AUDIT OF THE FLOOD PREVENTIVE MEASURES IN THE SLOVAK REPUBLIC

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Reason to Carry out the Audit

- Threat of flood to inhabitants:
  - More than 3000 flood preventive structures are functional in river basin in Slovakia (dams and water reservoirs, dikes, pumping stations e.t.c.)
  - 227 mi EUR is planned to invest (WME) to flood preventive structures in the period 2015-2021 to prevent possible damage 900 mil EUR
### Scope and type of the Audit

<table>
<thead>
<tr>
<th>Description</th>
<th>YES/NO</th>
</tr>
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<tbody>
<tr>
<td>Land management measures and capturing of water in the surface and ground</td>
<td>NO</td>
</tr>
<tr>
<td>Measures for water capturing from surface run of</td>
<td>NO</td>
</tr>
<tr>
<td>Capacity and quality of flood preventive structures in river basins</td>
<td>YES</td>
</tr>
<tr>
<td>Institutional responsibility for flood prevention strategy, planning, implementation, construction, maintenance and financing of flood preventive structures and measures</td>
<td>YES</td>
</tr>
</tbody>
</table>

- Combination of problem and system
- Combination of performance and compliance audit
How is the climate change reflected in Audit


1. The preliminary flood risk assessment, or the assessment and decisions referred to in Article 13(1), shall be reviewed, and if necessary updated, by 22 December 2018 and every six years thereafter.

2. The flood hazard maps and the flood risk maps shall be reviewed, and if necessary updated, by 22 December 2019 and every six years thereafter.

3. The flood risk management plan(s) shall be reviewed, and if necessary updated, including the components set out in part B of the Annex, by 22 December 2021 and every six years thereafter.

4. The likely impact of climate change on the occurrence of floods shall be taken into account in the reviews referred to in paragraphs 1 and 3.
Findings

- Climate Change is reflected in Flood Risk Management Plans Review

- The process assessing climate change influence to flood occurrence has been launched and at least 2 additional areas in Slovakia with higher rainfall and subsequently higher flows will be added as flood hazard areas to preliminary flood risk assessment, flood hazard maps and Flood Management Plans.

- Higher Q₁₀₀ is envisaged due to increased intensity of rainfall in Danube Watershed – this area will be added to flood risk map

- Occurrence of floods are recorded under the High Tatra mountains, so this area will be added to the flood hazard maps and flood risk maps
Maximálne kulminačné prietoky, N - ročné maximálne prietoky a trendová čiara
Dunaj - Komárno (Iža)
Flood Prevention/Climate change in national Policies

Strategy of the Slovak Republic- adaptation to climate change is a complex document, among others contains prediction of hazard/risk of higher precipitation and floods occurrence and necessity to implement adequate measures (in landscape, agriculture, forestry and hydro technics structures

Operational Programme Quality Environment: 2014-2020

• PRIORITY AXIS 2: ADAPTATION TO THE ADVERSE EFFECTS OF CLIMATE CHANGE WITH THE FOCUS ON FLOOD PROTECTION 493 mil. EUR
• PRIORITY AXIS 3: PROMOTING RISK MANAGEMENT, EMERGENCY MANAGEMENT AND RESILIENCE TO EMERGENCIES Affected BY CLIMATE CHANGE 307 mil. EUR
Audit Methods & Tools Applied

- Audit Proposal (Audit objectives definition, preliminary risk assessment)
- Fact finding survey (web sites, paper documents)
- Issue Analysis
- Elaboration the Audit Program and Plan including Risk Assessment
- Non statistical sample of projects selection
- Reviewing the specific documents,
- formulating specific questionnaires to subject audited
- Interview with the subject audited (including cross reference)
## Audit Methods & Tools Applied – Issue Analysis

### Main Question (1. Level)

**Are Inhabitants of the Slovak Republic adequately secured against flood risk through the flood preventive measures?**

### Key Question (2. Level)

<table>
<thead>
<tr>
<th>Sub Questions (3. Level)</th>
<th>Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Is the flood prevention strategy adopted by competent authorities in Slovak Republic?</td>
<td>• Adopted legislation on flood prevention</td>
</tr>
<tr>
<td>1.1 Does the MoE perform strategic management in flood prevention?</td>
<td>• Organisation structure and order of MoE</td>
</tr>
<tr>
<td>1.2 Are sources of financing flood prevention strategy identified, allocated, and provided in time?</td>
<td>• Volume of national financing for investments is sufficient and provided in time</td>
</tr>
<tr>
<td>2.2 Involve the working process of Slovak Water Management Enterprise the implementation of Flood Risk Management Plans?</td>
<td>• Organisation structure and statute.</td>
</tr>
</tbody>
</table>
| 2. Are the flood prevention measures implemented based on Flood Risk Management Plans? | 2.3 Assures Slovak Water Management Enterprise construction and maintenance of flood prevention measures? | • System of investment`s planning and evaluation is in place and financially covered.  
• System of maintenance & correction is in place  
• System of safety supervision is in place |
|---|---|---|
| 2.4 Assures Slovak Water Management Enterprise compulsory evaluation and review key elements of Flood Risk Management Plans? | | • System of safety supervision is in place  
• The process of review and updating of the flood risk assessment has been launched |
<table>
<thead>
<tr>
<th>3. Has been project objectives of flood preventive measure (water structures) achieved?</th>
<th>3.1 Have been the EU grant contract conditions achieved?</th>
<th>3.2 Are the physical condition of water structure in adequate quality?</th>
</tr>
</thead>
</table>
| 3.1 Have been the EU grant contract conditions achieved? | • EU Grant conditions.  
• Condition of sustainability is in place, Monitoring and Audit/control report delivered and problems removed. | • All conditions of the operation permits are obeyed  
• Due technical documentation for the operation of relevant structure is available and regularly renewed |
Audited Subjects /Resources/Time schedule

- Ministry of the environment – Water Division
- Slovak water management enterprise (state enterprise) (River basin management)
- 5 Towns and Villages – Recipient of ESIF Grants
- 11 ESIF Granted Projects of Flood Preventive structures with total value construction works 40 mil EUR
- 21 Auditors are employed from Bratislava HQ and regional Branches – 10 Audit Teams
- Preparation Phase: Jan-Apr. 2018
- Audit Conducting Phase: May-Oct. 2018
Main Facts and Characteristic on Auditees

Ministry of the Environment;
(Water Division/Unit for River Basin Management and flood prevention):
• is in charge on Flood Prevention Law. No 7/2010)
   (Transposing the Directive 2007/60/EC on assessment. And management of flood risk)
• Issue the annual provisional state budget approval for flood preventive measures construction and maintenance (main decision is on Ministry of Finance)
(Section of Programs and Projects):
• Acting as managing Authority of OPs ESIF Environment which in 2007-2013 and 2014-2020 allocate total 700 mil. EUR for flood prevention management
Selection of the audited ESIF Project

- The non statistical methods was used to select the projects of flood preventive measures (water structures) was applied
- Criteria for the selection were based on the value of the investment, value of the possible prevention and geographical location to cover as much as possible areas in the entire country

(-Auditors based in SAO branches out of Bratislava carried out the audit in projects and Water Enterprise branches spread across the country)
The Slovak Water Management Enterprise:

• Is the state enterprise established by MoE (and his predecessor), it is in charge for river basin management and flood protection via planning, constructing operation and maintenance of flood prevention structures.

• Is responsible for the elaboration, implementation and reviews of the Flood Risk Management Plans including:
  - flood hazardous areas definition
  - preliminary flood risk assessment
  - flood hazard maps and the flood risk maps
  - reflecting the climate change on the occurrence of floods shall while reviewing the
The Slovak Water Management Enterprise and audited projects on the map:
Slovak Water Management Enterprise portfolio:
Management of 33 000 km water streams

Operates:
• 3158 km dikes
• 1605 km dewatering melioration canals
• 295 water reservoirs (dams), total volume of water 2km3 and surface 2216 km2

• Asset value 1 323 640 000 EUR

• 3600 Employees, 4 Branch offices of administrations 25 operational departments
Main Findings 1

- Slovak Water Management Enterprise contains among others specific units for planning, financing, technical operation of water structures, safety supervision and inspections and construction works, all of these provide management of flood prevention measures – specific water structures

- Slovak Water Management Enterprise routine is guided based on standard operation procedures in written form, numerous internal guidelines and procedures are available for planning the investment, maintenance, internal audit, safety of water structures and safety supervision
Main Findings 2

• The Flood Risk Management Plans for 8 sub catchments were elaborated and are in force since 1st Jan. 2016
• 588 flood hazard areas are identified and
• 88 water structures with flood prevention function are identified in document to be completed (new or reconstruction, based on the document valid)
• calculated value of damage avoided originate from y 2013 is not actual, however the upgrade has been started
• Investment rate by SVE in years 2016 – 2017 has decreased by cca 60 % (old OP ESIF is concluded and new calls for proposals were 3 years in delay)
Main Findings 4

• Long Term shortage of state financing for maintenance and repair works comparing to the „calculated normative“
9 Water structures fulfilling multi functions including flood prevention were operated in limited regime and with several technical problems, (year 2017) thus compulsory „Technical Safety Supervision inspection“ and „State Water administration“ issued „Decision“ to make remedies and repair.

Based on this reality the technical condition of this structure did not comply with the selected specific condition of the Slovak legislation (Water Law 364/2004, § 48, (4) g); §53, )
In the planning phase 5 projects (from 11 audited) assumed significantly higher cost comparing to the real works completed

<table>
<thead>
<tr>
<th>Project Title</th>
<th>Budget Calculated</th>
<th>Construction after public procurement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Turá Lúka – úprava kapacity koryta Myjava</td>
<td>5 511 503,88</td>
<td>4 425 623,88</td>
</tr>
<tr>
<td>Vodná stavba Dolnohodrušská – rekonštrukcia</td>
<td>1 095 863,31</td>
<td>612 807,37</td>
</tr>
<tr>
<td>Opatrenia na ochranu pred povodňami Voznica,</td>
<td>1 299 333,10</td>
<td>790 019,70</td>
</tr>
<tr>
<td>Obec Teplička Regulácia Dedinského potoka,</td>
<td>1 715 213,68</td>
<td>1 473 247,14</td>
</tr>
<tr>
<td>Protipovodňová ochrana ZB Zímná voda</td>
<td>1 179 016</td>
<td>495 180,39</td>
</tr>
</tbody>
</table>
Main Findings 7

- Long Term increase of the operated assets and decrease of staff – disproportion

<table>
<thead>
<tr>
<th></th>
<th>2009</th>
<th>2017</th>
</tr>
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<tbody>
<tr>
<td><strong>Staff</strong></td>
<td>3680</td>
<td>3330</td>
</tr>
<tr>
<td><strong>Water Reservoirs</strong></td>
<td>277</td>
<td>295</td>
</tr>
<tr>
<td><strong>Water Sluices</strong></td>
<td>216</td>
<td>243</td>
</tr>
<tr>
<td><strong>Dikes (km)</strong></td>
<td>3135</td>
<td>4186</td>
</tr>
</tbody>
</table>
Tentative recommendation based on the audit findings

- Initiate the re-assessment of the „Maintenance & Repair Normative“ (MoE, MF, WME)
- Increase the State Financing for WME to cope with due maintenance and repairs and to recruit additional staff to provide care for rising number of assets in charge (MoE, MF)
- Continue with updating the due elements of the Flood Risk Management Plans (MoE, WME)
• Thank you for your attention