EUROSAI

Working Group on
Environmental Auditing

From Recycling to Circular Economy

Report from the Spring Session on Recycling

August 2016

EUROSAI Working Group on
Environmental Auditing

Table of Contents

Table of Contents 2
Preface 3
I. Plenary sessions 4
INTOSAI WGEA Guidance Material: "Auditing Waste Management" 4
Modernizing waste management system – the case of Estonia 7
Discussion forum: Evaluating waste management policy and plans against waste hierarchy 9
SAI presentation: Economic aspects of municipal waste management in Latvia 12
SAI presentation: Financing a new waste management system in Poland – theory and practice in view of NIK audit 13
SAI presentation: Positive measures of Ministry of Environment after an audit on fees for depositing waste in landfills and the risks arising from the draft of new Waste Act relating to the promotion of recycling 14
SAI presentation: How the French Cour des comptes audited extended producer responsibility organizations 15
II. Parallel sessions 17
Parallel session: Waste prevention and minimisation, waste as a resource 17
Parallel session: Economic aspects of waste management 17
Parallel session: Managing biodegradable waste 20
SAI presentation: Managing biodegradable waste in Bulgaria 20
Parallel session: Energy production from waste 21
Parallel session: Waste data 21
SAI presentation: Experience from audit on solid waste management 22
Conclusions 23
Appendices 24
Appendix 1. Spring Session Programme 24
Appendix 2. List of Participants 26

Preface

Waste management policy has undergone a rapid development, especially in the past decade, trying to keep up with the technical innovations and changes. In fact, the excessive progress has brought along a situation where the planned reforms, by the time they get implemented, are often already lagging behind from the actual needs – for example, most modern landfills have already become redundant. Waste management has swiftly made its way from simple waste collection to multidimensional concepts such as circular economy, and our role as SAIs is definitely to follow these developments and shifts closely.

The range of topics audited by supreme audit institutions (SAIs) has expanded throughout the years and continues to do so. Environmental auditing is no exception in this case. On the one hand, the topics at hand become more concrete, more detailed. But at the same time they become more interrelated and indivisible.

We have long surpassed the point where waste management referred to merely waste collection and landfills. These are definitely essential aspects, but we cannot do without following the new business trends and sustainable consumption. The key-words characterising today's and tomorrow's world are sharing, re-using, repairing, refurbishing, recycling.

The question here for us is whether the waste policies and actions actually approach the priorities of waste hierarchy and the needs of the changing society; and what could SAIs do for supporting the positive trends in waste management.

Of course, this is just a fraction of the issues that the participants of the spring session discussed during the busy 1.5 days in Tallinn in April. This paper aims to assemble the main messages from the seminar and perhaps inspire you to further work and also cooperate on waste and recycling audits.

Alar Karis

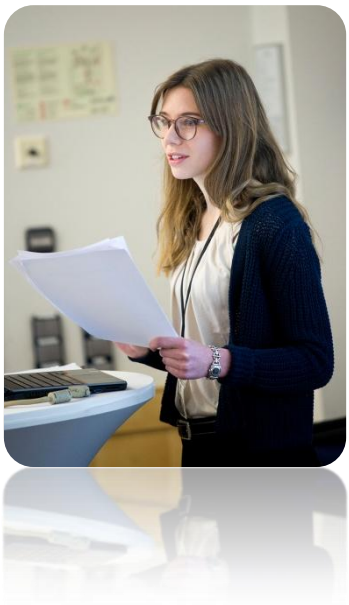
Chair of EUROSAI WGEA

Auditor General of Estonia

I. Plenary sessions

INTOSAI WGEA Guidance Material: “Auditing Waste Management”

Ms Mia Caroline Bratz



The SAI of Norway presented the draft INTOSAI WGEA guidance paper 'Auditing Waste Management'. The guidance paper is an update of the previous paper 'Towards Auditing Waste Management' from 2004. The new guidance covers hazardous and non-hazardous waste. Radioactive waste is not covered in this paper.

The new guidance is structured in 4 steps: 1) Identifying environmental and health risk scenarios related to waste management; 2) mapping out the actors and their responsibilities; 3) identifying possible governance problems related to waste management; and 4) selecting an audit topic. The paper also includes a chapter on methodology. The waste hierarchy is introduced in the guidance paper, and auditors are encouraged to take the whole hierarchy into account when conducting an audit on waste management.

Step 1 involves identifying environmental and health risk scenarios related to waste management. Possible risks include the contamination of soil and water, air emissions, marine pollution and littering. The auditor should assess the materiality and probability of these risks. Materiality may be assessed according to the dispersal, reversibility, acuteness and economic costs of the damage. The probability of the damage occurring depends on the handling of waste. In order to assess the probability, the auditor may ask questions such as: 'Are there adequate systems for waste collection?', 'is waste handled in a sound manner?' and 'is the import and export of waste subject to control?’.

Step 2 involves getting an overview of the organisational structure of the management of waste. An overview should include the most important actors: legislative bodies, relevant ministries, control authorities and waste handlers. Furthermore, it is important to map out the systems for handling different waste streams. While responsible actors for hazardous waste systems are usually located at the national level, responsible actors of non-hazardous waste systems are often located at the local level. This step in the guidance paper also gives an overview of international legislation with which the relevant actors are obliged to comply. These also constitute possible audit criteria, and are listed in the guidance.

In Step 3, the auditor is recommended to identify governance problems related to waste management. The new guidance paper gives an overview of common national and international governance problems that occur in waste management. Weak implementation of international agreements, weak coordination between relevant authorities, inadequate policy impact assessments and weak systems for monitoring, control and enforcement are some common problems that are identified in the new guidance paper. At the international level, different regulatory practices and priorities across countries complicate the consistent enforcement of waste shipment legislations. This may encourage businesses to export waste through countries with less stringent enforcement,

and increases the probability of illegal waste exports.[1] Also, differing waste classifications and lack of comparable data complicates monitoring and enforcement at the international level.

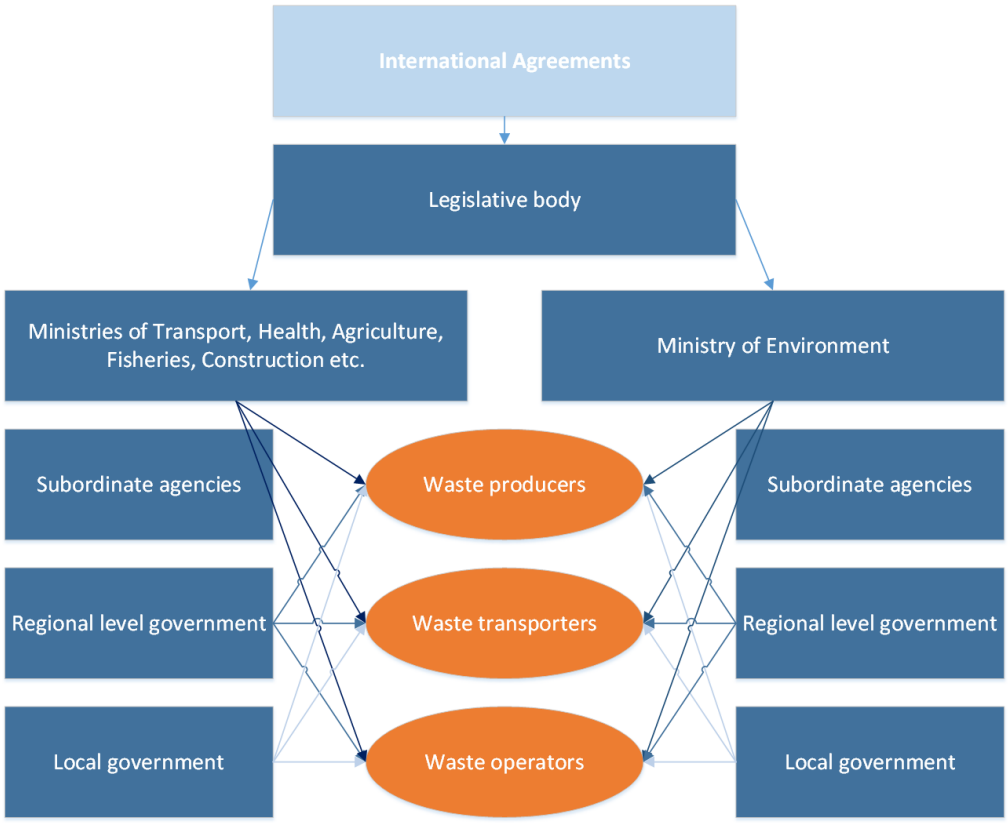


Chart of relevant actors associated with waste management

Step 4 involves selecting an audit topic. The auditor must consider which of the three E's according to ISSAI standards that the audits fall within: economy, efficiency or effectiveness. The auditor should at this stage also choose an audit approach, which may be result-oriented, problem-oriented or system-oriented, or a combination of these.

The final chapter on methodology provides an overview of possible methods for carrying out a waste audit. This chapter outlines common methods such as file examination, interviews, observation, statistical analysis, and surveys and questionnaires. In addition, more innovative audit methodologies such as web-monitoring, tracking and Geographic Information System (GIS) are presented in this chapter.

Waste Crime

The risk of waste crime, which is covered in the guidance, was presented in further depth. The key source on this topic was the UNEP Rapid Response Assessment 'Waste Crime – Waste Risks: Gaps in Meeting the Global Waste Challenge'.[2] The project group also had meetings and correspondence with the key author of the report, Ieva Rucevska, from the research centre GRID-Arendal (Norway), when gathering information on this topic.

Waste crime poses a great risk to the environment and to human health, as well as creating opportunities for money laundering and tax fraud. It also entails economic costs of cleaning up, and puts law-abiding businesses at an economic disadvantage. Illegal disposal of waste generates high profit, while the risks of getting caught are generally low. Illegal waste operators may be paid large sums for disposing hazardous waste in a safe manner,

[1] This problem is also identified in the 'Coordinated Audit on the Enforcement of the European Waste Shipment Regulation' from 2013.
[2] See http://www.grida.no/publications/rr/waste-crime/

while instead dumping or exporting the waste illegally. Illegally exported waste often ends up in primitive recycling facilities, as this constitutes a cheaper alternative for disposing of hazardous wastes than complying with regulations. The recycling of e-waste often generates additional revenues, as these contain valuable metals.

The growing transboundary movement of waste creates favourable conditions for waste crime. International waste streams are growing more complex, as a large number of actors are involved, making it difficult to trace the end destination of waste. The lack of international common standards, monitoring and enforcement reduce the risk of illegal waste actors getting caught. According to EUROPOL, there is a growing demand for illegal waste services in some European countries, especially with regard to waste intended for export. It is estimated that 70 per cent of illegal shipments detected in Europe, go to other EU countries. Illegal shipments are increasing between northwest and northeast of Europe, and from south to southeast Europe and the Balkans.

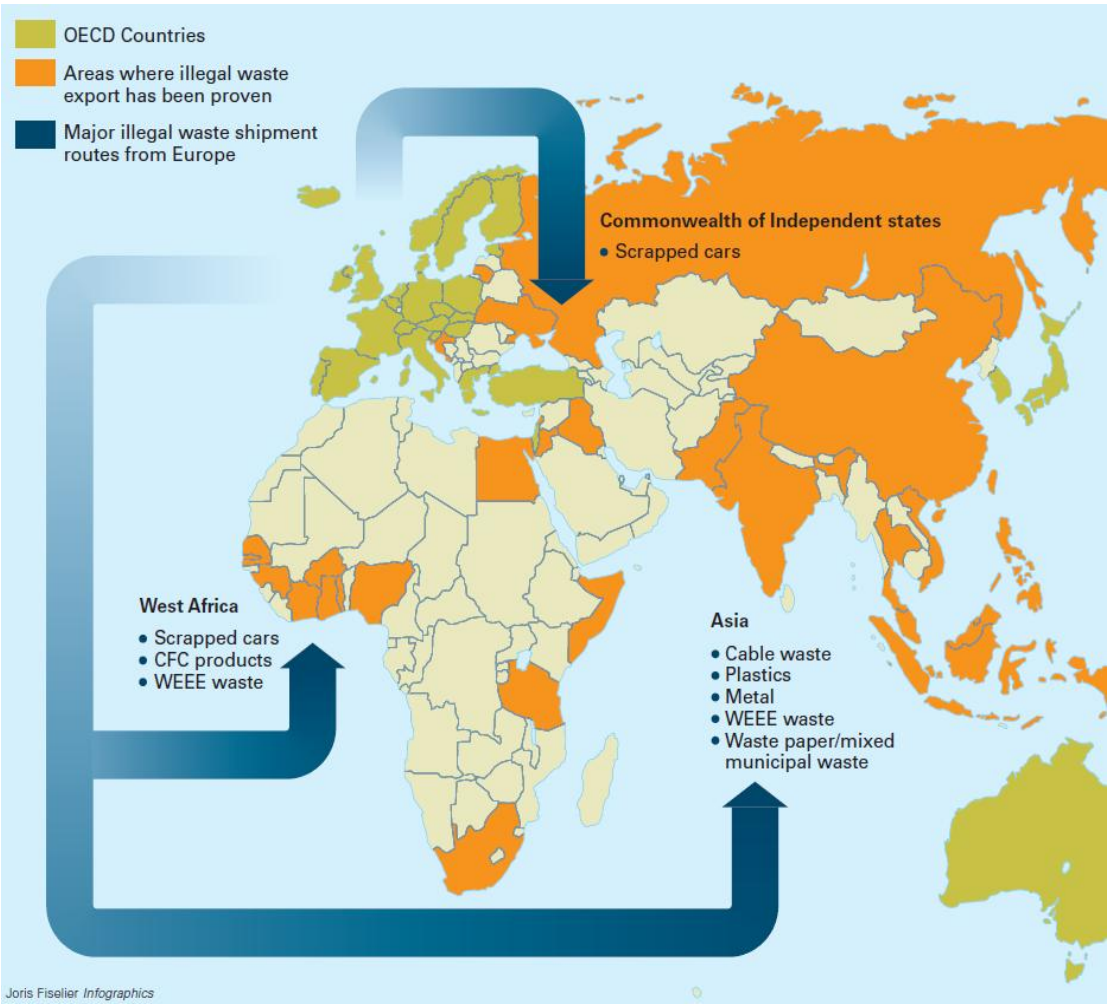


Figure from 'Coordinated audit on the enforcement of the European Waste Shipment Regulation'

Cooperation between SAIs is important in order to capture risks generated at the international level. SAIs are therefore encouraged to conduct cooperative audits and exchanging of information and expertise when auditing waste.

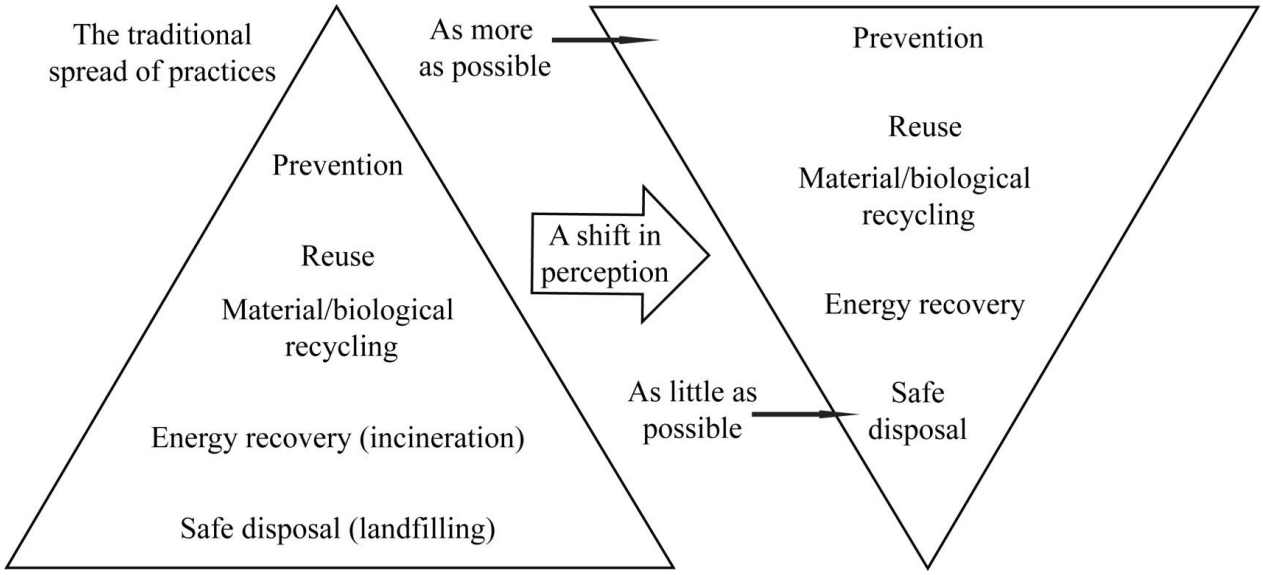
Modernizing waste management system – the case of Estonia[3]

Mr Harri Moora, Stockholm Environment Institute

Municipal solid waste (MSW) is a severe problem for a number of reasons, such as:

- Significant increase of waste quantities
- Increasing consumption and rapid process of urbanization
- Poor waste management that contributes to health and environmental problems - climate change, air pollution, soil and water contamination, etc.
- Economic loss and management costs
- Waste management is a complex issue, combining technical, economic, political, social and behavioural aspects
- Municipal waste itself is a multi-faceted problem (variety of waste materials, increasing amount of toxic substances)
- Waste management solutions in one region might not be appropriate elsewhere

The European Union (EU) approach to waste management is based on the waste hierarchy and decline of waste generation. Overall in the EU, an increasing amount of waste is recycled and a decreasing amount is sent to landfills. The shift in waste management is closely linked to EU waste legislation which sets ambitious targets to waste management (the Waste Framework Directive along with other EU waste directives on land filling, end-of-life vehicles, e-waste, batteries, packaging waste, etc.).

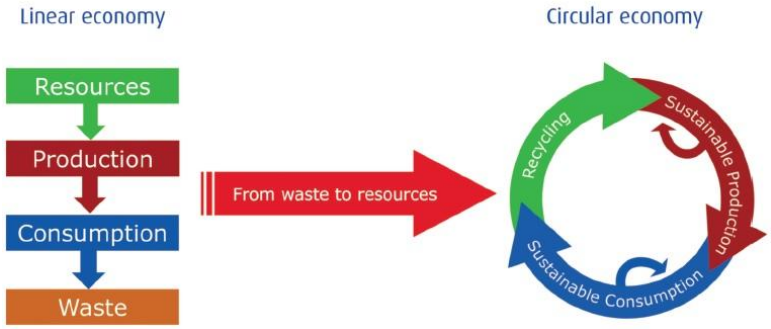


Waste hierarchy: the change of priorities in waste management strategies

[3] summary of the presentation drafted by the secretariat

EU countries can adopt different approaches to reach their waste targets, therefore large discrepancies still exist between countries. National and local policies have significant influence on municipal waste recycling targets. Some approaches seem to work better than others, e.g. landfill taxes can play an important role in shifting up the waste hierarchy, right set-up of the extended producer responsibility (EPR) schemes is also important. Yet, many countries still need to make extraordinary efforts in order to achieve the targets.

European Commission has adopted an ambitious new Circular Economy Package to stimulate Europe's transition towards a circular economy.



Transition from linear to circular economy

Key elements of the revised waste proposal include:

- A target for recycling 65% of municipal waste by 2030
- A target for recycling 75% of packaging waste by 2030
- A binding landfill target to reduce landfill to maximum of 10% of all waste by 2030
- A ban on land filling of separately collected waste
- Promotion of economic instruments to discourage land filling
- Simplified and improved definitions and harmonised calculation methods for recycling rates throughout the EU
- Concrete measures to promote re-use and stimulate industrial symbiosis – turning one industry's by-product into another industry's raw material

With the Circular Economy Package the EU is sending a clear signal to economic operators that the EU is using all tools available to transform its economy, opening the way to new business opportunities and models.

Development of municipal waste management in Estonia

In Estonia a high number of 'behind the corner' and mostly 'free of charge' dumping sites were used until the early 2000-s and there were no motivators to recover or recycle waste. Between 2001 and 2007 a rapid economic development brought along high growth rates of municipal waste. Finally in 2010, most old landfills were closed and 5 new EU compliant landfills were established. The waste management market in Estonia became to a great extent controlled by the private sector.

Up to now, a relatively high landfill tax, together with the ban for land filling unsorted MSW, has resulted in favourable conditions for the development of new waste recovery facilities in Estonia (MBT, WtE plant in Tallinn). As a result less than 10% of municipal waste is land filled and there is actually an overcapacity of mixed municipal waste treatment (landfills, MBT, incinerators). This situation has negative impact on separate collection and recycling schemes and therefore challenges the fulfilment of future recycling targets.

Packaging waste constitutes the biggest share in the recycled waste stream in Estonia. The deposit system has proven to be an effective measure in addressing the away-from-home consumption and recovery of beverage packaging waste. However, there are still several problems with producer responsibility schemes, e.g. high share of impurities in source separated packaging waste.

An increased liberalisation and free competition pressure from the government has led to the situation where the waste management market in Estonia is largely controlled by the private sector. Many small municipalities have not joined the waste management cooperation structures and municipalities have very limited ability to coordinate and control the municipal waste management system. This has occasionally caused legal problems regarding the ownership of the waste.

The extremely liberal waste management market has lead to an intense commercial competition between different privately owned waste recovery facilities and companies. As a result there is no interest to develop source separation and recycling capacity.

Issues for auditors to consider:

- Waste management data – data quality and reporting methodologies
- Combination of economic and regulatory instruments – gate fees and regulatory restrictions play an important role in shaping waste management decisions
- Planning of waste management infrastructure
- The ability and willingness of local authorities to regulate and control the waste sector plays a crucial role
- EPR schemes - competitive issues, sharing costs and responsibilities

Discussion forum: Evaluating waste management policy and plans against waste hierarchy

Moderated by Ms Viire Viss
Panellists: Dr Harri Moora, Ms Mia Caroline Bratz, Mr Sigmund Nordhus, Mr Michal Rampír

Introduction

In recent years, all the more has been discussed about circular economy – an economic model where *the value of products and materials is maintained for as long as possible; waste and resource use are minimised, and resources are kept within the economy when a product has reached the end of its life, to be used again and again to create further value*. The European Commission has adopted an ambitious Circular Economy Package to stimulate Europe's transition towards a circular economy which is aimed to boost global competitiveness, foster sustainable economic growth and generate new jobs. (European Commission, 2015)

Circular economy is a horizontal approach that ought to be integrated into the economy as a whole, not only in certain sectors, such as waste management for instance. Nevertheless, the importance of waste management within circular economy cannot be underestimated. As a matter of fact, a conceptual change has taken place in the definition and implementation of waste – waste has become a resource! It is an ideological shift that brings along opportunities and the emergence of new business models, but of course also dangers.

The panellists discussed the weaknesses of the current waste regulation and possible threats that it may bring along. The opportunities and possible downsides of the newly adopted Circular Economy Package were also talked about. Furthermore, the auditor's role and responsibilities in this context were outlined.

Waste management policy and plans

It was agreed that waste management is a complex system and the overlapping of laws and institutions in this sector is a widespread problem in many countries. Most often waste management has been organised so that the responsible institution and the enforcing institution are not the same. For example, it is not uncommon that a certain ministry has the responsibility over waste management, yet the actual tools or means to manage waste are often distributed to some other departments, other ministries, etc.

The problems related to the lack of enforcement and monitoring of waste may also lead to illegal waste export. The shipment of waste as such is not a bad idea. However, the differences in enforcement of regulations across European countries make illegal waste actors move from countries where enforcement is done in a less strict manner. On the one hand, secondary products are in great demand in some parts of the world, giving grounds to illegal and unsafe handling of steel for example. On the other hand, a major part of plastic waste from Europe is shipped to Asia for recycling, whereas the actual demand for importing the recycling material in the region is decreasing.

Today, European countries are perceived as rather advanced and set as an example of a recycling society. Nonetheless, reaching the recycling targets largely depends on external countries. Fulfilling the targets only within the region would be a substantial challenge. For reaching the recycling targets, countries have to focus more on other waste streams besides packaging waste. For instance bio waste, especially food waste is one of the waste streams that should be paid attention to in order to fulfil the ambitious recycling targets.

With regard to the recycling targets, another great and apparent risk was pointed out by the panellists. The calculation methods of recycled waste as well as the differences in defining municipal waste as such present problems and misunderstanding in reporting on the EU level. Currently, each member state can choose the method of calculating the recycling rate in their country, making it impossible to adequately assess and compare different states' progress in the area and the ambitiousness of the targets set.

Towards a more circular economy

Traditionally, waste management is a sectorial issue. However, moving up the waste hierarchy, the issues become less directly related to waste and more connected to other fields – energy, taxation, etc. – that are also dealt with by different ministries and authorities. The issues become wider and more integrated, and auditing such issues leads to much wider audit scope and recommendations targeted to several institutions.

It was argued that one of the great differences that the circular economy approach should bring compared to the conventional waste management is the level of integration between various sectors. Circular economy is definitely one of such interconnected topics, not only linked with waste recycling, but also waste minimisation and prevention. However, the transition towards a more circular economy can happen if the principles will not only be fit into existing documents, but integrated horizontally and perhaps even supported by a national circular economy strategy.

The principles of circular economy give ground to the emergence of new business models. For example the idea of using waste as a resource entails the reclassification of some waste streams as by-products and provides companies with entirely different ways of managing these resources. Many items would no longer fall under the

waste regime, leading to the situation where they not only disappear from the waste reporting but also from the control and enforcement side.

An interesting example of engaging the business sector into waste management is the extended producer responsibility (EPR) scheme – a topic rather often audited by SAIs as well. The initial idea of the EPR was waste prevention through less production and more innovative products, product design, etc. However, the initiative has resulted in highly motivating the recycling business.

It was argued that waste management is an area where assessment and calculations cannot be solely based on financial figures. Especially when aspiring towards a more circular economy, negative externalities such as the loss of biodiversity, health spending, years of life lost should also be sought to measure. In the liberal, competitive business sector, however, profit most often remains the triggering force and environmental and social aspects are often less prioritized. At the same time, implementing too strict regulations would pose a barrier for the new business models.

In addition to corporate responsibility, the success of circular economy relies also on the public awareness. It was agreed that the education process plays an important role in raising the consciousness of general public about waste issues, whereas the legislative framework alone remains weak in changing people's behaviour.

Conclusion and auditor's role

Although the problems related to waste management and recycling are similar in across European countries, it is difficult, not to say impossible, to provide uniform solutions. The general role of SAIs is to make recommendations whilst maintaining their independence and not interfering in the political debate. As in any audits, SAIs are in the position to inform the government and the public about the potential risks arising from the complex and overlapping system of waste management. Giving the parliament information about the unfit organisation model could add value in itself.

The implementation of circular economy concept into national legislation requires settling some rules and criteria. The government has to develop strategies and confirm relevant goals on the top level. The role of auditors can be to assess the fulfilment of those goals and strategies, and to point out the horizontal nature of circular economy. It is also important to keep in mind that even as the implementation of the strategy may bring additions costs, the overall and long-term aim is to foster innovation and improve the economic situation.

It was outlined that it is always difficult to objectively assess the goals that are still ahead of us. Auditors are in the position to describe the status of the audited object and assess the probability of achieving the goals. Furthermore, auditors can pinpoint the possible unintended consequences of some decisions. However, in order to maintain a non-political and objective standpoint, it is not possible to give exact advice or recommendations on the goals themselves.

SAI presentation: Economic aspects of municipal waste management in Latvia

Mr Jānis Salenieks

The State Audit Office of the Republic of Latvia (SAO) in 2015 has completed an **audit examining municipal waste management compliance with objectives and legal requirements**.

Objectives of the audit

- Are only reasonable and economically justified expenses included in the payment for waste management?
- Has separate waste collection been ensured by authorities?

Waste management fee in Latvia

Impact of Audit

- Amendments of Waste Management Law have been drafted (clarification of the calculation process for waste management fee)
- Waste management fee has been revised
- Investigation process for overpayment of waste management fee

Main lessons learned

- Limited assessment can be made when there are newly approved waste management plans (no objectives met yet)
- No channels for usage of RDF (fuel produced from solid waste) as a result of waste treatment (sorting) – sustainability issue
- Comparison of waste management fees in different municipalities – carefully, because varied package of services are covered under waste management fees
- Considering to examine all components of waste management fee during the audit to give the overall opinion of the approved fee
- Separate waste collection – really free of charge or expenses included in the waste management fee?

Informative report can be found at:
http://www.eurosaiwgea.org/audits/Audit%20documents/Municipal%20Waste%20Management%20Compliance%20with%20Planned%20Objectives%20and%20Legal%20Requirements.pdf

SAI presentation: Financing a new waste management system in Poland – theory and practice in view of NIK audit

Ms Katarzyna Papińska

In 2012 Poland introduced new rules on waste management. Municipalities are entirely responsible for waste management activities and introducing the new system. Municipalities have become the "owner" of the waste. They provide selective waste collection; contribute to reducing their storage and managing it in the most efficient way; as well as preventing illegal disposal of garbage.

Municipalities should among others:

- ensure that all of the property owners are included in the commune system of municipal waste management
- arrange for collection of municipal waste from property owners
- set a selective collection system of municipal waste comprising at least the following waste fractions: paper, metal, plastic, glass and multi-material packaging and biodegradable municipal waste, including biodegradable packaging waste
- create easily accessible points of selective collection of waste such as expired drugs and chemicals, waste batteries and accumulators, waste electrical and electronic equipment, furniture and other bulky waste, used tires, green waste and construction and demolition waste which are municipal waste
- ensure the achievement of adequate levels of recycling, preparation for re-use and recovery by other methods
- provide for reduction of the weight of biodegradable municipal waste transferred to storage

In accordance with the provisions of the Act, the system of waste management at the municipal level should be a balanced self-financing system. The system should be financed from fees paid by residents.

In theory, establishing a new waste management system, as well as selective collection and recycling was to contribute to lowering the costs of both residents and municipalities. The audit carried out in 2015 in 24 municipalities and surveys conducted in 2,116 others have shown that the system did not function as intended, waste management is becoming more expensive and the expenses were not balanced with the income from fees paid by residents. Especially in the cities the charges for waste collection were higher than in the previous period, even in the case of selective collection.

All the 24 audited municipalities failed to balance the financing of waste management system. The majority (60%) of municipalities' revenues exceeded expenses. The record was set by Krakow, where property owners paid PLN 73 million more than it actually cost for the management of the collected waste (from 1 July 2013 to 30 September 2014).

Local governments preferred to overestimate the amount of fees collected from residents, rather than to pay extra from their own budgets later on. However, on average, total expenditure exceeded income. Revenues did not cover the expenditure in 10 municipalities.

Some municipalities inappropriately paid the remuneration to the companies receiving and developing waste in a form of a lump sum and in some cases pays more than it should. There were difficulties in determining the number of persons required to pay fees for waste management and the basis for calculating the relevant fee.

Municipalities reported that not all residents have made declarations regarding the number of people and decisions regarding the selective collection of waste. Municipalities apply a reduced fee to the residents who declared selective collection and composting of organic waste.

Municipalities do not always take the appropriate measures to the owners who have not submitted the declaration and the claims from those who have made declarations but did not pay, were not enforced.

SAI presentation: Positive measures of Ministry of Environment after an audit on fees for depositing waste in landfills and the risks arising from the draft of new Waste Act relating to the promotion of recycling

Mr Michal Rampír and Mr Petr Nedbal

The presentation covered three main topics: the positive measures of Ministry of Environment ("MoE") after an audit on fees for depositing waste in landfills; the identified risks concerning the proposal of new legislation in the field of waste management system in the Czech Republic; and the differences in waste data.

Supreme Audit Office (SAO) performed an audit „Funds collected in accordance with Act on Hazardous Waste Management" from July 2012 to January 2013. One of the main findings was that up to 99 % of all hazardous waste was used as technological material for securing landfill sites without any fees. Last year the MoE and the parliament responded to our main recommendation and revised the legislation in this field.

In January 2016 the MoE sent a proposal of the new Waste Act to the comment procedure. The SAO identified a major risk that the proposal was not fully in accordance with the European Commission's plans as stated in the Circular Economy Package. The European Union's (EU) approach to waste management is based on the waste hierarchy. The MoE stated in an explanatory report that the new waste act is in accordance with the EU waste hierarchy. However, the SAO does not agree with the statement.

One of the reasons is that the proposal of the new act contained no specific provisions or articles relating to the promotion of recycling. Another important reason for our opinion is connected with Waste Management Plan for 2015 – 2024 ("WMP"). Czech Republic has set a target to re-use and recycle at least 50 % (by weight) of paper, plastic, glass and metal waste. It looks nice on first sight, but 50% of paper, plastics, glass and metals represent only 35 % of all municipal waste in present. In fact the Czech Republic fulfils this target already now. The remaining 50% of paper, glass, plastics and metals will end up in incinerators or in facilities for the energy recovery of waste, because the WMP sets a target to use mixed municipal waste especially for energy recovery in facilities designed for this purpose. The WMP supports incineration instead of recycling and this is not in accordance with the EU waste hierarchy.

In Czech Republic the producers of waste and licensed persons have a statutory obligation to report on waste data to the MoE. It concerns about 33 000 subjects. Besides the MoE, waste data is also processed by the Czech statistical office. They use data from around 11 000 subjects and also some data from the MoE. Eurostat, which collects and compares data from individual states, recognizes only the data from the Czech statistical office, because the office uses a methodology complying with Eurostat methodology. There are huge differences between the data from the statistical office and the MoE. For example, according to Eurostat the Czech Republic produced 310 kilos of municipal waste per capita in 2014; according to MoE it was 506 kg.

These differences can cause problems. One of the problems could be that all waste management plans are made by MoE and based on their data, but European Union requirements and regulations take into account the Eurostat data. The differences in data between the MoE and Eurostat probably also exist in other European countries, not only in the Czech Republic.

SAI presentation: How the French Cour des comptes audited extended producer responsibility organizations

Mr Arnaud Marrou

How does extended producer responsibility work in France?

Extended producer responsibility means that the producer has to manage, directly or indirectly, the waste generated by its products, when they reach the end of their life. A dozen of sectors are concerned in France but the French SAI focused on seven of them: packaging, papers, electric and electronic waste, batteries, textile and shoes, unused medicine, tyres. Indeed, other sectors, like solar panels or furniture, were too new to be audited properly in 2015.

More precisely, each time a customer buys a product covered by EPR, a fee (called eco-contribution) is taken by the producer. Then the producer who doesn't necessarily have the competency to manage the waste directly, transfers this fee to an EPR organisation (also called eco-organisation).

EPR organisations are private, usually non-profit companies, working under tight supervision of the French Ministry of Environment. They are in charge of gathering all the eco-contributions and using them to finance waste management. In some sectors, there is only one EPR organisation, in monopoly. In other sectors, several EPR organisations are competing. In the 7 sectors audited, 13 EPR organisations were operating in 2015.

Targets of collection and recycling as well as technical treatment standards are set by the ministry. Most EPR organisations manage how waste is collected: sometimes with municipal waste (for example for packaging), sometimes in special trays in shops (for electric and electronic waste), sometimes in containers in the street (textile) or in car repairs (tyres). Waste management organisations, which ultimately collect and treat the waste, can be municipalities, private companies or charities.

How did the French SAI audit EPR organisations?

First of all, the Court checked that it is competent, which was not obvious since it is generally entitled to audit public administrations, not private companies. However, a French law from 2000 says that the Court is competent whenever a payment frees somebody from a legal responsibility. It is the case here: the payment of the fee transfers the responsibility from the producer to the EPR organisation.

Then the Court carried out 13 audits on 13 EPR organisations. It also carried out transversal audit procedures on the Ministry of Environment to assess how it sets targets, delivers authorisations to operate, and punishes free riders (producers who do not pay their fee).

The Court issued 13 non-public reports and one public synthesis (included in the 2016 annual public report) in French, as well as a summary in English with the main findings.

To audit EPR organisations, the Court used the same methodology as for a state-owned company, i.e. it audited:

- governance of the sector and of the organisation itself
- relationships with producers
- financial aspects, in particular financial positions
- management, with a focus on communication towards the consumer and R&D
- relationships with waste management organisations, with a focus on the reach of collection and recycling targets

The Court faced some difficulties. First of all, there was a reluctance of some EPR organisations' boards to be audited. Secondly, assessing technical aspects of waste management, like technical quality of recycling or relevance of R&D projects, proved difficult. Thirdly, the judiciary context was highly sensitive in a sector: one EPR organisation was suing the ministry who had just withdrawn its authorisation to operate.

Despite these limitations, the audits were really successful to several extents: the Court was the only audit unit able to investigate inside EPR organisations, thus gathering first-hand material and data. Moreover, the Court got for the first time a global view of EPR organisations in all their dimensions: governance, financial, technical, and institutional. Finally, auditing these private companies who have a balance sheet and a profit and loss statement, proved to be easier than auditing a ministry!

In the next few years, the Court considers:

- auditing some waste management organisations, especially charities receiving money from an EPR organisation
- following up the recommendations
- auditing EPR organisations in new sectors as well as waste management in sectors without EPR
- enlarging its work to circular economy

For main findings please refer to:

https://www.ccomptes.fr/content/download/90611/2134683/version/2/file/20160210-Annual-Public-Report-English-summaries-Observations.pdf

II. Parallel sessions

Parallel session: Waste prevention and minimisation, waste as a resource

Moderated by Ms Viire Viss

In the discussion, the group mainly focused on waste prevention, which is a topic high in the waste hierarchy but the area has not been audited much. In general, the lower levels of waste hierarchy have been audited more than the higher levels of the hierarchy.

Waste prevention is a topic that does not actually include waste, as the idea is not to generate any. The main question raised at the session was 'What could governments do to prevent waste generation?'. The group identified 6 activities and tools for waste prevention as listed below:

- awareness rising and education on how to reduce waste production
- product design should be aimed at using less harmful materials that would also be easier to reuse
- green production technologies to avoid waste generation in the production phase
- influencing consumption to change the consumption patterns
- governments can use economic incentives
- strategic understanding

Parallel session: Economic aspects of waste management

Moderated by Mr Jānis Salenieks

In all the EU member states local governments are responsible for municipal waste management.

Basic waste management principles:

- Polluter pays principle - those who produce pollution should bear the costs of managing it to prevent damage to human health or the environment.
- Pay as you throw (PAYT) principle - usage-pricing model for disposing of municipal solid waste. Users are charged a rate based on how much waste they present for collection to the municipality or local authority.

Waste management fee usually is set:

- Per household/inhabitant
- In volume units
- In weight units

Fee based upon quantity	Average fee (flat rate)
+ Fair system: the more waste generated, the more is paid (The User Pays principle)	+ No incentive for illegal dumping, but at the same time no incentive for reducing waste quantity (e.g. by separate collection)
– People can avoid paying (by illegal dumping, using the neighbour´s bin, ...)	+ Easy to administer if the fee is part of another fee related to buildings
– Size of container and frequency of emptying have to be known	+ Easy to administer if the fee is fixed by known data, like area of the building, number of inhabitants, ...
– Each house has to have its own container usable only by residents of this house	– Difficult to administer if no such data is available, or changes often (number of residents)
	– The User Pays principle is not realized

Overview on advantages and disadvantages of different fee types

Collection cost increases by 10 to 15 percent if measurement of volume and/or weight of each container is done.

Each fee model contains its specific unfairness.

Policy instruments for waste management

1. Administrative instruments:

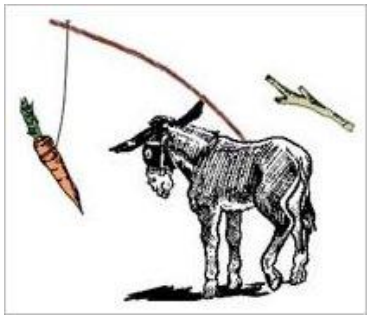
- Substance restriction
- Source separation
- Producer's take-back of specific discarded products
- Collection, reuse/refill and recycling targets
- Minimum recycled material content standards
- Landfill restriction/diversion targets
- Environmentally sound treatment standards

2. Economic instruments:

- Landfill tax
- Waste disposal tax
- Recycling credit scheme (*Recycling credits are paid by local waste disposal authorities to waste collection authorities or firms/ charity groups who collect certain waste items from households and transfer them to recycling facilities)*
- Subsidies for secondary products / taxation of quarry products
- Waste pricing: "pay-as-you-throw" approach
- Deposit-refund systems

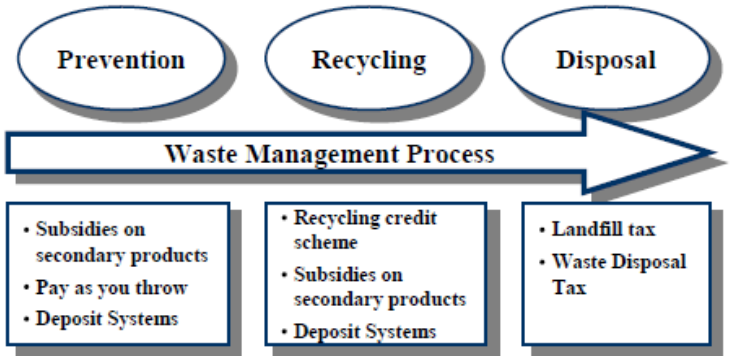
3. Informative instruments:

- Eco-labelling scheme
- Green shopping guide
- Marking of products and components
- Information campaigns to residents
- Information provision to treatment facilities



What is the best set of policy measures to ensure that we move up the waste management hierarchy? Should we be using *sticks* or *carrots* and, out of all the confusing variety, which particular measures should we choose?

No single instrument is the solution but a mix of policy instruments is necessary (optimal mix / coordination of instruments / overlapping instruments).



Economic instruments and their field of application within the waste management process

Economic instruments create incentives for behavioural changes. Accordingly, they are often named as incentive-based measures.

Problems and risks discovered during the session (based on the results of SAI national audits)

Waste management fee

- Property tax / surface dwelling, the amount of water used in the household (not related with waste fee)
- Subsidized waste management fee
- Often no calculations of waste management fee is available
- Waste disposal is often cheaper than recycling (no incentives for recycling)
- Waste management fee is low, sometimes even zero; sometimes the fee is improperly calculated

Economic incentives

- Pay as you throw (PAYT) principle is not used
- Other instruments (besides economic instruments) should be imposed as well
- Economic instruments are established without any impact assessment
- Economic instruments have not always led to achieving the waste management targets
- Information campaigns about waste management are often fragmented and do not introduce waste management targets
- Economic incentives are less successful when awareness about the need and possibilities of separate collection is low
- More waste – more business (no motivation for reduction of waste)

Monitoring and controlling

- Often no penalties imposed; there is lack of monitoring and controls

Administration/Regulation

- Insufficient administrative capacity hinders effective organisation and controlling of waste management
- Poor coordination between municipalities leads to ineffective waste management practice (e.g. not logical routes, higher prices)
- Complex legal regulation
- Awareness of waste management pyramid is low

Lessons learned

- Assess the possibility of extending the scope of the audit to get the overall picture

Parallel session: Managing biodegradable waste

Moderated by Ms Vaida Barizienė, Mr Mindaugas Valančius

In order to get a wider perspective on biodegradable waste management and make the session discussions the most efficient, before the session the moderators circulated a survey among participating SAIs before the seminar. The survey questions covered the definition of biodegradable waste, the year when the separation or sorting of the waste started, whether it is mandatory in the respondent's country, whether the responding SAI had conducted audits examining the management of biodegradable waste, etc.

The survey was completed by 10 countries, including Lithuania, and by the SAI of Kuwait. The survey helped identify the ways how different countries manage waste (e.g., it is separately composted by residents, it is collected and composted by a waste manager, it is used to generate energy, etc.), as well as indicated common problems, which were later discussed during the session.

Representatives of three countries – Bulgaria, Estonia and Kuwait shared their experience on biodegradable waste management. The SAIs which took part in the session showed a great interest in sharing their experiences and getting answers to issues and points of concern. The participation of the SAI of Kuwait in the session was very welcomed: experience of the SAI that is not a EUROSAI member was a very valuable and insightful input allowing for interregional comparison.

Concluding the session, common problems regarding biodegradable waste management were identified:

- There is no clear state policy on how biodegradable waste should be treated
- There is a lack of reliable data about biodegradable waste
- Municipalities have different perceptions and different ways of implementation of (biodegradable) waste management
- Not all residents have the opportunity to sort waste; their indifference to environmental problems
- Composting problems and encumbrance of the use of compost
- A large proportion of biodegradable waste still ends up in landfills

The aim of the survey and the session was not only to compare situation in countries, but to rather show different ways of biodegradable waste management in various countries.

SAI presentation: Managing biodegradable waste in Bulgaria

Ms Eva Galabinova, Mr Dimitar Dimitrov

The Bulgarian Waste Management Act defines biodegradable waste as any waste that is capable of undergoing anaerobic or aerobic decomposition; such wastes are food and garden waste, paper, cardboard and other. In Bulgaria biodegradable waste is categorized according to the way it is collected (as part of a municipal system for collection or individual collection) and according to the way it is treated (biologic treatment of plant origin waste or animal origin waste).

The EU Waste Framework (Directives 1999/31/EC and 2008/98/EC) has been transposed into Bulgarian legislation within the Waste Management Act as well as the Ordinance for the treatment of bio waste and the Ordinance for the separate collection of bio waste. As such, Bulgaria has adopted the objective set by the EC to limit the biodegradable municipal waste directly deposited in landfills by 31 December 2020 to 35% of the total quantity of such waste generated in the country in 1995.

In 2013, additional targets on municipal level were set in Bulgarian legislation in combination with economic instruments such as taxes for depositing waste in landfills and deductions for achieving the waste management targets. Bulgaria is subdivided into 55 Regional Waste Management Associations. The municipalities within each

region are responsible for achieving the target values both on municipality level and on a regional level. Each mayor is obliged to adopt a programme for separate collection and treatment of biodegradable municipal waste.

The National Waste Management Plan 2014-2020 includes measures that are intended to bridge the gap between Bulgarian and EU average levels for composted waste per person per year (132 kg/p/y average EU; 103 kg/p/y average in Bulgaria as of 2012). Some of the major problems identified are unfinished municipal programmes for separate waste collection and utilization, the population not being sufficiently informed about its obligations and the benefits of recycling and re-using waste, lack of trained personnel, outdated waste treatment facilities and high costs of purchasing new equipment.

Part of the costs can be covered by the operational programmes for the new 2014-2020 period. Some measures allow purchasing waste treatment installations and separate collection depots which can alleviate the problem with traditional landfills being overused.

Other measures in the Waste Management Plan include encouraging municipalities and the population to separately collect and re-use waste through taxes and incentives, information campaigns, an electronic system for tracking target values, projects for home composting and others.

Parallel session: Energy production from waste

Moderated by Mr Alar Jürgenson

The participants of the group session discussed the positive aspects and negative impacts of energy production from waste. Participants from 7 countries participated in the session. Out of those seven, five had existing incineration plants and 6 had such plans for the future. The table below presents the results of the discussion.

Positive aspects	Negative impacts
No land filling	Risk of accidental pollution
Can treat different type of waste	Operational emissions and hazards
Saving fossil fuels	Incineration residuals (waste), management of which is expensive
Initiating recycling (?)	Requires big investment
Reducing energy dependence	Influencing recycling (over capacities)
Needs small space/area	Low public acceptance
	Less additional employment
	Low in waste hierarchy

Parallel session: Waste data

Moderated by Mr Michal Rampír

It appeared that problems with waste data are rather widespread and similar across Europe. The participants of this parallel session shared their experiences with waste data and discussed the role of SAIs in this context. The

discussion started on the problems in the field of waste data and the group concluded some key remarks as follows:

- there are problems with data of private sector and the municipalities
- collection of data a frequent difficulty
- often there is duplicity in collection of data which may also result in differences of the total result (e.g. differences in total amount of waste in a country)

At the same time, the participants also shared some good practice examples of waste data collection, e.g. the Environmental Cadastre in the former Yugoslav Republic of Macedonia, or the database of the Ministry of Environment in Czech Republic.

It was agreed that SAIs can have a role in getting round these problems. Some possible opportunities are:

- SAIs can inform the parliament, the public and other stakeholders about the problem of data duplicity writing about it in their audit reports
- waste data is an interesting topic for a possible cooperative audit
- SAIs would appreciate cooperation with EUROSTAT in this field and it was suggested that this topic could be covered in some of the EUROSAI WGEA future meetings

SAI presentation: Experience from audit on solid waste management

Mr Branko Smilevski

Performance audit was conducted to **answer a question**, "Are measures, activities and decisions by stakeholders in the process of solid waste management, including control functions of state institutions, contribute to reducing the quantity of waste generated and the negative impact on the environment, life and health of the people? " and the activities were focused on the following **areas**:

- responsibilities and obligations of institutions and stakeholders for waste management in accordance with the laws and bylaws
- waste management at central/regional level (setting up and organizing regional waste management system)
- waste management - solid waste management by local government
- competences/responsibilities of the institutions and entities in connection with the disposal of municipal solid waste at central and local level
- monitoring, supervision and creation of waste management information system and method of supervision by the authorities

Over all, to improve the situation in the area of waste management, it is necessary to take **additional measures and activities related to**:

- legislative regulations (overlapping competences and responsibilities between the state bodies)
- establishment and organization of a regional system for waste management of the territory
- fulfillment of legal obligations in the way of handling waste (municipal) level of municipalities and public utilities
- closure and reclamation of existing dumps by organizing and building regional landfills and / or other facilities and installations for waste handling
- organizing and establishing monitoring and information system (data) in waste management in accordance with legal regulations for municipal bodies

Conclusions

The key to achieving waste prevention, which is the top priority in waste hierarchy, is raising public awareness about the necessity to avoid creating waste. Participants pointed to the conflict between waste prevention and waste companies' interest to earn profit, which is derived from volume of waste that is processed. There is an evident need to find ways to audit waste prevention and minimisation.

All participants stressed the need for creating opportunities to sort waste and obliging all companies and residents to sort waste. There are a range of economic incentives for motivating citizens and companies for separate collection. Such incentives need to be used wider. It is necessary to find good balance between incentives and sanctions.

On one hand, every country is specific and cannot replicate others' model for waste management blindly. On the other hand, countries tend to have similar problems with waste management. Most commonly mentioned were unreliable waste data and risk of getting rid of problem waste by exporting. Handling the problem of waste export in audits is a challenge, due to difficulties to acquire data from abroad. Cooperative audit could be the best way for auditing waste export.

At the end of both seminar days, the participants had the opportunity to outline the most influential or useful ideas mentioned during the seminar. The list, as compiled at the seminar, is presented below:

- New concept – waste as a resource
- Countries have similar problems with waste management (data, export)
- Raising public awareness about waste prevention
- Every country is specific and cannot replicate others' model blindly
- Incentives and sanctions need to be balanced
- Lower prices to stimulate the demand of eco-products
- Refer to INTOSAI WGEA guidance in the beginning of an audit (the 4 steps)
- How to handle the problem of waste export?
- Share good practice!
- Use memory techniques, e.g. games
- Need for cooperative audits (e.g. waste export, waste data)
- Contradictory targets of waste hierarchy and circular economy
- Conflict between waste prevention and companies' interest to earn profit
- Need to change thinking/behaviour of producers and consumers – waste is a resource
- Consider ways to audit waste prevention and minimisation
- Collection of audit criteria/targets
- Sorting must be mandatory for all companies and residents
- There must be an opportunity to sort waste
- We must sort waste!
- 0-waste in all countries
- Green public procurement should be encouraged (include conditions on waste)
- Producer responsibility is not always working well – need for auditing
- Economic incentives need to be used more
- Definitions of waste are sometimes not clear

Appendices

Appendix 1. Spring Session Programme

Tuesday, 26 April

19:00-20:30 Welcome reception at Radisson Blu Hotel Olümpia
Hosted by National Audit Office of Estonia

Wednesday, 27 April

9:00-10:30 Plenary session

Welcoming remarks by EUROSAI WGEA chair
Introduction to the seminar

INTOSAI WGEA Guidance Material: *"Auditing Waste Management" – governance problems and waste crime*
Ms Mia Caroline Bratz

Keynote presentation: *Modernizing waste management system – case of Estonia*
Dr Harri Moora, Stockholm Environment Institute

10:30-11:00 Group photo and coffee break

11:00-12:00 Plenary session

Discussion forum: *Evaluating waste management policy and plans against waste hierarchy*
Moderated by Ms Viire Viss
Panellists: Dr Harri Moora, Ms Mia Caroline Bratz, Mr Sigmund Nordhus, Mr Michal Rampír

12:00-13:00 Lunch

13:00-13:45 Plenary session

SAI presentation: *Economic aspects of municipal waste management in Latvia*
Mr Jānis Salenieks

SAI presentation: *Financing a new waste management system in Poland – theory and practice in view of NIK audit*
Ms Katarzyna Papińska

SAI presentation: *Positive measures of Ministry of Environment after an audit on fees for depositing waste in landfills and the risks arising from the draft of new Waste Act relating to the promotion of recycling*
Mr Michal Rampír and Mr Petr Nedbal

13:45-15:15	Parallel sessions
	Waste prevention and minimisation, waste as a resource Moderated by Ms Viire Viss
	Economic aspects of waste management Moderated by Mr Jānis Salenieks
15:15-15:30	Coffee break
15:30-17:00	Plenary session
	Outcomes of the parallel sessions Discussion and conclusions

Thursday, 28 April

9:00-9:45	Plenary session
	Reflections from day 1
	SAI presentation: *Implementing producer responsibility for packaging waste in Malta* Mr William Peplow
	SAI presentation: *How the French Cour des comptes audited extended producer responsibility organizations* Mr Arnaud Marrou
9:45-11:15	Parallel sessions
	Managing biodegradable waste Moderated by Ms Vaida Barizienė, Mr Mindaugas Valančius
	SAI presentation: *Managing biodegradable waste in Bulgaria* Ms Eva Galabinova, Mr Dimitar Dimitrov
	SAI presentations also by Mr Rashid Abdulsalam and Ms Sigrid Rajangu
	Energy production from waste Moderated by Mr Alar Jürgenson
	Waste data Moderated by Mr Michal Rampír
	SAI presentation: *Experience from audit on solid waste management* Mr Branko Smilevski
11:15-11:30	Coffee break
11:30-13:00	Plenary session
	Outcomes of the parallel sessions Discussion and conclusions Adjournment
13:00-14:00	Lunch

Appendix 2. List of Participants

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