Clean Water and Sanitation (SDG 6), and Affordable and Clean Energy (SDG 7).

The discussions highlighted the importance of adopting a holistic approach to India's emerging Blue Economy, taking into account technology, programs, policies, and gender equity. The seminar had an optimistic outlook on India's commitment to integrating the guidelines of the Intergovernmental Oceanographic Commission of the United Nations Educational, Scientific, and Cultural Organization into its national coastal mission alongside its Blue Economy initiatives. The fisheries sector's close ties to the Blue Economy were also emphasized, stressing the importance of generating awareness through comprehensive reports.

SAI India produced a [compendium on the Blue Economy](#) with 16 case studies from 15 SAIs that encapsulates the experiences and contributions of the SAI audit community, providing valuable insights to guide future audits in this domain. Aligned with Goal 3 of INTOSAI, this compendium seeks to foster SAI cooperation, collaboration, and ongoing knowledge development and sharing. Specifically, it highlights the need to overcome the challenges within the Blue Economy through requiring specialized audit teams, capacity-building initiatives, and the development of tailored auditing guidelines to meet the sector's dynamic demands.

CAG Murmu also announced the establishment of a Center of Excellence on Blue Economy at SAI India's International Centre for Environment Audit and Sustainable Development (iCED), a recognized Global Training Facility for INTOSAI.



### The Netherlands

#### Flood Protection Beyond Dykes

The Netherlands is a low-lying delta country. Its world-famous dykes meander across the land to protect the country and keep millions of people safe and dry. However, even the strongest dykes cannot always prevent flooding, and climate change increases the risk of a dyke breach or overflow. Therefore, the Dutch Minister of Water drafted a plan in 2009 to take additional measures, beyond the dykes, to protect people and businesses against flood damage. These measures



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include, for example, a flood-proof spatial planning structure and good evacuation plans.

In an October 2023 report, the Netherlands Court of Audit concluded that almost 15 years later, measures beyond the dykes have hardly been developed or implemented. While the Minister of Water included options for spatial planning and disaster management measures in the dyke reinforcement program, these options are seldom put to use.

The Court of Audit found that it is very hard for dyke managers to estimate the costs and benefits of measures beyond the dykes because the minister has not developed key figures. The Court of Audit also found that the legal, financial, and administrative arrangements that the minister provides for these measures are unclear, leaving unanswered questions about who is responsible and who should pay for measures beyond the dykes.

Last, the Court of Audit found that residents often oppose measures behind the dykes, especially if these measures radically alter the landscape or are costly to residents themselves (for instance, to adapt their homes).

Current practice is not fit for the future

2023: current situation



2050: the water rises but the dykes hold it back



2100: the water rises further and the risk of flooding increases but we are not prepared



The Court of Audit concluded that The Netherlands' reliance on dykes for flood protection is not fit for the future (see image above).

The Court looked abroad for policies that could be used to support measures beyond the dykes. In Flanders (a region in Belgium), the government issued building regulations in flood-prone areas. In England, the government formulated flood safety standards for homes and other properties behind dykes. And in the United States, flood damage mitigation is encouraged through a

national flood insurance program with spatial regulations and price signals. The report uses examples throughout for inspiration and recommendations.

*The summary and conclusions of our audit are available on our website. The full English translation of the report will follow shortly.*

<https://english.rekenkamer.nl/publications/reports/2023/10/12/beyond-the-dyke>. For further information, please contact Emmy Bergsma ([e.bergsma@rekenkamer.nl](mailto:e.bergsma@rekenkamer.nl)).



### Pakistan

#### Citizen Participation in Environmental Auditing

The Department of Auditor General of Pakistan has initiated Citizen Participatory Audits (CPA) as a new approach to environmental auditing. CPA is aimed at brokering a new relationship with citizens for engagement in the environmental audit process. It is universally acknowledged that effective and meaningful citizen engagement is essential in enhancing accountable governance, effective management of public finances, and the delivery of public services.

Initially, citizens and civil society organizations (CSOs) were engaged in providing suggestions for areas in which to conduct audits. In subsequent phases, support of citizens and CSOs is being solicited in the execution of environmental audits.

The Directorate General Audit (Climate Change & Environment) carried out an extensive study to identify relevant audit topics for Audit Year 2023-24. Based on the extensive research of subject matters and criteria employed, the CPA on Conservation, Protection and Management of Margalla Hills National Park in Islamabad has been planned for 2023-24.

In the planned audit, citizens (civil society, academic groups, community members, and the private sector) and the SAI will work together to carry out the audit and finalize the findings. The audit will provide opportunities for civil society organizations, environmentalists, and citizens to engage, influence, and support the entire audit process, leading to effective assessment and determination of the outcome of the initiatives and programs undertaken to protect and preserve the Margalla Hills National Park.

During the assignment, the suggestions of the citizens and CSOs will not only be sought, but they will also be actively involved in the audit process so as to perform the role of ‘Citizen-Auditor’ in the CPA. Citizens participating in the audit will make the exercise more responsive and effective and provide more opportunities to identify areas of weak performance by the responsible agencies. At the stage of audit execution, efforts will be made to identify possible weak areas and choose items of high risk by carrying out investigations about the citizens’ complaints and interviewing relevant citizens/forums.



## United States of America

### Managing Risks from Wildfire Smoke

The U.S. has recently experienced some of its worst wildfire seasons on record, creating unhealthy smoke that has affected tens of millions of Americans. Physical health effects from wildfire smoke exposure can range from breathing difficulties to heart failure. Wildfire smoke can also affect people’s mental health when smoke forces them to stay indoors or avoid recreational activities for days or weeks at a time. Wildfires are expected to become more frequent and intense as a result of climate change.

In the U.S., various federal agencies have different roles related to managing risks from wildfire smoke. The Environmental Protection Agency (EPA) has a primary role in managing risks to air quality and public health from pollution sources. Federal land management agencies—the Forest Service and Department of the Interior—lead efforts to mitigate wildfire risk on federal land, which can reduce the likelihood of future catastrophic fires and resulting smoke events.

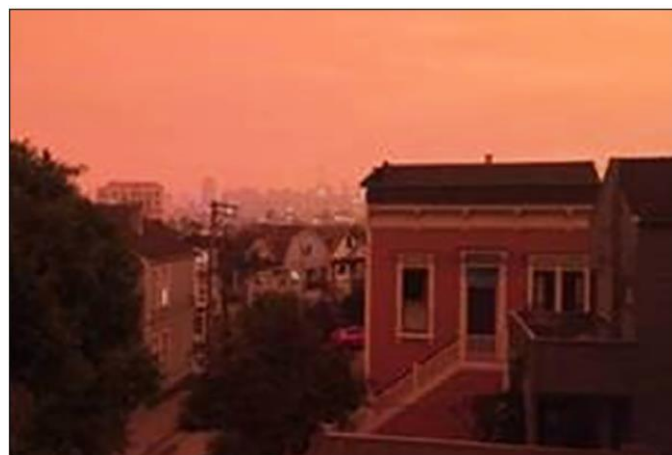
In March 2023, GAO issued a report on federal efforts to manage risks to air quality and public health from wildfire smoke. This report examined (1) EPA actions to manage risks from wildfire smoke and to coordinate with other federal agencies, and (2) how agencies could better manage these risks.

To conduct the work, GAO reviewed laws, regulations, agency documents, and literature; interviewed federal officials and 15 stakeholder entities, including tribal, state, and local agencies and nongovernmental organizations; and analyzed actions to reduce risks using criteria, including GAO’s Disaster Resilience

Framework. This framework provides a guide for analyzing federal actions to promote resilience to disasters and address the actual and anticipated effects of climate change.

GAO found that EPA has worked with other agencies to provide important information and tools to help communities prepare for and respond to smoke events. However, EPA’s efforts have been ad hoc and spread out across the agency, with no program or staff solely dedicated to this work. This may prevent the agency from targeting the limited resources it has to the highest priorities that can best help communities. GAO recommended that EPA better coordinate within the agency on these efforts.

### Wildfire Smoke in San Francisco (2020)



Source: GAO. | GAO-23-104723

GAO also found that EPA can enhance its role in supporting wildfire risk mitigation efforts, such as “prescribed burns,” that can help reduce the amount of smoke from future wildfires. This could help EPA more proactively and effectively reduce smoke risks over the long term. To do this, GAO recommended that EPA—with the Forest Service and Department of the Interior, as appropriate—take steps to better coordinate, provide information about reducing wildfire smoke risks, and incentivize and support wildfire risk mitigation at the tribal, state, and local levels.

*The full GAO report is available at <https://www.gao.gov/products/gao-23-104723>. GAO’s Disaster Resilience Framework is available at <https://www.gao.gov/products/gao-20-100sp>. For further information, contact Alfredo Gómez at [gomezj@gao.gov](mailto:gomezj@gao.gov).*