Government data-driven decision-making (DDDM) framework implementation. Test case: crisis management

Deliverable 2.5: Local municipalities' risk management methodology implementation roadmap

Technical Support Instrument

Supporting reforms in 27 Member States

Funded by the European Union

Republic of Estonia
Government Office

This document was produced with the financial assistance of the European Union. Its content is the sole responsibility of the author(s). The views expressed herein can in no way be taken to reflect the official opinion of the European Union.

The project is funded by the European Union via the Technical Support Instrument, managed by the European Commission Directorate-General for Structural Reform Support.

This report has been delivered in June 2022, under the EC Contract No. REFORM/SC2021/076. It has been delivered as part of the project "Government data-driven decision-making (DDDM) framework implementation. Test case: crisis management".

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Glossary

Term	Definition
A risk of an emergency	A situation where, based on an objective assessment of the circumstances, it may be considered likely that an event or a chain of events or an interference with a vital service may escalate into an emergency in the near future.[1]
An emergency	An event or a chain of events or an interruption of a vital service which endangers the life or health of many people, causes major proprietary damage, major environmental damage, or severe and extensive interferences with the continuity of vital services and resolution of which requires the prompt coordinated activities of several authorities or persons involved by them, the application of a command organisation different from usual and the involvement of more persons and means than usual.[2]
Compound risk	When multiple risks occur simultaneously, or one after another.[3] Compound risk events enlarge the consequences of the risk events and make the emergency more difficult to deal with. Compound risks have a combination of multiple drivers and/or hazards that contribute to societal or environmental risk.[4]
Continuity of a vital service	A capability of the provider of the vital service to ensure continuous operation and to restore continuous operation after an interruption of the vital service. The providers of vital services are usually public companies. The responsibility of assuring the continuity of these services is given out to specific authorities.[5]
Crisis	An unstable condition involving an impending abrupt or significant change that requires urgent attention and action to protect life, assets, property, or the environment.[6]
Crisis management	A system of measures which includes preventing, preparing for, and resolving an emergency.[7]
Damage	The total or partial destruction of physical assets and infrastructure in disaster-affected areas, expressed as replacement and/or repair costs. In the agriculture sector, damage is considered in relation to standing crops, farm machinery, irrigation systems, livestock shelters, fishing vessels and ponds.[8]
Disaster loss accounting	Assessment of disaster loss for crises that have taken place (backward looking). The primary motivation for recording disaster loss

[1] Riigi Teataja, ”Emergency Act,“ published June 13, 2017, https://www.riigiteataja.ee/en/eli/513062017001/consolide
[2] Riigi Teataja, ”Emergency Act,“ published June 13, 2017, https://www.riigiteataja.ee/en/eli/513062017001/consolide
[3] Dale Willman, “Double Trouble: The Importance of Thinking About Compound Risk,“ Columbia Climate School, published August 11, 2017, https://news.climate.columbia.edu/2020/08/11/compound-risk-hurricanes-wildfires/#:~:text=Compound%20risk%20%E2%80%94%20when%20multiple%20risks,at%20Columbia%20University's%20Earth%20Institute.
[4] Jakob Zscheischler, Olivia Martius, Seth Westra. et al., “A typology of compound weather and climate events,” Nat Rev Earth Environ, no. 1 (2020): 333-347, https://www.nature.com/articles/s43017-020-0060-z
[5] Riigi Teataja, “Emergency Act,“ published June 13, 2017, https://www.riigiteataja.ee/en/eli/513062017001/consolide
[6] The International Organisation for Standardisation “ISO/DIS 22300 Security and resilience – Terminology”
[7] Riigi Teataja, ”Emergency Act,“ published June 13, 2017, https://www.riigiteataja.ee/en/eli/513062017001/consolide
[8] Piero Conforti, Mira Markova, Dimitar Tochkov, “FAO’s methodology for damage and loss assessment in agriculture,” Food and Agriculture Organisation of the United Nations, published 2020, https://www.fao.org/documents/card/en/c/ca6990en/.

Term	Definition
	with the aim to document the trends and aggregate statistics informing local, national and international disaster risk reduction programmes.[9]
Disaster loss methodology	Disaster loss methodology aggregates the losses suffered as a result of a disaster event. Most commonly, disaster loss is calculated for human, physical and economic losses. Disaster loss can be accounted for, after the event takes place, but also potential loss can be estimated based on a risk scenario. Once this is used in disaster risk management, it allows to analyse avoided losses.
Disaster risk	The potential loss of life, injury, or destroyed or damaged assets which could occur to a system, society or a community in a specific period of time, determined probabilistically as a function of hazard, exposure, vulnerability and capacity. The definition of disaster risk reflects the concept of hazardous events and disasters as the outcome of continuously present conditions of risk. Disaster risk comprises different types of potential losses which are often difficult to quantify. Nevertheless, with knowledge of the prevailing hazards and the patterns of population and socioeconomic development, disaster risks can be assessed and mapped, in broad terms at least [10]
Disaster risk modelling	Assessment of disaster loss for potential crisis (forward looking). It aims to improve risk assessments and forecast methods. Loss data is used to infer vulnerabilities and to identify sectoral areas for disaster risk reduction and mitigation measures.[11]
Interdependency of services	Dependency of service providers on other services, resources etc. Disruptions in one service may lead to disruptions in others.
Loss	Quantifiable measures expressed in either monetary terms (e.g., market value, replacement value) for physical assets or counts such as number of fatalities and injuries.[12]
Risk	An effect of uncertainty on objectives. Risk is usually expressed in terms of risk sources, potential events, their consequences, and their likelihood.[13]
Risk management	Coordinated activities to direct and control an organisation with regard to risk.[13]
Vital service	A service that has an overwhelming impact on the functioning of society and the interruption of which is an immediate threat to the life

[9] Tom De Groeve, Karmen Poljansek, Daniele Ehrlich, “Recording Disaster Losses: Recommendations for a European approach,” Joint Research Centre – Institute for the Protection and the Security of the Citizen, published 2013, https://reliefweb.int/sites/reliefweb.int/files/resources/lbna26111enn.pdf.

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[11] Tom De Groeve, Karmen Poljansek, Daniele Ehrlich, “Recording Disaster Losses: Recommendations for a European approach,” Joint Research Centre – Institute for the Protection and the Security of the Citizen, published 2013, https://reliefweb.int/sites/reliefweb.int/files/resources/lbna26111enn.pdf.

[12] Preventionweb, “Handbook for Estimating the Socio-economic and Environmental Effects of Disasters,” published 2003, https://www.preventionweb.net/files/1099_eclachandbook.pdf

[13] The International Organisation for Standardisation “ISO31000:2018 - RISK MANAGEMENT”

Term	Definition
	or health of people or to the operation of another vital service or service of general interest.[14]

Abbreviations

Term	Definition
CM	Crisis management
DDDM	Data-driven decision-making
DG	Data Governance
EC	European Commission
EDL	Estonian Defence League
EU	European Union
GDPR	General Data Protection Regulation
GO	Government Office
KOKS	The Local Government Organisation Act (Kohaliku omavalitsuse korralduse seadus)
LM	Local Municipality
MoF	Ministry of Finance
PBGB	The Police and Border Guard Board
PoC	Proof of Concept
PwC	PricewaterhouseCoopers
RB	The Rescue Board
RfS	Request for Service
VOS	The Preparedness Law (Valmisolekuseadus)

[14] Riigi Teataja, “Emergency Act,“ published June 13, 2017, https://www.riigiteataja.ee/en/eli/513062017001/consolide

Executive summary

Purpose of the report

The purpose of this report is to present an overview of the local municipality's crisis management methodology implementation roadmap.

Scope of the report

This report has been developed within the Project carried out by PricewaterhouseCoopers EU Services EESV (hereinafter – PwC) on behalf of the DG REFORM, according to the specific contract No. REFORM/SC2021/076 (21EE02), signed on 14 October 2021. The report covers the items required in the Request for Service (RfS) adjusted, where relevant, to the changes agreed in Kick-Off and Steering Committee meetings.

This report covers the Outcome 2 (and 3) of the Project – **Crisis management.** A separate report is issued for Outcome 1 and all combined reports make up the complete package of deliverables.

The Estonian Government has an objective to improve the national crisis management and resilience by increasing national risk awareness. As agreed, the Project aims to: 1) create a common methodology for local municipalities to improve their risk awareness and 2) introduce a systematic disaster loss quantification methodology for state authorities.

Key findings and recommendations

Estonia will soon establish a new National Preparedness Law, which will assign all municipalities the task of carrying out risk assessments and establishing crisis management plans which take a greater view on the service continuity. Moreover, the new law will set the Rescue Board (RB) as the authority that should support the municipalities with their new tasks. This law will support the implementation of the methodology created in this Project, however, it is not necessary to wait for it before starting with the implementation activities.

We recommend approaching the implementation of the municipality's crisis and risk management methodology in four stages:

1. Preparations for the implementation – this stage should ensure the prerequisites for the successful implementation of the methodology. It includes the selection of an implementation model, finding possible funding sources, promotion related to the methodology and other activities that facilitate the introduction of the methodology.
2. Preliminary implementation of the methodology – at this stage, we recommend conducting another wider pilot of the methodology implementation without developing a technical solution. This is necessary because the pilot and testing carried out within the scope of this Project has been limited in scope (the broader pilot focuses on the risk awareness module and allows local governments to complete only those working papers for which they have the time resources). A wider pilot allows the GO and the RB to identify the best approaches (independent or facilitated sessions), gather feedback and further develop the methodology before the wider introduction. In addition, it creates an additional group of local municipalities which have experience in applying the methodology and which can inspire and guide others by sharing their positive experience. Additionally, this stage gives an overview of how training, providing guidance and quality control will be done.
3. Preparations for the technical solution – at this stage, we recommend updating the technical, functional and legal requirements of the system to be considered when setting up the technical solution. In case the IT and Development Centre of the Ministry of the Interior of Estonia (SMIT) decides that a new technical solution needs to be developed, the preparation and execution of the public procurement to find a suitable service provider and develop the technical system should also take place at this stage.

4. Implementation of the methodology and technical solution – at this stage, the activities carried out in stage 2, which enabled the introduction of the methodology to a smaller group, remain important also when the risk assessment is made compulsory for all 79 municipalities. At this stage, additional activities related to the introduction, maintenance and development of the technical application are added to the list of the required activities.

Lühikokkuvõte

Aruande eesmärgid

Käesoleva aruande eesmärk on anda põhjalik ülevaade kohalike omavalistuste (edaspidi KOV) riski- ja kriisijuhtimise metoodika tööriista rakenduskavast.

Aruande ulatus

Aruanne on koostatud Euroopa Komisjoni struktuurireformide toe peadirektoraadi (DG REFORM) tellimusel ja PricewaterhouseCoopers EU Services EESV (edaspidi – PwC) poolt läbiviidud projekti raames vastavalt 14. oktoobril 2021 allkirjastatud erilepingule nr REFORM/SC2021/076 (21EE02). Aruande koostamisel on lähtutud Projekti lähteülesandes esitatud nõuetest.

Antud aruanne hõlmab projekti 2. (ja 3.) tulemit – **kriisijuhtimine**. Eraldi aruanne koostatakse projekti 1. tulemi kohta ja antud aruanded moodustavad kokku kogu projekti tulemite kogumi.

Eesti valitsus on võtnud eesmärgiks parandada riiklikku kriisijuhtimist ja valmisolekut riikliku riskiteadlikkuse tõstmise kaudu. Projekti eesmärgid on vastavalt kokkulepitule 1) luua kohalikele omavalitsustele ühtne metoodika riskiteadlikkuse tõstmiseks, hindamiseks ja 2) luua riigiasutustele süstemaatiline kriisikahjude kvantifitseerimise metoodika.

Tähelepanekud ja soovitused

Eestis kehtestatakse peagi uus riiklik Valmisolekuseadus (VOS), mis paneb kõikidele omavalitsustele ülesandeks koostada riskianalüüs ja kriisireguleerimise plaan, mis keskendub teenuste toimepidevuse tagamisele. Lisaks seab uus seadus Päästeameti asutuseks, kes peab omavalitsusi nende uute ülesannete täitmisel toetama. Käesolev seadus toetab selles projektis loodud metoodika rakendamist, kuid seaduse vastuvõtmine ei ole rakendustegevustega alustamise tingimuseks.

Soovitame läheneda KOV kriisi ja riskijuhtimise metoodika rakendamisele 4 etapi kaupa:

1. Rakendamise ettevalmistamine – selles etapis tuleks tagada metoodika eduka rakendamise eeldused. See sisaldab endas rakendusmudeli valikut, võimalike rahastusallikate leidmist, metoodikat puudutavat müügitööd ja muud, mis lihtsustab metoodika kasutuselevõttu.
2. Metoodika esmane rakendamine – selles etapis soovitame viia läbi metoodika laiema kasutuselevõtu laiema piloteerimise suuremas grupis ilma tehnilist lahendust arendamata. See on vajalik, kuna käesoleva projekti raames tehtud piloot ja testimised on olnud piiratud skoobiga (laiema ringi piloot keskendub riskiteadlikkuse moodulile ja võimaldab KOV-idel teha läbi vaid need tööpaberid, milleks neil on ajalist ressurssi. Laiem piloteerimine võimaldab Riigikantseleil ja Päästeametil enne metoodika laiemat kasutuselevõttu tuvastada parimad lähenemisviisid (iseseisev või juhendatud täitmine), koguda tagasisidet ja metoodikat edasi arendada. Lisaks loob see täiendava grupi omavalitususi, kellel on metoodika rakendamise kogemus ja kes saavad oma positiivset kogemust jagades teisi inspireerida ja juhendada. Lisaks loob see ka võimaluse PÄA koormuse hajutamiseks nii koolitamise, nõustamise kui ka kvaliteedijärelevalve mõttes.
3. Tehnilise lahenduse loomine – selles etapis soovitame uuendada süsteemi tehnilisi, funktsionaalseid ja õiguslikke nõudeid, mida võtta arvesse tehnilise lahenduse loomisel. Selles etapis peaks toimuma ka riigihanke ettevalmistamine ja läbiviimine sobiva teenusepakkuja leidmiseks ning arenduse elluviimiseks.
4. Metoodika ja tehnilise lahenduse laialdane kasutuselevõtt – selles etapis on jätkuvalt olulised tegevused, mida kirjeldati 2. etapis, sest need tegevused puudutavad metoodika kasutuselevõttu. Nende tegevustega peaks jätkama kui teha metoodika kohustuslikuks kõigile 79 omavalitsusele. Eelmainitud tegevustele lisanduvad selles etapis kõik tegevused, mis puudutavad tehnilise rakenduse kasutuselevõttu, ülal hoidmist ja arendust.

Table of Contents

1 Introduction

1.1 Scope of the report

1.1.1 Purpose and Outcome

The report has been drafted for Outcomes 2 (and 3). Outcome 1 is disclosed in a separate report. This report will give a more thorough overview of the gaps which need to be addressed, as well as different possible to-be scenarios and recommendations to the Beneficiary.

> ***This report covers only Outcomes 2 and 3*** *– risk management and disaster loss methodology in Estonia. Separate report is issued for Outcome 1.*

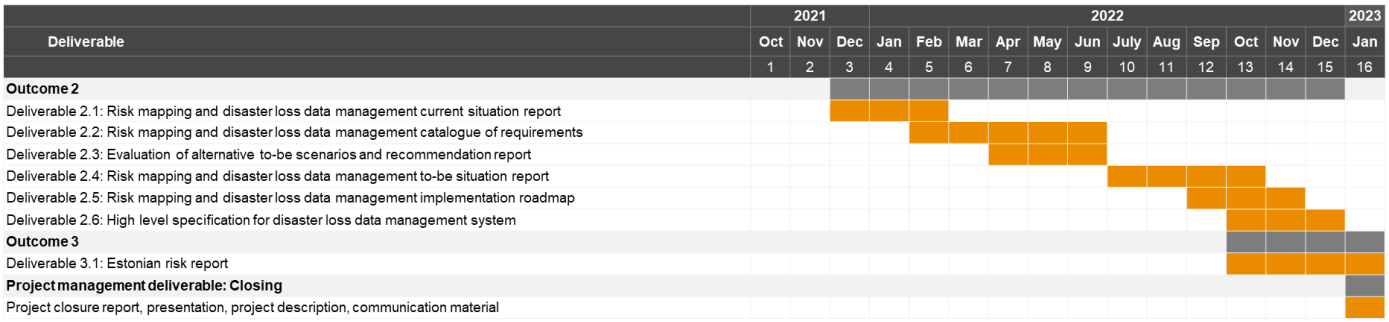
1.1.2 Scope of the Project Outcomes 2 and 3

The scope of the Project Outcomes 2 and 3 has two focuses. The first focus is **on the crisis management activities of the local municipalities**. This involves activities in three stages: preparing for the crisis (creating risk awareness, assessing risks, designing prevention and resilience policies), activities during crisis and activities after a crisis. The second focus is on the **disaster loss data management** at the state authority level and aims to design the methodology for the common loss assessment.

1.2 Methodology and Approach

Figure 1 gives a high-level overview of the Project activities and timeline. The activities of risk mapping and disaster loss data management to-be situation took place from August 2022 to October 2022.

Figure 1. Project activities and timeline



Three different methods were used and combined to create the roadmap (see Figure 2 below). As the creation of this methodology has been a continuous activity, a lot of information concerning the implementation roadmap was already collected during the previous stages of this outcome. Based on the collected information and our recommendations, a preliminary draft of this report was established. To adjust the recommendations and steps in the roadmap, the content was validated with the GO as well as the RB.

Figure 2. Methods used to create the roadmap

1.3 Limitations

The upcoming Preparedness Law (VOS) is currently still not in its final stage, which means that there are still some questions, such as the obligatoriness of the crisis management methodology, which remain uncertain. As the Project is expected to finish prior to the acceptance of the VOS, this limitation continues. Uncertainty concerning VOS makes it difficult for LM and other state agencies and ministries to understand their new role.

The eased COVID-19 restrictions and the current crisis situation have triggered a lot of meetings and trainings related to crisis management. This, although positive in the overall scheme of things, limits the availability of key stakeholders such as the LMs in the pilot group as well as the GO and the RB.

2 Risk mapping implementation roadmap

Based on the information collected throughout the Project, we recommend the implementation of the toolbox in four stages (see **Error! Reference source not found.** below). Each of the implementation stages is described in the subchapters below. The subchapters will highlight the goal for each of the stages, specific activities carried out, and agents responsible for the different activities.

Figure 3. Implementation of the toolbox

2.1 Preparations for the implementation

The goal of this stage is to assure the successful implementation of the methodology. This stage involves promotional activities to inform the municipalities about opportunities provided by the methodology and improving the content of the tool to increase the benefit it provides to municipalities. Detailed activities described in Table 1 below.

Table 1. Preparations for the implementation

#	Responsible	Category	Activity	Description
1	GO	Methodology	Additional data mapping and collection	• Understand the additional data needs of LMs. • Improve the data mapping and make additional data available/easily accessible for LMs. • If there are data needs for data that is currently not collected, guide responsible agencies and ministries towards collecting the data.
2	GO	Methodology	Role expectations	• Finalise the role expectations of the LMs, including expectations regarding service continuity as well as preparing and responding to risk events. • Assess whether the expectations are legally adequate. If not, exclude the expectations and communicate that to the agencies. If needed, adjust the legal environment to the expectations. • Collect feedback from LMs concerning the role expectations. • Assess whether the expectations are adequate considering the resources and capabilities available for most municipalities. Adjust the

				expectations or uplift the municipality's capabilities. If meeting expectations is not possible, review and adjust the expectations. • Collect LM's role expectations towards agencies and ministries by involving the Association of Estonian Cities and Rural Municipalities. • Review the role expectations of other agencies to uncover the areas of unassigned responsibilities.
3	GO/other service co-ordinators	Methodology	Establish the minimum service levels for municipality's critical crisis services (*kriisiülesanded*)	• Municipalities will be required to assure the continuity of the critical crisis services. It should be clarified what level of continuity needs to be assured.[15] This should be communicated to municipalities as a part of the service continuity role expectations. • There should also be a methodology established to assess whether the municipality meets the minimum service level requirements. The MoF's municipality service assessment criteria[16] can be used to assess the fulfilment of the service level under normal circumstances. Failing to meet the acceptable service levels can be an indicator on low service resilience during a crisis situation. However, additional requirements concerning service continuity and its assessment are needed. • It should be clarified what are the consequences if the municipality (or its service providers) does not meet the required service continuity levels. • In addition, it should be clarified what level of resilience and service continuity should the municipality be able to keep and when the state needs to give them a hand and support them in assuring the service continuity.[17]
4	GO	Legal	Support the implementation of the methodology with VOS	• Establish the requirements for assuring the continuity of the critical crisis services. • Establish a mandatory risk assessment requirement for LMs. • Assign to the RB the guiding and supporting role for LM's risk assessment and methodology implementation. • Decide on the implementation deadline for the new requirements.
5	GO	Legal	Adjust legal requirements to meet the role expectations	• Adjust the legal requirements to meet the realistic expectations of LMs.

[15] For example, what does it mean that kindergartens need to remain open during a crisis event? Is it providing the slot for all the eligible children (as it is under normal circumstances, but some municipalities fail), providing the service for the current users or providing the service to a % of the users? Moreover, the service level should clarify different time frames who fast after crisis the agreed service level should be met.

[16] MinuOmavalitsus: https://minuomavalitsus.fin.ee/

[17] For example, the current refugee crisis has increased the demand for kindergarten and education services. The municipalities are struggling to meet the increasing demand of Ukrainian children. Should managing the continues service provision to them be the task of the municipalities, should the state compensate them for it or should it be coordinated centrally?

				• Adjust the legal requirement to clarify the role expectations of ministries and agencies.
6	GO	Financing	Decision concerning financing of LMs' risk management activities	• Review funding opportunities: o national budget; o EU funded projects. • Decide if there is a need to finance the risk assessment or risk mitigation activities carried out by the municipalities.
7	GO	Financing	Design the funding model for LMs' risk management	• Design the principles of the funding. • There are a lot of options to consider for the funding: o additional budget directly to LMs' budgets; o resources for risk assessment process to procure the private sector support if needed; o compensating salary costs for the risk management professionals; o conditional funding/compensation for risk mitigation investments if the decisions are argued based on the risk assessment; o framework contract for all municipalities to procure trainings, facilitations and support from the private sector (similar approach was used in the activity-based budgeting implementation across the public sector).
8	GO/RB	Implementation	Promotion	• Promote the project outcomes, tools and materials available for the municipalities in different: o local crisis committees; o regional crisis committees; o other events and trainings targeted at local municipalities. • Collect and use the experience stories as marketing material for other LMs. This will help LMs to understand why using the methodology is helpful and necessary. • Assign regional spokespersons/promoters/champions from the pilot group, who can showcase the application of the tool, help others and support them with additional communication materials if needed.
9	GO	Implementation	Targets	• Establish the implementation targets – how many municipalities by what time should have performed the risk assessment. • Design the measures how to reach these

				targets.
10	RB	Implementation	Approach	• Design the measures how to guide municipalities to use the methodology. There are a few opportunities: o integrate the methodology implementation into regular crisis committee meetings; o fill in some of the modules of the tool in the preparation of crisis management exercises or during these exercises; o integrate the methodology into the other training materials.

2.2 Preliminary implementation of the methodology

The goal of this stage is to implement the methodology with larger LM group prior to the full launch through the technical solution. We think the technical solution is something that can support the implementation, however, to gain more user feedback and adjust the requirements it would be good to implement the methodology with a larger target group. This allows to collect user feedback and adjust the approach to make the implementation of the technical system smoother. The overview or the activities required at this implementation stage can be found in Table 2 below.

Table 2. Preliminary implementation of the methodology

#	Responsible	Category	Activity	Description
1	GO	Training	Update the training need	• Collect and evaluate the training needs of the municipalities. This could be done by reviewing the results and training needs of this project or by asking directly the municipalities which will be involved. o How to use all the modules? o How does the methodology benefit the municipalities? • Calculate the time consumption and personnel needs for the trainings.
2	GO	Training	Decision on training approach	• There are a few options to consider (and multiple approaches may be employed simultaneously): o make the video trainings and guidance documents available for the municipalities; o integrate the training into the existing RB's training programmes; o use peer training (form the more experienced municipalities to less experienced municipalities); o carry out additional trainings by the RB; o procure additional trainings from

				the private sector.
3	GO/RB	Training	Design the training programme	• Depending on the approach chosen, design the programme.
4	GO/RB	Implementation	Select a target group	• For the preliminary implementation, pick a target group that represents the sufficient variability in the following aspects: o size; o region; o capacity; o risk profile.
5	GO/RB	Implementation	Facilitation	• Considering the preliminary experience from the pilot, we believe that smaller municipalities, which, so far, have not been legally obligated to perform the specific risk management tasks, benefit the most from the facilitated assessment process. This guides their thinking and motivates their actions more and much faster than just completing the tool independently. • We recommend establishing a facilitated implementation for at least some municipalities (e.g. at first to less than 10,000 people population or to municipalities with higher risk of exposure). There are a few options for it: o facilitation from the RB. If this option is chosen, it should be analysed if the resources (funds and people) currently available in the RB are sufficient. If not, the GO needs to advocate for additional resources; o facilitation from the private sector. • Pilot experience indicates that the municipalities which management board members have a background from the RB, PBGB or EDL or which employees have the specific risk management competences and prior experience such as Tallinn and Tartu are more likely to be able to implement the methodology independently. • What kind of support is needed for the average size municipalities and municipalities lacking the specific risk management know-how remains unclear and can be better understood during the wider pilot (stage 2 – preliminary implementation). • Based on our experience the facilitator should only be involved for the first time. The facilitator will guide the municipality through the process and help solve the issues it may face. Having a facilitator will empower the municipality to independently carry out the assessment in the future. In addition, we believe it will also motivate the municipality to pay increased attention to risk management in the future (including dedicating resources for mitigation).

6	RB	Implementation	Helpdesk for municipalities using the methodology	• If all municipalities do not carry out the assessments in a facilitated format, they may still require additional support and guidance while using the methodology. • The RB should design and establish a format to provide such support to municipalities. • The RB should dedicate existing or additional resources for this task. If current resources available in the RB are insufficient, the GO needs to advocate for additional resources.
7	RB	Implementation	Quality review	• To assure the meaningful activities by municipalities, the RB should monitor the activities carried out by the municipalities and the risk assessment results. • The RB should provide feedback and recommendations if the risk analysis compiled by the municipalities is considered insufficient. Note, however, that the feedback should not be descriptive and determining the “right” answers (this will remove the LM’s ownership of the results). • The RB should dedicate existing or additional resources for this task. If current resources available in the RB are insufficient, the GO needs to advocate for additional resources.
8	RB	Implementation	Feedback	• The RB should collect user feedback to adjust and improve on the methodology before the full-scale implementation. • This can be done by RB’s regional representatives or as a procurement from the private sector. • The RB should dedicate existing or additional resources for this task. If current resources available in the RB are insufficient, the GO needs to advocate for additional resources.

2.3 Preparations for the technical solution

The goal of this stage is to establish a technical solution to facilitate easier risk assessment. The detailed activities required at this stage are described in the Table 3 below.

Table 3. Preparations for the technical solution

#	Responsible	Category	Activity	Description
1	GO	Legal	Assess the legal needs	• Review legal requirements concerning data access for making data risk assessment information and data available for the municipalities. • Review and design legal requirements to allow the sharing of risk assessments between different relevant stakeholders. • Review and design legal requirements to restrict the access to the risk assessments, where it includes sensitive information.
2	GO	Methodology	Adjust the requirements	• Based on the user feedback collected during the previous stage, adjust the functional requirements of the system (if relevant). • Adjust the legal requirements (if relevant). • Adjust the technical requirements (if relevant).
3	GO	Methodology	Provide additional data if needed	• Based on the municipalities' feedback, incorporate additional data where feasible.
4	GO	Procurement	Select the technical environment	• Decide upon the technical environment to host the methodology. • The preliminary recommendation is to use the RB's e-learn environment, however, in the context of potentially changing requirements this may not be suitable.
5	GO	Procurement	Map the technical requirements	• Map the technical needs of the selected technical environment which will host the technical solution. If a new independent system needs to be selected, design the independent technical requirements. • Map the technical requirements mandated by the legal requirements.
6	GO	Procurement	Financing	• Calculate the cost of development of the technical solution depending on the different functional, technical and legal requirements.
7	GO	Procurement	Financing	• Find the resources for developing the technical solution. • There are a few options to consider: o funding from national budget; o funding from the RB's budget;

				○ EU funding.
8	GO	Procurement	Design the procurement documents	• Design the procurement documents: ○ RfS; ○ evaluation criteria.
9	GO	Procurement	Establish a public tender	• Collect tenders. • Evaluate the tenders.
10	GO	Procurement	Establish the technical system	• In close co-operation with the service provider, develop the technical system that meets the needs.

2.4 Implementation of the technical solution

The goal of this stage is to implement the technical solution, provide continuous maintenance of the system and support for the municipalities using it. **All the activities mentioned in the preliminary implementation stage are also relevant during the implementation of the technical solution.** Detailed overview of the additional activities required at this stage is described in the Table 4 below.

Table 4. Technical solution implementation

#	Responsible	Category	Activity	Description
1	Owner of the platform (TBD)	Training	Training of the technical support providers	• Provide relevant trainings for the employees who will be responsible for providing technical trainings and helpdesk for the municipalities.
2	Owner of the platform (TBD)	Training	Training LMs to use the technical environment	• In addition to teaching how to use the methodology to the LMs, it is also needed to guide them to use the technical environment. • Additional text and video materials can be made to support the training objectives and wider implementation of the technical system.
3	Owner of the platform (TBD)	Maintenance	Technical upkeep and maintenance of the system	• Make sure that the system is up to date with regards to the data integrated. • Make sure that the system is accessible for all the relevant stakeholders without technical problems and restrictions. • Make sure that the system fulfils all the security requirements and data is stored securely. • Make sure the owner has enough resources available for the technical maintenance. If not, the GO should advocate for making additional resources available for the owner.
4	Owner of the platform (TBD)/RB/GO	Improvements	Increase the user-friendliness of the technical solution	• Add pop-up alerts and other guiding materials to the technical solution to make the risk assessment process easier for the municipalities.

5	Owner of the platform (TBD)	Improvements	User feedback and improvements	• Collect user feedback to improve the technical environment, e.g.: o whether the structure of the platform is understandable; o whether something is missing and/or unnecessary; o overall user-friendliness/UX of the platform.

3 Appendices

Appendix 1. List of interviews and discussion groups

Organisation/event	Date of the interview	Interviewees
Weekly meeting with the Government Office of Estonia	07.10.2022	Galina Danilišina Erik Ernits Triin Raag Jaanus Teearu
Weekly meeting with the Government Office of Estonia	14.10.2022	Galina Danilišina Erik Ernits Triin Raag Jaanus Teearu
Weekly meeting with the Government Office of Estonia	21.10.2022	Galina Danilišina Erik Ernits Triin Raag Jaanus Teearu
Weekly meeting with the Government Office of Estonia	28.10.2022	Galina Danilišina Erik Ernits Triin Raag Jaanus Teearu
Weekly meeting with the Government Office of Estonia	04.11.2022	Galina Danilišina Erik Ernits Triin Raag Jaanus Teearu
Workshop with the Rescue Board and local municipalities	09.11.2022	Ailar Holzmann (RB) Dmitri Burnašev (GO) Erik Ernits (GO) Evelin Uibokand (Tartu) Heigo Olu (RB) Heiki Soodla (RB) Irina Talviste (Pärnu) Jaak Janno (RB) Jaanus Teearu (GO) Janek Sõnum (RB) Kairi Pruul (RB) Karmo Nakk (RB) Maido Nõlvak (Rakvere) Margo Irve (Tallinn) Margo Klaos (RB) Marko Rüü (RB) Mart Suursu (RB) Raik Saart (Loksa) Raul Kudre (Setomaa) Siiri Kohver (Rakvere) Taavi Kaarmaa (RB) Tauno Mettis (Tallinn) Tauno Võhmar (Alutaguse Terje Lillo (RB) Triin Raag (GO)
Workshop with the Rescue Board and local municipalities	10.11.2022	Ailar Holzmann (RB) Dmitri Burnašev (GO) Erik Ernits (GO) Evelin Uibokand (Tartu) Heigo Olu (RB) Heiki Soodla (RB) Irina Talviste (Pärnu) Jaak Janno (RB)

Organisation/event	Date of the interview	Interviewees
		Jaanus Teearu (GO) Janek Sõnum (RB) Kairi Pruul (RB) Karmo Nakk (RB) Maido Nõlvak (Rakvere) Margo Irve (Tallinn) Margo Klaos (RB) Marko Rüü (RB) Mart Suursu (RB) Raik Saart (Loksa) Raul Kudre (Setomaa) Siiri Kohver (Rakvere) Taavi Kaarmaa (RB) Tauno Mettis (Tallinn) Tauno Võhmar (Alutaguse Terje Lillo (RB) Triin Raag (GO)
Weekly meeting with the Government Office of Estonia	11.11.2022	Galina Danilišina Erik Ernits Triin Raag Jaanus Teearu
Meeting with the Rescue Board	11.11.2022	Marius Kupper

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