



Message from the Chair of WGEA

Dear Colleagues,

The year 2012 entailed lots of activities relating to sustainability and environmental issues. Many hoped it would be a milestone to set new goals for sustainable development. While the outcome might have not been as successful as hoped for, the drive for more effective national and international efforts to protect our environment, and improve the quality of people's lives, must be continued. Supreme Audit Institutions are well positioned to perform a crucial function by examining the execution of financial and policy commitments taken by their governments. As the WGEA advocated in Rio de Janeiro, global environmental governance can benefit from enhanced development goals and performance indicators, together with environmental and sustainability accounts, and with improved national reporting systems that are subject to external review.

In this context, public auditors should continue to pursue good relations with international organizations to help enhance a "virtuous circle among stakeholders." The WGEA can also benefit from the work and knowledge of external partners.

INTOSAI WGEA is moving toward a new and dynamic work plan period of 2014-16, which will continue to examine critical ongoing environmental issues while also making room for new ideas. Waste, continued reliance on fossil fuels, and depletion of natural resources are just a few of the issues calling for auditors' attention. Final approval of all new work plan items will be given during the upcoming Working Group meeting. Estonia welcomes you and is looking forward to a lively and fruitful meeting where the collective mind of environmental auditors worldwide will set wise targets for the upcoming work period.

Greenlines has been one of the work plan items documenting the activities of WGEA and serving as a forum for the WGEA community for the past 20 years. This being my last message I take the opportunity to thank the SAI of the USA, especially Mr Steven Elstein, for their great effort to have it as an indispensable and foremost output to share thoughts, topical news, and experiences. Enjoy!

Mihkel Oviir
Auditor General of Estonia

Feature Story

Auditing market based instruments for environmental protection – the experience of the SAI of Estonia

At a first glance, the use of market-based instruments to encourage more responsible environmental behaviour, and to reimburse the nation for the extraction of its natural resources, seems like a perfect subject for auditing, as there is a clear connection with money. At a second glance, however, an auditor might be intimidated by the complexity of the subject. For one thing, different countries may have significantly different financing systems, making the use of benchmarking a challenge. Nonetheless, Estonia's National Audit Office (NAO) has undertaken a serious effort to audit various aspects of market-based instruments. In this Feature Story, NAO shares its experience. The SAI also notes that it plans to discuss the issue in greater detail in a future WGEA paper on the subject. *(Read more on the following page...)*

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Auditing Market Based Instruments for Environmental Protection: The Experience of the SAI of Estonia

By Airi Andresson, National Audit Office of Estonia

At first glance, the use of market-based instruments to encourage more responsible environmental behaviour, and to reimburse the nation for the extraction of its natural resources, seems like a perfect subject for auditing, as there is a clear connection with money. Yet at second glance, an auditor might be intimidated by the subject's complexity. For one thing, different countries have different financing systems, making the use of benchmarking a challenge. Nonetheless, Estonia's National Audit Office (NAO) has undertaken a serious effort to audit various aspects of market-based instruments. Below, NAO shares its experience. It also plans to discuss the issue in greater detail in a future WGEA paper on the subject.

Defining market-based instruments for environmental policy

Market-based instruments are a relatively recent phenomenon in Estonia's environmental protection system, but their importance is growing. These instruments include, among others, measures like environmental taxes, fees, the trading of greenhouse gas emissions, and obligations for producers to assume liability over the whole life-cycle of their products. All these instruments are based on the "polluter pays" principle, and aim to internalise the external costs to environment. In the same vein, they seek to make heavily polluting activities more expensive than the less polluting ones. In theory, these more flexible environmental management instruments should be more efficient than traditional regulatory measures (i.e., laws, regulations, licenses, permits). However, their actual effect in securing better results is still the subject of debate.



In Estonia, producers of packaging must collect packaging waste from consumers and recycle it, or are required to pay packaging-excite fees

Audits can look into the efficiency and effectiveness of market-based instruments

Market-based instruments for environmental protection can be effective if their general framework is set up

adequately, and if there are sufficient controls to ensure that polluters abide by the rules. By implementing market-based instruments, the state gives up part of its regulatory power on the assumption that market forces will lead toward less polluting and more efficient activities. Thus, whether environmental goals can best be achieved through a tax measure, producer liability system, or tradable right can become an important question for auditors. An example of a system with structural problems is the European Union's greenhouse gas emission trading system which, due to an oversupply of trading units, has failed to incentivise investments into less polluting technologies. (See the 2012 EUROSAI WGEA cooperative audit Joint Report entitled "Emissions trading to limit climate change: does it work?").

Experience of Estonia's NAO in auditing environmental fees

In Estonia, persons emitting certain pollutants into water or air or through the land-filling of waste must pay environmental fees. Fees are also levied on environmental resource users. The fee is levied to all environmental permit holders; illegal polluters or resource users must pay an additional premium fee. Most of the environmental fee is deposited into the state budget account, and is then earmarked for environmental protection purposes through a state-owned foundation.

The NAO of Estonia has dealt with the topic of environmental fees in several audits. In 2009, we audited the system of pollution fees in order to find out whether they have had the intended effect of reducing environmental pollution. We concluded that in most cases, the rates charged were too low to further incentivise pollution-reducing investments. Instead, most companies simply opted to pay fees at their usual levels rather than lessen their pollution load.

We also found that the rates that are charged do not always correspond to the harmfulness of the pollutant, with some highly toxic pollutants having lower rates than

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less harmful ones. In addition to problems with the fee system's structure, we also discovered serious flaws with the system of controls that govern its implementation. Specifically, while companies were supposed to be calculating and submitting their payable sums based on their emissions, the authorities of the Ministry of the Environment did not check whether these payments were in fact based on correct emission levels. Thus, it was possible for an emitter to lessen the payable sum by simply understating its emissions. Such a lack of proper controls put companies that accurately declared their emission levels and fees at a competitive disadvantage with companies that did not.

Similar problems with supervision and improper fee calculation for mining rights were highlighted in an audit on the mining of mineral resources used for construction. In an ongoing audit dealing with the sustainability of the drinking and wastewater infrastructure, we are continuing to address the problems with the government's handling of environmental fees by auditing the fees received from water extraction and sewage treatment.

In the same manner, NAO pointed out in an audit concerning the extraction of peat resources that the bases for taxation on the use of peat reserves did not reflect external costs and the money collected from the use of these resources, and in fact did not even cover public administrative costs of extraction. Such inadequately low rates are a common problem with environmental taxes and fees, which raises problems about their efficiency and raises concerns that the state is being insufficiently reimbursed for the use of the nation's natural resources. With this in mind, NAO has recently started an audit on the state's activities concerning the exploitation of oil-shale, where in addition to other issues we are also looking into state revenues from oil-shale mining. Since oil-shale extraction and processing imposes by far the biggest pressure on Estonia's environment, the question of fair taxation becomes even more important than usual.



More than 70% of environmental fees are collected from companies mining and processing oil-shale

Auditing challenges

There are certain common challenges that we have encountered in the above mentioned audits:

- It is difficult to assess whether a change in a company's environmental behaviour has happened because of a tax or other fee, or whether it was due to some other economic or societal change. The same applies to a situation where pollution levels have not changed. It is conceivable, though difficult to prove, that such a situation could have been worse without the tax.
- It is even more difficult to assess the effects of the market-based instruments if reliable data about the state of the environment are not available, are of poor quality, or do not extend back in time long enough to see a trend.
- Whether a measure works depends greatly on the companies to whom the market-based instruments apply. However, while our NAO has the authority to audit the responsible government agencies, it does not have such authority to directly audit the activities of these companies.
- The systems of market-based instruments may be rather complicated, and it may depend on many economic aspects about which the auditors are unaware.

We have tried to overcome some of these challenges by consulting OECD and World Bank publications, and are considering obtaining additional expertise if necessary. If these do not help, we will undertake other measures such as retaining the services of hired experts. We have consulted with the companies themselves by sending them audit questionnaires and asking their opinions on whether certain market-based instruments work and if not, then why not. In rare cases, we have also been able to collect the missing environmental information ourselves, or have enlisted the assistance of appropriate environmental oversight authorities.

In conclusion, the NAO of Estonia would encourage auditors to investigate how market-based instruments for environmental protection are implemented in their respective countries. Even if it is not possible to directly link these instruments with the changes in the environment, or in the behaviour of polluters, it can nonetheless be important to understand how these instruments operate, and how the money acquired through these instruments is collected and used.

Seventh Survey on Environmental Auditing released

The results of the WGEA's Seventh Survey on Environmental Auditing conducted among INTOSAI members from February-May 2012 have been compiled by the WGEA Secretariat into a report that highlights trends and other key findings. The survey focused on the period 2009-2011. 118 SAIs, including 63 WGEA members, contributed by either filling out the questionnaire or by indicating that they had not conducted, nor were planning to conduct, audits on environmental matters in the near future.

Among the observations made by the Survey report:

- The total number of environmental audits conducted by SAIs from 2009-2011 has increased remarkably compared to the previous period;
- SAIs seem to have become more aware of the ways in which their traditional mandate can be applied to examine environmental laws, programmes and policies;
- A remarkable rise has also occurred in the number of SAIs attempting to gauge the impact of their environmental audits;
- A shortage of environmental data, insufficient monitoring and reporting systems, and a lack of human resources, skills and expertise are the most frequently-cited barriers to undertaking environmental audits;
- A considerable gap exists between auditors' developmental needs (e.g., training in environmental issues and audit techniques) and SAIs' level of activities to meet these needs;
- International cooperation on environmental auditing has intensified since 2009.

Refer to <http://www.environmental-auditing.org/Home/WGEAPublications/Surveys/tabid/129/Default.aspx> for the full report, which also includes results broken down by all INTOSAI regions.

Other recent news and events

- INTOSAI WGEA was represented at the United Nations Conference on Sustainable Development (Rio+20), and the World Congress on Justice, Law and Governance organised by the UN Environment Programme prior to Rio + 20. The working group's thematic report put together by the SAIs of Brazil and

Canada was introduced at both events and SAIs of Brazil, Canada and Zambia collaborated with Secretary General Mr Tõnis Saar at the special WGEA side event held at the Rio+20 venue.

- The July 2012 issue of the INTOSAI Journal devoted an entire special section to environmental auditing: an interview with the Chair of INTOSAI WGEA, articles on the latest trends in environmental auditing practice, the work and achievements of the WGEA, and cooperative projects among various INTOSAI regions.
- AFROSAI WGEA's 2nd Annual Meeting was held in Yaoundé, Cameroon from 2-6 July 2012. Important outcomes of the meeting included the endorsement of a parallel environmental audit of Lake Chad, and the election of the SAI of Cameroon as the next chair of the regional working group, effective July 2013.
- The 4th Environmental Auditing Seminar and 3rd Working Meeting of ASOSAI WGEA took place in Penang, Malaysia, 18-20 September 2012. Papers were presented on climate change, water-related audits, and international cooperation experiences. The Rules and Procedures of the ASOSAI WGEA were also approved at the meeting.
- EUROSAI WGEA's 10th annual meeting was held in Cyprus from 23-25 October 2012. Sustainable development, and the application and auditing of data sources in environmental auditing, were the central topics of the event. A one-day seminar on forestry audits, organised by the SAI of Indonesia, preceded the meeting.
- The 12th meeting of the INTOSAI WGEA Steering Committee was held on 3-6 October 2012 in Jaipur, India. The committee reviewed and approved all the draft research papers, guidance documents, training materials, and other 2011-2013 work plan projects prepared thus far, and also explored potential WGEA activities for the 2014-2016 work plan. **[photos, next page]**
- In February 2013, the INTOSAI WGEA Secretariat visited the office of the Audit Board of the Republic of Indonesia in Jakarta to discuss strategic and practical issues pertaining to the chairmanship of the WGEA, to be handed over to SAI Indonesia at XXI INCOSAI in October 2013. Both parties continue their efforts to ensure a smooth transition.
- The IDI-WGEA collaborated Transnational Capacity Building Programme on Cooperative Performance Audit of Environmental Issues in Forestry has been completed. A total of 15 SAIs from AFROSAI, ASOSAI and CAROSAI regions participated, each completing a forestry audit on one of the six target topics: harvesting,

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national forest inventory, forest protection, forest ownership, permanent forest estate and forest monitoring.

- The ARABOSAI Working Team on Environmental Auditing (ARWTEA) has developed water audit guidance materials, focussed specifically on the ARABOSAI region and including several case studies on the experiences of the SAIs. Materials are available on the WGEA website (Under the Focus on Water section, click on “How to audit water issues”)

Upcoming Events

- The 3rd meeting of AFROSAI WGEA will be held in Cairo, Egypt from 15-18 April 2013. Topics on the agenda include environmental and social assessment, and green governance and environmental challenges for African countries. A one-day seminar on auditing mining, based on the INTOSAI WGEA mining guidance material, will be organised prior to the meeting.
- From 23-24 April 2013, the EUROSAI WGEA Secretariat will organise a seminar on auditing water management in Oslo, Norway. The seminar will focus on practical audit issues including potential topics for audits, water management best practices, among others.

- The 15th Assembly Meeting of INTOSAI WGEA will take place from 3-6 June 2013 in Tallinn, Estonia. At WG15, research papers and guidance materials developed during 2011-2013 will be introduced and the next work plan for 2014-2016 will be approved. SAIs are invited to sign up for new WGEA projects. Registrations for WG15 are due 1 April 2013. Please contact Ms Kaire Kesküla at kaire.keskula@riigikontroll.ee, or at +372 6400 115 for related information.
- The WGEA Steering Committee reviewed the programme of the WGEA environmental auditing training course at SC12 in Jaipur, India, and approved the project team’s proceeding with the compilation of materials. The training programme provides participants with the basics of auditing, in particular environmental auditing, and elaborates upon specific environmental topics (biodiversity, climate change, waste and water). Its main strength will be its broad coverage of sound environmental auditing practices worldwide. The first course is scheduled to take place in November 2013 at the INTOSAI WGEA Global Training Facility (iCED) in Jaipur, hosted by the SAI of India.
- XXI INCOSAI will be hosted by the SAI of China in Beijing in October 2013. With the Congress, the Chairmanship of the WGEA will be officially transferred to the SAI of Indonesia. The Secretariat of the WGEA will apply for an exhibition booth to introduce the latest output of the Working Group to all INTOSAI members.



Delegates of the WGEA 12th Steering Committee pose during a break in their October 2012 meeting in Jaipur, India



“Alls well that ends well” at the 12 Steering Committee meeting, according to Estonia’s Tuuli Rasso and Margit Lassi, and India’s Jagbans Singh



AUSTRALIA: SAI identifies management flaws in the government's Private Irrigation Infrastructure Operators Program

In June 2012, the Australian National Audit Office (ANAO) completed an audit of the government's Private Irrigation Infrastructure Operators Program, which funds improvements to the private sector's irrigation infrastructure in return for a share of the water efficiency gains. Water entitlements acquired under the program are then used by the Australian Government to water environmental assets in Australia's primary river system.

The audit concluded that while the administering department had implemented the program and allocated available funding, weaknesses in program governance and in the management of a number of implementation issues had an adverse impact on the overall effectiveness of the program's administration. In this regard, shortcomings were evident in the program's design, the assessment of applications, and the development of measures to inform whether the program was achieving its objectives. The administering department had established appropriate funding agreements with successful Round 1 applicants, and developed effective monitoring arrangements to address the project implementation risks arising from the shortcomings in the assessment of applications.

The ANAO made three recommendations to: reinforce the importance of effective governance arrangements; tailor the application approach to the program and implement assessment processes that better reflect administrative requirements; and develop appropriate key performance indicators to collect and analyse performance data.

For further information, contact Grant Caine at grant.caine@anao.gov.au. Audit reports and Better Practice Guides are available from the ANAO's website – www.anao.gov.au.



BOTSWANA: SAI cites deficiencies in landfill operations

In December 2011, the Office of the Auditor General of Botswana completed an audit on Management of the City of Francistown Council Landfill. The audit was conducted to ascertain whether the Council managed the landfill appropriately, in order to keep it from threatening the environment and public. Key findings among others included:

- There was no documentary evidence of a waste management plan to ensure that waste was appropriately planned for, and to determine financing needs.
- The City of Francistown City Council had not been issued a landfill license due to its "multiple critical violations" of the Waste Management Act 1998 (e.g., lack of visual examination of incoming waste to ensure that it was segregated and appropriately labeled, as required; clinical waste containers brought in for landfilling that had not been labeled; waste not compacted and covered on daily basis to control odour and reduce accidental fires in the landfill).
- One of the incinerators at the landfill remained non-operational for 3-4 years.
- Not all hazardous waste was completely combusted and disposed of in accordance with the Waste Management Act and the Guidelines for the Disposal of Waste by the Landfill. Some of this waste found its way into solid waste disposal cells without proper treatment.
- The Council had not complied with the Environmental and Sanitary Landfill Operational Manuals or World Health Organisation Standards, leading to problems that included, among others: inadequate containment of chemical wastes; blocked storm water drains around the landfill; and a lack of any documentary evidence that gaseous emissions were monitored.

The SAI concluded that the City of Francistown Council must guarantee that the identified deficiencies are addressed if the landfill is to provide a risk free environment that can be recognised nationally, regionally and internationally.

For further information contact Ms. Botho Entaile at bentaile@gov.bw.



BULGARIA: SAI expands its participation in cooperative environmental audits

Bulgaria's National Audit Office reports as one of its highest priorities for the current year its active participation in coordinated environmental audits with other European SAIs, including three such audits in its 2013 annual programme.

Two of the audits have been initiated under the auspices of the EUROSAI WGEA. One includes a Latvian-led coordinated audit of national parks issues which, in addition to Bulgaria and Latvia, includes participation from Croatia, Denmark, Norway, Poland, and Ukraine.

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The SAI of Armenia has also expressed its wish to join. Bulgaria's NAO and other SAIs interested in auditing biofuels issues are planning a kick-off meeting during the time of the EUROSAI WGEA's upcoming April 2013 water management meeting in Oslo, Norway.

The third coordinated audit, initiated by the SAI of Ukraine, focuses on preventing and combating forest fires. Participating SAIs will have their kick-off session during the 5th meeting of the EUROSAI Task Force on the Audit of Funds Allocated to Disasters and Catastrophes, to be held in Sofia, Bulgaria, in March 2013.

For further information, contact Snezhina Dimitrova at www.bulnao.government.bg.



CANADA: SAI updates post RIO+20 activities; tables major report on resource development

SAI Canada provides an update on the outcome of the WGEA's contribution to the United Nations Rio+20 Conference, held in Rio de Janeiro 20-22 June 2012. Beforehand, the SAIs of Brazil and Canada had prepared a special topical report on the main findings and conclusions of the SAIs around the world regarding factors inhibiting progress towards sustainable development (report available on the WGEA website). Working group members also represented INTOSAI at the conference.

Just prior to Rio+20, on 17-20 June, INTOSAI WGEA contributed to the *World Congress on Justice, Governance and Law for Environmental Sustainability* organized by the United Nations Environment Programme (UNEP). Together with chief judges, attorneys-general, public prosecutors, auditors general, and legal practitioners from more than 20 SAIs, the WGEA Secretariat participated in discussions and the compilation of a *Rio+20 Declaration on Justice, Governance and Law for Environmental Sustainability* (available on the website of the WGEA). The declaration was presented to the Heads of the Rio+20 Conference. The Congress called for the establishment of an international institutional network to continue engaging high-level legal officers, and to promote information exchange, education, and capacity building of members of the judicial, auditing, and prosecuting agencies.

UNEP followed up on the World Congress by creating a new, high-level advisory panel of senior figures to advise it and the international community on improving the role of law, justice, and good governance to achieve sustainable development; and to engage the legal and international auditing community in the effort. On 7 December 2012, the inaugural meeting of the International Advisory Council for the Advancement of Justice, Governance and Law for Environmental Sustainability took place in Washington, DC under the

auspices of UNEP and the Organization of American States. The nine-person Advisory Council, which includes the Canadian SAI's Commissioner of the Environment and Sustainable Development (CESD), will advise and assist interested bodies in developing the network; supporting the development and implementation of environmental law at all levels; promoting access to environmental justice and expansion of environmental jurisprudence; and encouraging information sharing and technical assistance toward these ends.

SAI Canada also notes that on 5 February 2013, its CESD tabled a comprehensive report addressing offshore oil and gas activities, environmental financial assurances, and marine biodiversity. Taken together, the audits contained in the report indicate that environmental protection may not be keeping pace with the nation's booming resource development, and that Canada will be challenged to reconcile its environmental standards with consumer expectations in foreign markets.

More specifically, the report observed that: The two Atlantic offshore petroleum boards and cognizant federal entities are not adequately prepared to respond to a major oil spill (chapter 1); The federal government's absolute liability limits for accidents at nuclear facilities or offshore oil and gas developments are dated, leaving taxpayers at increased risk of paying for environmental damages (chapter 2); The federal government has made limited progress during the past 20 years on its domestic and international commitments to protect Canada's marine biodiversity (chapter 3); and Federal subsidies to the fossil fuel sector are declining in line with Canada's international commitment, made in part to reduce greenhouse gas emissions (chapter 4). Chapter 5 updates the petitions process and the federal government's actions in response to petitions on hydraulic fracturing for shale gas.

The report is available online at: http://www.oag-bvg.gc.ca/internet/English/parl_cesd_201212_e_37708.html. For further information about the report, and on the Rio+20 matters discussed in this article, contact George Stuetz at George.Stuetz@oag-bvg.gc.ca.



CHINA: SAI audits land development issues

In order to promote the implementation of the State's land policies and ensure the sustainable development of the socio-economy, the National Audit Office of China (CNAO) conducted an audit on land management as well as collection, management and use of land funds (including revenues from land transfer and funds related to land control). The scope of the audit included the activities of 24 cities, districts and counties from 2009 to 2010. The audit results were announced on April 20, 2012.

Among the audits main findings: The acquisition of

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14,900 hectares of land failed to comply with relevant regulations in 14 cities and counties; nine cities and counties agreed to transfer or provide 113 pieces of land totaling 614 hectares in violation of tendering and auction regulations; and four cities and counties failed to meet the policy requirements that land provided for “three types of housing” (subsidized housing, shantytown renovation and small & medium size ordinary commercial residential housing) should account for 70 percent of land provided for residential housing. The audit also found that 1,220 hectares of farmland involving 226 land development projects in three cities and counties failed to meet quality standards or were abandoned, and that 11 cities and counties failed to place land transfer revenues totaling 9.719 billion yuan under the budget management of funds. Some findings had been rectified before the announcement.

For further information, contact Mr. ZHAI Chuanqiang at cnao@audit.gov.cn.



COSTA RICA: SAI assesses the efficiency of the drinking water supply service

In December 2012, the SAI of Costa Rica finished a performance audit that assessed the effectiveness and efficiency of the Costa Rican Institute of Aqueducts and Sewers in ensuring the supply and quality of drinking water. Most of the audit criteria used in the evaluation consisted of parameters indicating the extent of efficiency and effectiveness in operations and service delivery. These indicators were grouped in three categories:

- Physical attributes, such as drinking water quality, water supply and demand, non-revenue water (i.e. water that is produced but not sold) and pressure distribution systems.
- Functional attributes, such as the number and type of breakdowns and number of hours required to fix them, reliability of potable water, operation and maintenance costs, and investment costs.
- Social attributes, including equality in access to drinking water and customer satisfaction.

The audit team concluded that the Institute is not ensuring the sustainability of water production, because of stream flow reduction and the fact that the population served has increased more than production. The efficiency of the service is limited by the high levels of non-revenue water, which reached 48.9% in the Extended Metropolitan Area and 50.6% in Regional Systems. These proportions are high in comparison to those of other regions such as Chile, Colombia, and some European countries.

The high levels of non-revenue water were attributed primarily to leaks, aging infrastructure, and inadequate monitoring systems. Authors also pointed to other causes such as unbilled connections.

It was confirmed that access to the drinking water service is provided largely on an equitable basis. Nevertheless, inequalities persist in some areas because of the above-mentioned weaknesses. In this regard, the SAI of Costa Rica identified some regions that do not adhere to water pressure standards, and have higher incidence of breakdowns as well as lower relative investment in some components of water supply systems. Also, not all of the quality tests required by the Health Authority are performed in small communities. Finally, the “the query customer tool” applied by the Institute does not sufficiently capture the view and needs of the users.

Recommendations issued to public authorities called for: issuing a non-revenue water policy and quality regulations for the provision of the drinking water service; strengthening infrastructure expansion and the investment in maintenance; issuing a Control and Reduction of Non-Revenue Water Program and the Pollution Risk Map for testing water quality; and reformulating the customer query tool.

For further information, contact Lilliam Marín Guillén at lilliam.marin@cgr.go.cr.



CYPRUS: SAI audits climate change adaptation; hosts EUROSAI-WGEA meeting

Encouraged by the EUROSAI WGEA, the Audit Office of the Republic of Cyprus recently completed an audit of the government's efforts to help the nation adapt to climate change, focusing on the water, forestry, and agricultural sectors.

The main audit findings included an absence of a formal risk and vulnerability assessment and of a national adaptation strategy; and that implemented measures only addressed existing problems rather than facilitating adaptation to future climatic conditions. The report also cited a lack of coordination among various Departments implementing the measures. It concluded that as a result of inadequate planning, the economy, efficiency and sustainability of key actions taken were questionable.

According to the SAI, many of the identified issues are expected to be resolved by an ongoing initiative called the CYPADAPT project, co-financed by the LIFE+ 2010 programme. That project is expected to be completed by March 2014.

The full report is available in Greek on the SAI's website (www.audit.gov.cy). A comprehensive summary in English has also been posted to the site.

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The SAI also reports hosting the 10th annual meeting of the EUROSAI Working Group on Environmental Auditing 23-25 October 2012. More than 70 participants from 30 SAIs and 4 other organisations participated in the successful meeting. The main topics included sustainable development and data in environmental auditing. On the day prior to the annual meeting, a training seminar on auditing forests was held based on the recently-completed INTOSAI WGEA guidance document on this subject.

For further information, contact Akis Kikas at akikas@audit.gov.cy.



CZECH REPUBLIC: SAI audits EU program funds earmarked for limiting industrial pollution and environmental risks

In December 2012, the Supreme Audit Office of the Czech Republic (SAO) completed an audit of the finances associated with "Priority Axis 5," or PA5, under the EU Operational Programme Environment—Limiting Industrial Pollution and Environmental Risks. The audit focused on activities of the Ministry of the Environment, the State Environmental Fund (SEF), and 13 selected grant beneficiaries. The total funding at issue approximated CZK 280 million (approx. 11,2 million euros), which is about 35% of the approved grants from the European Regional Development Fund and SEF. The audit covered the years 2008 to 2011.

The auditors found that the indicators for projects designed to limit pollution or reduce environmental risks are set up in a way that will make it impossible, after the projects are completed, to quantify the programme's effectiveness in reducing pollution or its associated risks. Rather, the indicators will merely show how many pieces of equipment were installed, and what relative improvement they may bring. The indicators, such as they are, will provide no information about the actual effectiveness of the earmarked funds in reducing the volume of pollutants in the Czech Republic.

SAO adds that as part of PA5 projects, support is provided for developing pollution information systems and software tools to assist in preventing and responding to major accidents. The principal users of these systems and tools are the state and local authorities and organisations charged with preventing and dealing with such accidents. SAO observed, however, that these projects are usually initiated and designed by private entities; and found no evidence that these private entities engaged in negotiations or agreements on how these tools can best be designed to serve their purpose, relying instead only on their own speculation. Accordingly, the SAO proposed that projects be awarded according to the actual, documented needs and requirements of the relevant competent authorities that will be using them.

For further information, contact Michaela Rosecká at Michaela.ROSECKA@NKU.cz



ESTONIA: SAI finds that the nation's electricity production faces great challenges

In September 2012, the Estonian National Audit Office published a report on alternatives for Estonian electricity production. Fossil fuels (oil shale) still account for over 90 percent of total electricity generated in Estonia. Nearly three-fourths of oil-shale power stations are old and must be closed down over the next 10-15 years.

Environmental impacts associated with oil shale electricity are significant—accounting for about 70 to 80 percent of all CO₂ emissions, non-hazardous and hazardous waste, and water used in Estonia. Nevertheless, the report shows that, for now, the state strongly favours oil shale energy compared with renewable energy.

The NAO's report examined the present situation and changes in Estonian electricity production. The report emphasizes that in the next 10 years, the country's electricity production will have to deal with three important questions: (1) how to secure its energy supply after its electricity market is 100 percent liberalised and its old oil-shale power plants are closed; (2) how much electricity will be produced in Estonia with state versus consumer support; and (3) what type of generation will be favoured by the state (renewable or non-renewable sources, large or distributed power plants).

Estonia's energy sector plans have so far been made only 10 years into the future. However, in order to successfully implement structural changes in the technology of electricity production and transmission, NAO concluded that new plans should look at least 30 years ahead.

A summary of the report is available in English: <http://www.riiqikontroll.ee/DesktopModules/DigiDetail/FileDownloader.aspx?AuditId=2264&FileId=12023> For further information, please contact Ms Airi Andresson (airi.andresson@riiqikontroll.ee)



INDIA: SAI comprehensively audits environment management of Indian Railways

A wide ranging, comprehensive, and innovative audit by SAI India in 2011-12 assessed the environmental impact of railway operations in the nation. Indian Railways (IR) is the single largest carrier of freight and passengers in the country, covers 64,460 route kilometres, and traverses through high-density urban areas as well as vast rural

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and forest areas. It handles 7,651 million passengers and carries 922 million metric tonnes of goods traffic per annum. Operation and maintenance of the entire railway system in the country has considerable impact on environment—it is a huge consumer of energy, generator of waste, and source of air, water and noise pollution. The IR's approach toward environmental protection, therefore, assumes great importance for tackling India's environment challenges. A major challenge to the audit was absence of audit criteria for many IR operations.

Among the audit's major findings:

- IR has yet to formulate comprehensive environmental guidelines for handling and transportation of pollution-intensive bulk commodities (e.g., coal, iron ore, cement, fertiliser) which are now being transported in open wagons and thus pose a health hazard to passengers and neighbouring residents.
- Effluent Treatment Plants (ETPs) were to be installed at all major stations. However, on average only one ETP was installed in each zone, leaving most major stations to discharge effluent in nearby low-lying areas, water bodies, and municipal drainage systems.
- Water Recycling Plants (WRP) were to be provided at locations where water is scarce, but in 12 of 17 zones no provision for WRP had been made. Of 212 stations test checked, rain water collection systems were installed at only 7 stations in 5 zones.
- The energy conservation policy of IR envisioned the use of non-conventional energy sources. Bio-diesel was used in only 5 zones and its consumption was insignificant. The overall achievement of electrifying level crossings with solar panels fell far below targets. IR also failed to make major progress in tapping wind energy.
- Sixty-two elephants died during the review period after being struck by trains. Despite the imposition of permanent speed restrictions, improved signage, regular clearance of vegetation along tracks, etc., animal mortality rate due to such incidents had not declined.
- Garbage from outside agencies was burned or dumped on Railway premises in 37 stations. At 54 of the 212 stations checked, the Railway Administration resorted to disposal by burning, dumping into adjacent canal, low lying areas, and/or dumping on Railway land near the track.

The Report made numerous recommendations and was presented to the Parliament in December 2012 amid widespread publicity.

For further information, contact Ms. Nameeta Prasad at prasadN@cag.gov.in.



IRAQ: SAI hosts training on methods and techniques in environmental auditing

Pursuant to the 2011 training plan of the Arab Organization of Supreme Audit institutions (ARABOSAI), the Republic of Iraq's Federal Board of Supreme Audit (FBSA) hosted a training event in Baghdad on "Methods and Techniques of Environmental Audit" on 4-8 November 2012, for a group of representatives from ARABOSAI. Representatives from Tunisia, Palestine, Egypt, Yemen, Mauritania and Iraq took part in the event.

The training event addressed the following issues:

- Identification of environmental auditing and its significance.
- Methods and techniques in environmental auditing.
- The actual impact of alternative methods and techniques in environmental auditing.
- Environmental auditing and its relation to sustainable development.
- Audit guidance for environmental auditing.
- Challenges involved in conducting environmental audits.
- Exercises and case studies from the experiences of the host institution to enhance the theoretical aspect of the session.

The event was received positively by participants, who expressed their interest and keenness on Iraq's efforts to restore its interactions with the regional and international communities.

For further information, contact Federal Board of Supreme Audit at bsa@d-raqaba-m.iq.



LESOTHO: SAI completes local waste management audit

The SAI of Lesotho reports completion of an audit to assess problems associated with solid waste management by the Department of Health and Environment, in the Maseru City Council. The audit report observed that waste was kept in several "temporary" storages that had later become permanent, and that waste had been seen scattered outside the fenced areas. It also cited a shortage of street bins; a number of illegal dumpsites; and a lack of knowledge on the part of the community on the need to segregate different waste streams.

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Although the SAI notes that it may take some time to fully assess the audit report's impact, a number of remarkable changes have already taken place. Most temporary storages have been cleaned, and waste spillage problems have been eliminated. Illegal dumpsites have also been cleared, and signs have been posted to indicate that these sites are not for waste disposal.

Nonetheless, it has been observed that illegal dumpsites are still coming up in some areas, and there have been calls for the Maseru City Council to better educate communities on safe practices in waste management.

The SAI states that it will conduct a detailed follow-up audit at a later date, but that it will in the meantime continue to monitor the situation. The audit report will be posted to the SAI Lesotho website (auditgen.org-ls) in due course.

For further information, contact Mamahooana Leisanyane at mamahooanal@yahoo.co.uk.

LITHUANIA: SAI identifies untapped potential to reduce areas affected by quarrying

In December 2012, the National Audit Office (NAO) of Lithuania completed a performance audit report entitled, "Untapped Potential to Reduce Areas Affected by Quarrying."

According to NAO, the use of subsoil resources is an important element in meeting the needs of the society; however, this activity has a negative impact on the environment since open-pit mining of mineral resources (solid minerals, including peat) in industrial and small quarries and peat bogs damages those areas. Areas affected in this manner that go unrehabilitated spoil the landscape and pose threats to human health. Therefore, after extraction of mineral deposits, affected areas should be rehabilitated in a manner that restores, to the extent possible, the former land use or converts these areas into more valuable ecosystems.

Responsibilities for controlling quarry-related damage fall under the Ministries of Environment and Agriculture, and well as other government bodies reporting thereto (such as the Lithuanian Geological Survey, National Land Service, and municipalities). Currently, there is imprecise information on the land area damaged by quarrying and peat extraction, since the inventory of such territories was last taken in 1998. According to this significantly outdated information, the area of land damaged by quarrying was 9,829 hectares and the area affected by peat extraction came to 17,021 hectares. In fact, the amount of the affected areas is much larger because this amount does not include the land damaged by illegal mining.

The audit assessed whether the organisation and control of extraction mining and rehabilitation of mineral

resources ensure that only minimal land areas are left unrehabilitated. The audit examined whether excess land areas were affected; whether competent authorities have complete and reliable information about the affected land areas and their rehabilitation; and a number of other factors concerning the proper conduct and accountability of the rehabilitation process.

Auditors recommended that the Ministries of Environment and Agriculture create a database to help guide authorities in better managing the rehabilitation process; take steps to prevent illegal mining; and adopt a programme to rehabilitate areas for which a user cannot be identified.

For further information please contact Aldona Puteikiene at aldona.puteikiene@vkontrolė.lt



MALAYSIA: SAI collaborates with Indonesia on illegal, unreported, and unregulated fishing

The Audit Department of Malaysia has agreed with the Indonesia Board of Audit to conduct a parallel audit on Illegal, Unreported, and Unregulated (IUU) fishing in their respective maritime environments. As a "parallel" audit, each SAI will adopt an audit approach suitable to meet its national needs and preferences. Separate audit teams from each SAI will submit reports to their respective parliaments/governments.

The overall audit objective is to assess whether illegal, unreported, and unregulated fishing is being controlled efficiently and effectively, and in accordance with the relevant laws and regulations intended to minimize its adverse environmental impacts. The audit scope covers the period 2010 to 2012. To date, both SAIs have developed Audit Design Matrixes formulating the audit criteria, methodology, technique and approach. Remote Sensing and Geographical Information System (GIS) was used in selecting sample and decision making, as well as a tool for audit analysis.

The audit will address a number of adverse practices known to be occurring, which are in violation of current laws and regulations and which have destructive impacts on fish populations and the environment. Encroachment, for example, occurs when vessels fish illegally in territorial waters without proper license. Suspected destructive fishing practices such as bottom trawling, drift nets, shark finning, blast fishing, and poison fishing occur over vulnerable habitats such as shallow coral, deep sea coral and sea grass. Overfishing is also a serious problem, particularly when it occurs in vulnerable habitats such as spawning and nursery areas.

Multiple government agencies are currently responsible for various aspects of marine surveillance, search and rescue, and enforcement. According to SAI Malaysia, they have undertaken these responsibilities with varying

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degrees of success, depending on the quality and availability of their resources at any given time. Accordingly, the SAIs concerned will be investigating problems associated with overlapping jurisdictions and authorities among the numerous government agencies involved, and seeking ways to improve coordination of policies and decision-making processes across local, state and federal levels of government.

For further information, contact Fadzilah Binti Hj. Mohammad at fazee@audit.gov.my.



MEXICO: SAI systematically assesses national public environmental policies

According to Mexico's Superior Audit Office, public policy assessment and analysis has, in recent years, acquired great significance for governments, researchers and colleagues in academia, among the general public, and as a response to those wanting to know if public officers address public problems afflicting society.

Public policies are designed by government to solve the problems arising in society, as well as to meet citizens' demands and needs. This way, government aims to fulfill its primary responsibility of overcoming the existing obstacles in society.

Public policy assessment seeks to determine, interpret, and explain the results achieved, and to provide elements to the decision making process in order to improve the government practices.

In this context, and in accordance with its mandate under the Federal Supreme Auditing and Accountability Law, in 2012 the Superior Audit Office of Mexico started assessing federal public policies. To this end, the SAI conducted eight different public policy assessments related to the same number of public policy topics, including the so-called "Assessment of Environmental Public Policy, 1989-2011."

The latter allowed the SAI of Mexico to issue an opinion regarding the continuation given by the Mexican government to address the environmental challenges during the last 24 years (four presidential terms), particularly in relation to four key themes: air, water, soil and biodiversity. Likewise, the SAI's public policy assessment facilitated the analysis of the government's implemented actions to address these problems, and provided valuable information about the results obtained, and on the status in 2011 of each matter assessed.

With this new approach, the SAI of Mexico prepared a report on the main weaknesses and areas of opportunity of Mexican environmental public policies. These findings could be considered by the Mexican government to improve future public policies, thus contributing to the

enhancement of public administration with regard to environmental matters.

The report of the SAI's environmental public policy assessment has been available on its website at www.asf.gob.mx since February 20, 2013.

For further information, contact Erwin Alberto Ramirez Gutierrez at earamirez@asf.gob.mx.



NEW ZEALAND: SAI reports on biodiversity management and its efforts to build PASAI's environmental audit capacity

As one of the world's most geographically isolated countries, New Zealand is home to an exceptionally high number of indigenous plant and animal species, but is also regarded as a biodiversity "hotspot" because of threats to its rich biodiversity—about 2800 species are at risk of becoming extinct. As part of a work programme focused on how public agencies prioritise work, develop capabilities and skills, and use information to address future needs, SAI New Zealand recently completed a performance audit of the effectiveness of the Department of Conservation in setting priorities and working with partner organisations to manage biodiversity.

Overall, the audit found that the Department is not winning the battle against the threats to New Zealand's indigenous species and their habitats. Although the Department's goal is to maintain and restore indigenous biodiversity, efforts to date are, at best, merely slowing the decline of biodiversity in New Zealand. The Department is able to actively manage only about one-eighth of New Zealand's conservation land and about 200 of the 2800 threatened species. Given its resources, the Department's strategy of working in partnership with community groups, local authorities, and commercial enterprises is logical. The report is available at www.oag.govt.nz.

As Secretariat of PASAI, SAI New Zealand reports that PASAI members have recently begun a fourth co-operative environmental performance audit (CPA). The audit is part of a programme of CPAs in the PASAI region—a co-operative effort among the INTOSAI Development Initiative (IDI), the Asian Development Bank, PASAI, and SAI New Zealand as RWGEA coordinator.

Three CPAs have been completed to date on solid waste management (2010), access to safe drinking water (2011), and managing sustainable tuna fisheries (2012). Ten PASAI-member SAIs participated in each of these audits. The consolidated regional reports of the first two are available on the PASAI website at www.pasai.org and on the WGEA website at www.environmental-auditing.org. The regional report of the third CPA will be issued in early 2013.

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In October 2012, the 15th PASAI Congress approved the conduct of a fourth CPA on Climate Change Adaptation (CCA) and Disaster Risk Reduction (DRR). The Congress approved an umbrella audit topic enabling individual SAIs to develop audit objectives and lines of enquiry relevant to their specific jurisdictions. The umbrella topic is to assess the effectiveness of CCA and DRR strategies, plans, and financing in a particular sector of each of the participating countries. Once again, 10 SAIs are participating. The Audit Office in the Australian State of Victoria is assisting two audit teams under a “twinning” arrangement.

Different regions of the Pacific have different vulnerabilities to climate change effects and severe weather events such as typhoons and cyclones. The audit plans developed during a planning meeting in November 2012 are accordingly clustered around the following topics:

- Preparedness – Federated States of Micronesia National Office, Fiji, Palau, and Samoa;
- Planning for and managing climate change effects, such as coastal erosion – Cook Islands, Kosrae, and Tuvalu; and
- Managing climate change effects on food security – Solomon Islands, Tonga, and Pohnpei.

The audits will be carried out in the first half of 2013 and the audit teams will meet in June 2013 to finalise their reports.

For further information, contact Jonathan Keate at jonathan.keate@oag.govt.nz.



NORWAY: SAI discusses new multilateral audit on Arctic Circle issues and announces new EUROSAI WGEA climate change reports

SAI Norway reports that the SAIs of Denmark, Norway, Russia, Sweden and the United States have begun a multilateral performance audit regarding their respective governments' participation as members of the Arctic Council. In particular, the audit focuses on each government's efforts to meet its commitments as Council members to protect the environment and ensure sustainable development in the region. The Supreme Audit Institutions of the other member states of the Arctic Council (Canada, Finland and Iceland) are audit observers.

The multilateral audit's objectives are to describe the environmental challenges and economic opportunities in the Arctic and to evaluate the efficiency of the Arctic Council's Member States' responses to them. The latter

includes evaluating the implementation of the Arctic Council's recommendations related to environmental protection and sustainable development. The audit will also examine the manner in which the Arctic Council itself is fulfilling its own mission. The SAIs of Norway and Russia serve as audit coordinators. The participating SAIs will, separately and independently, conduct national audits of the effectiveness of their respective national authorities' work related to the Arctic Council.

Participants have already discussed methodological approaches, pertinent Arctic Council recommendations, and coordination issues. They agreed to maintain close communication throughout, and to share preliminary findings and conclusions as work proceeds. Some data collection may also be conducted jointly. They plan to complete their national reports by the end of 2013. A Joint Memorandum planned for early 2014 will then reflect key findings and conclusions.

SAI Norway also provided key updates as EUROSAI WGEA Chair. Upcoming activities include a seminar on auditing water management in Norway, 23-24 April 2013, and the 11th annual meeting to be held in the Czech Republic, 15-17 October 2013. The themes for the annual meeting are “Sustainable land use” and “Assessing validity and reliability in quantitative and qualitative analyse.” A one-day training seminar on the INTOSAI WGEA Guidance on “Fraud and Corruption Issues when Auditing Environmental and Natural Resource Management” will be organised in connection with the annual meeting.

The SAI also notes that two EUROSAI WGEA cooperative audit reports were recently published, entitled, “*Adaptation to climate change - are governments prepared?*” and “*Emissions trading to limit climate change: Does it work?*”

The cooperative audits' joint reports and further information about the EUROSAI WGEA's activities are available at the working group's website:

www.eurosaiwgea.org. For further information about the Arctic Council audit, contact Martin Ørvmim at Bjorn-Martin.Orvim@Riksrevisjonen.no



RUSSIA: SAI audits state activities and funds used to lessen climate change's impacts on agriculture

The Russian Federation's Accounts Chamber reports that among its environmental audits completed in 2012, was one focusing on alleviating the impacts of climate change on agricultural lands and productivity.

Auditors analysed a number of actions taken by state officials, focusing on their productivity and effectiveness in helping Russian agriculture to adapt to present and future changes in climate. They concluded that an appropriate level of state regulation was applied and did

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not identify problems with the use of budgeted funds. However, they did cite a lack of timely implementation of measures to adapt the agricultural sector to climate change, noting that it threatens both material losses and decreased international competitiveness of Russian agriculture.

The Accounts Chamber recommended that the Ministry of Agriculture develop a more comprehensive and optimal adaptation strategy that would include a greater diversification of the agriculture economy; a focus on sustainability that better accounts for potential climate change impacts; and a clearer statement on the mechanisms that the state will use to support these efforts. It also recommended that the government consider creating a body that would coordinate the efforts of different organizations to promote effective adaptive measures, and to lessen the anthropogenic influences on climate change.

For further information, contact Tamara Toloknova at totam@ach.gov.ru



RWANDA: Environmental audit underway on biomedical wastes management

In January 2013, the SAI of Rwanda undertook an environmental audit of the management of biomedical wastes. The SAI had been motivated to conduct the audit by a sharp increase in the utilization of health services and, along with it, an increase in the quantity of biomedical wastes generated by patients. Biomedical wastes are potentially harmful to all living organisms in general and healthcare and sanitation workers in particular. The SAI reasoned that the sudden increase in the quantity of biomedical wastes generated may not have been accompanied by a simultaneous increase in the medical community's ability to manage them; and that there was hence a high health risk associated with them.

The SAI therefore undertook the audit to assess the current status of biomedical wastes management and to recommend how it can be improved. Specifically, the audit's stated objective is to assess the management of biomedical wastes to ensure whether it is being done in a manner that protects living organisms, healthcare, and sanitation workers against potential harm caused by improperly managed biomedical wastes. The audit will cover all referral hospitals, some district hospitals, and some health centres.

For further information, contact Goretti Ingabire at Goretti.Ingabire@oag.gov.rw.



SOUTH AFRICA: SAI reports on solid waste landfill audit; and on recent AFROSAI-E Annual Technical update

SAI South Africa reports that in 2012, 57 solid waste landfill sites in all 19 local municipalities in South Africa's North West province were visited by auditors of the Office of Auditor-General. These visits focussed largely on the province's legislative compliance with regard to its solid waste landfill sites. South African legislation requires landfills to have permits and to comply with permit conditions and other requirements. Landfills must also be rehabilitated (continuously and after closure), and provinces must make provisions for this rehabilitation.

During the visits, instances of non-compliances with laws and regulations were found in all sites visited. Contrary to legislative requirements, most landfills did not have permits, nor did all municipalities provide for the landfill rehabilitation costs in the AFS as required.

Management of the environment is considered to be a provincial competency under the Constitution of South Africa. The North West province has, to date, not fully exercised its Constitutional powers, as it has not yet promulgated its own province-specific environmental legislation. At present, environmental management in the North West province is mainly driven by national and international priorities and requirements (e.g. CITES, Agenda 21 etc). However, outdated ordinances, bylaws and acts are still being used in the province. If the province is to address the concerns raised by auditors in a comprehensive manner, consideration will have to be given to updating outdated legislation and greater attention must be paid to matters of compliance.

In its capacity as AFROSAI-E Secretariat, SAI South Africa also explains that the Annual Technical update, which was held in Pretoria from 14-16 November 2012, is an annual event where technical guidance material on topics such as auditing standards, electronic working papers, environmental performance, and regularity audits are launched. Working with the Secretariat, expert resources are provided the opportunity to explain the purpose of the documents and how they can be used by SAIs. Delegates, on the other hand, are given the opportunity to comment and to share their experiences and lessons learned during the implementation of the previous year's documents.

Environmental auditing was again on the agenda for the 2012 Technical update. Two presentations were made, the first by a key note speaker on the topic of environmental issues related to extractive industries and the mining sector. This discussion provided a platform for developing a guideline on the auditing of extractive industries available to the SAIs. Further development work on this topic will be undertaken in 2013, according to the SAI.

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The second presentation was made by the SAI of Seychelles on its first environmental pilot audit with a regularity audit focus. The SAI explained that its auditee was the Department of Environment, which is responsible for oversight and monitoring compliance with environmental legislation and relating policies and plans. The particular focus of the audit was on the Plantation Club Resort and Casino (Kempenski), given the social and environmental impacts associated with these types of resorts. The SAI also mentioned that the AFROSAI-E Secretariat provided ongoing support throughout, and that the pilot audit was successfully completed at the end of November 2012.

For further information on the solid waste audit, contact Thabi Nkos at ThabiN@aqsa.co.za. For further information on AFROSAI-E matters, contact Annerie Pretorius at Annerie@aqsa.co.za.



THAILAND: Performance audit focuses on problems in demarcating forest boundaries

The SAI of Thailand examined issues associated with the demarcation of the nation's forests, and specifically to determine whether all forest boundaries have been clearly demarcated, and whether such demarcations are in harmony with the surrounding population. The audit's scope focused on the forest demarcations of 3 departments, which were responsible for all forestry areas from 2002 through 2010.

The audit concluded that the forest demarcations were often not clear nor covered all forested areas, and that boundary markings were inefficiency made. Based on interviews with affected parties, 30% never participated in the forest demarcation process, and 37.5% did not accept the forest demarcation. The people who accept the forest boundaries still live in forest areas. However, areas where demarcation is not accepted are still vulnerable to the problem of encroachment. Moreover, the audit found that inconsistent standards were used by many Ground Control Points (GCPs) in the same area, and that inconsistent demarcations were therefore made by the pertinent agencies across the entire country.

The audit report recommended that the government: (1) determine policy and assign a lead agency for forest management; (2) command all relevant agencies to integrate information; and (3) set up a clear action plan that will encourage consistent application of demarcation standards. The report also recommended each relevant agency: (1) design its own action plan, budget and goal in order to continue forest demarcation; and (2) involve all stakeholders in helping to identify forest boundaries to better ensure the accuracy and effectiveness of the ground survey process.

For further information, contact the International Relations Division at int_rela@oag.go.th.



UNITED KINGDOM: SAI completes audits on nuclear decommissioning, wide range of other environmental and sustainability issues

The National Audit Office (NAO) has completed work on a range of environmental and sustainability issues. Most recently, in March 2012, NAO published a detailed lessons-learned report on the Government's competition to design, construct, and operate the UK's first commercial-scale carbon capture and storage project.

The competition was launched in 2007 but cancelled four years later by the Department of Energy and Climate Change on the grounds of protecting value for money and because the project could not be funded within the £1 billion budget available. The NAO found that neither the Department, nor its predecessor, the Department for Business, Enterprise and Regulatory Reform, engaged sufficiently early with the commercial risk involved. During the competition, the Department's decisions to continue were not informed by detailed consideration of the probability of reaching acceptable contract terms and the time lost should the competition not succeed. The inability to agree on mutually acceptable terms among all members of the consortium contributed to the Department's decision to cancel the competition.

On 3 April, the Government launched a new UK Roadmap for Carbon Capture and Storage and a new competition, the 'CCS Commercialisation Programme,' to drive down costs by supporting practical experience in the design, construction and operation of commercial scale CCS. The new programme addresses the lessons learned from the first project.

Elsewhere, NAO's two most recent environmental studies have looked at:

- Flood risk management in England, finding that giving greater responsibility and discretion to local authorities to identify flood risk and target investment raises significant challenges. Local knowledge of surface water flood risk is far less advanced than national information on risk of flooding from rivers and the sea, and most local authorities lack the required technical expertise to manage the risk of flooding (October 2011); and
- The Department for Environment, Food and Rural Affairs' Geographic Information Strategy, finding that the Department had not set targets for cost reduction or quantified the benefits that could be achieved by collaboration or by sharing geographic information and systems; and had not collected such financial information. The Department had put in place appropriate technical governance, but strategic governance arrangements could be strengthened (July 2011).

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Work is currently underway on a landscape review of the electricity sector, and Value For Money studies into nuclear decommissioning and the Department for Environment, Food and Rural Affairs' commercial activities.

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