EIGHTH MEETING OF THE INTOSAI WGEA IN BEIJING

CHINA 10-15 APRIL 2003

Workshops on

Environmental

Auditing

Part I

Exchange of Information & Training

COMPENDIUM OF WORKSHOP PAPERS

INTOSAI
Working Group on
Environmental Auditing

WORKING GROUP ON ENVIRONMENTAL AUDITING

EIGHTH MEETING OF THE INTOSAI WGEA IN BEIJING

CHINA- 10-15 APRIL 2003

TABLE OF CONTENTS

PROTECTION OF WATER

Environmental audits 2001/2002- The audit of water and waste water management (Austria).....1

Review of The Action Taken by The Ministry of the Environmentand Waters Following Performance Audit on the Implementation of the Provisions of the Danube River Protection Convention (Bulgaria) 3

Audit of the Provisions of the Convention on Cooperation for the Protection and Sustainable Use of the Danube River (Croatia).....6

Surveillance of oil pollution on the sea (Denmark).....12

Summary of a CAO's Audit Report on the Extent of Appropriateness and Soundness of the Potable Water 2000/2001 (Egypt).....16

Auditing the Irrigation Networks Plans (Iran) 20

Preventing and Dealing with Pollution from Ships (Malta).....22

Management of Water Resources- Seriousness of the Problem and the SCC's Experiences from the Audits Carried Out (Poland).....27

Water Protection Audit (Romania).....31

Audits of water resources, carried out by the Accounts Chamber of the Russian Federation on the national and international levels (Russia) 33

The Activities of the Supreme Audit Office of SR in the Field of International Environmental Auditing (Slovak Republic).....36

Department for International Development: Maximising Impactin the Water Sector (United Kingdom).....39

Improved EPA Guidance and Support Can Help States Develop Standards That Better Target Cleanup Efforts (United States).....43

WASTE MANAGEMENT

On the Implementation of Municipal Solid Waste Management Activities and Programmes by the Ministry of Environment and Waters and the Local Authorities (Bulgaria) 47

An audit of the management of medical wastes (China) 54

Remedying Environmental Burdens from the Past (Czech Republic).....56

Summary of Solid Waste Management in the Municipality of Nueva San Salvador (El Salvador).....59

Review on Bio-medical Waste Management in the National Capital Territory of Delhi (India).....62

Waste Management in Iran (Iran) 68

WASTE MANAGEMENT (CONTINUED)

Management of Hazardous Wastes in New Zealand (New Zealand) 70

Municipal Waste Management on the Basis of the SCC's Audit Results (Poland) 74

Audit on Medical Waste Management (South Africa) 78

Protecting the Public from Waste (United Kingdom) 82

SUSTAINABLE DEVELOPMENT

Environmental audits 2001/2002- Sustainable Development (Austria) 85

Legal Framework of Environmental Auditing in Cameroon (Cameroon) 88

An audit of "the Project of Returning Farmland to Forest/Grassland" (China) 92

Remedying Environmental Burdens from the Past (Czech Republic) 94

Summary of the Audit of Municipal Environmental Management in Nueva San Salvador (El Salvador) 99

The preservation and management status of BDDG (Korea) 103

Sustainable Development and the Role of the New Zealand Office of the Controller and Auditor-General (New Zealand) 107

Environmental audits 2001/2002- The audit of water and waste water management (Austria)

Theme: Protection of Water

Author: Dr. Heinrich Lang Rechnungshof (Austrian Court of Audit)

What were the main reasons for choosing this topic?

a) We wanted to detect the environmental effects by looking at water quality. At the time of the audit more than 81 % of surface waters were classified biological water quality stage 2 or better.

b) The financial dimension is remarkable for Austria.

c) We wanted to do a comprehensive report on the whole system. Only the Court of Audit is able and competent to audit all levels concerned and to give a complete summary of the system of constructing and financing.

What was the scope of the audit?

a) Organisation and financing of the system, because the money which is granted now has to be raised and paid in the upcoming twenty years as the construction of the projects goes on. Financing was secured only till 2004.

b) Achieving the legal goals of a 85% connection rate (increasing from 71% 1993 to 81% 2000), increasing water quality and low charges (0,5-1 EURO for water supply and 1,5-2 EURO for waste water per cubic meter)

c) Effects on employment and infrastructure

The creation of employment was 20 employees per 1 million EURO.

What was the dimension of the audit?

We covered more than 50% of Austria itself, of the projects, the investments and the grants. The projects were divided into groups depending on the amount of investment and provinces. The largest projects were audited without exception, from the others a representative number, chosen by random, to be able to give a statistically valid statement.

Resources and dimension

Three departments were involved in this audit, four teams were on the road.

As one consequence of this audit, environmental matters of all possible levels and organisations were clustered in one single department by September 2001 (department for comprehensive environmental protection).

Main Results

Negotiations for reconstructing the financing system were initiated. The handling was partly streamlined and restructured. The law concerning environmental grants in Austria was reviewed, new standards concerning the system were set up.

Review of The Action Taken by The Ministry of the Environment and Waters Following Performance Audit on the Implementation of the Provisions of the Danube River Protection Convention (Bulgaria)

Theme: Protection of Water

R E P U B L I C O F B U L G A R I A

NATIONAL AUDIT OFFICE

Review of The Action Taken by The Ministry of the Environment and Waters Following Performance Audit on the Implementation of the Provisions of the Danube River Protection Convention

Bulgaria ranks low on the list of European countries rich in water resources. Therefore, the protection, rational use and management of water are vitally important to nationwide sustained development. Water provision per capita/ per annum, accounting for external and internal water resources in Bulgaria is 6 times lower than it is in Albania, 4 times less than former Yugoslavia and twice less than in Greece. Over the last few decades a decrease has been registered in water generated through hydrological cycle. The average annual flow has decreased by 40% over the 1985-1995 period.

Quantitative insufficiency apart, available water resources are not evenly distributed across the country. These facts characterize a situation, which gives rise to concern. A Environmental and Water Survey carried out by the Ministry of the Environment and Waters highlights that the existence of a water deficit is further complicated by unreasonably high water consumption, owing to:

- relatively low technological level of development of industry;
- the structure of the economy, which leads to high level of water consumption in some areas;
- extremely high levels of water loss along the distribution network;
- low environmental awareness of the population.

Some of the factors mentioned above also contribute towards increasing water pollution as well as deterioration in the quality of water generally.

The sector analysis under the “Waters” component of the National Environmental Strategy shows that the condition of water resources (in terms of quality and quantity) has been assessed as “posing risks to the social and economic development of the country”. Even minor changes to rainfall quantities and water balance could lead to major difficulties in the economic development of certain regions and to people’s daily lives.

The problems mentioned so far have contributed to the National Audit Office of the Republic of Bulgaria developing an interest in “the water issues”. Over the period 2000-2001 a performance audit was carried out jointly with four other Danubian countries – Romania, Slovenia, Slovakia and Croatia – in order to examine the implementation of the provisions of the Danube River Protection Convention by the Ministry

of the Environment and Waters and local authorities over the April 1st, 1999 until June 30th, 2001 period. The audit results were published on the web page of the Bulgarian National Audit Office.

Several important measures were taken by the Ministry of the Environment and Waters following the audit.

Work has continued towards the harmonization of Bulgarian legislation in the field of water management. Rules and regulations were enacted with the aim of:

- the establishment of Basin Directorates, their structure and activities;

- the establishment and activities of the Supreme Water Consultation Council;

- the quality of bathing water;

- the issuance of permissions for the wastewater discharge in water reservoirs and determination of individual emission limitations.

Other legislation has been enacted relating to the determination, classification, packaging, transportation and other activities in relation to dangerous and hazardous chemical substances, including the Regulation on the Final Assessment of the Risk of New Chemical Substances to Human Beings and the Environment.

A new Environment Protection Law has been enacted. Compulsory environmental impact assessment of the strategies, plans and programmes is required according to the provisions of the new law. The law makes provisions for the development of a National Environmental Management and Auditing Scheme, which will set criteria for assessing the environmental impact of operating enterprises, facilities and programmes.

ISO 14000 Standards have been selected to serve as main prerequisite and basis for statutory provisions implementation and have further been incorporated as an element of the Bulgarian National Standards.

The new measures taken are aimed at achieving continual improvement of the results of a wide range of organizations in the area of environmental protection and provision of relevant information to the general public and interested third parties in the process of discussing and finding solutions to problems in the area of environmental protection.

The delay of the adoption and/or ratification of a number of statutory acts, regulating important issues in this field, is a concern.

In particular, the Ratification Act of the Use and Protection of Cross-border Water Courses and International Lakes Convention, signed in Helsinki in 1992, has not to date been included in the Parliament's list of acts scheduled for adoption.

Another instance of delay has been observed in the case of the adoption of the Meteorological and Hydrological Activities in the Republic of Bulgaria Act. This prevents the efficient functioning of those elements of the National Water Monitoring System, which measure the quantity of rainfall and surface water.

The Minister of the Environment and Waters has not to date issued a methodology for determining of the minimum admissible levels of water runoff of rivers as prescribed by law. Feasibility studies have been

carried out and a methodology has been developed to be applied at the basins of two Bulgarian rivers. No information is available for the remaining river basins. This makes impossible to estimate the minimum runoff and to develop a general methodology.

There is an inadequate coordination of the actions of the state authorities, responsible for the development of the general and specialized cadastres, required by the Cadastre and Land Registry Act. The Ministry of Environment and Waters has not determined the structure, contents and operation of activities related to the Water Economy Cadastre. The Water Economy Balances and assessment of water condition should be based on information contained in the Cadastre, as required by the Water Act. The absence of this makes the effective water management in Bulgaria impossible.

In December 2001 a financial memorandum was signed between the European Commission and the Republic of Bulgaria for the implementation of an ISPA-funded project for the construction of a regional wastewater treatment plant for the towns of Gorna Oriahovitsa, Dolna Oriahovitsa and Lyaskovets. The intended investment is 16 634 000 Euro, 75% of this amounting to 12 475 000 Euro, is provided by ISPA, and the remainder of 4 158 000 Euro, is to be provided from internal financial resources.

The implementation of the project would not have been possible but for the preliminary efforts of the respective administrations of the three municipalities. A site on which the plant will be constructed has been selected and allocated. An environmental impact assessment has been carried out and the report has been approved by the Supreme Expert Environmental Council. To ensure the normal functioning of the future wastewater treatment plant it was necessary to modify the existing sewerage systems to redirect wastewater from the three settlements to the location selected. The financial resources required for this work, amounting to 700 000 BGN (approx. 350 000 Euro) was supplied from the state budget.

This project will help significantly the improvement of the water quality in the Danube River Basin.

In July 2002 MEW and EIA (Environment Implementing Agency) experts took part in a stocktaking project on potential sources of pollution in the Danube River basin. The updated information will allow the Bulgarian government to identify the environmental projects of most importance for the sustainable development of water management in Bulgaria.

Audit of the Provisions of the Convention on Cooperation for the Protection and Sustainable Use of the Danube River (Croatia)

Theme: Protection of Water

Author: Lidija Pernar

Audit of the Provisions of the Convention on Cooperation for the Protection and Sustainable Use of the Danube River (Danube Convention)

By Lidija Pernar
Assistant Auditor General
STATE AUDIT OFFICE OF CROATIA

1. INTRODUCTION

The State Audit Office is a new institution of the new, independent and democratic state of Croatia, founded on the bases of the State Audit Act at the end of 1993 and headed by the Auditor General.

The internal organisation of the State Audit Office is embodied in the foundation of the Central Office in Zagreb and the 20 regional offices in the county centres, with the same authorities and concerns as the Central Office.

The State Audit Office has a special, independent position within the system of government. It is strictly separated from executive government and answerable only to the Parliament. It has broad but nevertheless precisely determined authorities for the control of public expenditure at all levels and in all aspects, through all the phases, from planning, decision making, collection of the resources, allocation and spending.

This means that auditing, as control mechanism for the whole process, takes in the realisation of revenue, execution of assignments, financial transactions and financial reports of government in the broadest sense in all bodies and all functions. It also includes auditing of units of local self-government and administration as well as the beneficiaries of their budgets [spending agencies], and of all legal persons who are partially or entirely financed from the Budget and in which the state, or the local government unit, has a majority holding in shares or equity.

In connection with this, auditing implies control of legality in operational matters, which is the basis for every audit, and also includes the rendering of an evaluation about the efficiency and economy with which the activity is carried out and the effectiveness with which the objectives of given programmes are realised. Audits are carried out in accordance with INTOSAI Auditing Standards.

2. ENVIRONMENTAL AUDIT

2.1. Background

The State Audit Office is a member of INTOSAI since 1994 and of EUROSAI since 1996. The obligations that derive from the membership of these organisations require continued efforts and the involvement of the Office in the activities of these organisations and their working groups set up for the development of areas of special interest for state auditing and for the coordination of the methodology of work and the reinforcement of collaboration among supreme audit institutions.

One of the examples of the SAO's international cooperation activity leads us in the year 2000, when Romanian Court of Audit invited the State Audit Office of Croatia to join the initiative for parallel/coordinated audit of the provisions of the Convention on cooperation for the Protection and Sustainable use of the Danube River (Danube Convention), together with SAIs of other countries – signatories of the Convention.

Since the above listed mandates of the SAO made it possible to audit regularly the state activities with environmental perspectives, the SAO - aware of the major importance of the water protection as a global problem, welcomed the idea and joined the initiative.

First meeting was held in Bucharest in December 2000, where questions what approach and what kinds of co-operation to choose were discussed. As a result, a Common Position on Co-operation over parallel/co-coordinated audits of the Danube Convention was signed by the SAIs of Bulgaria, Croatia, Romania, Slovakia and Slovenia.

2.2. Purpose, subject and audit methodology

The purpose of the audit was to assess the implementation of the provisions of the Danube Convention, express an opinion and contribute to the efficiency of the implementation of the Danube Convention by preparing the recommendations with respect to the elimination of the deficiencies in the compliance with the said provisions.

Subjects of the audit in Croatia were:

1) State Water Directorate, which has legal obligation to carry out provisions of the Convention, and

2) Croatian Waters, legal entity for water management of state and local waters, although a number of services of other bodies and institutions were involved.

The audit **focused on** fallowing provisions of the Danube Convention:

1. Exchange of information on bilateral and multilateral agreements, legal regulations and measures in the field of water management; exchange of legal documents and directives and of other publications; other forms of the exchange of information and experiences (Article 4.b),

2. Record conditions of natural water resources within the Danube River catchment's area applying agreed quantity and quality parameters including the methodology concerned (Article 5.a),

3. Adopt legal provisions providing requirements including time limits to be met by waste water discharges (Article 5.b),

4. Enumerate ground water resources subject to a long-term protection as well as protection zones valuable for existing or future drinking water supply purposes (Article 6.a), and

5. Prevention of pollution of the ground water resources (Article 6.b).

Referring the **methodology** used, in order to generate information about the implementation of the particular environmental provisions in question, a variety of documents including the Danube Convention, acts of law, regulations, policy documents, maps and relevant statistics were analysed. Additional questions were further explained by questionnaires. The auditors also held a number of meetings and conducted interviews with representatives from the State Water Directorate and Croatian Water, as well as with some representatives from other institutions related to the implementation of the provisions of Danube Convention.

The audit covered **period** from January 1999 - when Convention set in force, till May 2001.

2.3. Audit conclusions and results

The main conclusion of the audit was that by conducting the water management activity and developing it continuously through the competent institutions, the Republic of Croatia *fulfils the undertakings assumed by the adoption of the Convention on Cooperation for the protection and Sustainable Use of the Danube River (Danube Convention).*

However, there are still certain fields in which the increased efforts are necessary to be put in to completely fulfil the undertakings.

In accordance with the foregoing, the State Audit Office hereby passes the following conclusions in this matter:

1) By signing the Danube Convention and with respect to the fundamental issues of the water management, the parties in Article 4.b agreed to exchange information on bilateral and multilateral agreements, legal regulations, documents and directives in the field of water management and to cooperate in other manners.

   The Republic of Croatia has, given the conditions, complied to the highest possible extent with the undertakings stipulated in the above-referred Article.

   However, it is necessary to seek ratification and implementation of bilateral agreements with neighbouring countries with which it hadn't been done yet, and through them further develop modalities with neighbouring countries to address water management issues in border areas.

2) In accordance with Article 5.a, the parties who ratified the Danube Convention have also undertaken to record the conditions of natural water resources within the Danube River catchment area applying agreed quantity and quality parameters including the methodology concerned.

   The Republic of Croatia fulfils this provision. However, when acting in this matter, it is necessary for it:

- to make certain improvements in the continued, up-to-date inclusion of data into the Trans National Monitoring Network,

- increase the number of examined water quality indicators while examining the water quality,

- apply to a greater extent the proposed ISO standards,

- prepare the annual reports on the results of all water quality examination programs and to make the monitoring program results available to various users and the public, all in order to achieve the ultimate monitoring goal - the protection and preservation of waters.

3) In accordance with the provisions of Article 5.b of the Danube Convention, the adoption of legal provisions providing for requirements including time limits to be met by wastewater discharges is foreseen.

In the Republic of Croatia, the legal provisions on the requirements to be met by wastewater discharges are adopted. However, the implementation thereof is dependent upon the fulfillment of several conditions precedent, such as *inter alia*:

- adoption of the County Plans for Water Protection;

- standardization of the modes of maintaining the Registers of Water Management Permits;

- continuous control of compliance of the wastewater composition with the water management permits issued to entities effusing the wastewater into public sewerage systems and natural reservoirs in their ordinary course of business; and

- involvement of the Main Water Management Laboratory in the analysis of wastewaters.

4) In accordance with the provisions of Article 6.a of the Danube Convention, the signatories have undertaken to establish the groundwater resources and protected areas important for the present and future water supplies, which are placed under the long-term protection. The SAO funded that knowledge on the quantity of groundwater in the whole territory of the Republic of Croatia is unsatisfactory and groundwater has not been sufficiently researched in all fields.

It is found as necessary:

- to establish the total quantity of groundwater suitable for the water supplies, and

- commence the work on the preparation of a new regulation on the conditions and modes of defining the sanitary protection zones, pursuant to which the protection of groundwater shall be implemented.

5) Under Article 6.b of the Danube Convention, the Republic of Croatia committed itself to the prevention of the pollution of the groundwater resources on a long-term basis, especially of those reserved for the potable water supplies from the pollution caused by the nitrates, plant protection agents, pesticides and other hazardous substances.

The water protection in the Republic of Croatia has been conducted pursuant to the Waters Act and the State Plan for Water Protection, whereas on the local level - save for the City of Zagreb - the water protection plans have not been adopted.

To fully comply with the commitments stipulated in the said Article 6b of the Convention, it is necessary to:

- commence the introduction of the set of measures aimed to the reduction of the groundwater pollution by agro technological agents and to enhance co-operation between water, agricultural and environmental management in order to achieve more sustainable development;

- establish the adequate supervision in protected zones (in the vicinity of water wells);

- apply the efficient sanctions against the perpetrators;

- initiate the rehabilitation of the existing and the construction of new, adequate waste disposal sites;

- initiate, in co-operation with relevant authorities, compliance with the highest criteria in the water protection when rebuilding old or building new traffic systems;

- produce the operative plans for the implementation of the measures in the case of accidental pollution of state- and local- waters; and

- establish a uniform, integral groundwater and water wells monitoring program in the whole country.

The final result of the audit has shown as satisfactory for all stakeholders. First, the audit subjects praised recommendations given by the SAO as very useful. Second, Parliament and general public were informed about fulfilment of Convention's provision and work of audit subjects on protection and sustainable use of water. Third, the SAO widened its working field and enriched its methodologies, fulfilling at the same time its vision: to contribute to the increasing of common wealth. Also, comments made by the audit subjects that work approach of the audit team was extremely expert and professional, then discussions initiated in Parliament as well as interest of general public were approval that the SAO is "walking in the right direction" and encouraged us to continue with further development in the area of environmental auditing.

3. CONCLUSION

From our auditing activity it is clear that the SAO has integrated the issue of environment protection in its controlling activities, and that the "forth E" is included in the widest rang of audits.

From described experience, it is obvious that usefulness of such audit activity is multiple justified.

The audit on Danube Convention confirmed to us that each SAI can contribute to raising the nature awareness of the government bodies and general public, not only by carrying out environmental audits in their respective countries, but also by joint actions with neighbouring SAIs, improving information exchange in order to learn from each other's experience, coordinating actions and dealing more effectively with common problems.

We believe that our, as well as other here presented, examples will inspire all SAIs in their environmental auditing efforts to strengthen and increase their control initiative and that this event will provide the opportunities for sharing experience and further learning on this kind of auditing among all of us.

Surveillance of oil pollution on the sea (Denmark)

Theme: Protection of Water

Surveillance of oil pollution on the sea.
The National Audit Office of Denmark (the NAOD)

1. The purpose of the examination.

The report examines the effectiveness of measures taken by the state to discover oil pollution in Denmark's territorial waters, and identifying and prosecuting oil polluters in the period 1995-2000.

It is prohibited to empty oil in Danish territorial waters, that is, 12 nautical miles from the coast.

Since 1983, it has been prohibited to empty oil in the Baltic Sea. A similar prohibition has been in effect in the North Sea since February 1, 1999.

The purpose has been to assess, whether:

- the surveillance effort is organised so that the state's aircrafts and satellite surveillance discover the oil spills,

- the pollution source is identified, and

- offenders are penalized.

2. Audit results.

a. Traffic of ships.

The NAOD examination showed that in the period 1995-2000 there was increased ship borne traffic in Danish waters and that the establishment of a major oil disembarkation terminal in Primorsk in Russia calls for a well functioning readiness against oil pollution.

The Ministry of Defence informed that the main pollution source of the Danish waters is illegal leakage from ships passing through the Skagerrak, the North Sea and in the Femer Belt.

Table 1. Passing ships in Danish waters during the years 1995 – 1999:

Number	Going north	Going south	In all
1995	52.050	52.850	104.900
1996	55.680	55.373	111.053
1997	60.286	59.832	120.118
1998	60.593	60.549	121.142
1999	60.447	60.322	120.769

b. Surveillance effort.

With the aim of meeting the recommendations of the Helsingfors convention, and in order to generally improve the oil pollution control; the Danish Environmental Protection Agency launched a three-year trial period with aircraft surveillance in 1989. Initially, the surveillance included 300 propeller hours annually, in 1995, the number increased to 450 propeller hours. As responsible for the flying hours needed, the Danish Environmental Protection Agency increased its flight hours by 100 % to 1000 propeller hours, equivalent to 500 jet hours.

Table 2. Planned and actual propeller hours in 1995-2000.

Year	1995	1996	1997	1998	1999	2000
Planned	450	450	450	1000	1000	1000
Actual	450	450	450	941	902	1002

Satellite surveillance has, on an experimental basis, been used for marine environment surveillance since October 1998, and from 2001 it became a permanent part of the Defence's oil pollution surveillance.

Defence has contracted for a fixed number of pictures to be supplied every year. For 2001, the Defence plans to receive 90 satellite pictures. The disadvantage of using satellite surveillance is that the observations must be verified visually, which in turn requires aircrafts or ships and takes time.

c. Observations of oil spills.

The number of observations varied in the period of 1995-2000. In 1999, it was at its highest with 220 substantiated oil observations, whereas the lowest number – 150 observations – was made in 1997, and in 2000 the number of observations was 151. In conclusion, in the period 1998-1999, the state's aircraft and satellite surveillance discovered an increasingly number of oil spills, but it was not until 2000 that aircrafts and satellites discovered more than half of the number of oil spills.

In 2000, the marine environmental surveillance discovered more oil spills with aircrafts and satellites than other sources; however, other sources still discover a significant proportion of the number of oil pollutions.

Table 3. Discovered oil spills in 1995-2000:

Number	1995	1996	1997	1998	1999	2000
Sea environmental flight surveillance	0	1	6	42	43	35
Satellite	0	0	0	12	42	52
In all flight and satellite	0	1	6	54	85	87
Other	188	171	144	147	135	64
In all	188	172	150	201	220	151

d. Identification and discovery frequency.

Various analyses are used for establishing evidence: lab tests of oil samples, databases of oil types, and various calculation models of oil slick movements at the sea. Analyses of the oil samples are made according to the North-test methodology, which the National Environment Research Institute of Denmark has participated in developing.

The North-test methodology is based on analysing samples from the pollution source as well as from the suspected source, and by comparing these analyses, it may be determined whether the samples are identical or not. On the basis of this, the polluter may be identified.

The examination showed that it was difficult to discover reliable research methodology.

The share of identified polluters has been between 12-22 % in the period 1995-2000. The share of identification was 19 % in 2000.

The examination of the NAOD has further shown that the extended expansion of the surveillance system (including the 100 % increase in the number of flight hours) only to a minor extent increased the number of identified polluters. A contributory factor may be that only about 1 % of the flights are carried out as night flights in spite of the Defence's assumption that illegal discharges are often being made in the dark and in low visibility weather.

Table 4. Identified polluters in 1995-2000.

	1995	1996	1997	1998	1999	2000
Number of oil observations	188	172	150	192	199	151
Identified polluters	24	21	33	27	31	28
Identified polluters in percentage	12	12	22	14	15	19

There are no night flights in spite of the Defence's assumption that illegal discharges are often being made in the dark and in low visibility weather.
The source of pollution is only identified in very few cases.

e. Prosecution.

The NAOD examination showed that the number of penalised oil polluters has not increased in the examined period. The NAOD demonstrated that only very few cases have been presented to the State Prosecuting Attorney. The Danish authorities' less effective efforts to stop pollution of the Danish waters are also considered to have a negative preventive effect.

f. Effectiveness in the system.

The NAOD assesses that the total effort in relation to oil pollution at sea is not effective. As long as aircraft and satellite surveillance are the core elements in deterring from oil pollution, it is necessary to increase the effect of these significantly. It is relatively unimportant that more oil polluters are discovered by the Defence's surveillance system, as long as the pollution sources are not identified. This means that the effort has to be targeted so that the oil spills are discovered sufficiently early to identify more polluters and ensure they are punished far more frequently.

3. Audit benefits

When the new Danish government came into power on November 20, 2001 initiatives were taken to follow up on NAOD`s report, regarding an increased effort to fight oil pollution, as an item in the government programme.

The effort has, among other things, included so called environmental radio calls to ships from The Danish Navy Operative Command sailing through the Danish seas. Authorities inform the ships of the Danish rules for emptying waste oil, and inquire about the cargo. This has resulted in the number of reports about waste oil puddles have been almost reduced to half the number.

On the basis of the successful Danish experiences, initiatives are underway to preventively call all the ships in the Baltic Sea region. In Helcom-regi (Baltic Marine Environment Protection Commission - The Helsinki Commission, see also www.helcom.fi) the issue will be dealt with a meeting in March 2003 among the nine Baltic Sea countries, and most likely the system will be introduced all over the Baltic Sea.

4. Methodology

The used methodology was traditional performance audit efficiency analysis. No specific audit environmental concept was applied. The audit lessons learned to be shared with other SAIs are few, but it is still an important environmental subject, since the illegal oil spills in fact pollute more than accidents with tankers.

Summary of a CAO's Audit Report on the Extent of Appropriateness and Soundness of the Potable Water 2000/2001 (Egypt)

Theme: Protection of Water

Summary of a CAO's Audit Report on the Extent of Appropriateness and Soundness of the Potable Water 2000/2001

Introduction:

Water pollution is regarded as one of the most serious phenomena of the environment pollution, thus subsequently necessitates the existence of a strictly—tight control over the water resources and the services of providing the citizens with pure potable water (either ground or filtrated at the appropriate health rates and specifications. In application of the state-oriented strategy adopted till year 2017 and its laid goals of developing the sector of potable water, such services are scheduled to be expanded to cover the different regions of the republic.

The CAO has prepared an audit report 2000//2001 on the extent of appropriateness and soundness of the potable water including its remarks and observations, supported by the evidences and recommendations on the folIow-up and evaluation of the role of some concerned entities subject to the Ministry of Health and Population which assumes the responsibility of setting controls, criteria and necessary conditions of providing, the pure potable water.

Such entities are the General Department of the Environmental Health, the Central Department of Laboratories and the Public Authority of the Great Cairo Water Utility which is entitled to providing and directing the potable water facilities in Great Cairo i.e. (Governorates of Cairo, (Giza and Kalyoubia) according to norms and specifications of the Ministry of Health and Population and the World Health Organization (WHO).

First: The Scope of the Audit Process-undertaken during 1999–2000, 2000 2001—tackled the following elements with a view to measuring the progress undergone by each:

1. Getting acquainted with the rate of the potable. water network coverage at the level of the all governorates (according to the last statistics of the Organization of Statistics and Public Mobilization—1999).

2. Listing all potable water—related operations which have been carried out at the level of all governorates and the type of each.

3. Getting acquainted with the competences of each department of the entities that are subject to evolution and follow-up regarding the projected plan. Its actual implementation during 2000–2001 in addition to the attained achievements.

4. Defining the legal framework annex I within the field of potable water, as concerns laws, statutes arid decisions of securing the quality and appropriateness of the potable water from the hygienic perspective with a view to ascertaining compliance with the provided conditions, norms and

limitations as well as verifying the measures and prosecutions taken in case of non-compliance and violation.

5. Getting acquainted with the conditions of the potable water whether produced from the treating network, the ground, the tanks, or the mixed, bottled and mineral, etc at the level of all. governorates and individually at the level of each, in addition to getting informed of the extent of compliance with the health norms and criteria, and the application of all tests and examinations defined by Law.

6. Evaluating the extent of efficiency of the samples taken from the stations of purifying and producing water throughout the governorates (filtrated—movable—ground) and the Great Cairo stations of Great water (which amount to 13) as well as the Conditions of the potable water (starting, from the stage of purification the ejection of the station), the compliance of each Station with the Conditions Stipulated by law regarding the wells, the periodic samples, the hygienic criteria of, the produced water.

7. Getting acquainted with the adopted' system of monitoring the potable water in the phase of production and the water produced from the ejection of the stations and the networks.

8. Verifying the commitment of the eater-producing entities, via the actual execution of their plans, towards realizing the state plans and strategy which aim at increasing the amount of the produced pure potable water so as to provide the deprived districts so as to the increase in population and the construction expansion.

Second: Determining the technical measurement sources for all auditees, supporting the evidences with documents and combining the results gathered from all auditees as a proof tool for performing the evaluation process awl help forming the technical audit opinion

These sources, as concerns the years: 1999–2000/2000–2001, are represented in the following:

- Statements, statistics. laws, norms and specifications of the potable water stations and networks in each governorate.

- Recommendations, observations and the technical directives mentioned in the reports, prepared by the entities of the technical controlling supervision, on the stations, labs, records, books, conducted examinations and their monthly and annual results of the departments of each governorate.

- Dossiers of the periodic achievements, the statistics of the samples-either taken from the filtered or the ground water and the results of the different exercised tests.

- Folders, official correspondences and the work process in each entity while being audited.

- Complaints, contingent environmental problems training files and the projected plans.

- Reports, prepared by the health directorates in each governorate on the stations' condition alone with the environmental health survey.

- Meeting the principals, conducting the necessary discussions and obtaining all explanations and clarifications required by the CAO.

- Getting informed about the technical opinions of some research centres and specialized public institutes, subject to the CAO auditing, as neutral entity of technical consultation.

The results of the researches and studies carried out by these entities should be taken into consideration, as indicators, wheat) preparing the CAO's report.

The CAO, through the follow up and performance evaluation, realized the state of the potable water as follows:

1. Number of the water purifying stations reached. throughout the Republic for the year 2000/20O1, 164l stations, ground water stations were 1803, the portable water stations 602 and the analyzing units were 11 .

2. Reading the results of examining the Greater Cairo water samples analyzed by laboratories of the Ministry of Health and Population during the year 2000/2001 in-both. Cairo and Giza shows that:

   The purified potable water which has been treated with chlorine is represented in (the bacteriological water network, the common examination water network, trenches water and tanks) etc. Such kinds don't exceed the allowed non-compliance rates.

3. Reading the results of all samples analyzed during the water purification stages throughout the Greater Cairo water stations affiliated to the General Organization for the Greater Cairo Water Supplies (GOGCWS) during the years I999/2000 and 2000/2001 shows that:

   All analyses of purification, filtration, tanks and trenches arc fully Complying with the concerned law as proved by stations' laboratories.

   All stations analyses made by the Organization’s Central Laboratory for the heavy minerals and radioactive materials as well as the microbiological analyses were within the limits and rates which are legally allowed in accordance with the standards and specifications laid down by the World Health and Population and the Ministry of Health Population under resolution N 108 for the year 1995 during the two years. The fact that shows efficiency in the performance of the water supplying stations.

4. The; little contribution of the ground water (wells) supplied by the GOGCWS stations which amounted to 1.6% only of its total production all over Greater Cairo in the year 2000/2001 up to June 30, 2001.

   The CAO recommendation is to review the possibility of increasing the ground water contribution in providing the deprived areas with water us well GIs enhancing the production of the outstanding stations to be in an equal footing with the at districts of Al-Arniria and Mustarod

5. Increasing of the total quantity of potable water in the Greater Cairo With all increase rate reached 4.7% for the year 2000/2001 over the year 1999/2000.

6. Increasing training activities by increasing the number of courses. trainees and widening them to include the largest number of governorates especially for those specialized in the field of analyzing water.

7. Potable water in the state of improvement in some governorates, this is observed through the various checkups applied in year 2000/2001.

Annex

The legislative framework concerned with potable water and its usage (It is considered the most important scale of measurement):

1. Presidential decree n 2703 of 1966 concerned wills establishing the Supreme Committee for Water under the Ministry of Health. This committee is concerned with studying all matters related potable water; its resources, ways of treatment and transmitting it to consumers.

   It is also concerned with approving the projects of water and its treatment from the aspect of health before implementing them.

   The resolutions of the committee are binding to both governmental and nongovernmental entities, through this committee we have observed that the Ministry of Health is the only responsible entity for setting up the standards and conditions of potable water.

2. Law no 27 of 1978 concerned with regulating water public resources required. for human usage, and according to article (6) from that law the Minister of Health issued the following decisions:

   Resolution no 108 of 1995 concerned with the standards and specifications that should be available in potable water. beside Iaboratories check-ups within the Central Department of, laboratories affiliated to the Ministry of Health and its sub-branches ill various governorates, this decision determines the permissible limitations related to:

   - Natural characteristics.
   - Unorganic materials that may affect its relish and household usages.
   - Chemical materials that may affect general health (Organic and inorganic materials).
   - Microbiology standards (total number of bacteria—pollution indicators—biological inspection).
   - Radioactive materials.

3. Minister of Health Resolution no 301 of 1995 concerned with health conditions of potable: water processes and processes and preserving it from pollution. The decision stipulated that the water source must be 500 meter away from electricity, an dits emptiness from buildings and pollution sources beside taking samples of water and checking them (chemically and bacteriologically).

4. Standard Specifications no 1588 of 2001 concerned with

Auditing the Irrigation Networks Plans (Iran)

Theme: Protection of Water

Auditing the Irrigation Networks Plans

This project was administered across the state according to Note 76 of the Second Economical Social and Cultural Development Plan. The predicted starting and ending dates were 1997-1999. The Irrigation and drainage network project is one of the many infrastructural projects which should promote the development of other economical sectors and requisites the fundamental role of the government in executing and managing the projects. The main objectives in water resource development plans especially those concerning the irrigation and drainage systems are as follows:

A) Encouraging the public to invest in the execution and exploitation of irrigation and drainage systems through the Bank credit facilities and General revenue.

B) Reduction of the financial obligations of the government and assuring that the water resource projects are not dependant on the general revenues.

C) Enhancing the income of the farmers benefiting from the increase of Agricultural products and avoiding any sort of dependence on imported food products.

D) Cutting down on the investment costs and proper employment and exploitation of Irrigation and Drainage networks.

According to Article 3 of Project Executive By-law of the Ministry of Power and Note 76 of the second development law, Note 76 and this by-law apply to the following cases: the irrigation and drainage networks under the diversion and storage dams, the networks supplied by the natural flow of the river or underground resources and water delivery plants ....intended to supply small irrigation and drainage network, A special Letter of agreement and its amendment has been concluded by the Water Resource Management organization (as the executive body and operator) in order to be included in the General Income payments.

The performance of this scheme is as follows:

Subject	General Income (in Rials)
Approved credit	111,787,100,000
Expense	54,349,469,000

Appropriation

The approved credit of the Scheme is provided through the general revenue and the other sources of Income. According to the Annex of the 1999 Budget Law the appropriation of the scheme is over 111.787.1 million Rials. The allotment is only 48.62% of the total credit approved in 1999.

Expenditure

The Water Resource Organization has received the total of 54,349,469 Rials in four intervals from the treasury. It has transferred the amounts to the Agriculture Bank and recorded them as expense. After necessary study, the audit team concluded that in four months, 10,000,000,000 Rials and in another four months 500,000,000 Rials was allotted to the current budget of the Water Resource Management Organization. It appears that in view of the nature of Note 76 and the related by-laws and also in view of the objectives mentioned above the auditee was obligated to transfer the receipts to the specified Bank (Agriculture Bank).

During the second development plan, there were ups and downs in the investment of the public in establishing irrigation and drainage networks and other water industry projects. The cooperation peak was in 1999 which amounted to a total of 332,164,500 thousand Rials.

During the second development plan the Agricultural Bank and the Common Committees have approved 132 schemes amounting to 876 Billion Rials to cover 235000 Hectares of Land. In 1999 (end of plan) according to the imposition credit limit, approximately 46 schemes have received their final approval which following the allotment process shall be accordingly carried out. Many of the schemes submitted to the Bank and the common Committee have not been approved due to credit deficiency.

Preventing and Dealing with Pollution from Ships (Malta)

Theme: Protection of Water

Preventing and Dealing with Pollution from Ships

Introduction

Like some other State Audit Institutions from the Mediterranean region, as well as the Netherlands and the United Kingdom, the National Audit Office of Malta has for the last year or so been engaged in carrying out the performance audit: Preventing and Dealing with Pollution from Ships. This audit provided the NAO – Malta with the opportunity to gain hands-on experience of environmental auditing through cooperation with our EUROSAI colleagues.

The purpose of this paper is to share the NAO's experience in performing this audit. First, the major reasons which prompted the NAO to perform this audit will be presented. Next, the paper discusses the audit objectives, scope and methodology. A brief section is dedicated to the problems encountered by the NAO during the performance of this audit. The paper will then present the main audit findings, and action being taken by Government entities to address the issues raised by this audit.

Purpose of the audit

Besides EUROSAI interests, the Maltese scenario also provided ample reasons for the NAO to perform this audit.

Malta is a small island State with a total area of 316 square kilometres and a coast line of 190 kilometres. On the other hand, the central Mediterranean has a relatively high volume of maritime traffic - nearly one third of all sea-borne trade either transits through the Mediterranean directly, or leaves from or is directed to, Mediterranean Ports. The associated risks of incidents are consequently high.[1] Malta's geographical proximity to major maritime traffic routes,[2] together with bunkering, transhipment activities, and other shipping activities in our ports, pose potential risks to human health, and to our environment as well as serious economic repercussions, including, for instance, severe damage to our tourist industry.

Such risks are usually associated with spills of oil, fuels or other harmful substances. Whilst the risk of a massive spill is ever present, the available data indicates that, to date, chronic low level pollution by oil and petroleum products in our coastal waters has become increasingly significant. Fortunately, no major oil spill (over 1000 tons) has occurred in Maltese territorial waters, that is, a radius of 12 nautical miles, which could lead to a massive stranding of oil on our shores.

Another reason for performing this audit is that Malta is the flag State Administration of one of the leading ship registers in the world,[3] and is responsible to regulate and control the registration of ships and yachts sailing under the Malta flag. The Malta Maritime Authority is responsible to regulate, control and administer all matters relating to merchant shipping and marine pollution prevention, in accordance with the Merchant Shipping Act and various international conventions.

Audit Objectives

Since this audit was a joint exercise, the audit objectives were generally similar to those of other participating SAIs. A few minor changes were necessary due to our audit mandate, which does not entitle

the Auditor General to go into the merits of any policy, and, therefore, we cannot comment on government policy. Other changes were necessary in order to be able to address issues which are considered to be of relevance in the Maltese scenario. Thus, our three main audit objectives were to confirm that:

- national policy to prevent and deal with pollution is being implemented and enforced;
- government measures to prevent pollution from ships are efficient and effective;
- government measures to deal with pollution from ships are timely and effective.

Audit Scope

These objectives entailed that our audit should be subdivided into two main parts: preventing pollution from ships and dealing with pollution, particularly in an emergency.

In the 'Preventing' part we reviewed the management of various types of ship inspections which are performed by, or on behalf of, the Malta Maritime Authority, namely:

- Ship surveys – which should provide valid statutory certificates as required by various conventions.
- Flag State Control Inspections – intended to verify that the actual state of Maltese ships is in conformity with statutory certificates. This was considered to be a critical part of the audit, given the attention attached by the status of Malta's shipping flag as ranked by the Paris Memorandum of Understanding.
- Port State Control Inspections – considered to be an important element of the Malta Maritime Authority's work due to the contribution of port State control towards pollution prevention and shipping safety all over the world.
- Pollution Control Inspections on vessels sailing in domestic waters. This type of inspection also covers maritime activities such as bunkering.

The second part of the audit concerned the management of the National Marine Pollution Contingency Plan (hereafter referred to as the NMPCP or the Plan) which lays down the country's response strategy.

The NMPCP knows its origin from a project financed under the Malta – EU Third Financial Protocol, which also provided for the procurement of equipment, including a support vessel, and the training of personnel. The Plan itself was drawn up in 1999 by the contracted consultants, the Centre de Documentation de Recherche et d' Experimentations sur les Pollutions Accidentelles des Eaux (CEDRE).

Besides the provisions of the contingency plan, Malta is a signatory to a number of agreements with countries that would be willing to provide assistance in the eventuality of a large-scale maritime incident. In addition, the UN agency REMPEC, which is based in Malta, provides technical expertise to all Mediterranean countries in dealing with maritime pollution.

Methodology

For the purpose of reviewing ship inspections performed by the Malta Maritime Authority, we accessed various inspection databases, the local shipping movements database, and international databases such as the Paris MoU and Equasis. We also performed structured interviews with senior management and key personnel.

Contingency planning was reviewed through a number of interviews with key personnel. We checked whether the various government entities involved complied with the requirements of the contingency plan. Our review included records of contingency plan training exercises.

The audit team had to spend a significant amount of time familiarizing itself with the Malta Maritime Authority's activities and shipping industry practices. In addition, gaps in in-house expertise had to be bridged by consultation with legal experts and colleagues from other SAIs, in particular the Netherlands Court of Audit and the NAO of the United Kingdom, who were also carrying out this audit in their own country.

Problems encountered by the NAO

One of the problems encountered during this audit was the relationship between the Malta Maritime Authority and the National Audit Office. This audit, which was a 'first' for the NAO, followed various investigations held at the Malta Maritime Authority after the "Erica" incident. Despite our efforts to explain our audit objectives in detail, and to continually update the management with information emerging from the audit, it was somewhat difficult to get the auditee on board during various stages of the audit.

Other difficulties encountered during this audit related to 'manual' ship survey and local pollution control records. The audit team had to compile databases related to these ship inspections. In addition, databases available were not integrated.

The NAO review of the management of the National Marine Pollution Contingency Plan was a more straightforward affair, even though the plan defined five government entities as the key players - the Oil Pollution Response Module, the Civil Protection Department, the Malta Maritime Authority, the Armed Forces, as well as the Ministry responsible for the Environment.

Audit Findings

Preventing Pollution from Ships

The audit revealed that guidelines, introduced by the Malta Maritime Authority during 2000, for the registration of merchant ships older than 15 years, were being adhered to. These guidelines were intended to strengthen assurance of the seaworthiness of ships being registered, as required by the Merchant Shipping Act. By tightening controls over the registration of older ships, these guidelines also contribute towards minimising the threat of pollution to the marine environment.

The audit revealed that more could be done to sustain improvement in the effectiveness of the various ship inspections performed by the Malta Maritime Authority.

The Malta Maritime Authority lacked fully documented criteria for conducting ship inspections. Furthermore, the Malta Maritime Authority had only limited access to relevant ship information available on international databases, such as the Paris Memorandum of Understanding.

Whilst the main focus of flag State control inspections performed during 2001 was on vessels in the higher risk category, such as the older ships and tankers, the Malta Maritime Authority did not fully comply with its own inspection targeting criteria. Weaknesses in internal controls and in the quality assurance of flag State control inspections performed abroad on its behalf were noted.

Port State control inspections performed by the Malta Maritime Authority on visiting foreign ships in 2001 fell marginally short of the target established by the Memorandum of Understanding on Port State Control in the Mediterranean Region (MMoU). However, it was recently reported that during 2002 the Malta Maritime Authority substantially exceeded the MMoU inspection target. The mechanisms for targeting ships for port State control inspections in accordance with the MMoU were not in place.

Deficiencies in management information systems as well as a lack of human resources at the time of our audit were the major contributory factors leading to the situation discussed above.

Dealing with Pollution from ships

A portfolio reshuffle during the NAO's audit exercise saw the former Ministry for the Environment, which was responsible for the National Marine Pollution Contingency Plan, assuming a regulatory role and shedding operational activities. Although such a move was considered desirable for many reasons, the reshuffle resulted in a contingency plan ownership vacuum, pending 'ad hoc' policy directives to bring all players working as one team.

The Plan was not supported by the formal allocation of funds, budgeted specifically for its ongoing development, and for personnel training on a national basis, at least once yearly.

The comprehensiveness of training exercises has been reducing each year since 1999. Consequently, training may have become inadequate, both in terms of the preparedness of personnel as well as the identification of potential defects in the Plan. Moreover, a Tier 3 (high level) disaster scenario has never been tested.

The Way Forward

Despite the difficulties encountered, the audit team found evidence of on-going improvement at the Malta Maritime Authority. This was reflected in the recent improvement in the Paris MoU risk ranking. Also, more ship inspectors were engaged during the audit.

Our audit also indirectly contributed towards the implementation of a pre-EU accession programme for Malta entitled 'Maritime Safety through the implementation of the Maritime Transport Acquis'. This programme aims to ensure that the Malta Maritime Authority develops the technical and administrative capacity to implement the EU's acquis through personnel training, the introduction of an integrated management information system, and the improvement of port reception facilities.

The key players involved in dealing with the eventuality of maritime pollution are currently addressing the following issues:

- Regulating the disposal of any waste that results from oil spill clean-ups.

- Regulating the methodologies used for oil spill clean-ups, in particular, the use of any chemicals/dispersants.
- The quantification of environmental damage resulting from oil spills.
- The imposition of fines related to environmental damage.
- Ensuring that fuel/oil depots and similar installations apply appropriate preventive and contingency measures against oil spills.
- The issue of any legislation on the matter.

Concluding Comment

This audit has not only provided Malta's National Audit Office with valuable experience in conducting audits with an environmental theme, but it also served as a catalyst, together with other initiatives currently being undertaken by the relevant government entities, to enhance Malta's contribution towards ship safety and pollution prevention. Some of the results of these initiatives are already evident.

The initiatives being taken to enhance Malta's preparedness and response in cases of marine pollution will contribute towards minimising the vulnerabilities of a small island state that are associated with such incidents.

[1] Source: State of the Environment – Report for Malta, p298.
[2] Source: State of the Environment – Report for Malta, p299.
[3] Source: Malta Maritime Authority. As at end December 2001, the Malta flag occupied the fifth place in the world's top list of ship registers**.**

Management of Water Resources- Seriousness of the Problem and the SCC's Experiences from the Audits Carried Out (Poland)

Theme: Protection of Water

THE SUPREME CHAMBER OF CONTROL
POLAND
Management of Water Resources:
Seriousness of the Problem and the SCC's Experiences from the Audits Carried Out

The aim of water management is to provide population, industry and agriculture with water and protect the State property against floods. Actions taken in this regard must follow the principle of sustainable development.

***

Poland as a country has very scanty water resources. Average annual river flow from the territory of Poland amounts to 1600 cubic metres (m3) per capita and is nearly three times smaller than the European average. In a dry year this value decreases to approximately 1000 m3, which is considered to be a marginally low amount of water, whereas in a wet year it does not exceed 2000 m3 per capita.

Irregular occurrence of water resources in various regions of Poland as well as seasonal changes periodically but seriously endanger same areas (Kujawy, Mazovia, part of Wielkopolska) due to water shortage.

The total capacity of more than 70 larger artificial reservoirs and barrages amounts to 3400 million m3, 65% of which is accounted for by reservoirs with a capacity ranging from 100 to 500 million m3. The capacity of storage reservoirs in Poland does not exceed 6% of the average flow compared with 12 – 14 % needed for proper water management and protection against floods. Poland does not have major underground water resources either. A system for the management of river basin water has been in operation for over 10 years in Poland. To that end regional water management boards were established, which have been working since 1991.

99% of the territory of Poland is situated in the Baltic Sea catchment area, which is very prone to pollution due to its close nature, relatively small capacity, and reception of water from the territory of 9 highly industrialized countries with intensive farming. Poland has ratified the 1974 Helsinki Convention, as amended in 1992, on the Protection of the Marine Environment of the Baltic Sea Area and takes strong interest in compliance with its provisions.

***

All issues related to water management require auditing by an independent body such as the Supreme Chamber of Control (SCC). Audits carried out by the SCC take into account a complex nature of water management and cover its particular fields at yearly to 3-year intervals. Duration of each audit cycle ranges on average from 9 months to a year, and includes preparation of an audit programme and training of participants for about 3 months, an actual audit in units – 3 months, and summarizing audit results and drawing up the final report – 3 months. In most audits it is impossible to examine all units and all information related to the subject under study. On average 80 to 130 units were audited. Sample was

selected in such a way to be representative for making conclusions about the whole population. To that end the SCC relies on its experiences (auditor's manual and the SCC's standards – since 2002) and on the recognised international auditing standards (European Implementing Guidelines for the INTOSAI Auditing Standards). These audits usually combine the issues specific to performance audits and regularity audits.

Regardless of the topic studied, the following are audited:

- compliance of the tasks implemented with the law in force,
- regularity of water policy implementation,
- reasonable use of public funds,
- efficiency of management,
- economic results achieved in comparison to the projected ones.

The SCC invites also state control bodies to participate in relevant audits, for example environmental, plant and sanitary protection inspectorates that on the basis on a general audit programme and under the SCC's supervision carry out specialized audits also in private units that cannot be audited directly by the SCC.

***

For the last 10 years the SCC has carried out 10 audits covering nearly all spheres of water management, i.e.:

- protection of surface and underground water resources against pollution,
- ensuring safety of hydrotechnical objects,
- fulfilment of obligations under the provisions of international agreements concluded with our neighbours as regards borderland waters (these were parallel audits carried out with relevant SAIs),
- antiflood protection in Poland and management of rescue operations during the flood-time, as well as removal of flood effects.

In 2000 within the framework of the audit concerning the fulfilment of obligations under the provisions of the Convention on the Protection of the Marine Environment of the Baltic Sea Area, the so-called Helsinki Convention, we audited the water-supply-and-sewage-disposal management as regards point and non-point land-based sources of pollution, monitoring system, adjustment of local law to the Convention requirements as well as regularity of spending public funds on the objectives mentioned; the audit was carried out in parallel with the SAIs of Denmark, Estonia, Finland, Latvia, Lithuania, Russian Federation and Sweden. The audit findings and the course of action taken were presented at the Seminar of the EUROSAI Working Group on Environmental Auditing held in Goławice near Warsaw.

Between 2000 and 2001 we audited costs incurred in connection with the public water-supply-and-sewage-disposal management as well as provision of water for people living in urban agglomerations, covering 20 cities with over 200.000 inhabitants.

It follows that the main focus of water management auditing has been on the protection of water resources and proper provision of water for the population and the national economy.

The audit carried out in 1994 showed that efforts taken with a view to improving water purity had been insufficient and had not brought about improvement. The purity of rivers and lakes was alarmingly low. In 1994 only half of sewage was treated in the degree required, and half of industrial plants and one third of cities did not have any waste water treatment plant. Nearly one third of waste water treatment plants audited did not comply with obligations arising from water law permits. Fees due for discharge of wastes into water and fines imposed for breaching conditions of water law permits were calculated and collected with delay.

The audit carried out in 2000 showed that purity of surface waters gradually improved. Half of the plants audited substantially limited pollutant loads discharged into waters, and the volume of untreated sewage decreased by over 60%. Conditions set out in water law permits for the disposal of wastes to surface waters and operation of treatment installations were better complied with; and work on the construction of new waste water treatment plants was intensified. Between 1998 and 1999 around 60% of waste water treatment plants came into use and results of their work can be seen today as the quality of surface waters has improved. The SCC's conclusions covered many issues related to rendering the supervision over waste water management more effective, updating legal regulations and launching construction of waste water treatment plants. Substantial number of conclusions has already been implemented, and the implementation of long-term conclusions is pending.

Protection of underground water resources was audited in 1996. Class III water was detected in one third of underground water samples studied. Moreover, indirect protection zones for underground water intakes were still not established. Inactive wells failed to be liquidated, which might have polluted water-bearing horizons, or they were closed with delay. Regional authorities did not draft balances of available underground water resources, nor did they make any periodical assessments of the amount of water used under water law permits. Implementation of tasks related to the protection of underground water resources has become more effective thanks to the assessment presented by the SCC as well as detailed and focus conclusions proposed.

The second group of problems concerned water supply. Audits carried out in 1997 in 63 municipalities showed that the consumption of water by industry and individual users decreased by 15%. Nevertheless, there were some irregularities as regards exploitation of public water intakes. Nearly half of the water intakes were exploited without valid water law permits for water withdrawal and operation of facilities. Conditions set out in water law permits were not obeyed in one third of the water intakes. Enforcement of post-audit conclusions ensured the eradication of existing irregularities.

Provision of water for people living in urban agglomerations was audited in 2001. The audit was carried out in the 20 largest cities with over 200.000 inhabitants, totalling a quarter of the population in Poland. About 7% of the inhabitants did not use water supplied centrally but withdrew it from local intakes and public wells. More than half of the cities studied tapped class III water or water not classified. In over two thirds of the cities the quality of mains water supplied to the population as well as water withdrawn from most public wells did not meet all the requirements specified for drinking water. A sanitation inspectorate is certainly not blameless, as it carried out insufficient audits of the quality of water supplied or did not enforce its findings, which had an impact on the quality of water. The audit also showed that the water

mains were prone to frequent malfunctions due to insufficient renovation and modernisation of the gird that was often 50 to 100 years old, which greatly affected the quality of water. Losses of water from the water mains amounted to 25%, pushing up operational costs of water management companies, which were, in consequence, bound to be passed on to the user. The audit disclosed that there was insufficient progress as regards drafting conditions for using basin waters that constituted a basic instrument for water management, including for the benefit of urban agglomerations. Focus conclusions, related in particular to new legal regulations, have already been implemented or are being executed now. Improvement in water treatment and modernisation of the old water mains require considerable financial resources and are achieved progressively.

Moreover, the audit showed that the rise in costs of the public water-supply-and-sewage-disposal management was not always justified when we take into account poor parameters of water supplied. It was found out that financial resources obtained as a result of higher fees for water and for pollutant loads discharged with wastes were not always used for water quality improvement or protection of waters against pollution; they were sometimes spent on faulty investments, and even on pay rises.

***

We are pleased to report that a great part of conclusions arising from assessments formulated during audits is implemented by the units concerned. This applies in particular to legal and organisational regulations and to the strengthening of supervision over task implementation. Nevertheless, considerable improvements of water balance both quantitative and qualitative, protection against floods, construction of sewage system and waste water treatment plants require substantial funds and long periods of implementation.

The analysis presented shows that auditing topics falling within the scope of the management of water resources is feasible and crucial for each SAI. Issues related to water management are, by and large, escalating in all countries.

The synthetic outline of issues audited in the field of water management also points to the efficacy of organizing a training by INTOSAI in this regard.

Water Protection Audit (Romania)

Theme: Protection of Water

Water Protection Audit

The regional conventions on water protection against pollution have been the first field of interest for the Romanian Court of Accounts, as this was also the approach of many of the members of EUROSAI and INTOSAI Working Groups on Environmental Auditing. As the subject of audit was selected The Convention for the Protection of the Black Sea against Pollution, signed in Bucharest in 1992, and The Convention on Cooperation for the Protection and Sustainable Use of the Danube River, signed in Sofia in 1994. The latter is the subject of the audit, in a natural order, since the Danube River is the main affluent of the Black Sea.

The organisation of the water protection audit at the Romanian Court of Accounts level has started by the thorough analysis of the Danube Convention provisions and the study of relevant national legislation. There have also been consulted external information sources, in particular the documents prepared by the INTOSAI and EUROSAI Working Group on Environmental Auditing and auditing reports drawn up by some of its members on various aspects of environment protection.

The general objectives of this audit were the following: the statement of a general audit opinion regarding the observance, at district level, of the Danube Convention provisions, and the formulation of recommendations on the grounds of the ascertainment of shortcomings in the fulfilment, at local level, of the obligations undertaken by the Romanian State by signing the Danube Convention. The evaluation of the existing legal framework in the audited field, as well as the analysis and evaluation of the way of defining the responsibilities among various structures competent in the field of water protection were also taken into account, with a view to identifying the possible gaps within the regulations or activities performed. The auditing reports thus prepared provided a large range of information with respect to the way in which the provisions of existing legislation in the filed of water protection are enforced. The presentation of concrete cases, representative for the pointed out aspects, will create an extensive image of the situation existing at a local level, as far as the proposed subject is concerned.

In 2002 was prepared and carried out at the level of Romanian Court of Accounts territorial structures in a Danube riverside districts the audit on the observance of Convention provisions. The audit at territorial level has been carried on at the District Inspectorates for Environmental Protection, the territorial structures of "Romanian waters" National Company, the territorial structures of central public administration authorities competent in this field, commercial companies, local interest State-controlled companies (autonomous companies), local public administration authorities, NGOs. The general objectives of this audit were the following: the statement of a general audit opinion regarding the observance, at district level, of the Danube Convention provisions, and the formulation of recommendations on the grounds of the ascertainment of shortcomings in the fulfilment, at local level, of the obligations undertaken by the Romanian State by signing the Danube Convention.

Were also taken into account the evaluation of the existing legal framework in the audited field, as well as the analysis and evaluation of the way of defining the responsibilities among various structures competent in the field of water protection, with a view to identifying the possible gaps within the regulations or activities performed. The auditing reports thus prepared provided a large range of information with respect to the way in which the provisions of existing legislation in the filed of water protection are

effectively enforced. The presentation of concrete cases, representative for the pointed out aspects, will create an extensive image of the situation existing at a local level, as far as the proposed subject is concerned.

At the central level, the audit has as its purpose to assess whether the application of the Convention is carried on accordingly, and whether necessary measures have been taken for the compliance with the obligations undertaken.

For us the overall assessment of the way in which the Romanian Government observed the commitments undertaken by signing the Danube Convention was very important and revealed several important issues:

- The responsibility and commitment of the authorities in charge of the environmental protection as relates to the water protection activities were ascertained; as well as the clear awareness of the reality that, as the last Danube downstream country, Romania is the most vulnerable among Danube countries; it has the duty and the entitlement to consistent organisational and financial efforts;

- The undertaken commitments by Danube Convention are followed and permanently considered;

- Romania has played and is continuously playing an active role in the international co-operation aimed at the use and protection of the Danube River;

- The quality of the Black Sea water is directly linked with the Danube water quality;

- Water protection is a continuous activity, and the efforts made to date are to be followed up and accelerated.

The recommendations contained in the report as result of audit involve the need for the establishment of a clear and coherent legal framework, able to lead, on the one side, to the increase of the funds earmarked to the environmental protection, and to changes of behavioural attitude, on the other side. All legal and natural persons are both virtual polluters of the environment and its long-term beneficiaries. The increase of the tax or other incentives is useful, able to stimulate the economic activities that use "clean technology", as well as an increased penalization of law breaches in this field. A good balance of incentives and penalties would be the key for progress.

The Romanian Court of Accounts is presently in the process of modernisation and institutional strengthening. It will continue to approach in an active manner all the activities that are going to be accomplished by the EUROSAI and INTOSAI Working Groups on environmental auditing, continuously developing its organisation and working methods. Our future activities in the field of environmental auditing will be a component of the overall institutional strategy of the Court, currently under preparation.

The economic component is no doubtfully the most important issue of the environmental policy. The improvement of the environment condition, including water quality, needs economic and social development measures with an emphasise on the regional sustainable development, the elimination of poverty, the unemployment reduction, the attraction of Romanian and foreign investors, the infrastructure rehabilitation and development, the valorisation of the tourist potential of the country.

Audits of water resources, carried out by the Accounts Chamber of the Russian Federation on the national and international levels (Russia)

Theme: Protection of Water

Audits of water resources, carried out by the Accounts Chamber of the Russian Federation on the national and international levels

Theses of the report of Mr. I.G.Dakhov
Auditor, Member of the Collegium of the Accounts Chamber of the Russian Federation,
at the meeting of the INTOSAI Working Group on the Environmental Auditing
(Beijing, China, April 10-14, 2003)

Dear Colleagues!

Ladies and Gentlemen!

Water resources management is a very important problem of environmental preservation both for Russia as well as for the world community in general.

Around one quarter of the world fresh water underground and surface resources are concentrated on the territory of the Russian Federation. Average annual river water down streams in Russia account for 10% of the world river down streams. Powerful water industrial complex has been created to satisfy the need of the population, industry, agriculture and hydroelectric energy production sector. An important role in the water complex is played by water storage lakes as the instrument of control and regulation over timing of river water flows. In Russia there are around 3 million hydro-technical constructions the functioning of which is subject to regulation by the Law "On the Security of Hydro-Technical Constructions".

The quality of drinking water in Russia arouses justified concern and in many regions it is becoming one of the most serious breaches of human rights for favorable environment presenting threat to the health of the population.

Water resources management and their protection are regulated by the Water Code of the Russian Federation and the Law "On the Protection of the Environment".

Financing of projects in the sphere of regulation, use and protection of the national water resources is provided in a separate item of annual federal budgets of the Russian Federation. In addition to financing from the federal budget Subjects of the Russian Federation, local self-government bodies, international organizations and water consuming enterprises also allocate financial resources for tackling the above mentioned problems.

The Accounts Chamber of the Russian Federation is paying great attention to the efficiency of the use of financial means for management of water resources. During the last three years alone we have carried out value-for-money audits of financing of such federal target programs as "Revival of the Volga River", "Protection of the Baikal Lake and the Baikal Environment" as well as preservation of security of large-scale hydro-technical constructions in the Northern Caucasus and in the Urals (Krasnodar, Tsimliznsk and Yumaguzinsk water-storage lakes).

Financing of management of the above mentioned sites is provided from the federal budget, local budgets and international organizations (such as the World Bank, the European Bank for Reconstruction and Development). One of the characteristic shortcomings revealed by these audits is an extremely limited financing of the water protection arrangements from all financial sources.

In the year of 2002 the Accounts Chamber of the Russian Federation checked financing from the federal budget resources allocated in 2001 to the realization of the Federal Target Program "Securing of the Protection of the Baikal Lake and Rational Use of the Natural Resources of its Basin" in part of volumes, target use ad efficiency. One of the aims of the verification was to assist in improvement of efficiency of reproduction of natural resources, raising the environment quality and supporting steady development of the region.

The goal of this program was to reduce negative impact in specific environmental spheres and to introduce modern technologies in industry, transportation and agricultural branches of the national economy. The program is based on the Federal Law "On the Protection of the Baikal Lake" which envisages a complex of measures in the sphere of its protection and preservation as a unique phenomena included in 1996 into the UNESCO list of the world environmental heritage. Protection of the Baikal Lake is beyond just national interests of Russia and represents an integral part of the International Convention on the World Environmental and Cultural Heritage.

This is the third performance audit of the use of funds, allocated to securing of the protection of the Baikal Lake, executed in the last years by the Accounts Chamber of the Russian Federation. During the course of this audit we have found out cases of violation of the budget and environmental protection legislation including non-target and non-efficient use of the budget resources.

In the year of 2002 the Accounts Chamber of the Russian Federation also carried out verification of target use of the federal budget resources allocated to the protection of water resources and execution of water-economy measures (creation of the Yumaguzinsk Water-Storage Lake on the Belaya river) in the Republic of Bashkortostan.

In 2000-2001 the Accounts Chamber of the Russian Federation participated in the international parallel audit международных организаций ВОФК of the execution of obligations under the Helsinki Convention. The audit has been organized by the EUROSAI Working Group on Environmental Auditing.

From the Russian side the audit was carried out in the Ministry of Natural Resources of the Russian Federation as the head federal body responsible for the execution of the provisions of the Helsinki Convention and in the administrative bodies of the city of Saint-Petersburg and the Kaliningrad Region where the main sites presenting interest from the point of view of the Convention provisions are situated.

The peculiarity of this international audit was that we were examining both financial, legal and ecological aspects using the principles and approaches, elaborated by the Group for the execution of this particular international audit. Alongside with the above problems in the course of the audit we tried to find out what had been done actually and what problems we are facing as to the improvement of the mechanism of realization of the provisions of the Helsinki Convention.

The regularity (financial) part of the audit covered the spheres of completeness, timeliness and target use of the federal resources, analysis of budgeting from other sources (including local and foreign ones) allocated to the realization of measures aimed at rational use of natural resources and environmental protection of the Baltic Sea Region.

The main obstacle in the field of the sea environment protection of the Baltic Basin is under-financing of the environment protection projects including construction of environment-protection sites without which it is impossible to fulfill the provisions of the Convention.

Extremely insufficient financing is characteristic for all financial sources: federal budget, regional and local budgets, own financial means of enterprises.

Out of 132 most significant sources of pollution of the Baltic basin (the so called "hot spots") 19 are located in the Russian Federation including 9 in Saint-Petersburg and in the Leningrad Region and 10 in the Kaliningrad Region. It was at these very spots that the use of the federal budget resources in the city of Saint-Petersburg and the Kaliningrad Region was audited.

International parallel audit of the implementation of the provisions of the Helsinki Convention environmental protection of the Baltic Sea Basin is bringing over its results. After the appeal of the Chairman of the Accounts Chamber of the Russian Federation to the President of the Russian Federation Mr. V.V.Putin with the request to raise financing of environmental protection measures the Russian Government has taken decision to allocate to these purposes from the federal budget around 1 billion euros for the Kaliningrad Region. In the whole this verification has permitted us to reveal positive achievements as well as shortcomings in the sphere of environmental protection of the Baltic Sea Basin.

Considering the positive experience of the above mentioned audit the Russian side has moved forward an initiative to organize another international audit project within in the framework of the EUROSAI – parallel international audit of the Bucharest Convention on the Protection of the Black Sea against Pollution. The EUROSAI Working Group approved this proposal, supported by the delegations of Ukraine and Bulgaria and included it into its 2003 work plan. Execution of parallel audits of international conventions in the sphere of environmental protection will be undoubtedly useful for the world community in general as well as for exchange of experience and strengthening ties among national SAIs. This experience can be also used for the execution of parallel audits within the framework of INTOSAI and ASOSAI.

We are taking this opportunity to submit for the consideration of the participants of this meeting our proposal to include into the working plan of our Group parallel audits of two international conventions – On Biological Diversity and the UN Framework Convention on Climate Change. The Russian side confirms its readiness to actively participate in these projects.

Rounding up my short speech I would like to point out that the information exchange among SAIs on the problems of environmental auditing is fruitful and useful for the Russian side. We would like to extend our gratitude to the INTOSAI Working Group on the Environmental Audit and the National Audit Office of the People's Republic of China for the initiative to host such an important event and we are looking forward to continuous constructive cooperation in the field of the environmental protection of our countries and the entire world community.

Thank you.

The Activities of the Supreme Audit Office of SR in the Field of International Environmental Auditing (Slovak Republic)

Theme: Protection of Water

Author: Zoltan Virsik

The Activities of the Supreme Audit Office of SR in the Field of International Environmental Auditing.
Zoltan Virsik

The participation of Supreme Audit Office of the Slovak Republic (SAO SR) in the international environmental audits is one of the most preferred activities of this office in the last years. SAO SR started the international cooperation in the field of environmental auditing in the year 2000. In cooperation with the Supreme Chamber of Control of Republic Poland (SCC RP) the SAO SR carried out both the regularity and performance audit in the Pieniny National Park in the Slovak Republic. In the year 2001 the SAO SR participated in the parallel audits of the Convention of Cooperation for the Protection and Sustainable Use of the Danube River under the coordination of Court of Account of the Republic of Romania. The joint standpoint on cooperation in the sphere of carrying out parallel audits of implementation of tasks related to protection of water against pollution in the Baltic Sea catchment area was signed in the year 2001 by the representatives of the SCC RP, SAO CR and SAO SR. On this basis at the beginning of the year 2002 the SAO SR carried out the above mentioned audit. In the same year the Audit of the Investment Project of the Mária Valéria Bridge was carried out simultaneously by the Hungarian State Audit Office (SAO RH) and the Slovak Supreme Audit Office (SAO SR). One of the objectives in this audit were the requirements of protection of the environment. This is an example that even in the audits in which the environmental problems are not the main objectives the environmental aspects can be respected.

The audit in the Pieniny National Park (PIENAP). The regularity and performance audit in PIENAP was carried out by SAO SR in cooperation with SCC RP. The audit object was the managing of the state property and efficient and effective use of state budget means. The crossborder cooperation of the management of PIENAP in Červený kláštor in Slovakia and the management of Pieniny National Park in Kroscienko in Poland (PPN) was also evaluated. By the performance of these audits as well as presentation of results of the performed audits carried out by both SAO SR and SCC RP a good collaboration and coordinated pursuance was shown. The result of performed audits was a common communiqué, signed by the presidents of both SAI-s, in which the representatives of both SAI-s demonstrated the good will to continue the collaboration in the area of performance of parallel audits and in the exchange of audit schedules and informations about audit results.

The audit of the Convention of Cooperation for the Protection and Sustainable Use of the Danube River (Sophia Convention). The task to perform this audit resulted from the Agreement of Audit Institutions of Danubian Countries settled in Bucharest on 5 October 2000. The audit purpose was to evaluate the respecting of Sophia Convention provisions by the Slovak Republic as for rational use of public means, i.e. means from the state budget, from the State Fund of Environment of SR, from the State Water Management Fund and other means provided from abroad to fulfil the tasks resulting from the Sophia Convention.

The audit result concerns measures accepted by Government of SR, ministries and in-line organisations. The Government of SR appointed Ministry of Environment of SR as the guarantor of ensuring and

fulfilling the tasks resulting from the Sophia Convention. The Ministry of Agriculture of SR co-operated in fulfilling the tasks actively. The another 15 organizations, which activities effect the protection and the sustainable use of water in the Danube river basin were involved in this audit. Resulting from the report, Slovak republic fulfilled the obligations actively taking part in nearly all activities realised within the Sophia Convention. SR has representatives in the International Commission for Danube Protection in Vienna as well as in related expert groups and often took part in solution of tasks also beyond activities settled. Reserves in fulfilment of tasks remained in ensuring of financial background of Sophia Convention tasks implementation. This happened because of shortage of financial means from the state budget. That is why means provided by banking sector, enterprises, municipalities and financial assistance from abroad contributed to the building of ecological premises in the Danube basin.

The audit report was sent to the Court of Audit of the Republic of Romania as coordinator of this international parallel audit to involve it in to the joint final report of all participants of this audit.

Parallel Audits of the Implementation and Fulfilment of Tasks Concerning the Protection of Water Against Pollution in the Baltic Sea Catchment Area (Helsinki Convention). Acting upon the requirement raised at the meeting of EUROSAI Working Group on Environmental Auditing in October 2000 the representatives of the SCC RP, SAO CR and SAO SR signed the joint position document regarding the execution of parallel audits of the implementation and fulfilment of tasks concerning the protection of water against pollution in the area of the Baltic Sea (Helsinki Convention) in Seoul on October 23, 2001.

The programme of this audit was based on an assumption that measures adopted by different countries to protect surface streams and water bodies against pollution were reflected in a number of inter-linked consequences, in particular economic ones.

The parties concerned performed audits focusing on activities of the respective countries insofar as the protection of water quality in upper parts of the basins of rivers discharging into the Baltic Sea was concerned. While the audits carried out by the Czech and Slovak Supreme Audit Offices covered the whole watershed areas of the relevant rivers running through their respective territories, their Polish counterpart focused mainly on sections of border streams shared with the Czech Republic.

The SAO SR audited implementation of measures connected to protection of water against pollution in the Dunajec and Poprad rivers, which waters drain into the Baltic Sea through the other water courses. Audits were carried out of purposeful and economically effective use of the means of the state budget and state funds for investments, monitoring and other activities in the period since 1998. No serious inadequacies were found in these areas.

Results of the audits were approved in separate national reports; subsequently, the SAO CR, in its capacity of the audit co-ordinator, amalgamated them into a single document, the Joint Final Report on the Parallel Audits of the Implementation and Fulfilment of Tasks Concerning the Protection of Water against Pollution in the Baltic Sea Catchment Area.

Furthermore, it has been agreed that the co-operation of SCC RP, SAO CR and SAO SR in the field of environmental audits will continue to develop and be based on 2002 – 2004 Work Plans approved by the Working Groups on Environmental Auditing of EUROSAI and INTOSAI.

The audit of the investment project Mária Valéria Bridge. The audit was carried out simultaneously by the Hungarian State Audit Office and the Slovak Supreme Audit Office, based on the mutual agreement concluded by the two audit institutions. The audit was focused on the assessment of the completion of the tasks and the meeting of the requirements specified in the bilateral agreements and those concluded with

the European Union, the compliance with PHARE regulations, along with the joint financing of the reconstruction of the bridge over the Danube from national resources, as well as the construction of the related infrastructure. The audit comprised the regularity (legal compliance) of the financing process for the implementation of the project, including compliance with the rules on public procurement and the conclusion of the relevant contracts.

From the audit results follows, that the requirements of environmental protection originated from the principles of the sustainable development of the regions concerned were all met by the project and are in accord with the conditions laid out in Article 2 of the Amsterdam Convention.

The Ministry of Transport, Communication and Water Management of the Republic of Hungary is also planning to implement development projects in order to reduce the environmental load and to improve traffic safety. In the course of the implementation of the complex project the ministry co-ordinated with the council of the Municipality of Esztergom. As result of the negotiations the ministry undertook to provide funding of the construction of the public roads to reduce traffic within the municipality, aiming to provide for environment protection and traffic safety at even higher standards.

The various project elements relating to the bridge meet the requirements of the protection of historical monuments and environment protection. The environmental loads were planned to be reduced by the project element along a new route designed to bypass the town centre and by another new access road to the bridge, in order to reduce air and noise pollution.

In order to better the environment protection on the Slovak side the completed projects relating to the bridge include the replacement of the underlying structures of the access roads in the town Sturovo to the bridge, the widening of the roads, the construction of support walls and s.o. At present the construction of the access roads is in finishing state, enabling the transit traffic currently passing through the town centre to bypass the town and so to reduce air and noise pollution in the town.

The report was signed by the President of the State Audit Office of the Republic of Hungary and the President of the Supreme Audit Office of the Slovak Republic in September 2002.

Following mutual exchanges of experience acquired in the course of these audits the representatives of the participated SAIs expressed the common will and commitment to carry out additional environmental audits, based on the Work Plan of EUROSAI Working Group on Environmental Auditing. The SAO SR plans in the future to take part on such parallel or co-ordinated audits, which, according to the Work Plan, are dealing with quality of surface streams and water bodies and with the disposal of hazardous or dangerous wastes, including radioactive ones.

Concerning the Workplan of the EUROSAI Working Group on Environmental Auditing in the year 2003 we are interested in cooperation with SCC RP on audit regarding the International Waste Transboundary Shipment (Basil Convention). We have planed this audit for the second half-year 2003.

Department for International Development: Maximising Impact in the Water Sector (United Kingdom)

Theme: Protection of Water

Author: Joe Cavanagh

Department for International Development:
Maximising Impact in the Water Sector"
(HC351 Session 2002-3).
Joe Cavanagh
National Audit Office, United Kingdom

Why did we undertake this audit?

More than 1 billion people lack access to safe drinking water, and 2.4 billion people lack basic sanitation facilities. Providing access to water and sanitation is inextricably linked to the alleviation of poverty. The Millennium Development Goals adopted by member countries of the United Nations in 2000 provided a global consensus on objectives for addressing poverty. They included a target to halve by 2015 the proportion of people without sustainable access to safe drinking water. The World Summit for Sustainable Development in Johannesburg in 2002 subsequently put water issues at the forefront of the fight against global poverty. Participating governments reaffirmed their commitment to halve by 2015 the number of people lacking clean drinking water and agreed a new target to halve by 2015 the proportion of people without access to adequate sanitation facilities. Achieving these targets and addressing the global water crisis represents a huge task for the international donor community.

The Department for International Development (DFID) is responsible for the United Kingdom Government's contribution to development and poverty reduction. Water and sanitation issues are central to its work. At the global level, DFID has played a highly influential role raising the profile of water and sanitation issues. For instance, it played a key role pushing for the adoption of the access to sanitation target at the Johannesburg summit. At the national level, DFID has provided development assistance aimed at generating improvements in the water sector, both through dedicated projects and as part of wider projects. DFID completed 193 dedicated water and sanitation projects between 1997 and 2002. In 2001-2 alone, it had commitments to the water sector involving expenditure of £87 million across 691 on-going projects. These have focused predominantly on improving access to water and sanitation. They have included infrastructure projects, such as the provision of wells or latrines, and projects aimed at strengthening the institutional capacity of service providers in developing countries.

In response to the escalating interest in the international development community in water issues, the Secretary of State committed DFID in 2000 to expand water related developmental assistance. However, achieving a lasting beneficial impact in the water sector is fraught with problems. In particular, there are often doubts about the proportion of water sources that remain in good working order after development assistance projects have been completed. These sustainability questions led to concerns in the development community about the progress being made towards the water targets set by the Millennium Development Goals. Given that we knew that the Johannesburg summit was likely to increase the pressure to achieve these goals, we decided to conduct an audit of DFID's water based development assistance programmes to ensure that DFID had taken appropriate steps to maximise the impact of its assistance in the water sector. We examined three main issues. First, we looked at what DFID had achieved through its direct assistance in the water sector in developing countries and, in particular, the

sustainability of impacts. We were also interested in DFID's growing use of budget support mechanisms to disburse aid. Secondly, we examined how DFID designed country programmes and whether due consideration was given to the water sector. Thirdly, we examined how effective DFID was in influencing the international agenda in the water sector.

What did we find?

We assessed the achievements of DFID's water related programmes against two key criteria: first, did they achieve a sustainable impact and second, was there wider replication of project methodologies by host governments? We found that, where assessments were available, three quarters of dedicated water and sanitation projects completed between 1997 and 2002 had completely or largely met their objectives. However, we also found that there was often not enough evidence to determine the sustainability of these improvements, and that where there was, it raised significant doubts as to whether impacts were likely to prove sustainable. The problems that arose were most commonly caused by insufficient attention being paid to operation and maintenance issues, a lack of local capacity, and inadequate understanding of local circumstances. Against the criterion of project replication, we found that DFID had achieved mixed success, with some good examples of wider uptake by host governments, but many cases in which replication had not occurred. We recommended that DFID ensure that it has a more detailed understanding of local circumstances, that it is proactive in managing projects and that it develops further its approach to project evaluation in order to provide better information and identify those factors which lead to a lasting beneficial impact.

DFID has begun to use budget support to improve the effectiveness of its development assistance and, in particular, the sustainability of its impact. In 2001-02 some £290 million, nearly one fifth of its bilateral aid programme, was provided using this mechanism. It involves the disbursement of aid directly into the national budgets of partner governments in order to support their implementation of an agreed poverty reduction strategy. Thus, rather than funding specific projects, it emphasises building the capacity of institutions to deliver public services and of government systems to disburse funds more effectively. There are potential development benefits but also financial risks. DFID, in consultation with the National Audit Office, is implementing a range of measures - undertaking explicit risk assessments and implementing a range of safeguards - to provide assurance that funds are being used for the intended purpose. However, we felt that it needed to give greater attention to developing the capacity of partner governments at lower levels to deliver improved water and sanitation services and to ensure it retains appropriate expertise to engage fully in the water sector. In particular, there is scope for DFID to work with other donors to improve the capacity of partner governments to deliver service improvements in the water sector.

We found that DFID's expenditure in the water sector averaged only four per cent of the bilateral aid programme which was spent on specific sectors between 1997 and 2002, significantly less than some other donors, both in absolute terms and as a proportion of the total aid programme. In individual countries, its contribution generally represented a small proportion of total donor commitment to the sector. There were concerns that DFID's policy level commitment to the water sector was not being translated into appropriate coverage at the country level. However, DFID has to balance what it spends in the water sector against the demand for resources from other sectors, such as health and education. We recommended that the department ensure, in designing country programmes, that its decisions are based on a rigorous analysis of needs; that it works to develop a complementary approach with other donors to water issues; and that appropriate use is made of relevant expertise within the department.

In terms of its international role, we found that DFID was highly influential but that there was scope to make more effective use of its research. The department plays a prominent role in influencing host nations, other donors and non-government organisations to raise the profile of the water agenda and to promote the adoption of good practice. This is important in that it can help promote long-term policy reform and the adoption of good practice by partner governments. DFID has also been proactive in developing partnerships with a range of bodies. This is vital in that considerable additional development assistance per annum is needed to achieve the water targets set by the Millennium Development Goals and the Johannesburg summit. A crucial support for this role is DFID's research programme, on which it spends more than £100 million per annum, including £3 million on water related issues. Its aim is to generate better knowledge to inform DFID's, and the wider development community's, approach to tackling water issues in developing countries. DFID uses a range of methods to disseminate the results. However, we found that there was scope to improve uptake further and to provide a basis for closer collaboration between donors and partner governments.

What methodology did we use?

In order to complete the study we used a range of methodologies. The basis of our research was a wide-ranging review of documentation held by DFID including target strategy papers, country strategy papers, project completion reports and project evaluations, supported by interviews with key members of staff. To widen our focus, we also reviewed a broad range of published materials, and consulted widely with academic experts, donors and non governmental organisations. In order to generate useful comparisons, we visited two other bilateral donors (Denmark and Sweden) and held discussions with the Japanese Aid Agency to compare how DFID managed its operations. We focused on identifying areas of good practice through comparisons with the other donors' structure and their approach to design, monitoring and evaluation. The key component of our fieldwork was visits to DFID country offices. The purpose was to develop a better understanding of the water issues in each country, the approach of country teams to designing country programmes and balancing competing priorities, the types of projects and interventions being undertaken in-country, and to assess the impact of DFID's assistance. We visited Ghana, India, South Africa and Uganda. These countries were chosen, after discussion with DFID, because they provided examples of the broad range of approaches used by DFID where it is active in the water sector. In addition to visiting DFID water projects, during these visits we interviewed with DFID staff, held meetings with host country government officials, held meetings with other donors and nongovernmental organisations, and examined documentation, including country needs assessments and reviewed available information relating to project selection, design, monitoring and evaluation.

What lessons did we draw from the audit?

We learned a considerable amount from our experience on this audit. Most importantly, we learned that the complexities of evaluating the impact of aid programmes make a particular approach necessary. Aid programmes are difficult to evaluate for two main reasons. First, there is often insufficient data available in partner countries to determine with any level of confidence how much the situation has improved, while the sheer range of factors involved in any outcome and the presence of intervening random variables mean that any attribution of causes and effects must be tentative. Second, it is not, in any event, sufficient to look at impacts simply in an immediate sense. Rather, it is essential to consider the *sustainability* of impacts. Unless improvements are sustainable independent of further aid, they will either serve simply to perpetuate dependency, if further assistance is provided, or they will fail in short order, if it is not. Yet the *sustainability* of impacts is even harder to measure. The extended time range implied, together with the fluidity of conditions in many developing countries, increases the problems of attributing causes to effects by an order of magnitude. This makes a focus on *process* as opposed to

outcome advantageous. While it is extremely difficult to determine the extent to which a sustainable impact has been achieved, it is much easier to assess the extent to which the preconditions for achieving sustainability – in terms of ensuring all the local factors have been taken into account, that projects are planned and managed with the goal of sustainability in mind, and that lessons are learned so as to progressively improve performance – are present. Here, international comparisons can be very useful as a way of developing good practice benchmarks. However, it is worth noting that, because of the highly devolved pattern of responsibilities in aid agencies, we found visiting local, country teams more useful than visiting the agencies' head offices.

The other main area in which we felt there were lessons to be learned was in terms of the complexities of auditing development assistance provided as budget support. The growth in the use of budget support is directly related to the increasing focus on the sustainability of impacts. Budget support addresses many of the weaknesses inherent in the project aid approach by placing a greater emphasis on building the capacity of institutions to deliver public services and strengthening government systems to disburse funds more efficiently and effectively to address poverty issues. However, while the budget support has, in the right circumstances, considerable advantages from a developmental perspective, it also carries significant financial risks, placing additional reliance on the capacity of partner governments to spend funds effectively. This can be problematic in environmental and especially water related programmes, because there is strong evidence that increased spending does not always lead to proportionate increases in improved access to services. At the same time, budget support mechanisms raise a number of new issues for audit institutions. In terms of auditing process, the lack of donor control over funds once they are disbursed makes an analysis of the mechanisms in place in aid agencies to assess and manage risk at a preliminary stage much more important. In terms of auditing impacts, the collaborative nature of many of the poverty reduction programmes funded under such mechanisms implies a need for joint auditing of targets by the SAIs of donor countries. In collaboration with its partners in the Utstein group (the SAIs of the Netherlands, Germany, and Denmark), the National Audit Office of the UK has used its experience on this audit to produce a set of common protocols to govern budget support. These will be published shortly in the UK as "DFID: A Review of Safeguards Against the Misappropriation and Diversion of Aid."

Ultimately, these issues can only become more important. To halve the number of people without access to clean water and effective sanitation by 2015 is a huge challenge that will require the international community to deploy huge resources in novel and imaginative ways. The likely growth of development assistance and the financial risks associated with new modes of delivery make effective auditing essential. Yet the complications associated with many of these new modes, coupled with the inherent complexity of auditing environmental issues, will make it a difficult task. In identifying some of the issues that SAIs are likely face, "Maximising Impact in the Water Sector" can perhaps serve as basis on which they can begin to navigate this complex area.

Improved EPA Guidance and Support Can Help States Develop Standards That Better Target Cleanup Efforts (United States)

Theme: Protection of Water

United States General Accounting Office
Water Quality: Improved EPA Guidance and Support Can Help States Develop Standards That Better Target Cleanup Efforts

Why GAO Undertook This Audit

According to the federal Environmental Protection Agency (EPA), over 20,000 bodies of water throughout the United States are too polluted to meet water quality standards, and it will cost billions of dollars to clean them up. Under the Clean Water Act, states (which generally are responsible for implementing most water pollution programs under EPA's oversight) develop water quality standards to use as benchmarks against which pollution levels within their waters are measured. As such, the standards are critical in making accurate, scientifically based determinations as to which waters are "impaired" and therefore require attention. In recent years, however, questions have been raised as to whether water quality standards are being developed properly—and, therefore, whether the right waters are being targeted for cleanup.

Given the importance of the environmental issues at stake and the need to spend dollars devoted to water protection as efficiently as possible, a Congressional Committee asked GAO to determine whether EPA and the states are doing all they should to ensure that the two critical components of water quality standards—the "designated uses" that identify the purposes which a given body of water is intended to serve, and the "pollutant concentration thresholds" that determine whether the water's quality is sufficient to achieve these uses—can be used to make accurate determinations as to which waters are impaired and therefore require remediation. Specifically, GAO was asked:

1. To what extent are states changing designated uses when necessary to ensure their accuracy, and how well is EPA assisting the states toward that end?

2. To what extent is EPA updating its "criteria documents" and providing other assistance states need to develop the pollutant concentration thresholds that are necessary for defensible water quality standards?

Background Information

Water quality standards are comprised of two key components—designated uses and pollutant concentration thresholds. Designated uses are uses assigned to bodies of water, such as drinking water, contact recreation (e.g., swimming), and aquatic life support. Pollutant concentration thresholds specify pollutant limits that are intended to protect the designated uses of a water body (e.g., the maximum allowable concentration of a pollutant), or an important physical or biological characteristic that must be met (e.g., an allowable temperature range).

To develop pollutant concentration thresholds, states rely heavily on EPA-developed "criteria documents" containing the technical data that help states derive pollutant levels that, if not met, may preclude a water body from meeting its designated uses. States may use the thresholds recommended in the EPA criteria

documents; modify them to meet state needs; or develop their own thresholds. States generally determine if a water body's designated use is being achieved by comparing monitoring data with applicable pollutant concentration thresholds. If the water body fails to meet the applicable thresholds, the state is required to develop and implement a remediation plan.

Thus, if water quality standards (i.e., the designated uses and the thresholds that determine if these uses are achieved) are flawed, the decisions regarding which waters need remediation may be likewise flawed. Given the importance of accurate standards in making these critical decisions, states are required to review their water quality standards periodically and propose changes to EPA as appropriate.

Methodology Used to Conduct the Audit

We used a three-pronged approach for collecting the needed information for our report:

1. To obtain information from the states, we conducted a survey of all 50 states using the World Wide Web. We "pretested" the survey with state officials in two states and also obtained comments on the draft survey during a teleconference call with officials from 27 states.

2. To obtain information and perspectives from the federal government, we interviewed officials from EPA's headquarters office and its 10 regional offices throughout the country.

3. To obtain more detailed insights on how the program works, we conducted site visits in three states – Kansas, Montana, and Ohio. In selecting these states, we considered a variety of factors, most notably their experiences in changing designated uses and establishing criteria and the diversity of their geophysical characteristics. In each state, we interviewed state water quality officials as well as representatives of industry and environmental groups, and accompanied state officials as they monitored and assessed the quality of some of their waters.

Results of the Audit

Question 1: To what extent are states refining designated uses, and how well is EPA assisting the states toward that end?

- The extent to which states changed their designated uses varied. We found that while some states made no use changes from 1997 through 2001, other states made over 1,000 use changes during that same time period.

- Regardless of the wide variation in the number of use changes that states made to date, nearly all states reported waters within their states that are in need of designated use changes to improve their accuracy.

- According to the states, some of these needed designated use changes were not made because of the states' uncertainty over the circumstances in which use changes are acceptable to EPA and the evidence needed to support those changes.

- States overwhelmingly cited a need for additional EPA guidance that clarifies both the circumstances under which a designated use change is acceptable and the type of evidence needed to support those changes.

- We made a number of recommendations to EPA to help ensure that the designated uses in place under EPA's water quality standards program provide a valid basis for decisions about which of the nation's waters should be targeted for cleanup.

Question 2: To what extent is EPA updating the "criteria documents" states need to develop accurate pollutant concentration thresholds, and how well is EPA assisting states in developing such thresholds?

- While EPA has developed and published criteria documents for a wide range of pollutants, it has not developed these documents for key pollutants (sediment and nutrients) that account for a large share of the nation's most polluted waters.

- Even when EPA criteria documents have been developed, some states reported difficulty in using the documents to develop pollutant concentration thresholds in such a way that they can be compared with obtainable monitoring data.

- States also expressed difficulty in modifying the thresholds they already have in place to reflect, for example, new data or changing ecological conditions.

- More than half of the states cited EPA's approval process as a barrier that affects their ability to make necessary modifications to their pollutant concentration thresholds—noting, for example, insufficient assistance from their respective EPA regional offices in helping them understand what data are necessary to justify a modification.

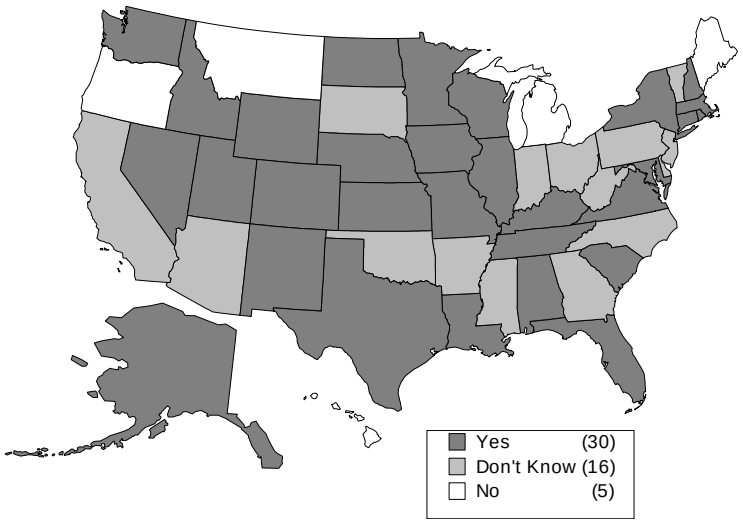
- We found considerable inconsistency among EPA regional offices in the assistance provided to states; and that this inconsistency has been due, in part, to a lack of staff expertise among some offices in determining the scientific feasibility of modifying existing thresholds.

- We made recommendations to EPA to help improve the states' abilities to adopt, apply, and modify pollutant criteria thresholds so that they are more effective in accurately determining water impairments.

Overall implications for targeting polluted waters for cleanup

If states are unable to correctly identify their impaired waters, they risk focusing their limited resources on cleaning up the wrong waters and/or exposing their citizens to health and environmental risks. With this in mind, we found that poorly developed standards (both the designated uses and the pollutant concentration thresholds that determine if these uses are being met) often lead states to target the wrong waters for cleanup. As figure 1 illustrates, our analysis showed that 30 states would have identified different waters for remediation if improvements were made to the process of modifying their standards.

Figure 1: States Reporting That Different Waters Would Be Targeted for Cleanup If Improvements Were Made In The Way Standards Are Changed



On the Implementation of Municipal Solid Waste Management Activities and Programmes by the Ministry of Environment and Waters and the Local Authorities (Bulgaria)

Theme: Waste Management

R E P U B L I C O F B U L G A R I A

NATIONAL AUDIT OFFICE

Audit on the Implementation of Municipal Solid Waste Management Activities and Programmes by the Ministry of Environment and Waters and the Local Authorities during the period 01 January 2000 – 30 June 2002 (Summary Presentation)

This paper presents the performance audit on waste management issues, launched by Bulgarian Audit Office in 2002. The study was carried out with the support of British auditors as part of a twinning project. The document aims to illustrate the approach adopted by auditors. A summary of the actions, scope, objectives and risks identified, and the methodology used is presented below.

1. Reasons for Carrying out the Audit

Municipal solid waste (MSW) is a problem of civilisation. The concentration of population in detached residential areas (urban and rural settlements) and its specialisation results in the generation of specific municipal waste. Waste generation is also connected to some extend with the level of social and economic development of society. The acceleration and the intensification of the processes of urbanisation resulted in the problem of the generation, treatment, disposal of waste and rendering this waste harmless.

The accumulation of MSW has a negative impact on the components of the environment and generates risks for human health.

Proper management of the activities related to MSW is the best way to curb this problem. Waste management is an important part of the urban infrastructure development activities and ensures the protection of environment and human health. It has technical, ecological, social and economic aspects. Waste management is also related to lifestyle, resource utilisation schemes, employment of population, income level and other social, economic and cultural factors.

Article 1 of the Restriction of the Harmful Impact of Waste on Environment Act (RHIWE Act) defines waste management as a combination of rights, obligations, decisions, actions and activities, related to waste generation and treatment and to the different forms of control. Waste management aims at preventing, decreasing or mitigating the harmful impact of waste on human health and on the environment.

Therefore waste management, including municipal solid waste management, covers the functions on regulating, planning, implementation of projects and activities, monitoring and control.

Every year as a result of the human activities about 4 million tons of municipal waste (MW) are generated in Bulgaria. Several problems have been identified in respect to their management:

- In about ¾ of the settlements in the country there is no organised collection and transportation of municipal solid waste;

- Waste disposal is regarded as the only method for rendering municipal waste harmless currently applied in the country. Part of the generated MW is taken out of the containers and is handed over for recycling in an unorganised way before garbage collecting. According to the information provided by the Ministry of Environment and Waters (MoEW), over 10 000 people in the country earn their living from collecting garbage from containers and on landfills;

- The available information on the collected, transported and disposed MSW, summarised on national level, is unreliable. No information exists as to the volume of the waste generated.

- No systematic surveys are carried out on the morphological composition of MSW.

- According to information, provided by the MoEW, there are more than 4800 landfills for municipal waste on the territory of Bulgaria. Other non-hazardous waste (as defined in the RHIWE Act) is disposed together with the municipal waste at most of these waste disposal facilities.

- There is no system for separate collection of municipal waste. In many municipalities systems for separate collection of hazardous municipal and hospital waste have not been set up yet.

- Packaging is not collected separately and recycled.

- There is no solution to the problem of agricultural waste from households at national and local levels.

- No installations for treatment of biodegradable waste have been constructed.

- The administrative capacity of the control structures, the collection of information and the planning possibilities are insufficient with regard to the requirements of the extant legislature.

During the 1990's a trend to a gradual decrease of the quantities of collected MSW was observed. The reasons for this were both the decrease in the annual accumulation rate of MSW per capita and the general decrease in the number of the population in the country. During the period 1996 – 2000 the percentage of the population in the country, receiving MSW collection, transportation and treatment services, slightly increased (by about 2.5%). The reason for this were primarily the processes of urbanisation (internal migration, changes in the ratio urban / rural population), and not the extending of the scope of waste management activities, performed by local authorities.

According to the National Statistics, in year 2000 almost 99.4% of the urban population were covered by waste collection and waste transportation services. For rural population the percentage was not higher than 33.

Besides the problems mentioned above the examination of the information from the National Statistics Institute shows that the costs of waste management activities have been dynamically increased during the period 1996 – 2000.

The operational costs for municipal solid waste management are funded from the state budget and from the local budgets.

The Local Taxes and Fees Act stipulates that municipal waste fee is the source for funding the collection, transportation and treatment of municipal waste on landfills or in other facilities, as well as keeping the common territories in settlements clean. The user of these services, the public, is entitled to be informed on the ways in which the fees paid by them have been spent.

The abrupt increase in the amount of the fee over the last two years resulted in a wide discontent among the people. The Bulgarian National Audit Office inspected the expenditure plans of the municipalities in their part, related to municipal solid waste. Serious violations of the financial discipline and non-compliance with legislation were established.

There are few areas, which provide opportunities for improvements in management:

- The use of EU instruments for solving the problems related to environmental protection in the country (ISPA, SAPARD, Phare, etc.).

- Sustainable change in public attitude in support to the efforts to protect the environment.

- The development of tourism as a priority branch in the country presupposes and requires environmental protection, including conscious need for improvement in waste management at regional level.

- Correspondence between the national priorities in the field of environment and the priorities of international unions – UN, EU, etc., which regard environmental protection as a priority.

- Development of district and municipal strategies for social and economic development, which cover environmental protection issues.

- Gaining practical experience in the field of development of project proposals for funding of activities.

- Development of municipal pilot programmes for environmental protection.

2. What kind of approach was adopted?

The preliminary study was carried out between July and October 2002. The efforts were focused on collecting, processing and analysing general information and data about the projects and activities in the field of waste management. A significant amount of information about problems and their possible solutions in different countries was gathered through Internet search. Publications of the World Health Organisation, the International Solid Waste Association (ISWA) and the European Commission were very useful for the overall understanding of the issues in this area.

Data on the quantities of generated, collected and disposed MSW, population served and municipal landfills was received from the National Statistics. The Executive Environment Agency provided the audit team with the data from the Register of Landfills and Old Contamination.

In addition, the mayors of 66 municipalities, as well as 6 RIoEWs, were requested to answer detailed questionnaires.

In the preliminary study report the audit objectives were defined as:

- To provide the legislature and the executive, the management of the MoEW and the Municipal Councils and other parties with independent and objective opinion on the degree of efficiency and effectiveness, with which municipal solid waste management projects and activities have been implemented at national and local levels;

- To help the management of the MoEW, the mayors and the Municipal Councils improve the efficiency and effectiveness of the implementation of projects, related to MSW management.

For this purpose the auditors had to answer the following questions:

- Is the implementation of the National Programme and of the Municipal Programmes for Municipal Solid Waste Management effective?

- Does the Ministry of Environment and Waters perform its regulatory, control and information functions, entrusted to it by law, in an efficient and effective manner?

- Do the local authorities perform their regulatory, control and information functions in an efficient and effective manner?

The audit is to be focused on the analysis and forming an opinion on the degree of:

- Compliance of the aims, set in the National Programme and the Municipal Programmes for Municipal Solid Waste Management, with the strategic aims, set by the Government.

- Legality of the activities, the planned actions and the measures, taken by the MoEW and local authorities to implement the Municipal Solid Waste Management Programmes;

- Effectiveness in the implementation of the National Programme and the Municipal Programmes for Municipal Solid Waste Management. In the course of the study the degree, to which aims have been achieved, and the tasks, directed to the achievement of the long-term programme, will be assessed;

- Efficiency, with which the Ministry of Environment and Waters and local authorities perform their regulatory, control and information functions, set out in legislation;

- Efficiency of the use of public funds by the Ministry of Environment and Waters and local authorities.

Under legislation the responsibility for implementation of the waste management activities is allocated to a large number of entities (organisations, agencies, companies and individuals). However, in order to make the audit feasible, it was limited to an examination of the authorities, directly involved in the implementation of projects and activities in the field of MSW.

That is why the field work covered the Ministry of Environment and Waters, the Executive Environment Agency, the Regional Inspectorates on Environment and Waters and 19 local authorities.

The following main factors were taken into account when the audited period (01 January 2000 – 30 June 2002) was determined:

- The National Waste Management Programme was adopted in 1999 and is effective till the end of 2002. A draft for its updating has already been prepared.

- The "Environment" Sector Programme sets parameters, which should be achieved by 2002.

- The Restriction of the Harmful Impact of Waste on Environment Act has been effective since 1997 and by year 2000 it was possible to create conditions and prerequisites for the implementation of the mechanisms, set out in it, and to adopt the relevant bye-laws.

In carrying out their research the auditors do not try to establish and investigate trends and long-term dependencies with regard to the quantities of collected, transported, disposed and treated waste, because information under the Restriction of the Harmful Impact of Waste on Environment Act is being collected since 1998.

The adopted general approach was to use simple and doable methods and tools because of lack of experience. So document review, interviews, written and oral explanations, Internet search, written inquiries, questionnaires and inspections have to be used for data collection. The data analysis is limited to the use of:

- systematisation of data and synthesis of indicators;

- comparative analysis;

- descriptive statistics.

Sampling was used to determine which local authorities and projects would be analysed using the direct substantive testing approach.

3. What are the possible risks?

The risks for the Audit Office are associated with:

A) The number of auditors involved. Twenty persons take part in this audit – five from the Performance Auditing Division of the Central Office and 15 from Regional Offices. They are located in different cities, so difficulties in communications were expected to occur. To overcome these:

- All questionnaires, procedures and methodology were designed in advance and distributed to the Regional Offices.

- A for regular-basis reporting system was adopted.

B) Delays in information delivery. It results from the necessity to contact a lot of auditees, stakeholders and other parties. In order not to miss the deadlines for the preparation of the preliminary study report and the audit report, the dates for collecting the questionnaires and the reports of the auditors from the Regional Offices were fixed very early during the study. This could give time to the team from the Central Office to analyse the data and present the consolidated within the deadline.

C) The availability of inconsistent and unreliable information. The necessary data have to be gathered from different sources and the possibility of inconsistency is estimated as high.

The risk of poor implementation of projects was also estimated as high.

The auditees covered in the study have different statutes – government and local authorities.

The number of municipalities is high and all have different characteristics with respect to population, size of the territory, economic potential, amount of funds, used for waste management, etc. Moreover, the independence, granted by statute, gives them opportunities to make independent decisions and to apply different practices in the field of municipal solid waste management.

The qualification of staff at national and regional level provides a reasonable assurance in the correct implementation of the procedures. At local level, not all of the municipal administrations have appointed specialists in ecology with the required qualification.

The construction of regional landfills depends on the efficiency of the activities of mayors of different municipalities.

There is no system for reliable collection of initial information. This has an impact on the decision-making process. Results from previous inspections and audits of the Bulgarian National Audit Office, from the inspections, made in the course of the preliminary research and the response of the municipalities to the questionnaires show omissions in the maintaining of sufficient analytical accounting information.

Most of the municipal programmes do not envisage control systems and performance assessment criteria. A risk for the implementation of the programmes is the lack (insufficiency) of financial resources in the municipal budgets.

On the basis of the above-mentioned the auditors assess the inherent risk for efficient and effective management of waste-related programmes and activities as high.

In accordance with the Rules on the Structure of the MoEW, adopted with Decree No. 214 of the Council of Ministers / 1999, control over the activity of the units within the system of the MoEW, related to the topic of the survey, is exercised by:

A) "Inspectorate" Department, which controls:

- the performance of the units of the Ministry;

- the efficiency of work and the degree of interaction between the units;

- the legality of the acts, related to policy development and implementation.

B) "Co ordination of the RIoEWs" Directorate which exercises control over the operational activity of the RIoEWs and co ordinates the activities, related to warning and informing in cases of contamination as a result of emergencies and failures.

C) "Preventative Activities, Preserving the Quality of Air and Waste Management" Directorate

Less than 10% of the municipalities have established "Inspectorate" units. These units exercise control over the compliance with the requirements of the municipal regulations, over the way in which settlements are kept clean and in good order, over the compliance with the conditions of agreements with operators, etc.

Health risks for the population as a result of the operation of landfills, installations and waste are not being assessed in a systematic way.

On the basis of the above-mentioned the auditors assess the control risk (the risk that instances of inefficiency and ineffectiveness will occur) of the MSW management as high.

4. What are the auditors' expectations?

The deadline for the fieldwork is 30 April 2003. The audit report has to be delivered to the auditees till 30 May 2003.

As a result of the audit the auditors expect:

- to propose appropriate changes in legislation;

- to justify the need for a new model of financial provision for waste management activities;

- to give recommendations, related to the information provision of the management process;

- to give recommendations for improving the waste management activities at regional level.

An audit of the management of medical wastes (China)

Theme: Waste Management

1. Introduction: Environmental Audit Practice

CNAO defines its audit projects based on the following:

- the major steps of environmental protection taken by the government;
- the areas of environmental protection with major government financial input;
- the areas of major concern from the general public;
- the areas under the jurisdiction of CNAO.

In China, based on the priorities in pollution control and ecological construction, CNAO has defined the following as its key working areas:

- major government invested environmental projects, such as "three rivers and three lakes Control Project" (the Huai, Hai and Liao Rivers, and the Tai, Dianchi and Cao Lakes), the Project of controlling acid rain and sulfur dioxide, the Project of Returning Farmland to Forest/Grassland and the Natural Forest Preserving Project etc;
- implementation of main environmental protection policies, such as some experimental environmental policies and basic environmental policies, etc.

Next, I would like to share with you an environmental audit project we have conducted in CNAO.

2. An audit of the management of medical wastes

With the development of the economy, solid waste has become a major pollution in cities. According the *law of prevention and control of solid waste pollution of the People's Republic of China*, solid waste includes industrial waste and household waste. These poisonous and deleterious solid wastes are considered dangerous and may have enormous adverse effects on the environment and residents. Medical waste is listed as the number one dangerous waste items because it contains infectious virus, germinal, chemical pollutant and radioactive materials.

To understand the situation of medical waste management in city X, in July 2002 CNAO audited the management of medical waste in this city. The priority of the audit was to examine how the medical wastes were being controlled and to understand the operation of some hospital waste incineration.

Auditors found that the environmental management departments and the hospitals investigated have done a lot of work in handing these wastes in an environmental friendly way. Trash bags with different colors were offered for collecting normal rubbish and medical rubbish. All medical wastes were stored in special containers and were disposed of by incineration as required. However auditors have also found some problems:

- The capacity of medical waste disposal is quite inadequate. Although each year, 20,000 tons of medical wastes are produced in this city, yet there has not been one large-scale medical waste disposal plant meeting relevant national standards. The only two small-scale medical waste disposal plants in the city can dispose of only 2,100 tons of such wastes annually.

- One hospital audited did not dispose of the medical wastes collected properly. Its facilities were out of date and the disposition of medical wastes did not meet the government standards and may likely cause re-pollution.

- Some hospitals audited did not have sound medical waste control systems.

Auditors analyzed the problems found and concluded that these problems are caused by:

- inadequate input of funds from the government in medical waste disposal facilities;

- lake of training and dissemination of knowledge and information for medical wastes disposal workers by the environmental protection and public health departments;

- some hospitals did not pay adequate attention to the building and maintenance of facilities for medical waste storage and disposal.

Auditors cooperated closely with the local environmental protection agency in the course of audit. After the audit, CNAO reported its findings together with suggestions to the hospitals and the local environmental protection agency. In its turn, the local environmental protection agency required that relevant organizations should carry out the audit suggestions within a time limit. Thus, this audit has promoted the effective disposal of medical wastes in that city.

Remedying Environmental Burdens from the Past (Czech Republic)

Theme: Waste Management
Author: Miroslav Kruchina

Remedying Environmental Burdens from the Past
By Miroslav Kruchina, Ing.
Director of the Department of the Environment and Agriculture

This information is provided to the participants of the 8th WGEA INTOSAI meeting on a subject that is, in a certain sense, a meeting point of various aspects of the subject of waste, including disposal and the sphere of protection of groundwater sources. In the Czech Republic, the remedying of environmental burdens from the past occupies one of the foremost positions from the standpoint of environmental importance and consequently, also taking into account the high financial costs of this liquidation (the financial cost of the program has been estimated at 10 bil. CZK), they were the subject of special attention in several audits on the part of SAI Czech Republic.

Introduction

In connection with the massive transfer of state property to new owners (commercial companies), it was also necessary to deal with environmental damage caused by the previous operations of the privatized companies. This environmental damage, also termed "environmental damage from the past", has not been defined in the legislation, as it can take a number of forms and have a number of causes: these extend from inadequacies in storage of petroleum derivatives, the use of obsolete technology and unsuitable materials, to illegal landfills on the premises of the production enterprises. Last, but not least, this damage resulted from the presence of the Soviet Army in CR in the years up to 1991.

The bodies of the state administration consider an environmental burden from the past to consist in a state where harmful substances present in the soil or geological basement, in landfills or in construction structures pollute or endanger the environment, especially ground and surface waters, above a set limit. The legislation has created preconditions so that the new owners of former state property can request payment of expenditures connected with remedying environmental damage caused by the actions of the enterprise prior to privatization. Financial payment is made from the means of the National Property Fund (hereinafter the "Fund"), into which revenues flow from privatization, with direct Government guarantees.

Remedying of environmental damage caused by the Soviet Army

Introduction

Over a period of almost 23 years, the Soviet Army used at total of 73 different locations in CR, of which approx. 60 were designated as important from the standpoint of environmental damage. The choice of locations for carrying out decontamination took into account the degree of environmental risk involved and the decontamination work was subsequently carried out at the most affected sites. The main contaminants were petroleum hydrocarbons, chlorinated hydrocarbons, polychlorinated biphenyls, heavy metals and other toxic substances. Between 1991 and 2001 (inclusive), over 40 million USD were expended from the state budget for decontamination of sites formerly used by the Soviet Army.

1) Purposes of the audits

SAI CR carried out an audit of the provision and use of financial funds for this decontamination work through the budgetary chapters of ME in 1995, 1998 and 2001.

The subject of audits at ME consisted particularly in financing expenditures for studies, for obtaining a database of environmental burdens, decontamination, supervision, monitoring of the locations, preparing studies for evaluating the state of the burden during the decontamination, expert reports connected with evaluating proposals for decontamination and their implementation, preparation of basic documents for contracting out the decontamination through a public contract and professional supervision of the decontamination.

The work was financed mainly through the consignees, i.e. through the town and municipal authorities relevant to the sites of the decontamination work, in the basis of agreements concluded with ME. Consequently, audit at the site was concerned not only with the purposefulness and economy of the decontamination, but also with compliance with the contract obligations by the individual consignees.

2) Analysis of functioning of the model of financing

In the framework of audits in the decision-making phase of provision of financial funds, the following hypotheses were verified:

ME announced tender procedures for contractors for the individual sites only in the year in which work was commenced, where subsequent agreements with the contractor were concluded for a period of one year on the basis of individual project plans. The work was carried out without clear delimitation of the entire subject of the work. Consequently, the specific environmental parameters that were to be achieved, or even the period of time and the price required for achieving these targets, were not exactly specified.

Individual changes were adopted only after the first audit by SAI CR, especially in relation to carrying out investigative studies and preparation of risk analyses as a basis for new contracting for public contracts. The consignees then concluded framework contracts for the entire period of the decontamination with a contractor that was named for them by ME in the mandate contract. Annexes to the contracts for each year or stage then specified the extent of the work and the corresponding prices.

ME always transferred financial funds intended for the entire stage of the decontamination work (12 months) to the account of the consignee at the beginning of each budgetary year. Tthe consignee paid the invoices of the contractors only after completion of the work. Thus, these funds were sent one to twelve months sooner than they were actually expended. Thus, ME allowed the consignees (mandataries) to transfer entrusted financial funds to their other accounts (e.g. fixed term accounts) or to use them for (temporary) payment of other expenditures.

3) Evaluation of the purposefulness and financial prudence

Criteria for evaluation of the purposefulness, prudence and effectiveness of the completed decontamination work were established on the basis of contract provisions between the Ministry and consignee, on the basis of specification of hazard factors from the risk analyses and especially on the basis of the technical and economic indicators of the individual decontamination project plans. The following facts were found on site in the framework of the audits of the individual investors:

In managing the budgetary means ear-marked for remedying environmental damage caused by the Soviet Army, ME did not proceed prudently in that it did not control whether the funds provided are used only for the specified purpose and, in some cases, provided financial funds without a covering contract. It did not carry out regular control of fulfilling of consignee (mandate) agreements and did not control how investor supervision is carried out by the consignees to whom the financial funds were entrusted.

The audit demonstrated that, at practically all the decontamination locations, contamination of ground waters by additional contaminants was discovered during the decontamination work, leading to an increase in the budget and to prolonging of the duration of the decontamination work. The contract provisions were substantially changed and, in some cases, the agreed decontamination limits were not met. This was connected with inconsistently carried out investigative study of the location and thus imprecisions in the risk analyses.

Cases were found, in which the consignees did not carry out the appropriate investor work. For example, the set price per unit output was not maintained and payments were made, including unsubstantiated down-payment invoicing. The invoices of the contractors were not documented by a list of work completed. The consignees failed to comply with the conditions of contracts, in particular the use of the funds provided exclusively for the set purpose with opening of a special account for these funds and separate accounting thereof.

4) Evaluation

Similar to environmental damage remedied through the means of the Fund, new contaminants were frequently found, with a consequent increase in the budget and prolonging of the duration of the decontamination work. In some cases, the work was completed without meeting some of the set limits. From the standpoint of improvement of the quality of the environment, the complex benefits of the decontamination work have not yet been quantified and evaluated in relationship to the funds expended.

Thus, it will be necessary to continue to monitor these aspects and repeat the audits in the near future.

Conclusions

The chief benefit of the completed audits was an improvement in the effectiveness of the model of financing the decontamination and creation of a more effective control system. The results of the audit also formed the basis for a discussion in Parliament on adopting special legislation for remedying of environmental burdens from the past.

Summary of Solid Waste Management in the Municipality of Nueva San Salvador (El Salvador)

Theme: Waste Management

Author: Manuel Villalobos

Summary of Solid Waste Management
in the Municipality of Nueva San Salvador,
La Libertad Department
El Salvador, Central America

There is great interest in environmental protection today in the developed countries in response to the deterioration of natural resources that has taken place. Their economies cause a series of problems that change the course of the environment and health.

The emerging or developing countries have not lagged behind in these problems, which are complicated by the large populations living in urban zones, leading to social, cultural and physiological changes.

The fourteen municipalities in Greater San Salvador plan to undertake a project for the collection, transport and final disposal of the solid waste produced in the city. San Salvador is one of those municipalities.

The project came about because San Salvador was trucking all of its solid waste to an open dump located between the municipalities of Quezltepeque and Nejapa, 45 kilometres away from the capital. The dump was established without taking environmental factors into account. When it opened, about 20 poor families automatically went to live there to eke out a living by picking through the trash. Men, women and children salvage plastic, wood, iron, glass, tins and other recyclable materials, with no protection to prevent them from catching infectious diseases.

The municipality of Nueva San Salvador produces about 120 metric tonnes of garbage a month from the municipal market and trash produced throughout the city. Part of the organic waste produced at the market is taken to the composting plant – which it should be noted in passing does not comply with the environmental regulations. The rest was transported by truck to the municipal dump until December 2002, when it was officially closed. Today trash is carted to the Nejapa dump.

Methodology used

a. Documentary verification of the process of transport, collection and final disposal of trash.

b. Physical inspection of the old and new dumps and of the composting plant.

c. Documentary verification of the legislation governing the establishment of garbage dumps and composting plants.

d. Verification of municipal plans and programs for the transport, collection and final disposal of trash.

e. Verification of the days, times, number of garbage trucks, employees and the form in which the garbage is collected.

f. Verification of the controls to monitor the processes of collection, transport and final disposal of trash.

g. Verification of safety and protection measures for the municipal employees who handle and transport the trash.

h. Consultations with the population receiving garbage collection service, in the form of questionnaires.

Results

a. Employees do not have safety equipment to prevent them from contracting infectious diseases.

b. Garbage is collected daily in the centre of the city by the municipality.

c. Of 15 garbage trucks, just five are working, which are often not enough to collect all the garbage.

d. Four private companies operate in the residential zones, which collect on two shifts, one in the morning and one in the afternoon.

e. There are no mounds of garbage in the urban area, but about 25 focuses of infection exist in the outskirts, whose main contaminant is garbage.

f. The municipality has not carried out environmental education programs to discourage the public and companies from dumping their garbage, which they mostly do in rural areas.

g. The composting plant, which operated for one year, is a vacant plot that is causing more pollution on account of the leachates it produces. It was closed by city hall at the start of 2003, since it failed to comply with environmental standards from the start.

h. Final disposal is managed by a foreign consortium with public and private capital, in which the municipalities are shareholders.

Conclusions

a. Farming out part of the trash collection service by contracting private companies has substantially improved the landscape in the city, since no mounds of garbage are visible in the outskirts or in the historic centre.

b. Work must be done with other institutions, such as the Ministry of Education, to educate the public in the benefits of managing trash in a more sustainable manner, to prevent disease and obtain extra income.

c. More information is required on final disposal, since the audit was limited by time constraints and the company is private, so that an environmental evaluation can be performed of the site, compliance with environmental requisites, etc.

d. Trash is one of the environmental components that the municipality has dealt with best, although there are still some problems with control that can be solved in the short term.

Review on Bio-medical Waste Management in the National Capital Territory of Delhi (India)

Theme: Waste Management

Review on Bio-medical Waste Management

in the National Capital Territory of Delhi

(Presented to the Legislature in March 2002)

Background

India has 300 million people living in urban areas. Of this, 50 million live in three cities of Delhi, Mumbai and Kolkata. Since most of this urban growth is fuelled by rural-urban migration in search of livelihood, the infrastructural facilities have not kept pace with the numbers. An unfortunate consequence of this unplanned urbanization has been the environmental degradation resulting from solid wastes and air pollution. Apart from adverse effects on the quality of life and health of the urban residents, this also threatens sustainability of urbanization.

2. As per the Constitution of India, environment is a concurrent subject over which both the federal and provincial government have jurisdiction. The Government of India has attempted to establish a legislative process for regulating and controlling this environmental degradation. A series of Rules have been enacted under the umbrella Environment Protection Act of 1986. The Bio-Medical Waste (Management and Handling) Rules, 1998 were framed to ensure proper segregation, treatment and disposal of bio-medical waste generated through diagnosis, treatment or immunization of human beings or animals or in research activities. These prescribe obligations on hospitals, dispensaries, clinics, pathological laboratories and blood banks generating, storing and transporting bio-medical waste to ensure that there was no adverse effect on human health and environment. A period of 17 months was provided for compliance to the Rules which was extended by 6 months. The violation of the rules attracts a strict fine of Rs. 100,000 (equivalent to US $ 5000).

Scope of Audit

3. SAI India has undertaken several audits to review enforcement of compliance to environmental legislation. Review of Bio-Medical waste management in Delhi was one such audit undertaken during 2000-01. The audit was designed to check:

a) efficacy of the Authority empowered to ensure compliance;

b) adequacy of the steps taken by the hospitals and dispensaries under the control of Government agencies (thereby under the audit jurisdiction of SAI), and

c) compliance by non-government hospitals as reflected in inspection reports .

Audit Findings

Performance of the Regulating Authority

4. The Delhi Government appointed Delhi Pollution Control Committee (the Committee) headed by the Environment Secretary as the prescribed authority under the Rules. An Advisory Committee with representatives of Health Department, Municipal Bodies and NGOs was also constituted. The committee was to authorise units to handle bio medical wastes after ensuring that their systems complied with the Rules.

Lack of seriousness and the commitment of the Government in enforcing the legislation was evident in the following:-

a) Against the period of one month prescribed in the Rules for constitution of the authority, the first step, the State Government notified the committee after 12 months.

b) Against the stipulated 90 days prescribed for disposal of an application under the rules, the Committee generally delayed the process, in several cases by one year or more.

c) The Committee could issue authorizations only to 40% of the applicants by the stipulated date. The operations of the balance were therefore unregulated and their compliance to the Rules was not verifiable.

d) The Committee did not carry out any survey of the units generating bio-medical waste. They issued notices for penal action only to such private hospitals registered with the Department of Health Services which did not apply for authorization.

e) Less than 10% of the units were actually inspected by the regulating agencies.

f) No penal action had been taken against any of the units.

g) No records were prescribed for the hospitals. Consequently each hospital maintained its own records. Most of them did not maintain any.

Performance of Hospitals

6. Forty four government hospitals were selected for detailed audit scrutiny. The records maintained by the hospital authorities and the monitoring reports of the Nodal Officers in the hospitals, Central Pollution Control Board and the Committee were reviewed. Widespread poor compliance to the Rules came to notice as detailed in succeeding paragraphs

7. Non-segregation of bio-Medical Waste : The Rules provide that all waste must be segregated into three colour coded bags with different modes of treatment and disposal. Of the 44 hospitals covered in audit, only 27 maintained records which showed serious violation of the Rules. In fact, no hospital fully complied with the Rules. The violations were:

a) Colour coded bags were not in use,

b) syringes, needles etc. were not separated,

c) blood stained/used syringes were lying open at laboratory shelves,

d) bio-medical waste was lying on the floor, and

e) bags containing bio-medical waste were found to be leaking.

Inspection reports of the private hospitals carryied out by the regulating agencies did not show any better situation. The same lapses were evident in them. These deficiencies continued to persist despite regular inspections.

8. Labeling of container/bins etc.: The five major hospitals of Delhi , whose records enable evidence , were not labeling bags with appropriate hazard symbols as required under the Rules.

9. Onsite transportation: The Rules provide that hazardous bio-medical waste should not be mixed with non-hazardous general waste while transporting to the storage point. In the 11 hospitals where records of onsite transportation were available, it was seen that the same wheel barrows were being used to transport different categories of waste to the disposal points. None of the remaining hospitals maintained proper records.

10. Transportation to treatment facility: While the rules prescribe that no infectious waste should remain at the point of generation for more than 48 hours, substantial delays were noticed in almost all the hospitals. There were delays even in the large hospitals which have captive incinerators. In two hospitals, the wastes were not lifted because of the non-functioning of the incinerators.

11. Treatment and disposal: The provisions of the rules regarding treatment and disposal were generally violated as under:

a) The waste required to be autoclaved were not autoclaved despite availability in five major hospitals. In the remaining hospitals, records were not maintained to ascertain the final disposal.

b) None of the hospitals under the Municipal Corporation of Delhi had autoclaves. Inspections had also established that major private hospitals continued to burn similar waste.

c) Several lapses were also noticed in use of incinerators; all kinds of waste were being incinerated even though the rules prescribe that only yellow coded waste should be incinerated.

d) Records of government hospitals and inspection reports of the private hospitals by the Committee showed that the temperature prescribed in the primary and secondary chambers were not being maintained in the incinerators.

e) Incinerators were shut down for long periods in several hospitals due to administrative delays.

f) In one major hospital, rag pickers had been spotted shifting bio-medical waste due to inadequate fencing of the incinerator.

12. Training: Sensitization of the hospital staff to the procedures prescribed under the rules is critical for compliance. It was however, seen that of the 44 hospitals audited, in 33, less than 50% of the staff was trained. In fact, in 9 hospitals, not a single staff member was trained.

13. Health and safety of health care staff : In none of the hospitals were the health workers using the personal protective equipment provided to them. In fact, in several hospitals no protection equipments were provided.

14. Community participation: Steps taken towards generating community participation and public awareness for bio-medical waste management were not taken in 9 major hospitals.

Environmental /health hazards of non-compliance

15. The Audit Report presented to the Legislature also detailed the following health hazards of the failures in compliance.

a) Used needles, syringes, intravenous sets and equipment can be recycled and reused which can pose serious health hazards.

b) Dumping bio-medical waste in MCD dustbins is also hazardous for rag pickers who sift through them with their bare hands, thus becoming vulnerable to infections.

c) Using the same wheelbarrow for transporting general as well as infectious waste increases the risk of contamination of the general waste thereby enhancing the rise for the health workers, public and environment.

d) The presence of untreated waste at the point of generation for long periods poses a serious risk to the health workers and patients. This points to the need for more effective monitoring of the management of bio-medical waste by the hospital authorities.

e) The hospitals polluted the atmosphere by incinerating the waste which was required to be autoclaved.

Impact of Audit

Media response to audit report

16. The Audit Report for 2000-01, of which the review of Bio medical waste management was a part, was presented in the State Assembly in March 2002. The headlines of media coverage of the audit report were grabbed by the findings on Bio medical waste management. Interestingly the coverage in the hindi Newspapers was more than the English newspapers which is generally not the case with Audit Reports. The Headlines in some of the major Newspapers were:

(a) Government unable to dispose of Bio medical waste

(b) CAG unhappy with management of Bio medical waste

(c) Government not serious about disposal of Bio medical waste

(d) Bio medical waste not disposed off safely: CAG

This widespread coverage created awareness among the people not only of the poor performance on part of the regulating agencies but also Government and Private Hospitals.

Legislature Response

17. Despite there being no financial implication of the Review the Public Accounts Committee has short listed the Review for detailed examination.

Action taken by Government

18. The audit succeeded in pressurising the Government and the regulating agencies in getting more serious in their task. In their written response they reported several initiatives as under:

(a) Commissioning of a survey to prepare an inventory of all units handling bio medical waste

(b) Increase in the number of inspections by the regulating agencies

(c) Greater compliance by the larger hospitals to provisions regarding segregation, labelling, transportation and treatment of waste

(d) Issue of comprehensive instructions by the Government.

Findings from other States

19. Reviews of bio medical waste management have been undertaken simultaneously in other States with large cities. The Audit findings were similar. In Maharashtra, less than 4 percent of the units have applied for authorisation. Infact in Mumbai city none of the major Hospitals had applied for authorisation. Likewise, in West Bengal, none of the municipalities had established a system for collection and disposal of medical waste. In Kolkata, gross violations in segregation, transportation, treatment and disposal came to notice. Similar results were obtained in other provinces. The audit findings have been reported to the State Legislatures.

Innovations in approach & methodology

20. The Review departed from a standard Performance review in several ways:

a) The selection of the issue was not based on materiality measured by financial outlay. It was based rather on its criticality to the environment and human health.

b) The audit combined reviews of efficacy of the regulatory authority and waste management by Government administered hospitals.

c) Waste management records rather than financial records were relied upon for gathering evidence.

d) The Report highlighted the adverse effects of non compliance by hospitals on environment and human health.

Lessons from the Review

21. Performance review of Bio medical waste management in major urban conglomerates has been the first major foray by SAI India into the audit of enforcement of environmental legislation and the compliance of Government hospitals to the prescribed obligations. The keen interest shown by both the legislatures and the media have been encouraging and the remedial measures initiated by the Government

for stricter compliance lend credence to the tremendous usefulness of such studies. Review of enforcement and implementation of the statutes relating to waste management constitutes an important ingredient of the medium term strategic plan under finalisation.

Possible contributions of WGEA

22. The WGEA platform can be used for enhancing quality and impact of audits of waste management in the following ways :

a) Compare statutes across countries to identify deficiencies / weaknesses in obligations, standards, penal provisions, regulating machinery etc.

b) Prepare detailed guidelines for auditing waste management.

c) Co-ordinate joint audits of compliance with Multilateral Environmental Agreements pertaining to waste management.

d) Hold information/ experience sharing seminars and workshops.

Waste Management in Iran (Iran)

Theme: Waste Management

Waste Management in Iran

The old and usual methods of collecting, transporting and dumping waste is no longer effective, considering the population growth, developing urbanism and the use of artificial and industrial products. Little by little environmental dangers threaten cities and create a growing concern for the health authorities. Presently in Iran 38-40 thousand tons of normal leftovers (urban and domestic) are produced daily and the products produced per head is 0.82 kg per day. Reviews show that approximately 75% of leftovers are organic and dissolvable materials and 25% includes dry and recyclable materials (paper, plastic, glass and metal).By recycling them the volume of buried materials will decrease.

In 2001, more than 2,243,000 tons of urban waste has been collected in Tehran, 153,596 tons of which are industrial and 21,898 tons are hospital waste. Tire remaining 96% of the waste were alimentary leftovers. In this regard, the research scheme for subsidized interest of recycle installation of glass, paper and plastic of Municipalities waste, is being carried out. This scheme has an approved credit of 24,832,000 Rials for the years 2000.2003 .As environmental problems increase through waste dumping, and following the pressures exerted by the people and health authorities, strict environmental rules and regulations are approved. Leftover management has been considered in different countries, and various rules aid regulations have been approved in this regard.

The present rules and regulations in the country are general and they are not sufficient for current conditions. Thus the legal bill of leftovers has been provided in order to execute proper management for appropriate dumping of different leftovers. In this law, leftovers are classified in different categories such as: normal, medical (hospital), unique and industrial. This law has been designed in such a way as to take into consideration the different kinds of leftovers and in order to prevent the consequences. The obligation and duties of all foundations, their way of relationship and even the criminal violations have been defined by this law.

The following guidelines have been defined as macro-policies by the law, for fulfilling the efficient management of goals.

1. Creation of a well ordered management.

2. Minimizing leftovers and increasing recycling for further use

3. Improving the awareness of people and Industrial authorities and their multilateral participation in leftover management.

In this law the management and responsibility of each leftover laid on the producer and the supervision over the execution of the law is the duty of Environment Department.

Today, according to the present laws, the municipalities are responsible for urban cleansing in general and leftover management in particular.

According to Articles 54 and 55 of the Constitution, the Supreme Audit Court of Tran is obligated to audit the accounts of all organizations which, in any manner *whatsoever, benefit from the* national Budget. But, *in view of the fact* that the Municipalities are independent from the national Budget, and their income is provided by the urban tolls, therefore they are exceptionally excluded from the monitoring scope of the Supreme Audit Court.

Management of Hazardous Wastes in New Zealand (New Zealand)

Theme: Waste Management

Management of Hazardous Wastes in New Zealand
Office of the Controller and Auditor-General
March 2003

1. What we did

Audit Objective

In June 2002 the OAG commenced an audit that examined the efficiency and effectiveness of the framework for delivering safe hazardous waste management for communities and their environments in New Zealand.

The report aimed to provide recommendations to improve hazardous waste management to lead to a cleaner and safer environment for all New Zealanders.

Definitions

For the purposes of the audit, 'hazardous waste' refers to materials that are flammable, explosive, oxidising, corrosive, toxic, ecotoxic, radioactive and/or infectious. Examples include unused agricultural chemicals, solvents, cleaning fluids, medical waste and many industrial wastes.

The audit focussed particularly on trade waste. This is liquid waste that is the by-product of industrial and manufacturing processes and that is disposed of through the sewerage system.

2. How we did it

Audit Methodology

The audit was conducted in three parts:

1. The national framework for the management of hazardous wastes in New Zealand was defined. The framework incorporates relevant legislation and the functions and statutory powers of the agencies responsible for delivering the aims of the legislation.

2. The effectiveness of the national framework was tested in the Auckland region (New Zealand's major urban centre) with a particular focus on the management of trade waste. Three other locations were used to check the validity of our Auckland findings for the country as a whole.

3. The validity of the key audit findings was then tested by sending an electronic survey to all 86 local authorities in New Zealand.

Fieldwork

Having identified the key agencies responsible for regulating the importation, manufacturing, storage, transportation, use and disposal of hazardous waste, we interviewed staff from these agencies. These agencies included central and local government organisations.

We also attended relevant conferences and held informal discussions with private sector companies involved in managing hazardous waste.

External Advisors

We obtained expert advice and guidance from a panel of four people with specific expertise in hazardous waste management.

What we didn't do

We didn't examine the technical, operational aspects of hazardous waste management.

3. What we found

As at March 2003, the audit report is being drafted. Therefore the following are preliminary conclusions and recommendations.

The management of hazardous waste is not being done well.

A lack of sufficient information prevents organisations from meeting their statutory obligations.

Many waste generators have a general lack of knowledge about hazardous wastes and do not know they are generating such wastes - generators of hazardous waste have a very poor knowledge of what happens to their hazardous waste once it has left their sites.

Many councils do not know what hazardous wastes are being produced.

Most local authorities have at best only partial knowledge of the extent and the safety and environmental impacts of hazardous wastes in their areas.

There is no mechanism for tracking hazardous waste to ensure appropriate disposal is carried out.

There is no nationwide programme for the management of many types of hazardous waste.

This lack of guidance results in inconsistency across the country, and unsatisfactory protection of the environment and human health - there is uncertainty about the quality and quantity of liquid hazardous wastes being discharged as trade wastes to sewers or storm water drains.

40% of the territorial authorities do not have a Trade Waste bylaw for the safe disposal of trade wastes. Without such a bylaw in force, and its consequential trade waste information capture, councils do not know the scale and content of even the trade waste part of hazardous waste.

The framework for the management of hazardous waste lacks leadership, clear coordination and accountability.

Management of hazardous wastes in New Zealand occurs within a framework of many pieces of relevant legislation and there is not a single over-arching piece of legislation that holds them together. It is a multi-agency function without clear coordination or leadership in terms of legislative responsibilities and accountabilities are blurred.

The complexity of, and recent changes in the legislative framework has led to confusion among the key players, resulting in a widespread lack of support for the changes made under Hazardous Substances and New Organisms Act (HSNO) that was designed to clarify existing responsibilities.

The Act is not yet helping on-the-ground practitioners and managers of hazardous waste. For territorial authorities it has generated a number of new concerns and there is a low level of awareness and understanding of the framework especially within the small business community.

It is unclear how HSNO will apply to hazardous wastes. In particular, it does not cover sludges and mixtures that have a variable and mostly unknown composition that is a characteristic of most liquid trade wastes.

Local government enforcement officers have powers of entry to a place or structure or premise, under three pieces of legislation with regard to the management of hazardous wastes. This results in the inconsistent use of enforcement activities.

The arrangements for managing trade waste in Auckland are different from the rest of the country.

Special provisions in the Local Government Act provide for a company called Watercare Services Ltd (jointly owned by the Auckland territorial authorities) to provide bulk water and wastewater services to much of the region.

The Auckland local authorities cannot agree on the best structure for the delivery of water and wastewater services within the region.

Repeated and costly reviews of the Auckland region's water supply and wastewater collection and treatment sector over the last decade have all concluded that integration "offers the greatest financial, environmental, social, governance, and operational benefits". However, integration has not occurred because the six territorial authorities involved have not agreed on how it should be implemented.

The implementation of the waste minimisation aspects of the New Zealand Waste Strategy in Auckland will be difficult without good cooperation between all entities.

The Waste Strategy states that by December 2005, all territorial local authorities will ensure that all holders of trade waste permits will have a recognised waste minimisation and management programme. Most territorial authorities in the Auckland region have no direct relationship with the trade waste producers in their area; instead this relationship is with Watercare Services. Territorial Authorities will have to work closely with Watercare Services to achieve this target.

4. What we learned

The electronic survey of all 86 councils was a useful way of testing the main findings from interviews held at a limited number of organisations. The survey was simple and cheap to conduct and generated a lot of useful additional evidence. It was necessary and important to test the survey before sending it out to councils.

The audit team stated that it would have been very easy to get embroiled in the technicalities of this issue. The complexity of, and relationships between, the many pieces of relevant legislation required the audit team to obtain expert legal advice from our in-house legal team.

The highly political nature of this topic meant that the audit team had to be continually aware of potentially interesting but ultimately unhelpful diversions.

The audit is due to be completed in May 2003 and will be available on our website:

www.oag.govt.nz

For further information on this audit please contact the audit team:

john.handiside@oag.govt.nz deborah mills on deborah.mills@oag.govt.nz

Municipal Waste Management on the Basis of the SCC's Audit Results (Poland)

Theme: Waste Management

THE SUPREME CHAMBER OF CONTROL
POLAND
Municipal Waste Management on the Basis of the SCC's Audit Results

Wastes are extremely harmful to the environment, which for the most part is made manifest in pollution of water and soil, contamination of air, destruction of landscape beauty and environmental values, and abandonment of farmlands and woodland areas to be taken as waste disposal sites.

Between 1994 and 2001 the Supreme Chamber of Control carried out five audits of waste management. The audits combined the characteristics of both performance audits and financial audits, and they covered:

- in 1994 – implementation of tasks related to waste management – 107 units;

- in 1998 – management of municipal wastes and maintenance of cleanliness and order in municipalities (western Poland) – 15 units;

- in 2000 – hazardous waste management – 137 units;

- in 2001 – execution of tasks in the field of environmental protection and keeping order and cleanliness in municipalities by local self-government units (north-eastern Poland) – 30 units;

- in 2001 – management of municipal solid wastes – 46 units.

By the end of 2001 nearly 2 thousand million tons of industrial wastes had been accumulated in Poland. The amount of wastes generated in 2001 reached 124 million tons, which means that it increased only by 1% compared with 1995. 78% of wastes were utilised for economic purposes, 19% were stored and nearly 3% were rendered harmless. Hazardous wastes which due to their origin, chemical or biological composition or other properties pose threat to human life and health, and to the environment, accounted for approx. 1.3 million tons of the total amount of industrial wastes generated, i.e. 1% (3.2% in 1997). Out of the total amount of hazardous wastes 28.2% were utilised, 69.0% were disposed of, and 4.8% were stored. The rest remained on temporary landfill sites.

The audits carried out by the SCC in 1994 and 2000 showed that 60% of industrial plants did not comply fully with legal provisions on the protection against wastes. They did not have a proper organisational and legal status as regards waste utilisation and disposal; landfill sites were not properly secured and caused environmental pollution – mainly to surface and underground waters. Actions taken to reduce the amount of wastes generated and increase their utilisation for economic purposes or their disposal were found to be insufficient. There were irregularities as regards calculation and collection of fees due for waste storage. Also the supervision exercised by the Inspectorate for Environmental Protection was inefficient. 24% to 70% of plants, depending on the kind of activity conducted and its relation to hazardous wastes, did not hold permits required periodically, and 30% of the plants studied did not keep or kept an inadequate waste

register. No proper supervision was exercised over international trade in hazardous wastes. Customs authorities at border crossings often failed to ensure adequate protection against illegal import and export of hazardous wastes.

Audit findings concerning hazardous waste management were presented at the seminar organised in Oslo by the EUROSAI Working Group on Environmental Auditing.

Today we want to share with you our experiences from audits carried out in Poland as regards municipal waste management.

In 2001 the amount of municipal wastes reached 11 million tons, nearly 96% of which were stored at 1036 landfill sites. Disposal by incineration, utilisation in composting plants and recovery through selective management accounted for 475 thousand tons, i.e. 4.3%.

In 1998 and 2001 the SCC carried out three audits of municipal waste management in 10 from among 16 provinces existing now, covering 92 units, including 81 city and municipality authorities. When selecting municipalities, the SCC took into account rural and urban-rural municipalities with not more than 20 thousand inhabitants, municipalities where the number of inhabitants did not exceed 100 thousand, and municipalities with more than 100 thousand inhabitants.

The audit aimed at evaluation of how municipalities implemented their policy and fulfilled statutory tasks related to municipal solid waste management as well as at examining the regularity of spending funds on erection, development and modernization of buildings and plants intended for waste management.

The audits covered in particular:

- programming of tasks;

- regularity of using landfill sites as well as supervision over units dealing with disposal, storage and rendering wastes harmless;

- scope and effectiveness of operations aimed at the liquidation of illegal dumping sites;

- reasonable use of state-allocated funds on municipal waste management.

In the wake of audits carried out, the SCC criticised the way the national environmental policy was implemented at the municipality level and the fulfilment by the units audited of their statutory tasks related to municipal waste management.

1. An environmental protection programme should be a basic instrument for the implementation the national environmental policy at the level of municipalities. The audit findings show that nearly 70% of municipalities did not have such a programme. They executed tasks only as the need arose. 30% of municipalities did not keep a mandatory register of landfill sites used and closed without reclamation as well as illegal dumps.

There were around 800 places where municipal wastes were illegally dumped in half of the municipalities. By the time the audit ended, nearly 400 of such dumps had failed to be liquidated due to the lack of resources for liquidation of illegal dumping sites and for land reclamation. New illegal dumps are springing up taking the place of liquidated ones and destroying the landscape and the environment.

This testifies to the lack of constant supervision and inspection in the field on the part of responsible municipal services.

2. Municipalities were obliged to formulate and implement the rules for maintaining cleanliness and order within their bounds. 4 municipalities, 5% of the examined, did not formulate and did not implement the said rules either. 30% of them neither enforced the rules implemented, nor selected units for the provision of services, including the conclusion of agreements as regards the collection of rubbish from small economic operators and one-family houses. Municipalities were also obliged to specify conditions for selective collection and sorting of wastes. Implementation of this task is still very limited. No actions in this regard were taken in 36% of the municipalities audited. It was found out that in some cases no one wanted to purchase wastes that had been sorted, and in extreme cases the wastes sorted were dumped at the common municipal landfill site.

3. About 50% of the landfill sites created in the 70's and 80's still did not have – despite a statutory obligation – proper insulation of their substratum. This resulted from the negligence on the part of managers of landfill sites and construction supervisory bodies. Waste disposal sites have a negative impact on the environment, which was true of every third site subject to laboratory tests. The audit findings show that there were cases of designating places for waste disposal that violated the provisions of the law on spatial management, including specially protected areas with main underground water reservoirs that were the source of drinking water.

4. Over 25% of landfill sites did not possess a proper organisational and legal status. In 2 cases the managers of such sites exploited them without a necessary permit, and the remaining sites were constructed without a building licence and did not meet the requirements of legal regulations in force – they were in fact illegal dumps. 17% of landfill sites lacked the waste disposal instruction manual, or existing instruction manuals were not complied with. By the time the SCC closed its audit, one fourth of post-audit recommendations issued by the provincial inspector for environmental protection in 1999 and 2000 as regards landfill sites had failed to be implemented. 4 disposal sites are going to be closed due to inadequate exploitation.

5. 70% of municipalities exercised insufficient supervision and control over the regularity of landfill site exploitation, waste sorting and determining its further development. Also composting of agricultural and horticultural wastes was not carried out in a sufficient scope.

6. No occurrences of misuse of financial resources by environmental protection and water management funds were found.

7. Since new legal provisions entered into force after the period studied: the law of 27 April 2001 on the protection of the environment and the law of 27 April 2001 on wastes, which regulated some of the issues audited in this case, the SCC did not present conclusions of a legal and organisational nature.

The most significant conclusions directed to public administration bodies related to:

- exercising control over municipal landfill sites as regards adjustment of their operation to the requirements laid down in legal regulations on wastes and environmental protection;

- reclamation of closed landfills, liquidation of illegal dumping sites and arrangement for supervision that would ensure ongoing detection of illegal dumps together with imposition of sanctions against people guilty of their creation;

- ensuring proper supervision over exploitation of landfill sites;

- extending the range of waste sorting and introduction of composting of agricultural and horticultural wastes.

Conclusions formulated in the wake of the audit and directed to managers of the units audited were accepted and are being implemented now.

Information on the audit results was submitted, in particular, to the President of the Republic of Poland, Speakers in the lower and upper house of the Polish Parliament (the Sejm and Senat), Prime Minister and relevant parliamentary committees. It was also made available to the mass media – the press, radio and television.

In its work programme for 2003 the SCC has provided for auditing compliance with requirements related to international trade in wastes. The audit will assess:

- legitimacy and correctness of issuing permits for international trade in wastes as well as compliance with requirements specified therein;

- efficiency at exercising supervision and control over international trade in wastes, including effective co-operation with the Czech Republic and the Slovak Republic in this regard;

- implementation – within the scope of the subject under study – of conclusions flowing from the audit carried out by the SCC as regards management of hazardous wastes.

Regular auditing of waste management contributes towards gradual improvement of the situation despite the fact that this process is slow and does not meet expectations of society and requirements of international treaties.

Warsaw, February 2003

Audit on Medical Waste Management (South Africa)

Theme: Waste Management

What South Africa did

The Office has made an important commitment to enabling an EA strategy and seeing it being rolled out to the audit components over the next two to three years. This is a complex area and will require a substantial amount of research and training. This paper will try to set out some of the key achievements that the office has made the past year.

Outputs

- Developing a best practice guideline on the audit of Medical waste. The office's technical committee officially approved this best practice guide on 16 October 2002. Pilot audits at seven provincial hospitals and two military hospitals preceded the approval of the guide.

- Members of AFROSAI performed such a medical waste audit at a provincial hospital in the Mpumalanga province, during early September 2002, as part of their EA course. The above mentioned best practice guide was used for this exercise.

- Audits on Medical waste are currently in the process at another two provinces. Their reports will be applicable on the 2003/2004 financial year. In effect, four out of nine provinces were introduced to the principles and objectives of waste management of which medical waste can be seen as a sub section.

- The office is communicating with government officials/departments whose core responsibilities are to manage other role-players whose activities may effect the environment. The intention is to enhance the accountability process surrounding the environmental management and reporting. In conjunction with these role-players, a survey is currently conducted by the technical support section of the office to identify the shortcomings in the control environment of two of the departments, namely Department of Minerals and Energy and Department of Water affairs and Tourism. It is foreseen that the findings, of this survey will be made available at the end of July.

- It was decided that the next topic would be "The Audit of Landfill sites" and the best practice guide on the topic is to be developed before the end of 2003.

2. Rationale for undertaking the Audit

The office's first aim is to sensitise the auditors to environmental issues and to introduce generic audits and guidelines that can assist the auditors in covering the environmental aspects of their work. Lessons learned on previous environmental audits, such as the audit on Sea Fisheries and Freshwater Resources, indicated a plethora of environmental issues, as well as international agreements and Accords and national legislation, regulations and local by laws. Environmental auditing can therefore be complex due to fragmented laws, role-players and various and different reporting channels. It seems feasible to limit the scope of the environmental audits, at first, to a topic that includes all the elements of environmental laws and regulations, as well as environmental or health risks, but which is easier to audit because of limited laws, regulations and role players.

3. Presentation of the issue

Slides on waste management are prepared. Headings of the slides entails:

- What the OAG – South Africa understand by waste management
- Rationale for undertaking medical waste
- Audit methodology
- Audit results
- Landfill sites- next topic
- Land fill sites- focus areas

4. What the auditors found and the impact of the audit

Findings

- Separation of health-care waste from general waste is not practised and consequently, all waste is incinerated leading to grater pollution potential
- No guidelines exist for the separation of non-hazardous health –care waste from hazardous health-care waste and staff training in this regard is inadequate
- Inadequate controls in place for the transportation of hazardous waste
- There is shortage of suitable incinerators in the provinces
- The majority of incinerators are not managed correctly and are technically inefficient, not complying with expected standards
- Illegal incinerators are located throughout the country, creating unacceptable environmental conditions for communities
- Illegal dumping of health care waste and other hazardous waste is taking place at substandard landfill sites due ti poor standards and controls.

Impact

The impact of the audits is not known at this stage, as all the reports were not yet submitted for scrutiny to the provincial SCOPA's and their recommendations are therefore not available.

5. Audit results and benefits

Audit results

See above-mentioned findings

Benefits

Environmental awareness amongst auditors and a general know-how on environmental laws and regulations, which control waste management in South Africa. The health authorities in four provinces became aware of the role and mandate of the office with regard to environmental auditing.

6. Innovative approach and methodology used to address environmental issues

In line with the INTOSAI perception of environmental auditing, it is intended that the office cover all auditing aspects, namely: financial, compliance and performance auditing. It is envisaged that the office will place particular emphasis on the process by which the management and control of resources occurs in order for an entity to fulfil its objectives and report accurately. See annexe for detail.

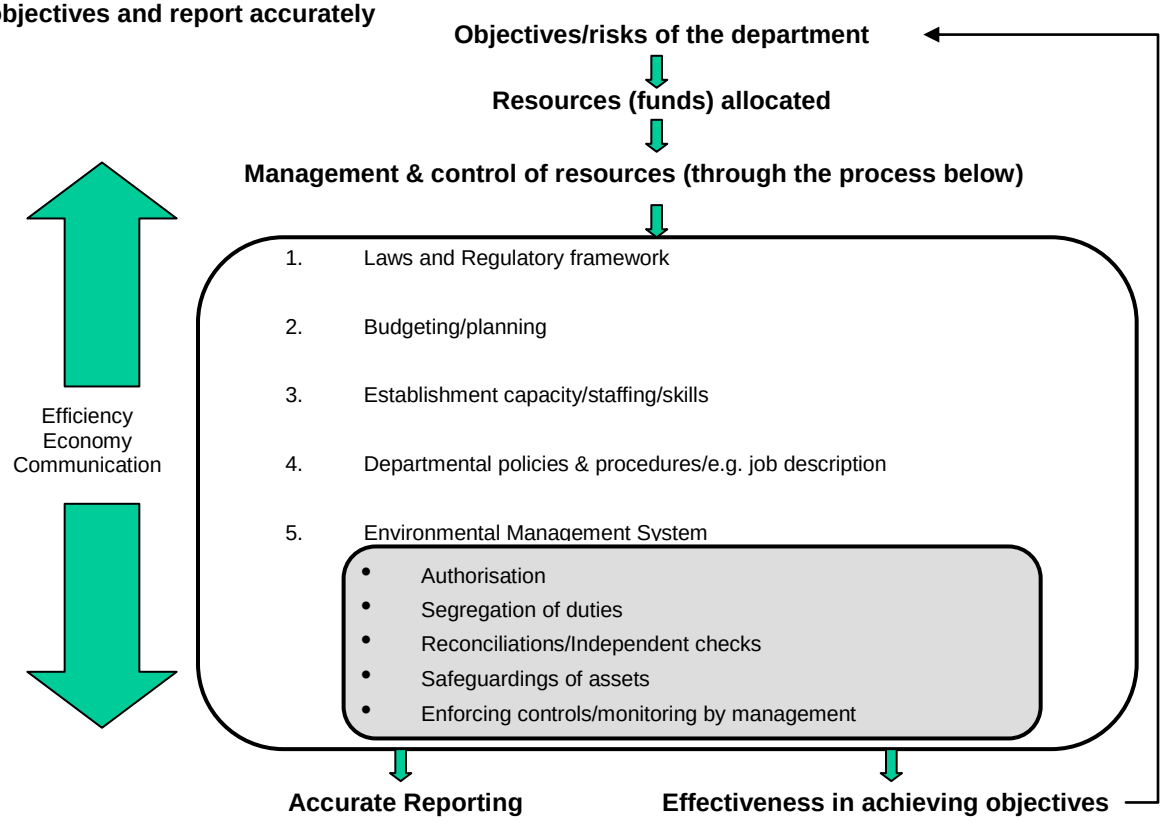
7. Lessons learned that could benefit the other SAI's

Start at a small scale and limit the scope of the audit. Accumulate on the knowledge by identifying a similar, but a more complex audit topic the following year.

8. Description of possible contributions of the WGEA to improve audit practices of SAIs dealing with similar concerns

Environmental Management

Process by which the management and control of resources occurs in order for an entity to fulfil its objectives and report accurately



Protecting the Public from Waste (United Kingdom)

Theme: Waste Management
Author: Joe Cavanagh

Protecting the Public from Waste:
an audit of waste regulation in England
Joe Cavanagh
National Audit Office, United Kingdom

EUROSAI has established waste as the environmental theme for the next three years. By coincidence the National Audit Office already had a study planned on waste. In December 2002, we published "Protecting the Public from Waste" which sets out the findings from our audit of waste regulation in England & Wales. This paper sets out why we choose the study, what we found and draws some lessons which other SAIs will find useful when they come to do their own studies of waste or of similar environmental regimes based on licensing and inspection. Instead we examined the Agency's investigation of pollution incidents involving waste, the licensing of major waste sites, the poor quality of inspections, abuse of the system of exemptions, fly-tipping.

Why did we choose to examine waste?

The safe disposal, treatment and recycling of waste is financially material and the subject is both topical and controversial. The Environment Agency (the Agency) regulates the recycling and disposal of some 176 million tonnes of waste a year in England and Wales (over 3 tonnes per head of population). The waste industry has an annual turnover exceeding £4 billion and employs some 90,000 people. The Agency spends £78 million a year on range of waste regulation activities: nearly half funded by the industry through licence fees, the remainder by central government. There are also doubts about the potential risk to human health from landfill and waste incineration: a European study of 23 hazardous waste sites, published in January 2002 suggested that chromosomal abnormalities increase by 41 per cent in populations living within 3km. In the UK this would represent a high proportion of our population. Since 1996, waste regulation in England and Wales has been centralised in a single organisation. Prior to this date, there were 83 different waste authorities. In practice each authority operated with its own policies, priorities and, sometimes, within extremely limited resources. For all these reasons, we decided that waste was a good topic for audit.

But there were problems with the scoping of a study on waste. Waste is a massive subject area to do justice to in a single report. Instead we focussed on the Agency's mainstream work on waste regulation rather than the less common but more dangerous types of waste. Planned work on the possible effects of waste on human health was pared back as too technical and inconclusive. Other important topics, such as waste minimisation and national and international movements of hazardous waste (both priorities identified by the Johannesburg summit in September 2002), we simply had to leave for another study.

Secondly, auditing a moving target is always much more difficult than reviewing an area which has remained fairly static for a period. As my European Union colleagues will be aware, waste is an area of constant change as the European Commission develop new and higher standards for waste treatment and disposal. In scoping our investigation we decided to concentrate our work on the Agency's key operational roles where we knew there was a problem or where there was such a high level of public concern that to ignore the issue would leave us open to criticism that we had missed the risk. An

advantage of scoping the study in this way is that operational matters are less likely to be subject to change than the policy superstructure.

What did we find?

Our main conclusion was that the Agency could make better use of its limited resources by carrying out fewer but more comprehensive, in-depth, inspections of waste operators. In 2001-02, the Agency planned to visit licensed sites 15 times on average, and at least four visits to each site no matter how low risk. We found no evidence that this high frequency of inspections is needed to deliver effective regulation. We also found that most pollution incidents at licensed waste sites relate to only a small proportion of sites: in 2000-01, such reports were recorded at only 12 per cent of licensed waste sites and nine sites accounted for 35 per cent of the 400 reports of major or significant incidents that year.

Our second main conclusion was that Agency does not always escalate the enforcement action it can take where a licensed waste operator is guilty of multiple, but individually minor, breaches of its licence. Each year, only 30 waste operators are prosecuted for a breach of licensing conditions. We concluded that the Agency should say more clearly how it will respond to licence breaches; and take prompt enforcement action when a further compliance failure is detected.

Other conclusions are a mixture of environmental, financial and administrative issues.

- The Agency has limited funds earmarked specifically for regulating some 120,000 sites exempt from the requirement to be licensed (such as the spreading of waste on land and the remediation of contaminated land): only 2,200 of whom were inspected by the Agency in 2001-02. The Government recognised that controls over waste activities need to be improved. However, waste is not seen as a priority issue and it has taken since 1998 to complete the review of these controls promised to the House of Commons' Environment Select Committee.

- The Agency has improved standards of waste licensing sine 1996 but needs to improve further on the time it takes to deal with licence applications. In 2001-02 only one fifth of new licences were issued within four months of application and one in seven took more than a year. Some of delays are outside the Agency's control, including poor quality applications, but the Agency also needed to simplify the application process.

- Taxpayers may end up paying for the long-term management of abandoned waste sites because operators' financial provisions become unavailable once operators become insolvent as environmental debts can be disowned by the receiver. The Department is working within other parts of Government to ensure that the 'polluter pays'. As a minimum, we believe that environmental liabilities should enjoy a similar rank with the tax authorities on the wind-up of a company.

- Evidence pointing towards an increase in fly tipping following the introduction of the Landfill Tax in 1996 is anecdotal and the Agency's records do not show a clear trend. However, the Agency estimates that there are around 50,000 fly tipping incidents a year, costing local authorities some £50 million to £150 million.

Our work has resulted in substantial financial savings and a reduced burden on the waste industry. Already the Agency has reduced the number of routine inspections from 120,000 a year to 100,000 - a saving of some £3 million in the Agency's staff costs. We would like to see the overall number of

inspections falling further and the resources used to carry out improved inspections. We believe that this will improve the quality of environmental inspection and better protect the environment.

How did we address environmental issues?

Technical and scientific issues are difficult to audit directly. Our report records the scientific debate in the most balanced way we can but does not seek to second guess the decisions reached. Our work involved review of recent scientific studies, ensuring that the Agency was active in evaluating risk, planning research and adjusting policy in the light of new information. During the study we were advised by an academic consultant specialising in the engineering and management of landfill sites and by a leading expert on public health. We also invited submissions from environmental groups, local residents associations and formed an expert panel drawn from the Agency, government, academia and the waste industry to discuss an early draft of our report.

It is difficult to evaluate the overall effectiveness of a regulatory regime. We originally planned to examine the number and impact of waste related incidents recorded by the Agency since it was established in 1996. This proved impossible due to the poor quality of the data. The Agency now has a sophisticated risk assessment system which records a risk score for every site visit carried out and uses this data to calculate a recommended inspection frequency for each of its 7,600 licensed sites every three months. Even if this information had been available to us, interpretation would have been difficult: an increase in risk scores could either be caused by reduced standards in the waste industry or be the result of improved inspections.

In the UK and elsewhere, environmental groups are highly sceptical of both scientists and government officials. We found evidence that a small number of older waste sites are causing significant harm to the environment but similar evidence from modern well operated waste sites is almost absent. How government's should apply the "Precautionary Principle" in this situation is not clear. Although the UK Department of Health concluded that the available scientific evidence does not justify a change in regulatory approach, it recognises that "no evidence of harm" is not the same as "safe". SAIs will need to consider very carefully how they can usefully add to this debate in the context of their own country.

We found international comparisons to be of value to determine whether the UK was broadly in line with practices in similar countries and in picking up good ideas which had not been considered here. Eventually, a total of seven countries, in Europe and two other continents, provided us with outline information. It quickly became clear to us that nowhere was waste regulation as centralised as in England and that few other countries compiled detailed statistics on waste regulation. The European Commission has published some comparisons between EU states but these also fall far short of the level of detail needed for a detailed benchmarking exercise. How should you do this? Firstly, use INTOSAI contacts as far as possible - they understand your audit needs and can the help put things into context. Secondly, do the work towards the end of the study so that you have reduced your questions to those you absolutely require comparative data. Anything else is unfair to your INTOSAI colleagues and wastes your own time.

To sum up, the waste report is an example of how the National Audit Office has approached environmental audit in the United Kingdom. "Value-for-money" subjects are selected for their auditability, financial significance and the potential for the audit process to add value rather than because of their importance to the environment. Inevitably much of what environmental bodies such as the Environment Agency does is science-based and, as auditors, we are poorly placed to challenge these judgements. Nevertheless there is scope for auditing around the science and to produce practical recommendations which will make a difference.

Environmental audits 2001/2002- Sustainable Development (Austria)

Theme: Sustainable Development

Author: Dr. Heinrich Lang Rechnungshof (Austrian Court of Audit)

A) The Austrian Court of Audit

Environmental protection is one of the three main goals in the strategy of the Austrian Court of Audit.

The Court of Audit is the only institution in Austria, including the audit institutions of the provinces (Länder), which is able and allowed to audit all levels of government from national down to local communities, enterprises which are 50% or more state-owned and all grants given by Austrian administrations to private enterprises or persons.

The Court of Audit is independent in planning its audits. Audit planning is done on a revolving annual basis. Usually there are no reports without a field audit. Most audits are performance audits.

Reports are forwarded to the competent legislative body (federal or provincial parliament). These reports are condensed versions of the original reports, which were forwarded to the auditees, which have a constitutional period of three months to give comments on the findings and recommendations. The reports must not be published before they are forwarded to the legislative body.

B) The granting system

The Austrian environmental granting system is divided in grants for water and waste water management, grants for other environmental items in Austria and grants for abroad.

The grants are given by the federal ministry for agriculture, forestry, environment and water management and are allocated by a bank. The value of the grants depends on the impact on the environment in Austria (for grants for abroad too). The granting system covers all environmental matters as air pollution.

The financial dimension is:

Water and waste water	2 752.0 Mill. EUR	7302 projects
Environmental grants	266.2 Mill. EUR	4092 projects
Grants for abroad	68.5 Mill. EUR	149 projects

C) The audit of environmental grants for other environmental items

What were the main reasons for choosing this topic?

a) We wanted to detect the environmental effects of the money spent focussing on the contribution to reach the Kyoto-targets.

b) Another topic was the contract, the co-operation and the co–ordination between the federal ministry and the allocating bank.

What was the scope of the audit?

a) Organisation and financing of the system, because the coming fund-raising and distribution of the money is very important for influencing industrial investments in the woke of Kyoto.

b) Achieving legal goals

c) Environmental effects especially on decreasing CO2 emissions.

Main Results

Austria will get problems in fulfilling the Kyoto targets. A new financial planning system (not annual) is needed. Trade in "hot air" can only be the last way to reach the Kyoto targets. Parallel existing regulations were deleted and improvements in co–ordinating efforts reducing greenhouse gases were promised.

D) The audit of environmental grants for abroad

What were the main reasons for choosing this topic?

a) Environmental effects for Austria from this grants in the neighbourhood?

b) We wanted to know and compare the costs of avoiding one ton CO2 in Austria and abroad to be able to judge effectiveness of the coming flexible Kyoto instruments (Clean Development Mechanism and Joint Implementation).

c) In co-operation with our Hungarian colleagues we wanted to know if Austrian money was spent effectively in Hungary.

What was the scope of the audit?

a) Organisation and financing of the system

b) Co-operation with governments and/or organisation in the receiving countries?

c) Are there concrete projects with environmental effects on Austria or are there just studies with no operational outcome?

Resources and dimension

The project-management of all 140 projects was audited. Our Hungarian colleagues audited all projects in Hungary funded by Austria.

Main results

There were differences between the balances of the bank allocating the funds and the federal balances (2 mill EUR). Average costs for avoiding are 103 EUR/t CO2 in Austria, 52 EUR/t CO2 abroad. A new law concerning the organisation and co-operation in locating funds abroad including new processes concerning the flexible Kyoto mechanisms was created. The implementation of grants will be organised by the receiving countries in future (contacts with Hungary, Poland and Slovakia)

In Hungary, from 41 tasks, six were already finished, six were under construction, 11 planned, and four called necessary (in sum 27, = 65%), statements on the environmental effects were not possible.

The reports are on the Austrian homepage (www.rechnungshof.gv.at, in German) and in a short English version on the homepage of the EUROSAI working group for environmental auditing (www.nik.gov.pl/intosai).

Contacts: www.rechnungshof.gv.at, wg.environment@rechnungshof.gv.at, lang@rechnungshof.gv.at

Legal Framework of Environmental Auditing in Cameroon (Cameroon)

Theme: Sustainable Development

Author: François-Xavier OWONA NDOUGUESSA

REPUBLIC OF CAMEROON
Peace-Work-Fatherland
PRESIDENCY OF THE REPUBLIC
Supreme State Audit Office
MINISTER'S CABINET
THE CO-COORDINATOR GENERAL

940 RUE DE Narvick
BP : 376 Yaoundé
Fax (237) 23.44.03

PRESENTATION OF PROF. François-Xavier OWONA NDOUGUESSA AT THE 8th MEETING OF THE INTOSAI WORKING GROUP ON ENVIRONMENTAL AUDITING (BEIJING, CHINA. APRIL 2003)

This paper focuses on four objectives, namely:

- presentation of the legal framework (mandate) of the environmental auditing in Cameroon ;
- presentation of the three(3) environmental audit, authorities in my country;
- presentation of a list of environmental audits conducted in Cameroon during the year 2002 ;
- illustration of an environmental audit case.

L-Legal Framework of Environmental Auditing in Cameroon

Environmental audit, as a recent form of audit, is governed by one law and four published decrees, two of which arc signed by the President of the Republic and the two others by the Prime Minister, Head of Government. A fourth decree is currently under preparation. Other instruments arc still to follow, considering the scope and multiplicity of environmental categories protected by law e.g. the. atmosphere, waters, forests, animal and plant species, human settlements, sub-soil, etc.

1. Law no 96-12 of 5 August 1996 to lay down the general Legal framework for environmental management

   This law constitutes the basic instrument which governs environmental auditing, It comprises 99 articles grouped into seven (7) parts ranging from general provisions (1); through the preparation, coordination and financing of environmental policies (2);

environmental management (3); implementation and monitoring of programmes (4); incentive measures (5); liability and sanctions (6) to miscellaneous and final provisions.(7).

2. Presidential Decree No 97-47 of 5 March 1997 to organize the Supreme State Control, supplemented by decree 97-48 of the same date relating to roving audit missions.

   It. is the latter decree which, in part 1, article 2, paragraph 5, provides for «environmental control»

3. Decree of the Prime Minister, Head of Government N° 2001 - 24/CAB/PM of 30 January 2001 on the organisation and functioning of the Committee on the Protection against contamination by hydrocarbons.

4. Decree of the. Prime Minister, Head of government N° 2001 - 718/PM of 3 September 2001 on the organisation and functioning of the Interministerial Committee on Environment.

5. Decree of the Prime Minister, Head of Government under preparation to lay down conditions for conducting environmental impact assessment.

It is true, that this list could be extended with other instruments such as:

- Law No 98-5 of 5 April 1998 to lay down the water schedule;
- Law No 98-15 of 14 July 1998 on firms classified as dangerous, inhygienic and inconvenient
- Law No 98-20 of 24 December 1998 relating to gas and steam pressure equipment;
- Law No 99-13 of 22 December 1999 on petroleum code;
- Decree No 2000-485 of 30 June 2000 to lay down conditions of implementation of Law no 99-13 of 22 December 1999 on petroleum code.

Illustration of an Environmental Audit: The Case of Sofavin Cameroon

Breach of Law 96-12 of 5 August 1996 relating to environmental management	Sanctions proposed art. 82 of the same law	Recommendations
- Direct spill of unprocessed effluent liquid into River Mfoundi. Art. 29		1.-Carry out thorough environmental assessment of the company's activities for a better mastery and a rational management of the impact on the environment.
- Disposal of solid waste without the authorization, and monitoring of the Ministry of Environment and Forestry. Art. 47	5 000 000 FCFA Francs	2.- Draw up a plan for the effective implementation of projects under way and forward it to the competent service of the Provincial Delegation for the Environment and Forestry for the Centre
- Open-air incineration of solid waste. Art. 21	7622,45 Euros	
- emission of smokes and unburnt matter into the air. Art. 21		
- Dumping of coal on the soil in the vicinity of the factory, Art. 36		3.- Establish an operational environmental unit for a more rigorous follow-up and assessment of the environment.

Authorities in Charge of Environmental Audit

For the moment, there exist three bodies, namely:

1-The Permanent Secretariat for Environment.

It is an autonomous service endowed with a legal personality operating under the supervisory authority of the Ministry of Environment and Forestry.

2-The General Inspectorate of the Ministry of Mines, Water and Power

It is an internal audit organ operating within this Ministry.

3-Services of the Presidency of the Republic in charge of the Supreme State Audit.

These Services are the Supreme Audit Institution (SAI) of Cameroon of which I am the second personality in my capacity as Coordinator General (Permanent Secretary).

As a SAI, the Supreme State Audit Office is responsible, at the highest level, for auditing inter alia, public and semi-public enterprises, as well as various other bodies.

In this respect, the SAI:

- studies audit reports drafted by audit authorities at a lower level acid;
- may initiate environmental controls at its own level.

List of Audits carried out in 2002 by The Permanent Secretariat for Environment

During the period under review, this audit authority conducted audit missions in the following, 7 companies

- SOFAVIN Cameroun (wine brewing factory);
- TIB (Hydrocarbons distribution plant);
- BAT (Cigarette manufacturing plant);
- SOSUCAM (Sugar manufacturing factory);
- SABC (Brewing factory)
- ADC (Company in charge of the management of airports in Cameroun);
- Garage NYUENTA Mesmin Yaoundé (Garage).

All of the above mentioned resulted in sanctions.

An audit of "the Project of Returning Farmland to Forest/Grassland" (China)

Theme: Sustainable Development

1.Introduction: Environmental Audit Practice

CNAO defines its audit projects based on the following:

- the major steps of environmental protection taken by the government;
- the areas of environmental protection with major government financial input;
- the areas of major concern from the general public;
- the areas under the jurisdiction of CNAO.

In China, based on the priorities in pollution control and ecological construction, CNAO has defined the following as its key working areas:

- major government invested environmental projects, such as "three rivers and three lakes Control Project" (the Huai, Hai and Liao Rivers, and the Tai, Dianchi and Cao Lakes), the Project of controlling acid rain and sulfur dioxide, the Project of Returning Farmland to Forest/Grassland and the Natural Forest Preserving Project etc;
- implementation of main environmental protection policies, such as some experimental environmental policies and basic environmental policies, etc.

Next, I would like to share with you an environmental audit project we have conducted in CNAO.

2. An audit of "the Project of Returning Farmland to Forest/Grassland"

In 1999, the Chinese government started to implement a project to return farmland to forest/grassland in 24 provinces (autonomous regions and municipalities) with the aim of improving the ecological environment. Until May 2002, 48 thousands sq. km. farmland have been returned to forest or grassland. According to a plan approved by the State Council, from 2001 to 2010, the area of conversion will reach to 320 thousands sq. km of farmland will be returned to forest/grassland. The project is expected to bring about huge ecological, economic and social benefits. In order to examine how the state policies were implemented and to disclose and handle the problems existed in the implementation of the project, management and usage of the project funds, improve the value for money and to put forward advice on further perfecting the policies and management, CNAO organized 12 of its resident offices, 17 provincial audit institutions to audit the Project of Returning Farmland to Forest/Grassland from 1999 to June 2001.

The audit looked mainly at the following areas:

- implementation of the project plan.
- allocation and utilization of the project funds.

■ implementation of relevant policies of the project.

■ results and effectiveness of the project.

One of the responsibilities of CNAO is to report to the government and the environmental departments those typical and tendentious problems existing in the usage the funds. During this audit, the provincial audit institutions submitted more than 300 pieces of information to CNAO, who in turn reported the most important 12 of these to the State Council and sent 23 to relevant departments. The State Council and relevant departments valued the reported information very much. On the basis of summarizing and analyzing the audit reports from the provincial and resident offices, CNAO submitted a consolidated report to the State Council showing the general picture and results of the Project of Returning Farmland to Forest/Grassland. The report also disclosed some non-compliance issues detected including:

■ project funds were not appropriated timely which to some extent, has negatively affected the implementation of the project plan and the enthusiasm of the farmers in returning their farmland to forest/grassland;

■ a total amount of 0.11 billion RMB irregular funds was detected and 11 cases seriously violating laws/regulation have been deal with by the government.

At the same time, CNAO has made suggestions for perfection of relevant policies to the government and environmental protection departments on the basis of its audit findings. After this audit, CNAO put forward 6 pieces of advice to State Council on further improving the work of returning farmland to forest/grassland and all six have been adopted by the State Council. By and large, these suggestions put forward to provincial governments by provincial audit institutions have also been adopted. These audit suggestions have effectively promoted the smooth implementation of this major environmental protection project.

Remedying Environmental Burdens from the Past (Czech Republic)

Theme: Sustainable Development

Author: Miroslav Kruchina

Remedying Environmental Burdens from the Past
By Miroslav Kruchina, Ing.
Director of the Department of the Environment and Agriculture

This information is provided to the participants of the 8th WGEA INTOSAI meeting on a subject that is, in a certain sense, a meeting point of various aspects of the subject of waste, including disposal and the sphere of protection of groundwater sources. In the Czech Republic, the remedying of environmental burdens from the past occupies one of the foremost positions from the standpoint of environmental importance and consequently, also taking into account the high financial costs of this liquidation (the financial cost of the program has been estimated at 10 bil. CZK), they were the subject of special attention in several audits on the part of SAI Czech Republic.

Introduction

In connection with the massive transfer of state property to new owners (commercial companies), it was also necessary to deal with environmental damage caused by the previous operations of the privatized companies. This environmental damage, also termed "environmental damage from the past", has not been defined in the legislation, as it can take a number of forms and have a number of causes: these extend from inadequacies in storage of petroleum derivatives, the use of obsolete technology and unsuitable materials, to illegal landfills on the premises of the production enterprises. Last, but not least, this damage resulted from the presence of the Soviet Army in CR in the years up to 1991.

The bodies of the state administration consider an environmental burden from the past to consist in a state where harmful substances present in the soil or geological basement, in landfills or in construction structures pollute or endanger the environment, especially ground and surface waters, above a set limit. The legislation has created preconditions so that the new owners of former state property can request payment of expenditures connected with remedying environmental damage caused by the actions of the enterprise prior to privatization. Financial payment is made from the means of the National Property Fund (hereinafter the "Fund"), into which revenues flow from privatization, with direct Government guarantees.

Auditing of the use of funds for remedying environmental burdens from the past in the privatization process

1) Focuses of the audit

SAI of the Czech Republic carried out two audits (in 1997 and 2001), in which it controlled the purposefulness and financial prudence of the use of the means of the "Fund" to remedy environmental damage from the past. From the standpoint of the auditing methods employed, these consisted in an efficiency audit with individual aspects carried out as audits of legality. The focus of the audits and the methodology employed were subject to a scheme that contained in particular the following steps:

- Request of the entity for reimbursement for costs

- Issuing of a Government guarantee simultaneously with the decision on privatization
- Preparation and concluding of an agreement between the Fund and the new owner
- Study and risk analysis
- Issuing of an administrative decision
- Tender procedure for a contractor
- Concluding of an agreement between the new owner and the contractor for the preparatory and actual decontamination work with participation of the Fund and the Ministry of the Environment (hereinafter "ME")
- Implementation of measures and provision of reimbursement from the means of the Fund
- Control of compliance with the conditions for provision of financial reimbursement.

At the Fund, audits were carried out, in particular, of how it participates in preparation of the Government decision in the matter of issuing of the guarantee, how it prepares and concludes agreements with new property owners (investors) and supervisory organizations (companies carrying out professional supervision), and how it releases financial means to these investors and supervisors. Audits were also carried out of how the Fund participates in the tender procedures for contractors, and how it controls the effective use of financial funds by investors and supervisory organizations, keeps records of financial funds, contractual relations, obligations and claims, and provides financial funds for complying with contractual obligations in the annual and medium-term periods.

At ME, audits were carried out of activities encompassing, in particular, methodical procedures for assessment of environmental burdens from the past and decisions on necessary remedial measures, issuing of consent to concluding environmental agreements, statements on projects to remedy environmental burdens from the past, and carrying out control of the usefulness of expended financial means of the Fund by investors.

At the Czech Environment Inspection (hereinafter "CEI"), which, as the relevant state authority, issues administrative decisions on implementation of the remedy, audits were carried out of the aspect of obtaining basic documents and decisive criteria for setting the target limits for decontamination work.

Amongst investors (new property owners), who obtained financial means from the Fund as reimbursement for the costs of remedying environmental burdens from the past, audits were carried out of the purposefulness and prudence of the use of the financial funds in relation to compliance with the conditions of the agreement, i.e. particularly compliance with technical and economic indicators laid down in the project plans for the decontamination.

2) Analysis of functioning of the model of financing

In the framework of audits of the decision-making phase of provision of financial funds, several hypotheses were established, of which the following were confirmed:

In the sense of the relevant Government decisions, new owners of state property obtained in the privatization process were guaranteed reimbursement of amounts up to limits given by the "purchase

price of the privatized property or, for a joint-stock companies, the corporate stock of the company". Thus, the amount of the guarantee was not dependent on the extent of the environmental burdens, or the expected costs of the remedy. The actual requirements on the financial means of the Fund (far less than the guarantees) were negotiated only during evaluation and approval of the decontamination project plans, i.e. after conclusion of the environmental agreement. The projects are mostly evaluated in the framework of tender procedures for contractors. It often happened that the actual costs of decontamination further increased during the implementation, amongst other things because the investor (new owner of the property) did not participate in any way in payment of the increased costs.

Priorities were not established for remedying environmental burdens from the past or reimbursement of costs for a remedy from the means of the Fund from the standpoint of the greatest burdens and potential further hazard for the environment or for the procedure in time or financial requirements. It follows from evaluation of the steps in which the remedy is carried out that dealing with environmental burdens from the past was dependent primarily on the progress of privatization of the individual cases and also on the procedure followed by the new owners of the property. Agreements on acceptance of environmental obligations by the state were concluded to a major degree at the initiative of the new owners of privatized property. The system that was to be conceptually created by the state authorities for dealing with the most serious environmental obligations was not completely functional.

In spite of the undoubted economic advantageousness for the investors, the model employed was not based on sufficient pressure on the part of the state authorities for rapid commencing of decontamination. So far, it has been possible to remedy environmental damage from the past only for the group of the most important privatized enterprises which, however, correspond to only approx. 6% of the total number of privatized units. At the same time, according to the prepared environmental audits, almost all enterprises of an industrial character exhibited environmental damage.

3) Evaluating the purposefulness and economy of the implementation

Criteria for evaluating the purposefulness, economy and effectiveness of the implemented remedies were established on the basis of the provisions of the environmental agreements between the Fund and the investor, on the basis of specification of risk factors from the feasibility study and their application in the contracting agreements and especially on the basis of the technical and economic indicators of the individual project plans for the decontamination. In the framework of audits of the individual investors in the decontamination, the following was verified on site:

On the basis of the relevant Government decision, the decision of the bodies of the state administration was fundamental for determining whether an environmental burden from the past that it was necessary to remedy was involved, and the target state that was to be achieved. This administrative decision determined the amount of costs for remedying the environmental burden from the past. A decision for remedying environmental burdens from the past was issued by CEI in the vast majority of cases only to entities that so requested, because they had financial funds ensured for the decontamination on the basis of an agreement with the Fund. In fact, in some cases, the decision was even issued after preparation of the project plans for the measures for a remedy. CEI thus often issued administrative decisions for remedy of environmental burden from the past to entities where the environmental damage was not the most serious according to the individual lists. Simultaneously, the basic documents for the decision-making by the state administration included studies and risk analyses obtained by the new owner of the property, for whom the work was frequently carried out by the future contractors for the decontamination work.

It was found that, in a number of cases, the financial utilized, in spite of the fact that the target parameters for the decontamination given by the administrative decision were not attained. In fact, it was suggested

that the work be terminated with the justification that achieving of the originally established targets of the decontamination would not be realistic or that this would no longer be effective in relation to the partial improvement in conditions.

Both the Fund and ME had the right to control whether the new owners complied with the conditions of the environmental agreement and whether they carried out the work paid for by the Fund according to the project plans for measures for a remedy. The Fund carried out control through its own employees; however, a considerable portion of the factual and financial audits was shifted to "supervisory" organizations. It was found in the audits that the tender procedures for external companies for supervisory activities were carried out by the Fund in a nontransparent manner. Cases were even found of direct personnel connection between the contractor and the supervisory organization.

Tender procedures for contractors for all activities announced by the new owners (especially studies, risk analyses and the actual decontamination) were carried out according to the internal methodical materials of the Fund, which the new owners were obliged to respect. In the tender procedure, evaluation was to be carried out according to the general criteria of financial prudence (comparison of the unit prices for comparable work, etc.). Cases were found in which the tender procedure did not proceed in accord with the instructions of the Fund and thus in accord with the environmental agreement. In some cases, the qualifications of the contractors and/or their ability to carry out highly specialized activities were not suitably evaluated in the tender procedure.

In about 50% of the audited projects, there was a significant increase in costs during the implementation of the work, in spite of the fact that considerable sums were expended from the means of the Fund for study and preparatory work, and especially for risk analysis. Although no single case was documented where doubts would be expressed about the work of the contractors for these activities, nonetheless, the changes are justified through new facts found by the contractor during preparatory and decontamination work. In most cases, the new owner, the Fund and ME agreed to the increase in costs, i.e. these are the parties that participated in all the previous approval processes.

Cases were found in which the new owner did not proceed in accord with the environmental agreements, including use of the funds improperly or for some other purpose. Some investors attempted to use funds, not only for dealing with environmental burdens from the past, but also for financing future development of the company.

4) Evaluation

It followed from evaluation of the two audits particularly that an effective control mechanism was not created for maintenance of financial prudence in the entire process of payment of the costs of remedying of environmental burdens from the past from the means of the Fund. The new owners of privatized enterprises responsible for compliance with administrative decisions had no stake in prudent use of financial funds. The financial limit, that the new owners had available on the basis of the relevant Government decision, exceeded the actual requirements in the vast majority of cases. Because the investors did not participate in any way in the costs of the decontamination work, they thus did not exert any pressure on expenditure of funds with the greatest prudence. Similarly, the process of approval of project plans for remedial measures by the Ministry of the Environment and the Fund also did not provide a full guarantee of the most economical use of the funds because of the complexity of the subject and the difficulty of verifying information submitted by the new owners.

Following the first completed audit, the Government required that the relevant authorities propose a more effective means of remedying environmental damage. It follows from assessment and evaluation of the

proposal prepared, carried out in connection with the findings of the audit, that the proposal did not introduce new approaches, and did not address basic problems, such as, e.g., enforcing of environmental priorities and achieving economy in management of funds. Only some individual points lead to a slight improvement in the procedures formerly employed, as was found in a subsequent audit.

Summary of the Audit of Municipal Environmental Management in Nueva San Salvador (El Salvador)

Theme: Sustainable Development

Author: Manuel Villalobos

Summary of the Audit of Municipal Environmental Management in Nueva San Salvador

Libertad Department, El Salvador

Environmental management is a political, technical and administrative process carried out by local governments, involving permanent coordination with the different municipal sectors for the conservation, protection, restoration and adequate use of the environment and its natural resources, under the framework of sustainable development.

Aware of serious environmental degradation and the fact that environmental audits can improve the use of resources, the Auditor General of El Salvador, through the Social and Environmental Auditing Directorate, has planned the first environmental audit of a municipality, to provide it with guidance on how to direct its efforts to improve the quality of life of its citizens.

To determine the scope of the audit, from among four municipalities in the metropolitan area of Greater San Salvador, we selected a municipality that had an environmental unit, protected zones, watersheds, a municipal market, a municipal slaughterhouse, urban and rural cemeteries, population of over 100,000, human settlements, housing developments, sewage treatment plants, industry and commerce, historic centre, solid waste management, and other features. We chose Nueva San Salvador, 12 kilometres away from the capital city, for the environmental management audit.

The methodology used

a. A general examination was performed, based on documents, interviews and physical inspections of rural and urban areas, in order to learn what the municipality does in the area of sustainable resource management.

b. A plan was prepared that summarizes the procedures to be followed in determining the preliminary lines of investigation and factors whose evaluation could be potentially important.

c. The preliminary investigation was divided into management areas, in order to gain a clearer idea of the functions and environmental aspects for which each area is responsible.

d. Questionnaires on environmental aspects were prepared to learn about the duties of each area, documenting each procedure.

e. A narrative account was prepared of the interviews, completing them with paperwork.

f. Visits were paid to corroborate the work done by the management areas in environmental aspects.

g. Interviews were held with people living in urban and rural areas to discover whether city hall has close ties to the communities and whether it solves their environmental problems.

h. Photographs were taken of works performed and works omitted by the municipality.

i. Physical visits were paid to complete the questionnaire to determine the auditing risk for each management office; the risk is based on what the offices are supposed to do as part of their tasks and what the law requires them to do.

j. A report was prepared on the strengths and weaknesses of the management offices that were evaluated.

k. A planning memorandum was written, which includes all the preliminary lines of research and environmental problems detected, and subsequently a decision was made regarding which projects would be evaluated.

l. As the final step, programs were prepared for each project to be carried out.

Shortcomings found

a. The municipality has no technical study that determines its vulnerability to a series of environmental components, which it can use as a guide for strategic planning under a framework of sustainable development, and for channelling its efforts and resources into environmental improvement and management, as administrator of those resources.

b. The municipality has no internal environmental legislation for watershed management and control.

c. The municipality has not implemented education programs to prevent environmental deterioration.

d. There is a clear split between the municipal government and the central government, which do not pool their efforts to improve the quality of life of citizens or create a sustainable development plan for future generations.

e. The management offices do not act in function of the sustainability of resources in protected areas, land management, pollution of rivers and streams, air pollution, or preparation of an environmental study for the municipality. They do not state what steps they have taken to counteract the effects of pollution caused by any of the sources that cause it.

f. There is no planning for the planting of ornamental trees in green areas and no maintenance of those areas by the municipality.

g. There are no plans to raise the awareness of rural and urban communities regarding environmental conservation.

h. Employees who collect and transport solid waste do not have equipment to prevent them from coming into direct contact with the waste, as a means of disease prevention.

i. There are many focuses of infection and no actions have been taken to prevent contamination.

j. There is no office where citizens can lay complaints about pollution caused by individuals or companies.

k. The composting plant does not have suitable infrastructure, there is no collection area, employees do not have equipment to protect themselves from gasses produced by the compost.

l. The Pequeña Inglaterra community has no electric power and the well it uses for its water supply is contaminated with magnesium and fecal matter, according to laboratory tests.

m. No risk mitigation measures have been carried out on the streets of the Las Colinas settlement, which was seriously damaged by the earthquake in January 2001. Although a portfolio [of projects] and financing have been approved by the Social Investment and Local Development Fund (FISDL), an impasse exists because city hall has not wound up the earthquake project financed by FISDL in 2001.

n. More than two years have passed since the earthquakes and there are still two human settlements where conditions are subhuman; they are still living in temporary shelters erected in the wake of the emergency.

o. Not enough attention is paid to the cantons, and the construction and improvement of access roads to most of them has been neglected and they lack basic water, electricity, trash collection and transportation services.

p. The sewage treatment plants are not operating and there is no control over them.

q. The municipality has no land development plan.

r. There are no regulations governing administration of the market, the slaughterhouse or the municipal cemetery.

s. Street vendors obstruct the main entrance ways and pedestrian access to the market.

t. There is no quality control by the Ministry of Public Health to verify the quality of the meat produced at the slaughterhouse.

Impact

The municipality has considered making short- and long-term changes based on the shortcomings found, since they all have to do with improving the quality of life of its inhabitants. It is attaching greater importance to the environment as it relates to the sustainability of resources.

Conclusions

1. The results of the present audit show that the environmental management of the Municipality of Nueva San Salvador is not effective or efficient, since it lacks sufficient elements to generate and promote sustainable development of communities. It is also necessary for its environmental policy to consider the elements that make up the environment as a whole, as established in the environmental law. It should use strategies to communicate with other agencies to improve environmental efforts.

2. Audits of this type require a change in attitude by auditors and the employees of the entities that are audited, since the results are not just based on failure to obey the rules. They also call for activities or processes that should be carried out to reduce environmental contamination, many of which are not included in any legislation, but which respond to measures that need to be performed to improve the quality of life.

3. To achieve a sustainable environment, there needs to be a great deal of interaction between the inhabitants and administrators of the commune, so that together they can comply with the plans and programs that the municipality has decided to carry out to obtain a healthy environment and for the regeneration of resources.

4. To perform audits of this kind, an academically-trained and technologically-equipped technical team is required, that can help to obtain, transmit and technically shape the results.

5. Since the planet earth is our only home and until we discover another system of life, we must continue with environmental management audits to ensure that the officials responsible for administering public resources do so in a sustainable fashion, so that future generations can live in a less-polluted world.

The preservation and management status of BDDG (Korea)

Theme: Sustainable Development

The preservation and management status of BDDG

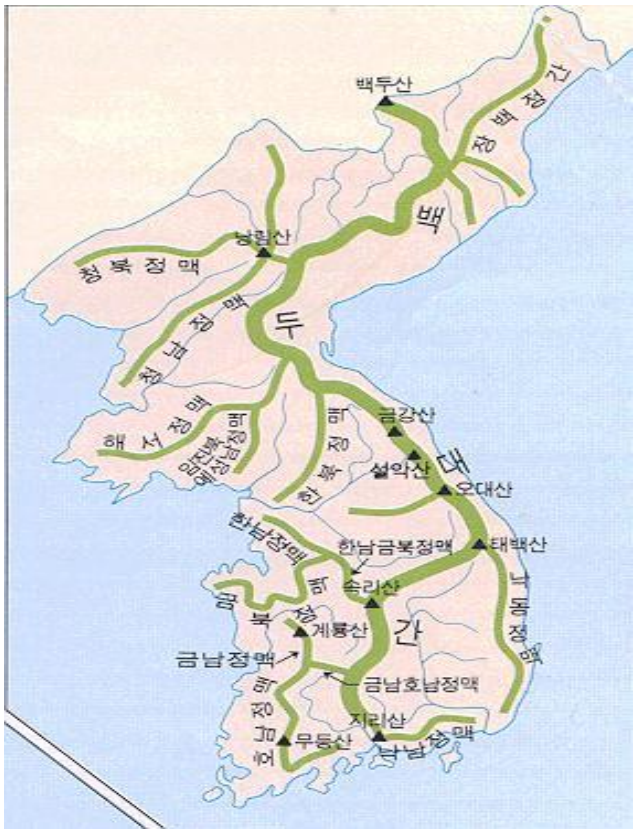
(Sustainable Development)

BAI, Republic of Korea

1. The outline

Board of Audit and inspection (BAI) conducted a inspection on 15 government institutions including the Ministry of Environment and the Korea Forest Service to check the preservation and management status of BDDG (Baek-Du-Dae-Gan, The Great Baekdu Mountain Range, the backbone of the Korean peninsula) from July to Sep. , 2002.

The Great Baekdu Mountain Range (length: 680Km, dimension: 27.5% of the South Korean territory) which is the central eco-axis that connects rivers, wetlands, tidal flats, islands and dunes is to serve as one of three major axes of Korea's ecosystem including the demilitarized zone (DMZ) and the coastal and island regions.



In this inspection, to preserve soundly BDDG, the Great Baekdu Mountain Range(from the Baekdu Mountain to the Chi-ri Mountain), treasure-house of Korean peninsula's natural ecosystem and the main source of rivers such as the Han river and the Nak-dong river, from various developments and injured behaviors, we evaluated the appropriateness of various implementations of the Ministry of Environment and the Korea Forest Service' duties and conducted field studies on 8 cities and provinces and 5 National Parks including the Seol-ak mountain and recommended several alternatives.

2. The Outcomes of preservation and management of BDDG so far

The Korea Forest Service assigned a specified range apart from the top of BDDG as a "restricted area of forest form and nature's change" to restrict various development behaviors and continued to do investigations on forest ecosystem and research projects to manage BDDG comprehensively and systematically. Also they appointed 40 superior forest ecosystem regions (dimension: 111 ha) such as a “yew tree” stock area as a “reserved forest heredity resources zone” and promoted restoration works to damaged forest areas.

On the other hand, the Ministry of Environment designated 700m width areas from the top of BDDG as an ecological line and makes it use as data sources for environmental impact assessments and pre-environmental characteristics examinations.

They also have done a 3 year research project with the content of the control zone’s establishment to prepare for the efficient management plan and they have constructed and managed the 2 pathways for wild animals at the Seol-ak Mountain and the Chi-ri Mountain to restore the ecosystem which was cut off by roads, etc.

Also a few provincial governments such as Gang-won-Do and Choong-chung-Book-Do investigated the natural resources and damaged-forest conditions in their regions to protect them from bad influences of development in BDDG regions and promoted research projects to establish the management plan for BDDG.

Finally, each national park office such as Seol-ak Korea National Park Authority consolidated damaged mountain climbing paths and tried to prevent from forest fire to preserve the national and provincial parks.

3. Main Audit results

Emphasize harmony between environmental conservation and economic and social development

This inspection is one of our efforts to contribute “Johannesburg objectives” by making corresponding government institutions consider the harmony between environmental conservation and economic and social development when they are making and implementing government policies especially in areas which have a high preservation value like BDDG.

(1) Improper evaluation on the economic value of natural assets which is destroyed by various development plans

As the Ministry of Environment have worked about environmental impact assessments, it is desirable to investigate the propriety of projects by considering the economic value of damaged natural assets when the development projects are set up. Furthermore it is advisable to investigate whether the economic value of natural assets is considered properly when they conduct environmental impact assessments.

The research about the economic value's estimation of natural assets and applying it to environmental impact assessments is not enough and applying methods to decision making by valuating the economic value of natural assets rationally have not been developed yet except the research about seashore's economic value according to the construction of a Sae-Man-Gum tide embankment: Minimum value 9 million won to Maximum value 20 million won per ha and The estimation of environmental damaged cost according to the construction of Dong-Gang Dam : 111,800 million won yet.

When the environmental impact assessments and pre-environmental investigations are conducted, they have been presenting opinions only about the reduction method of environmental damage in the development plan by evaluating the project's appropriateness without considering the cost of damaged environmental value like the economic value of damaged natural assets. Therefore they have not been coping with various development projects in BDDG areas which have a high preservation value.

In its recommendations, BAI told the Ministry of Environment to make project operators to evaluate the appropriateness of project by developing evaluation methods of the economic value of natural assets and to study plan to consider it as a evaluation basis when they conduct the environmental impact assessments.

As a result, the Ministry of Environment requested the Institute of Korea Environment and Evaluation(KEI) to study about these matters and KEI are now doing research, The study of economic analysis about environmental impact according to large development projects.

(2) The insufficiency of pre-propriety investigation and environmental quality assessment

As the Ministry of Planning and Budget begin to use the results of pre-propriety investigation including environmental quality assessment when they evaluate the projects which include construction works with the cost of more than 50 billion won.

Even though it is desirable to be able to exam the project's propriety and efficiency by considering the economic value of environment and restoration cost of ecosystem when they conduct a pre-propriety investigation on dam and road construction works which bring about a huge environmental damage and it is also advisable to decide the propriety and whether or not the project is carried out by considering environmental quality's evaluation when they exam developmental projects especially in BDDG which has a high preservation value of natural assets

In its recommendations, BAI told the Ministry of Planning and Budget to study the methods to weight more on environmental evaluation factors by considering the development project and intended region's characteristics in the pre-propriety investigation when the construction works are conducted in the regions with a high preservation value.

As a result, the Ministry of Planning and Budget is studying to apply environmental assessments in pre-propriety investigations

(3) Insufficiency of appropriate rules of environmental assessment in road construction works

As the Ministry of Environment set a minimum scale of construction works in Article 2 of an Enforcement Ordinance of Influence Evaluation about an environment, traffic and disaster, they set to make developers receive a environmental assessment on road construction works in an attached table of Article 2 in an Enforcement Ordinance of Influence Evaluation about an environment, traffic and disaster only when the works are more than 4 Km-length in case of new one and 10 Km-length in case of

expanded one. However they did not fix a scope of an environmental assessment when new and expanded road construction works are conducted simultaneously in an above article.

To correct these problems, BAI told the Ministry of Environment that the Article 2 of an Enforcement Ordinance of Influence Evaluation about an environment, traffic and disaster should be revised to include the case that new and expanded road construction works above a certain scale are conducted.

As a result, the Ministry of Environment is now preparing to amend an Enforcement Ordinance of impact assessments about environment, transportation, disaster to correct this problem.

(4) Inappropriateness of restoration system on damaged forest

As the Korea Forest Service operates a restoration system which set forest restoration fees for developers such as owners of the stone quarrying rights and mining rights to deposit for a forest's damage, although it is reasonable to make developers deposit more fees because a restoration cost and the public loss of forest damage is higher when they develop ecologically superior regions like BDDG, the dimensions and gradient on a ground plan are only considered in a criterion of restoration cost's estimation.

Therefore the restricting functions against developments are not working properly in forests where public value is high because the developers did not pay a enough restoration fee. And the incised slopes as a result of mining or road constructions are neglected because most of restoration works are conducted without refill works in the stone quarrying and mining areas

Also, it is necessary for the Korea Forest Service to prepare fundamental alternatives to prohibit improper restorations as a result of not considering the ecosystem and scenic beauty of forests, they have not prepared fundamental alternatives such that developers have to pay a real cost of restoration and forest restoration works should be conducted by proper expert institutions

In its recommendation,

BAI told the Korea Forest Service to study the ways how to make developers pay a real restoration cost against the form and nature's change by considering the quantity of mining and stone quarrying and scenic beauty, ecosystem, etc.

We also told the Korea Forest Service to study a plan to strengthen a supervision and management to restore damaged forests properly.

As a result, the Korea Forest Service is preparing to consider real restoration cost of damaged nature by amending the Enforcement Ordinance of Forest management.

Sustainable Development and the Role of the New Zealand Office of the Controller and Auditor-General (New Zealand)

Theme: Sustainable Development

Sustainable Development and the Role of the

New Zealand Office of the Controller and Auditor-General

March 2003

Introduction

Sustainable development is 'development which meets the needs of the present without compromising the ability of future generations to meet their own needs'. This paper briefly describes what the OAG is doing in relation to the emerging sustainable development agenda.

Why is the OAG interested?

There are a number of factors driving the OAG's involvement in sustainable development. These are:

Triple Bottom Line Reporting[1] – there has been a trend in recent years for organizations (in both the private and public sectors) to report not only their economic performance, but also their performance in relation to the social and environmental impact they have in carrying out their activities. More recently some organizations have added a fourth factor – the cultural impact – to the way in which they report on their performance. The OAG is responsible for auditing some of these organizations and there is, therefore, an expectation that we will give an opinion on the validity of these aspects of their annual reports.

The Local Government Act 2002 – this legislation sets out what local authorities are required to report. It states:

"An annual report must, in relation to each group of activities of the local authority, describe any identified effects that any activity within the group of activities has had on the *social*, *economic*, *environmental*, or *cultural* well-being of the community."

As the auditor of local authorities, the OAG will therefore need to be in a position where it is able to give assurance to Parliament on these reports[2].

Sustainable Development for New Zealand: Programme of Action – this document was released by the New Zealand Government in January 2003, building on the work done leading up to and at the World Summit on Sustainable Development in Johannesburg in August 2002. The document puts forward some key issues and an approach to strengthening decision making to infuse sustainability into policy

[1] Triple Bottom Line Reporting is increasingly being referred to as sustainable development reporting.

[2] Improving the standard of public sector reporting is one of the key aims of the OAG.

development across all of Government. The key issues that have been identified for this first progamme of action are:

- water quality and allocation
- energy
- sustainable cities
- child youth and development

For each of these issues there is an overarching goal, a number of desired outcomes and further details of what the specific programmes of action will involve. The document also contains details of what work will be done to develop indicators that can be used to measure progress towards achieving these sustainable development goals. It is likely that the OAG will undertake performance audit activity sometime in the future to assess the performance of government departments in meeting these sustainable development goals.

The OAG's own economic, environmental and social footprints – as the OAG becomes more involved in sustainable development, it will need to demonstrate its commitment to the principles of sustainable development.

What is the OAG doing?

Sustainable Development Working Group – this group has been established within the OAG to keep a watching brief on the emerging sustainable development agenda. Members of the group attend sustainable development seminars and conferences and the group meets on an occasional basis to discuss new issues and share knowledge.

Triple Bottom Line Pilot Study – the OAG took part in this study that was coordinated by the Ministry for the Environment. The study involved two multi-agency groups (one local and one central government) that were established to facilitate organizations to work together to identify and develop methodologies for producing a triple bottom line report.

Expert Advice - the OAG has contracted an external advisor with expertise in triple bottom line/sustainable development reporting to help the office develop its strategy for sustainable development. The advisor is currently focused on developing a framework for the capability required by the OAG to be able to give assurance to Parliament on the sustainable development reports of central and local government organizations.

OAG Internal Reporting – the OAG is currently examining its own policies and procedures to identify where improvements in its economic, environmental and social performance might be made.

Challenges

A key challenge facing the office is the need for the OAG to understand the sustainable development agenda and all that it entails, but not to be seen to be leading the issue.

The OAG is very keen not to endorse a template that organizations can use to produce a sustainable development report as this will restrict innovation and creativity. Such a template would be likely to lead

to organizations taking a 'tick and flick' approach to sustainable development reporting – i.e. organizations not being fully committed to the analytical process required to produce a sustainable development report.

Another challenge that has yet to be overcome is whether the OAG should give an opinion on the process an organization has gone through to produce a sustainable development report or on the report itself. The latter approach will require thorough analysis of the indicators used by an organization to measure its performance and of the quality of the information used to support these indicators.

For further information on sustainable development and the role of the OAG please contact:

gary.lewis@oag.govt.nz