

*EUROSAI Working Group
on the Audit of Funds Allocated to Disasters and Catastrophes*



**GOOD PRACTICE RECOMMENDATIONS
FOR CONDUCTING AUDITS IN THE FIELD
OF PREVENTION AND CONSEQUENCES
ELIMINATION OF FLOODS**

2020

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2020

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GLOSSARY OF TERMS

River basin – the area of land from which all surface run-off flows through a network of streams, rivers and, possibly, lakes into the sea at a single river mouth, estuary or delta.

Floods Directive – Directive 2007/60/EC on the assessment and management of flood risks.

Floodplain – land areas adjacent to rivers and streams that are subject to recurring inundation.

Flood – a large amount of water temporary covers an area, includes river floods, flooding caused by mountain streams, sea currents, etc. Flood types: fluvial - due to overflow of rivers; pluvial - due to heavy rain, in excess of what drainage systems can absorb; coastal - due to extreme tidal levels, storm surges, or arising from wave action.

Green infrastructure – is a planned network of natural or semi-natural spaces, in an urban or rural setting, designed to tackle climatic challenges while supporting or restoring natural and ecological processes. An example of green infrastructure, in the context of this report, is the restoration of a floodplain to prevent flooding of vulnerable areas.

Flood zone – is a geographic area which is flooded (or could be flooded) during flood.

Flood hazard map – shows the annual exceedance probability and likely extent of flood events. It can also show occurrences associated with floods that can cause and/or influence the damage.

Flood risk map – shows the potential adverse consequences of flooding in terms of the number of people affected, the impact on economic activity and environmental risk.

Flood hazard – the probability of a potentially damaging flood event occurring within a given period.

Flood risk management plan – a document setting out appropriate objectives and a set of measures aimed at preventing, protecting, preparing, forecasting and providing early warning for certain areas within the area of the river basin.

River basin management plan – a document containing a status analysis and a set of measures to achieve the goals set for each river basin district within the established period.

Area of potentially significant flood risk – areas identified as being at potentially significant risk of flooding by rivers, rain, groundwater, sea and natural or artificial lakes.

River basin district – an area of land and sea consisting of a number of neighbouring river basins together with their associated ground waters and coastal waters.

Water Framework Directive: Directive 2000/60/EC of the European Parliament and of the Council establishing a framework for community action in the field of water policy.

Flood risk management – measures to identify, analyze and mitigate previous flood risk.

PREAMBLE

Good practice recommendations for conducting audits in the field of prevention and consequences elimination of floods (hereinafter – the Recommendations) developed by the EUROSAI Working Group on the Audit of Funds Allocated to Disasters and Catastrophes, within the framework of Strategic Goal 2, “Professional Development”, as defined in the 2020 Strategic Plan of the Working Group.

The purpose of this document is to assist the Supreme Audit Institutions in improving the quality of carrying out audits on the issues of prevention and consequences elimination of floods by selecting, summarizing and disseminating good practices in conducting audits in this area.

During its development, the task was not to provide a full description of the procedures that the auditor should carry out in conducting audits on the issues of preventing and eliminating the consequences of flooding. We have focused our attention on how to carry out an audit that can be the subject of a study and what goal can be achieved through these audits.

The Recommendations logically complement and specify the Best Practices Recommendations for the Audit of Funds Allocated to Prevention and Consequences Elimination of Disasters, developed within the EUROSAI Task Force on the Audit of Funds Allocated to Disaster and Catastrophes, and approved by IX EUROSAI Congress in 2014.

Based on the provisions of the International Standards of Supreme Audit Institutions (ISSAI), documents of international organizations on disasters, the Recommendations supplement and specify the standards that the SAIs apply in their activities, including examples of good practice based on the results of audits.

Having developed the Recommendations, the Working Group:

- analyzed and summarized the materials and presentations provided by the speakers at the annual meetings of the Working Group;
- maintained [the database of the audits on natural and man-caused disasters and catastrophes in Europe](#), analyzed the provided reports on the results of conducted audits on prevention and consequences elimination of floods;
- reviewed reports on the results of conducted audits on prevention and consequences elimination of floods, downloaded in [the audit database on the EUROSAI website](#);
- studied documents of international organizations on catastrophes.

The Recommendations consist of three chapters, which are sufficiently detailed, with examples from the reports on the results of conducted audits on prevention and

consequences elimination of floods; the following questions are set out:

Chapter 1 – the scope of audits on the prevention and consequences elimination of floods;

Chapter 2 – peculiarities of the audit in the field of prevention and consequences elimination of floods considering the provisions of ISSAI series 5500¹;

Chapter 3 – international audits in the field of prevention and consequences elimination of floods.

In addition, the Recommendations contain Glossary of Terms relating to flood prevention and mitigation issues, and List of materials and documents used in the development of Recommendations.

¹ International Standard of Supreme Audit Institutions on Audit of Disaster-related Aid are under review (as of October 2020).

INTRODUCTION

Flood is a large amount of water temporary covers an area. This concept includes river floods, floods caused by mountain streams, periodic Mediterranean currents, sea flood in coastal zones. The consequences of flood are the destruction of housing, crops, the death of cattle and people.

Flood is one of the most expensive natural disasters². A study by the Centre for Disaster Epidemiology Research has shown that flooding was the most common type of disaster in 1994-2013, accounting for 43% of all events. Flood has negatively impacted the lives of more people than all other disasters together - 2.5 billion people, injured more homes around the world, more schools and hospitals than any other type of disaster.

In addition, recently the number of floods began to increase. According to a study conducted by the Joint Research Centre of the European Commission and published in 2018 in the journal Nature Climate Change³, global warming will lead to an increase in human casualties and economic damage caused by floods in subsequent years. This study revealed that with a temperature rise of only 1.5 °C, depending on the socio-economic scenario, human victims of flooding can grow by 70-83%, direct damage - by 160-240%, with a relative decline in welfare of 0.23 - 0.29%.



Flood in Bosnia,
February 2019, photo
Federalna Uprava
Civilne Zaštite

According to data published continuously on the website <http://floodlist.com/europe>, in Europe flood is also the most extensive and most frequent type of catastrophe that causes human casualties every year and leads to colossal damage. In May-June 2016, more than 47,000 people were injured in floods in Germany, with losses of €1 billion.

² The Human Cost of Natural Disasters 2015: A Global Perspective (Centre for Research on the Epidemiology of Disasters, 2015).

³ <https://www.nature.com/articles/s41558-018-0257-z>.

Practically the same damage was caused by flood in June of that year in France, in which 18 people died. And in 2013, Germany faced a flood that caused a loss of €13.5 billion.

Data only for 2019:

- **January** - four people died after landslides and floods caused by heavy rains in northern Spain;
- **February** - record-breaking rains in Crete left four people died;
- **June** - 260 people were evacuated in Romania due to flooding caused by heavy rains;
- **August** - heavy rainfall led to flooding in the UK. A number of settlements were flooded, 6.500 people were evacuated.
- **November** - the Italian city of Venice experienced the second worst flood during the regular fixation of water levels since the late 19th century. The water level in the Venice lagoon reached 194 centimetres above average. About 82 % of the island's area was inundated. Two people died; the damage costs ran into several hundred million euros.
- **December** - 12 people became victims of the powerful cyclone "Fabien" in Europe. The landslides and flooding caused the closure of the roads; hundreds of people were evacuated from flooded homes.

The high intensity of flood is not left out of the attention of the governments and the public of European countries. Governments, non-governmental organizations, donors are constantly allocating significant amounts of funds to prevent floods and to eliminate their consequences. In turn, the use of funds is a risk factor, may be due to various types of violations, and the measures taken are not always effective and efficient. That is why Supreme Audit Institutions pay considerable attention to the issues of prevention and consequences eliminations of floods and keep this issue under constant control.

The high priority of such issues was confirmed by [the analysis of the results of the questionnaires of the Supreme Audit Institutions - members and observers of the EUROSAI Working Group on the Audit of Funds Allocated to Disasters and Catastrophes](#) carried out in 2015, which showed that prevention and consequences elimination of floods to be one of the most urgent issues for questionnaires both for conducting international audits and for developing good practice recommendations. Based on the this survey results, the EUROSAI Working Group on the Audit of Funds Allocated to Disasters and Catastrophes decided to include the development of good practice recommendations for conducting audits in the field of prevention and consequences elimination of floods in the 2020 Strategic Plan of the Working Group as a measure of implementation Strategic Goal 2 "Professional Development".

CHAPTER 1.

THE SCOPE OF AUDITS ON THE PREVENTION AND CONSEQUENCES ELIMINATION OF FLOODS

The subject of audits carried out in the area of prevention and consequences elimination of floods, depending on the purpose of the audit and the authority of the SAI, could be:

- legal framework in the field of prevention and consequences elimination of floods, including directives of the European Parliament and the Council of the European Union, laws, decisions of governments, provisions of relevant bodies and services;
- national and/or regional strategies in the field of prevention and consequences elimination of floods and special flood risk management plans;
- target programs in the area of prevention and consequences elimination of floods and mechanisms for their implementation;
- financial and material resources, allocated and used for prevention and consequences elimination of floods, including humanitarian aid;
- the activities of governments, local authorities, special bodies and services in the field of prevention and consequences elimination of floods, decision-making mechanisms, division of responsibilities and coordination between the authorities responsible for preventing, preparing, responding to and overcoming the effects of floods.

In order to assess the effectiveness and efficiency of measures, the main characteristics of the effects of floods should be taken into account:

- the population that was in the flood zone - the number of deaths, the number of victims, the number of people left behind, etc.);
- the number of settlements in the flood zone (cities, urban-type settlements, rural settlements, completely flooded, partially flooded, under flooded);
- the protected environmental areas (national parks; NATURA 2000 etc) flooded;
- the cultural heritage sites in the flood zone;
- the number of objects in various sectors of the economy in the flood zone;
- the length of railways and roads, power lines, lines of communications and communications in the flood zone;
- the number of bridges and tunnels flooded, destroyed or damaged as a result of floods;
- the number of dwellings flooded, destroyed or damaged as a result of floods;

- the area of agricultural land flooded;
- generalized characteristics of the consequences: the volume of losses due to flooding.

1.1.

LEGISLATION, WHICH REGULATES THE FIELD OF PREVENTION AND CONSEQUENCES ELIMINATION OF FLOODS

In view of rising flood risks, in 2007 the EU adopted the Directive 2007/60/EC of the European Parliament and of the Council of 23 October 2007 on the assessment and management of flood risks. Its purpose is to reduce and manage the risk of negative impacts of floods on human life and health, the environment, cultural heritage and economic activity. The Directive compels Member States to carry out a preliminary flood risk assessment and identify areas of potential significant flood risk, the drawing up of flood risk maps for such areas by 2013, and the approval of management plans by 2015 flood risks, aimed at prevention, protection and readiness by 2011.

In addition, EU member states should coordinate their flood risk management practices in shared river basins and should not jointly take measures that would increase the risk of flooding in neighbouring countries. Member States shall take into account long-term development, including climate change, and sustainable land-use practices in the flood risk management cycle considered in this Directive.

The measures taken to implement the Floods Directive should be in line with Directive 2000/60/EC of the European Parliament and of the Council of the EU of 23.10.2000 (Water Framework Directive), which requires the development of a management plan for each river basin area in order to achieve a favourable environmental and chemical situation, which will help to mitigate the negative consequences of floods. However, the main objectives of the Water Framework Directive are not to reduce the level of flood risks and does not take into account the evolution of these risks due to climate change.

In addition to the Floods Directive, there are national policies and national laws that target flood risk management.

The audits, which are subject to the regulatory acts regulating flood prevention and response, focus on the adequacy of the legal framework on these issues and whether their approach is effective.

1.2.

DECISIONS AND MEASURES TAKEN FOR PREVENTION AND CONSEQUENCES ELIMINATION OF FLOODS

The measures taken to prevent and eliminate the consequences of floods can be divided into two categories:

- measures to prevent floods and to ensure preparedness for them;
- measures of emergency response and measures at the stage of reconstruction and recovery.

The floods related to climatic conditions are natural phenomena that, sometimes, can be inevitable. However, having prepared for them, it is possible to reduce significantly their impact.

The measures to prevent floods include the creation of a concept and practical action to reduce their risk through systematic work aimed at analyzing and controlling the causative factors of flooding, reducing vulnerability of the population and property, reasonable management of land resources and the environment and increasing preparedness for adverse events. The mechanisms of floods prevention and preparedness are:

- traditional flood protection solutions include dams, dikes, channels, storm surge defences and barriers in general⁴. Frequently made of concrete, such techniques are called grey infrastructure.
- restoration of floodplains, wetlands or river redevelopment, which can reduce the impact of flooding. Such decisions are called green infrastructure. Natural flood protection today is considered one of the main solutions. Creating water-based areas and protecting natural ecosystems in catchment areas are as important as a policy of consistent planning.
- other solutions that can reduce the impact of flooding. Such measures are called non-structural measures. Non-structural measures do not prevent the occurrence of flooding, but are aimed at mitigating their effects. Such measures may include:
 - awareness and risk assessment, including hazard analysis and vulnerability/capacity analysis;
 - promoting public and enterprise awareness of flood risks and providing appropriate guidance;
 - establishment and well-functioning of the warning system against floods, including forecasting, monitoring and informing;

⁴ Report of European Environment Agency № 14/2017 "Green infrastructure and flood management – promoting cost-efficient flood risk reduction via green infrastructure solutions".

- support in the preparedness for the management authorities, forces and means designated in the case of a disaster to carry out rescue and other emergency activities;
- effective response to emergencies and recovery plans after flooding;
- planning of control measures so that future changes do not increase the risk of flooding.

If, despite all the measures taken to prevent flooding, it happened, it is necessary that the response measures be taken as soon as possible, namely, the assistance of emergency services and state support was provided to save people's lives, to reduce the harm to their health, ensuring public safety and meeting the immediate needs of the affected population. Measures of the emergency response include:

- timely warning and constant informing of the population;
- search and rescue works;
- medical assistance;
- evacuation of people and animals;
- provision of food, water and housing to victims;
- sanitary and preventive measures;
- urgent financial assistance to the victim;
- clearing of the rubble;
- restoration of communications;
- construction;
- analysis, assessment and notification of damage caused by flooding.

Effective management at the emergency stage involves complex and coordinated actions of state, non-governmental and private organizations, including international ones, therefore, the co-ordination of measures, their adequacy and timeliness, as well as compliance with regulatory acts are drawn to the attention of auditors who are investigating decisions and measures taken to prevent and mitigate the effects of flooding.

Recovery and reconstruction is the restoration and, if necessary, improvement of the facilities, livelihoods and living conditions of the flood-affected population, including measures to reduce the risk of flooding.

Recovery and reconstruction activities are:

- recovery of work of basic services and production enterprises;
- recovery of transport infrastructure;
- construction of housing;
- taking measures for flood prevention.

1.3.

FUNDS ALLOCATED TO PREVENTION AND CONSEQUENCES ELIMINATION OF FLOODS

As indicated in the [ECA Special Report No. 25/2018, “Flood Directive: progress in risk assessment, while planning and implementation need to be improved”](#), flood risk management costs are financed both through the budgets of the Member States and through the EU budget. Data on flood costs is not collected systematically and is not communicated either in the Member States or in the European Commission.

According to a survey⁵ conducted among Member States on flood costs, the European Commission estimated that 17 Member States that had access to available information spent €2.5 billion per year⁶ on average over the four year period up to 2015, both from national sources and from EU funds.

According to the [Report of the Comptroller and Auditor General of Ireland “Strategic Planning for Flood Risk Management”](#), capital expenditure on flood risk management over the period 2005 to 2014 was €329 million, comprising major works at a cost of €242 million, strategic studies that cost €52 million and minor works that cost €35 million. In September 2015, the Government announced details of a €430 million six year programme of capital investment on flood defence measures as part of the Government’s overall Capital Investment Plan 2016 – 2021.

In the UK, ([the UK’s National Audit Office report “the Strategic Flood Risk Management”, 2014](#)) flood risk management is funded from several sources. During 2013-2014, the Department for Environment, Food & Rural Affairs has invested 606.2 million pounds in flood risk management activities. The Environment Agency conducts a calculation of the benefit-cost ratio from the funds allocated for flood risk management. The Agency anticipated it would achieve a programme benefit–cost ratio of at least 8:1 for its flood defence projects funded through grant-in-aid for the current spending review period. As of March 2014, it has achieved 9.5:1.

When conducting audits of funds allocated for the prevention and elimination of flood consequences, first of all, their sufficiency, timeliness, purposeful use and efficiency from the point of view of the received benefit are investigated.

⁵ “Common implementation strategy for the water framework directive and the floods directive (2009-2015) – Flood risk management in the EU and the floods directive’s 1st cycle of implementation”, p.207.

⁶ Based on information provided by Austria, Belgium, the United Kingdom, Denmark, Ireland, Spain, Italy, Latvia, Malta, the Netherlands, Germany, Portugal, Romania, Slovakia, France, Croatia and the Czech Republic, the European Commission estimated that €10 million was invested. in reducing the risk of flooding for four years. The calculation was based on the answers to question 5.14 of the questionnaire.

CHAPTER 2.

PECULIARITIES OF THE AUDIT IN THE FIELD OF PREVENTION AND CONSEQUENCES ELIMINATION OF FLOODS CONSIDERING THE PROVISIONS OF ISSAIs ON AUDIT OF DISASTER-RELATED AID⁷

2.1.

AUDIT ON FLOOD PREPAREDNESS

The SAI's disaster preparedness audit can cover all activities that prepare the community, the economy and the environment for a possible disaster, and those that not only mitigate their consequences, but also the risk of their occurrence, for example, reducing vulnerability and / or action natural threats⁸.

Preparedness for disasters involves many activities; this sector is multidisciplinary and requires the participation of many institutions and local, national and international bodies. Governments are required to use appropriate disaster management tools to facilitate the management and coordination of organizations and activities. SAIs should receive, understand and evaluate the legal framework as they affect disaster preparedness, general strategic national disaster plans, operational activities of local or specific plans and disaster information systems, in particular, the use and quality of geospatial information available to the government⁹.



The European Court of Auditors analyzed the Floods Directive (Special Report N°25/2018 “Floods Directive: progress in assessing risks, while planning and implementation need to improve”) to determine whether flood prevention, protection and preparedness under the Floods Directive were based on sound analysis and whether the approach employed was likely to be effective



Objective of the audit

Whether flood prevention, protection and preparedness under the Floods Directive were based on sound analysis and whether the approach employed was likely to be effective.



Audit scope

1. whether the Floods Directive had positive overall effects in establishing a framework for flood-related action;

⁷ International Standard of Supreme Audit Institutions on Audit of Disaster-related Aid are under review (as of February 2020).

⁸ ISSAI 5510 “The audit of disaster risk reduction”, parag.3.8.

⁹ ISSAI 5510 “The audit of disaster risk reduction”, parag.5.1.

2. whether Member States managed appropriately the financial resources used;
3. whether implemented their Flood risk management plans well; and
4. if they adequately considered some of the major future challenges.



Audit criteria

Audit criteria based on EU policy papers, legislation, Commission guidelines, studies and other publications, meetings with Member State authorities¹⁰, as well as from a pilot mission conducted to the Netherlands in September 2017.



Audit approach

There were reviewed existing literature and consulted experts in the domains of climate change and flood insurance.

Between October and December 2017, we conducted audit visits in selected river basins in the following eight Member States: Slovenia, Italy, Spain, Portugal, Romania, Bulgaria, Austria and the Czech Republic¹¹. In those river basins¹² also inspected 31 cofinanced flood-related projects¹³, on site to assess their compliance with the Floods Directive and the Flood risk management plans.

It was also assessed whether the European Commission¹⁴ had ensured adequate implementation of the Floods Directive and of flood-related action taken in other policy areas.

With spending under the FRMPs in the period 2016-2021 still at an early stage, this report focuses on the planned expenditure included in these plans and the European structural and investment funds programmes. Therefore, the report does not assess the overall effectiveness of the measures planned for the first cycle of the Floods Directive.

We excluded emergency and recovery action from the scope of our work, because we have already audited this area¹⁵, and it is, in any case, not in the remit of the Floods Directive.

¹⁰ In Luxembourg and France.

¹¹ We have visited the following river basins: - in Slovenia, the river basins of the Danube and North Adriatic (two projects visited); - in Italy, the river basin of the East Alps (three projects visited); - in Spain, the river basins of Miño-Sil and Galicia-Costa (three projects visited); - in Portugal, the river basin of Minho and Lima (three projects visited); - in Romania, the river basins of Arges-Vedea and of Dobrogea Litoral (four projects visited); - in Bulgaria, the river basins of the Danube and the Black Sea (four projects visited); - in Austria, the river basin of the Danube (five projects visited); and - in the Czech Republic, the river basin of the Danube (four projects visited)..

¹² Including the river basins in the Netherlands where we had our pilot mission (three projects visited).

¹³ There were selected the projects from lists compiled by the Member States. We aimed to visit recent projects implementing various measures addressing diverse flood types.

¹⁴ There were interviewed officials from the following Commission Directorates-General (DGs): DG ENV, DG CLIMA, DG REGIO, DG AGRI, DG ECHO and DG FISMA.

¹⁵ There were interviewed officials from the following Commission Directorates-General (DGs): DG ENV, DG CLIMA, DG REGIO, DG AGRI, DG ECHO and DG FISMA.



GENERAL CONCLUSIONS

We found that the Floods Directive had improved coordination between the Commission and the Member States, particularly through the supervisory and monitoring role of the Commission and the dedicated working group established as a forum for coordination and the sharing of knowledge and good practices. The Member States we visited acknowledge the positive role the Floods Directive has played in the standardisation of flood risk assessment and management.

At the same time, the implementation of flood-related action suffers from weaknesses in allocating funding. The sources of financing in the Flood Risk Management Plans were only partially identified and secured, and funding for cross-border investments was limited. In addition, the ranking procedures distributing these limited resources generally presented weaknesses and did not allocate money in accordance with the priorities established.

All Member States have begun implementation of the Flood Risk Management Plans, but improvements are needed. We observed that major future challenges remain concerning the much fuller integration of climate change, flood insurance and spatial planning into flood risk management.



Report of the Accounting Chamber of Ukraine
“Efficiency of the Flood Protection System of
Ukraine”, 2017



Objective of the audit

Estimation of the effectiveness of planning and implementation of flood measures defined by the National target program for water management development and ecological improvement of the Dnipro river basin for the period up to 2021, as well as the economy, productivity and efficiency of using the state budget funds allocated for the indicated measures.



Audit criteria

on the assessment of the effectiveness of planning and implementation of flood measures - assessment of the legality, timeliness and completeness of management decisions in planning and implementation of flood control measures, determined by the National target program for the development of water management and ecological improvement of the Dnipro river basin until 2021;

on the assessment of the efficiency of using budget funds:

- effectiveness of using budget funds - establishing a relationship between the performance of administrators and recipients of budget funds and the amount of funds used to achieve these results;
- effectiveness of using budget funds - determining the degree of compliance of actual results of activities achieved by managers or recipients of budget funds for the planned results;
- savings in the use of budget funds - establishing the state of achievement by managers and recipients of budget funds for the planned results through the use of the minimum amount of these funds or achieving maximum results with the use of the budget determined by the amount of funds.



Audit approach

Taking into account the requirements of Article 3 of the Law of Ukraine dated 07.07.2015 No. 576 “On the Accounting Chamber” during the audit, the International Standards of Supreme Audit Institutions (ISSAI) have been applied in part that does not contradict the Constitution and laws of Ukraine. In addition, during the audit, the General Recommendations on the Audit of Effectiveness of the Use of State Funds, approved by the Resolution of the Accounting Chamber Board No. 18 4 dated July 12, 2006, were used.

During the audit, the main focus is on the effectiveness of the implementation of the State Program. In addition, taking into account that the selected audit topic is complex and requires an integrated approach, additional elements of the compliance audit are used.

During the audit, the following methods were used:

- analysis and comparison of documents regarding the organization of work and implementation of tasks entrusted to the audit objects;
- analysis and comparison of legislative and regulatory acts of auditees;
- analysis and comparison of public and departmental reporting of auditees;
- interviewing officials of audit objects, interviews;
- receipt of documents at the written requests of the Accounting Chamber;
- analysis of the data of the previous audits of the Accounting Chamber concerning the chosen topic.



GENERAL CONCLUSIONS

It is found that in Ukraine legal and organizational principles of planning and implementation of flood control measures defined by the National Program have been established. However, in order to achieve the goals, certain clarifications are necessary and brought into line with existing legislation.

The Accounting Chamber recommend the Ministry of Ecology and Natural Resources of Ukraine and the State Agency of Water Resources of Ukraine to consider initiating amendments to the National Program in order to bring it into line with the requirements of the current legislation, to identify the National Program Coordinator, to amend the list of program implementers and to clearly outline the responsibilities of its customers and performers.

The audit found that the performance indicators determined by the National Program were not provided with financial resources. Thus, only two out of seven central executive bodies responsible for implementing the National Program received funds from the state budget for the implementation of its activities. In addition, the volume of allocated budget funds was insufficient (only from 7.2 to 12.1 percent of the amount determined by the program). However, even in the face of a shortage of funds, they were not fully utilized and partially repaid to the budget at the end of 2014 and 2015.

It was found that financing problems led to the impossibility of fulfilling all the planned performance indicators of the National Program. The number of unfinished construction projects has increased, despite that the construction of new facilities began. As a result, there was a lack of compliance with the terms of the introduction of objects into operation.

In this regard, the Accounting Chamber recommends that the Cabinet of Ministers of Ukraine focus on finding non-budget funds to finance the National Program. The State Agency of Water Resources of Ukraine is recommended to strengthen internal control over the effective use of budget funds in the conditions of their limitation.

In addition, the audit revealed the lack of a Methodology for assessing the effectiveness of the National Program, the use and protection of water and water regeneration, maps of threats and flood risks caused insufficient level of predictability of the development of floods, floods and flooding, as well as the impossibility of creating a modern, complete and integral anti-flood complex.

The Accounting Chamber recommend Ministry of Ecology and Natural Resources of Ukraine and the State Agency of Water Resources of Ukraine to develop a Methodology for assessing the effectiveness of the program, water use and protection and water reuse schemes, as well as maps of threats and flood risks, which will increase the predictability of floods, floods and flooding, and will contribute to the creation of a modern, complete and integrated flood the complex.

This will enable to attract additional state financial resources, provided for implementation of state investment projects.

At the same time, the results of the audit confirm that the flood measures envisaged by the National Program and carried out during 2014-2015 and the first half of 2016 did not have a significant impact on the development of the system of flood protection in the country. Management decisions related to the subject of the audit were not effective and timely, which resulted in the fact that the implementation of flood measures in 2016 actually stopped.

The funds of the state budget allocated to the implementation of flood control measures have not been planned and used effectively and efficiently. As a result, the planned performance indicators of the corresponding budget programs were not achieved. The abovementioned caused further increase in the cost of work in the future and led to the need for additional funding in this area.



[Report on Flood Risk Management in England of the National Audit Office \(2011\)](#)



Objective of the audit

To define the progress in the sphere of Flood Risk Management made since 2007 in England



Audit issues:

How important is Flood Risk Management?

How well were targeted the investment at risk of flooding?

What are the barriers to effective flood risk management planning?

How well do Department for Environment, Food and Rural Affairs and the Environment Agency manage the reform of flood risk management?



Audit approach

NAO conducted semi-structured interviews with the Department for Environment, Food and Rural Affairs and the Environment Agency, examined a number of documents from the Department and the Agency.

Semi-structured interviews with key stakeholders involved in flood risk management, including lead local flood authorities, Regional Flood and Coastal Committees, district local authorities, internal drainage boards, Association of Drainage Boards, and Association of British Insurers were conducted.

NAO examined the financial data used by the Agency for its capital and maintenance programme. The level of commitments for the mid-term plans and the amount of capacity funding provided by the Department for the lead local flood authorities was examined too.

Furthermore, an external flood risk management expert from the University of Bristol was appointed.



GENERAL CONCLUSIONS

According to the findings of the National Audit Office, the Agency has improved its knowledge of the condition of its flood defences, and targeted investment more effectively.

Giving greater responsibility and discretion to local authorities to identify risks, and raise and target funding, brings some significant challenges. If these challenges are not overcome, the Department's reforms will have failed to fulfil their potential to increase levels of investment in flood management and value for money to the taxpayer.



[Report on Strategic flood risk management of the National Audit Office \(2014\)](#)



Objective of the audit

To examine whether current arrangements for the strategic management of flood risk in England deliver value for money.



Audit issues:

Are the funding approaches sustainable?

How flood risk management activities are managed and delivered?

What optimal strategic flood risk management would look like?



Audit approach

Decision-making, management and communication were evaluated by:

- assessing improvements to the Agency's flood model;
- conducting interviews with Agency staff, flood risk management authorities and other government bodies;
- analysing management information provided by the Agency; and
- carrying out fieldwork visits to flood risk-affected areas.

- Financial sustainability were considered by:
- reviewing the cost–benefit approach for approving and maintaining flood risk management projects;
- analysing financial information about the allocation of Flood and Coastal Erosion Risk Management funding and spend; and
- gathering views of stakeholders through interviews and a call for evidence.



GENERAL CONCLUSIONS

The Department and Agency have limited resources to spend on maintaining and enhancing the standard of flood protection in England. The Agency has responded to these constraints by improving cost-effectiveness, and adopting methods for prioritising service delivery, which provide a healthy return on investment. On these criteria, the Agency is achieving value for money.

However, current spending is insufficient to meet many of the maintenance needs the Agency has identified for its assets. In the areas where maintenance has been deprioritised – typically, where there are a low number of homes – this will increase the danger of asset conditions degrading, so increasing flood risk. The Agency may be faced with decisions on whether to replace affected assets earlier than would otherwise be the case, or to let them lapse.

It is reasonable, based on recent experience, to predict a role for community and political pressure in how these decisions play out. (As a rule, our experience is that ad-hoc emergency spending is less good value than sustained maintenance). The impact of climate change will also continue to increase pressure on defences.

The NAO conclude that the achievement of value for money in the long term remains subject to significant uncertainty.



[Special report on Strategic Planning for Flood Risk Management of Comptroller and Auditor General \(Ireland\), 2015](#)



Audit scope

This examination considered the project management arrangements in respect of the pilot projects and the first of the national CFRAM studies, which commenced in the Shannon River Basin District in January 2011. It also assessed the management of the programme by OPW (Office of Public Works) and reviewed progress to date on the overall CFRAM programme.

In reviewing progress at the programme level, the focus is on the progress made by OPW towards achieving the deadlines set in the EU Floods Directive. For the purposes of this report, a pilot project or regional study is considered to be complete when the associated flood risk management plan has been finalised and published. A series of interim outputs may also have been produced e.g. flood hazard and risk maps, environmental reports, hydrology reports and hydraulics reports, all of which contribute to the development of the flood risk management plans.



GENERAL CONCLUSIONS

The Office of Public Works (OPW) is the lead State body for the co-ordination and implementation of Government policy on the management of flood risk nationally. OPW works in partnership with local authorities on structural flood defence and relief schemes and on strategic studies.

Current policy on flood risk management in Ireland has its origins in a review carried out by an interdepartmental group established in 2003. The group's report – published in 2004 – recommended that future policy should be based on managing flood risk at a river basin level. It also recommended the development of flood risk maps and flood risk management plans. Between 2005 and 2008, OPW commenced a series of pilot projects in advance of, and to inform, a planned national programme that would involve the preparation of flood maps and risk management plans for all river basins.

The EU Floods Directive, published in 2007, established a common approach across the EU to the assessment and management of flood risks. Because the approach proposed in the Floods Directive was consistent with the policy approach that had been adopted in Ireland, OPW was able to adapt the work already underway to meet the Directive's requirements.

In January 2009, OPW prepared an implementation strategy for a national 'catchment flood risk assessment and management' (CFRAM) programme. The CFRAM programme was to produce the required flood hazard maps, flood risk maps and flood risk management plans within the timeframe set out in the Floods Directive.

While OPW established structures to monitor project implementation, it was found that, in the case of the pilot projects, there was a lack of clarity over the precise roles of those oversight bodies. A steering group established to oversee the national CFRAM programme met regularly at the start of the process, but did not meet at all during a four year period up to November 2014. Similarly, a high level Interdepartmental Co-Ordination Group set up to oversee national coordination of flood risk management and flooding response met in the period 2006 to 2009, but did not meet thereafter until the group was reactivated in July 2015.

The aim of the pilot phase that commenced in 2005 was to test the proposed approach in advance of the rollout of a national flood risk management programme. Two pilot

projects were managed by OPW, and two were managed by local authorities. While there is some evidence of learning from the pilots being transferred to the national CFRAM programme, this did not happen in a formalised manner.

It was found that in case of the two pilot projects managed by local authorities, the examination found that no service level agreement had been put in place between OPW and the relevant local authorities prior to commencing the projects. The absence of such agreements can lead to difficulties in resolving project issues that may arise and can also increase the exposure of public bodies to costs in excess of those agreed at the outset.

An implementation plan prepared by OPW in March 2006 envisaged that the pilot testing phase would finish in 2007, and that the national programme would be complete by the end of 2011. The examination found that all four pilot projects reviewed ran significantly over their original schedules, with delays in relation to the aerial and ground survey work being a feature in each case.

The current status of the pilot projects reviewed is that final flood risk management plans have been published in two cases (river Lee and river Dodder) while a draft final plan has been published for another project (Fingal/East Meath). OPW has indicated that the remaining pilot (river Suir) will be completed as part of the South Eastern CFRAM study.

OPW met the first deadline set under the Floods Directive and incorporated into the CFRAM programme. This was to prepare and submit preliminary flood risk assessments to the EU Commission by March 2012. However, by the second deadline of March 2014, OPW had only submitted the required flood hazard maps for 50 of the 300 areas that had been identified at the preliminary assessment stage.

In relation to the completion of flood risk management plans, OPW has stated that it does not expect to meet the submission deadline of March 2016 but aims instead to finalise the flood risk management plans for all river basins by the end of 2016. It is recommended that OPW should set revised milestones for the CFRAM programme.

OPW estimated in 2009 that the cost of implementing the national CFRAM programme (but not including the cost of the pilot projects) would be €30 million (excluding VAT). Expenditure on the CFRAM programme to end December 2014 was €22.8 million, with OPW estimating that a further €4.6 million will be needed to complete it. OPW currently expects that the CFRAM process will be completed by end 2016.

Detailed project budgets were not formally approved in advance by OPW for the individual pilot projects which commenced. While it was originally envisaged that nine pilot projects would be undertaken, only four proceeded. Indicative cost estimates for the four pilot projects totalled €3.5 million. Expenditure to the end of 2014 was €8.9 million. In all cases, expenditure to date on the pilots has significantly exceeded the

indicative estimates. In three of the four pilot projects, the expenditure to the end of 2014 also exceeded the contract value.

2.2.

AUDIT OF THE EMERGENCY RESPONSE PHASE, THE RECOVERY AND RECONSTRUCTION PHASE

Audits that evaluate actions and funding at the emergency response phase in most cases additionally cover either the preparedness phase or the flood recovery phase.

The purpose of audits of the emergency response phase may be:

- assessment of the transparency of revenues and their proper and effective use during or immediately after the flood to undertake activities including rescue and other urgent activity aimed at ending the effects of dangerous factors, saving lives and preserving human health, as well as localization of flood zones;
- assessment of the legality and effectiveness of the actions of governments, central and regional authorities responsible for emergency response.

One of the problems that auditors may face is access to classified information, which is a state or business secret, requiring auditors to ensure that the information is not included in the report or included only in the summary form.

Audits of the recovery and reconstruction phase are usually a logical extension of the audit of the emergency response phase.

Their main purpose is:

- assessment of the legality, efficiency, effectiveness and economy of the use of funds for the reconstruction of the country or the affected area after flooding (rehabilitation and reconstruction of buildings, restoration of transport infrastructure, etc.);
- evaluation of the effectiveness and legality of the activities of the authorities responsible for recovery;
- evaluation of the effectiveness and efficiency of implementation of programs aimed at restoration and reconstruction after flooding.

In the area of reconstruction and reconstruction there are high probabilities for corruption risks that auditors are required to take into account while planning and conducting audits at this phase.



Special Report of European Court of Auditors
No 3/2008 The European Union Solidarity
Fund: how rapid, efficient and flexible is it?



Objective of the audit

To assess the rapidity, efficiency and flexibility of the implementation of the Fund by the Commission since its inception.



Audit issues:

- a) Did the Fund provide a rapid response to the applicants, i.e. states or regions affected by a disaster? (How much time did it take from the disaster to the payment of aid? What factors account for variation in time taken for obtaining aid from the Fund? Can the time actually taken be regarded as showing that the Fund provided a rapid response to the applicants?)
- b) Was the aid granted efficiently? (The balance between the total cost of managing the Fund and the aid granted)
- c) Was the Fund's response to applicants flexible without compromising the principle of equitable treatment? (How are regional disasters treated by the Fund? Does the grant calculation principle compromise the fair treatment of grants allocated to regional disasters?)
- d) Are applicants satisfied with the Fund?



Audit approach

The audit was mainly carried out through interviews, file examination at the Commission and analysis of the data collected. In addition, the Court carried out an electronic survey by addressing questionnaires to the 37 applicants out of 41 in 17 states that had sought aid from the Fund.



GENERAL CONCLUSIONS AND RECOMMENDATIONS

The Court's examination of the operation of the Fund in 2002-2006 shows that the Fund does not provide a rapid response. On average, the applicants had to wait for 12 months after the disaster to receive payment of the assistance. The delays are not related to the category or the nature of the disaster, or to the origin of the application. The time necessary to mobilise funds depends mainly on the extent of the administrative rules applied, on the rapidity of the Commission, on the promptness of the national authorities' replies and on the quality of the information provided in each case by the applicants.

The existing number of staff managing the Fund at the level of the Commission has proved to be efficient. In addition the total cost of managing the Fund were found to be very low in relation to the aid granted.

There are no cases where the Fund showed a lack of flexibility in its treatment of applications for aid. Without questioning the rejection of applications there are a few cases which illustrate a lack of clarity in the justification of the rejection of applications for regional disasters. The method used for the calculation of the grant amount for approved regional disasters does not take into account the prosperity of the state, so it may not respect the principle of fairness.

It should be noted that, despite the issues raised above, all applicants that have replied to the survey are satisfied with the Fund. In this way, the Fund has achieved its underlying objective, which is to demonstrate solidarity with member states in disaster situations.

In order to speed up the payment of the assistance, the Commission should have procedures in place, before the end of 2008, to ensure that an applicant state receives detailed guidance on the requirements of the application as soon as possible, preferably within one week.

In addition, the Commission should establish direct contact with the body in the member or accession state responsible for preparing the application to warn them of the common weaknesses in applications received and stress the importance of sending back the application and any other document requested by the Commission, including the final agreement, rapidly.



[Report on the results of performance audit on implementation of flood control programs \(2008\) of the Accounting Chamber of Ukraine](#)



Objective of the audit

To define the actual state of implementation of the national flood control programs, to determine the completeness and frequency of financing, to assess the impact of the measures taken to improve the protection of population against the harmful effects of floods, as well as to determine the level of consequences elimination of flood, which occurred on July 23-27, 2008.



Audit criteria

Assessing the legality: to verify the compliance with the norms and provisions of the current legislation and regulations, which govern relations in the sphere of subject of the audit.

Assessing the efficiency and effectiveness: the assessment was carried out by analyzing the impact of the completeness and frequency of financing on the achievement of performance indicators:

- flood control programs;
- passports of budget programs;
- activity plans and programs of audit objects.



CONCLUSIONS AND RECOMMENDATIONS:

The Accounting Chamber repeatedly draw the attention of the Government and the Verkhovna Rada of Ukraine to the issues of protecting the population and territories of Ukraine against the harmful effects of water.

Some of the recommendations, in particular regarding the legislative policy, were taken into account by developing a new Integrated Flood Protection Program in the Tisza River basin in Transcarpathian region for 2002-2006 and a forecast by 2015. However, the recommendations regarding the protection of the Carpathian region have not been implemented yet and remain relevant today.

The results showed that, despite the decisions taken at the highest state level on the implementation of measures to prevent and eliminate the threat of flood disasters; in particular in Transcarpathia and the Carpathian region, the situation is not significantly improved. The absence of regulations on management and interaction of water management organizations and services in the field of protection against harmful effects of water, as well as the economic activity on the lands of the water fund, heavily endangers flood protection.

The audit revealed that over the past ten years the Government of Ukraine failed to ensure the implementation of flood control programs in the Carpathian region. As a result, the system of flood protection of the population and territories of the region is not being strengthened, but on the contrary become weak. The increasing number of human victims is an indicator of this process. Capital investment in the water sector, which has a direct impact on the country's flood-control situation, fell steadily, resulting in an increasing flood threat. The damaging effects of floods, especially in mountainous and foothill areas, lead to significant negative socio-economic impacts and losses, and the elimination of damage caused by the element require an annual extra-planned mobilization of additional financial resources, within both the state and local budgets.

The consequences of the floods, occurred on July 23-27, 2008 on the territory of the Carpathian region, caused significant losses to the population and economy of the region and resulted in the death of 39 people. This situation showed the failure of the existing flood protection system. For the period of 2005-2008, about UAH 0.7 billion was allocated from the state budget to implementation of flood control measures, at

the same time, the total losses from this year's July flood amounted to more than UAH 5.7 billion.

According to the Law of Ukraine on changes to the state budget for 2008 and decisions of the Cabinet of Ministers of Ukraine, UAH 3.5 billion was allocated to consequences elimination of natural disaster. In addition, the funds from the reserve fund in the amount of UAH 0.5 billion was directed as material financial assistance to the families of the victims and the injured population. At the same time, expressed needs of regional state administrations were satisfied by 78 % and central authorities by 47 %.

The audit showed that the expenditures foreseen by the Government to pay benefits to affected families, which were accompanied by repeated increases, were not included in the calculation of the needs of regional state administrations. As a result, UAH 1.3 billion will be needed for the restoration of communal property. At the same time, government decisions were taken in violation of the current regulations, without reliable calculations, and were not mutually harmonised, which, in turn, does not allow to use the state budget funds promptly and effectively to eliminate the consequences of the floods. Consequently, the restoration of the objects of the nature reserve fund, veterinary-sanitary examination, flood protection in the amount of at least UAH 120 million, remains without funding sources.

The reconstruction of the housing stock is chaotic and uncontrolled, and is conducted in violation of the requirements of the current legislation. Thus, neither the Cabinet of Ministers of Ukraine nor local self-government bodies provided effective measures for the effective use of state budget funds to eliminate the consequences of disaster.

CHAPTER 3.

INTERNATIONAL AUDITS IN THE FIELD OF PREVENTION AND CONSEQUENCES ELIMINATION OF FLOODS

Audits at this level are intended to assess the implementation of international treaties in the field of flood prevention and mitigation.

To conduct these audits, it is necessary to determine which international treaties in that field have been ratified or accepted by the state. The detailed algorithm for selecting the topic of the audit is described in the document “Audit of International Environmental Treaties” developed by the INTOSAI Working Group on Environmental Audit (2001).

These audits may be compliance audits, performance audits, or comprehensive audits. The specific choice of type of audit depends on the mandate of each higher audit body. The main areas of these audits can be:

- observance of the obligations imposed by the responsible state bodies within the framework of the concluded contract;
- creation of effective mechanisms for implementation of international agreements in the field of prevention and elimination of the effects of flooding;
- effectiveness of monitoring compliance with the requirements of international treaties.

The practice of conducting audits of compliance with international agreements in the field of prevention and mitigation of the effects of flooding has shown that usually the main objects of control are:

- the central body of executive power, the coordinator of measures on fulfilment of obligations of the state within the framework of the international agreement;
- central and local executive authorities responsible for ensuring compliance with the requirements of the international treaty and implementing the mechanisms envisaged by it;
- public authorities whose task is to organize the collection, processing of the results of observations, statistics, their proper use at national and international levels, etc.



[Joint report on auditing implementation of flood protection measures on transboundary waters of Ukraine and Republic of Poland \(2005-2006\)](#)

According to the Joint Action Plan between the Accounting Chamber of Ukraine and the Supreme Audit Office of the Republic of Poland for 2004-2005 and on implementation

of the EUROSAI WGEA Working Plan for 2005, the Accounting Chamber of Ukraine and the Regional Office of the Supreme Audit Office of the Republic of Poland in Rzeszów conducted parallel audit of implementation of programs on flood protection measures in the Carpathian region and the level of international cooperation on transboundary waters of Ukraine and the Republic of Poland.



Audit purpose

To assess the provision of flood protection in the Carpathian region by public authorities and local governments, as well as level of interstate cooperation on transboundary waters of Ukrainian-Polish border.



JOINT CONCLUSIONS

The Accounting Chamber of Ukraine and the Republic of Poland jointly concluded about positive assessment of interstate cooperation in the field of flood protection. With the aim of implementation of the Agreement on cooperation in the field of water management on transboundary waters Ukrainian-Polish Commission for Transboundary Waters Issues was established. Development of draft plan for joint actions regarding stabilization of the Western Bug riverbed has been initiated since 2002.

SAIs of Ukraine and the Republic of Poland assess the state of financing and implementing measures of flood protection facilities construction, their maintenance, conducting erosion-preventive and bank-consolidated works on transboundary waters as unsatisfactory that doesn't provide effective and efficient cooperation as to problematic issues on transboundary waters.

The parties performed inventory of bank erosion of the Western Bug River and agreed to protect bank at their own expenses in 2005.

SAIs come to conclusion that their Governments don't provide required works volume regarding prevention of territory expropriation and change of national Ukrainian-Polish border lines. As a result, there exists danger of territory loss from both sides.

SAIs concluded uniquely that local governments and water management authorities of both countries don't provide establishment of material-and-technical inventories in case of flood. Their inventories don't exceed 30 % of planned figures in both Ukrainian and Polish sides.

Polish auditors revealed that territorial water management plan was implemented in none of 6 controlled local governments. Much as mentioned above Ukrainian auditors revealed that 60 % of planned flood protection measures were implemented in Lviv and Volyn regions.

SAIs concluded about insufficient level of cooperation between territorial communities and local governments on transboundary waters and non-existence of regulations (standard and legal acts) on such cooperation.

SAIs report about insufficient level of cooperation regarding information exchange about course of flooding sulphur pit of Yavorivskiy State Ore Mining and Processing Enterprise “Sulphur” and carrying capacity of the Shklo and Vyshnya Rivers.

Thus, insufficient financing of flood protection measures in both countries leads to gradual ruining of separate sections of flood protection facilities and relaxing of flood protection in the region in general. Under such circumstances both countries’ material-and-technical support of flood protection measures seems inadequate that doesn’t ensure peoples’ safety during floods.



International coordinated audit on prevention and consequences elimination of floods

At the Meeting of the EUROSAI Working Group on Audit of Funds Allocated to Disasters and Catastrophes, which was held in March 2017 in Rome (the Italian Republic), the representatives of the SAIs of the Republic of Belarus, the Republic of Poland and Ukraine signed “Common position on cooperation within International coordinated audit on prevention and consequences elimination of floods”.

Common position states that the cooperation will be realized in the form of conducting the coordinated national audits with consideration of common aim and the subject of international audit, based on common issues/criteria, which are defined in this Common Position on Cooperation. The national audits will be conducted in accordance with the national programs of the Parties within the framework of the Common Position on Cooperation.

Later, the SAI of Georgia, the Republic of Serbia, the Republic of Turkey and the European Court of Auditors also participated in the international audit and preparation of the Joint Report on its results.



The objective of the audit

- the assessment of efficiency, effectiveness and economical use of budget funds allocated to establishment, development and functioning of the forecasting system and the flood protection system;
- the assessment of legality, timeliness and completeness of corresponding administrative decisions made by the competent authorities.



The subject of the audit

- Government activities directed to establishment, development and functioning of the forecasting system and the flood protection system, including in the framework of international cooperation;
- public funds allocated to these purposes, the procedure of their use.
- Besides, it is mentioned that the Parties could independently decide to extend the aim and subject of the audit at the national level.



General questions/ audit criteria

- efficiency, effectiveness of investment and non-investment activities related to the audit aim;
- economy and legality of the use of budget funds allocated to activities relating the audit aim;
- international cooperation activity and completeness of international agreements implementation, the amount of attracted international assistance and ongoing international projects;
- establishment of the mechanisms and the promptness of authorities in responding in case of floods;
- reducing of the harmful consequences of floods.



JOINT CONCLUSIONS

Based on the audits findings SAIs – participants have reached the following common conclusions.

Legal and organizational frameworks for flood protection planning and management, in general, have been established in the countries of SAIs participating in the coordinated audit. However, there is the necessity to improve the program documents and specify the policies developed. Also, the coordination between the competent authorities should be strengthened, as well as strict adherence to the requirements of the European and national legislation should be provided.

In particular, legislative and regulatory documents (EU directives, laws, government regulations, etc) have been developed in all countries of audit participants and at EU level to regulate the functioning of the flood risk assessment and management system, water management, management of the system of prevention and consequences elimination of emergencies, including due to hydrological factors. However, the SAIs of Georgia, Serbia and Ukraine point out that the implementation of EU legislation, in particular the Floods Directive, into the national legislation of these countries was not properly fulfilled.

The SAIs–audit participants note the availability of program documents (strategies, state programs, subprogrammes) that identified the flood protection measures. At the same time SAIs of Georgia, Serbia and Ukraine emphasize the need for their improvement, the specification of their intended goals, as well as the harmonization of program documents with other legislative acts in order to ensure the effective implementation of flood protection measures and their monitoring.

Authorities responsible for implementation of program documents on flood protection, accident-free functioning of water bodies during floods, forecasting of their consequences, monitoring the development of natural phenomena and providing interested parties with the necessary hydrological information, were designated at the legislative level in the countries of participating SAIs. At the same time audit revealed that competent authorities have not fully used the given powers to define public policy on flood protection and some management decisions were made late. The ECA also notes the need for coordinated flood risk management in cross-border river basins and the consideration of transboundary aspects at each stage of the risk assessment and planning process.

In the countries of participating SAIs a system of flood risk management was introduced on the basin principle and district river basin management bodies were established. But integrated flood risk management was not provided by majority of these countries and the international flood risk management plans at the level international basin districts have not been developed by some of the EU Member States.

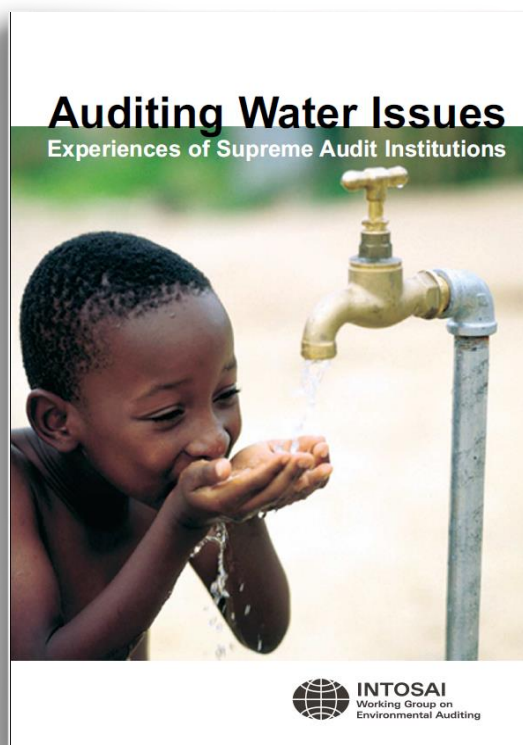
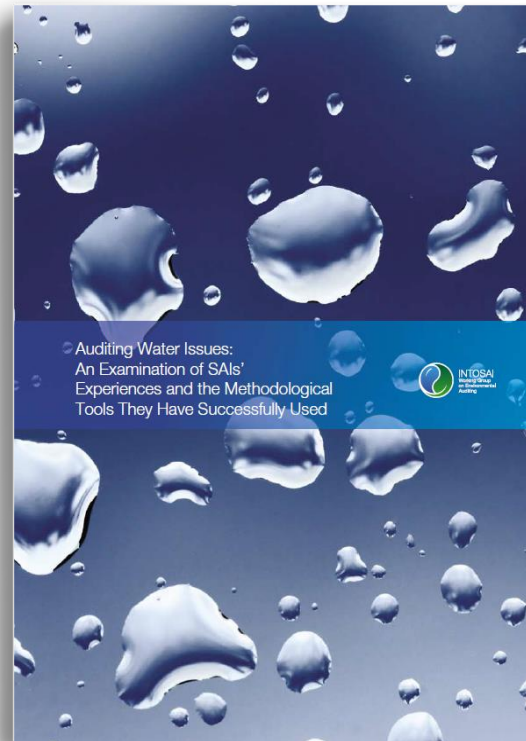
The SAIs, participating in the audit, also indicates that measures aimed at flood protection have not been implemented effectively in their countries and approaches to financing flood protection measures are needed to be improved.

The SAIs–participants of the audit draw the attention of their governments to the need to increase level of predictability of flood and to apply spatial planning to flood risk management, as intensity and frequency of flooding will increase, particularly due to climate change. The adverse effects of floods will also increase. Among the flood preparedness measures, early notification systems are of crucial importance, correct planning and development of its network is directly linked to the flood hazards and vulnerability map creation.

USEFUL TIPS AND TRICKS

The peculiarities of audits in the field of water issues are detailed in the report “Auditing Water Issues: An Examination of SAI’s Experiences and Methodological Tools They Have Successfully Used” prepared by INTOSAI Working Group on Environmental Auditing on 11 Key Issues, including flooding issues.

The information provided in the report describes how various audit tools can contribute to the successful audits to be conducted by SAI in the area of water-related issues.



There is also publication “Auditing Water Issues: Experiences of Supreme Audit Institutions” on the INTOSAI Working Group on Environmental Auditing website, which considers issues on prevention and consequences elimination of floods.

This document provides a brief overview of audits which deal with issue of flooding, particularly the preparation of flood rescue plans, the performance of rescue operations, and flood effect elimination.

LIST OF MATERIALS AND DOCUMENTS, USED FOR THE DEVELOPMENT OF RECOMMENDATIONS

- Directive 2007/60/EC of the European Parliament and of the Council of 23 October 2007 on the assessment and management of flood risks
- A global framework for future costs and benefits of river-flood protection in urban areas
- FloodList
- The Human Cost of Natural Disasters 2015: A Global Perspective (Centre for Research on the Epidemiology of Disasters, 2015)
- Increased human and economic losses from river flooding with anthropogenic warming
- A framework for global river flood risk assessments
- EEA Report No 14/2017 'Green Infrastructure and Flood Management Promoting cost-efficient flood risk reduction via green infrastructure solutions'
- Guidance for Flood Risk Analysis and Mapping
- Common Implementation Strategy for The Water Framework Directive and the Floods Directive - Flood Risk Management in the EU and the Floods Directive's 1st Cycle of Implementation (2009-15). A questionnaire based report
- Special Report ECA 3/2008 "The European Union Solidarity Fund: how rapid, efficient and flexible is it? Together with the Commission's replies"
- Special Report ECA 25/2018 "Floods Directive: progress in assessing risks, while planning and implementation need to improve"
- Special Report of Comptroller and Auditor General of Ireland "Strategic Planning for Flood Risk Management"
- Report of National Audit Office of UK "Flood Risk Management in England"
- Report of National Audit Office of UK "Strategic Flood Risk Management"
- Joint Report on auditing implementation of flood protection measures on transboundary waters of Ukraine and Republic of Poland
- Report of the Accounting Chamber of Ukraine on the Results of the Performance Audit of Development and Operation of the Flood Protection System

