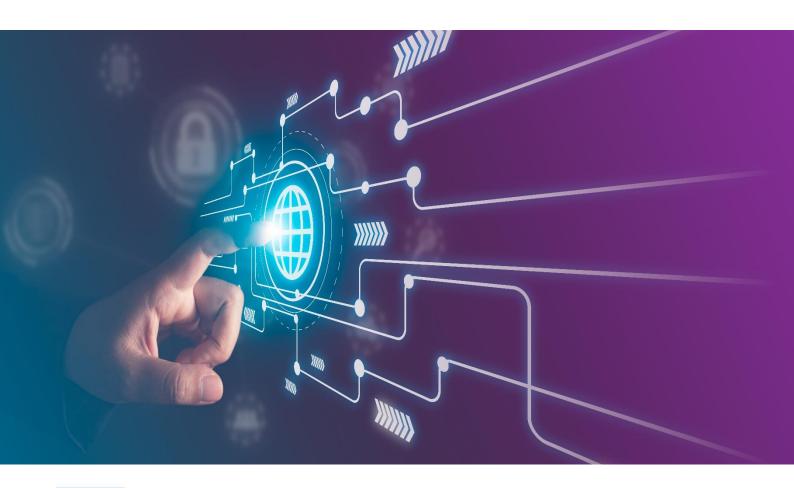
Government data-driven decision-making (DDDM) framework implementation. Test case: crisis management

Deliverable 1.1: Current situation report

Technical Support Instrument

Supporting reforms in 27 Member States









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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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Executive summary

Purpose of the report

The report has been drafted for the purpose to describe the current situation of Government decision-making process and explains the use of Technology, Data and People, including Public Authorities involved in the Process. It further aims to give an overview of the relevant Regulations as well as Policies, Guidelines, Principles and Good Practices that Estonian Public Authorities follow.

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 October 14, 2021. The report covers the items required in the Request for Service (RfS).

This report covers Outcome 1 of this Project – **Government data-driven decision-making**. Separate reports are issued for Outcome 2 and 3 which all combined make up the complete package of deliverables.

The Estonian Government long-term objective is to take better, data-driven decisions, resulting in better policy making. The following hypothesis act as a guide to address challenges related to the use of data: "Not all available data is used in the preparation of the decision making and decisions are often based on intuition and on limited data only."

Document analysis and interviews (both group and individual) with ministries and public authorities were conducted to obtain the understanding of the current situation.

#	Findings
1.	Legal
1.1	Restricted or limited access to state databases and registers within civil service limit the use of data.
1.2	Limited legislation to enquire data from private sector in time critical situation.
2.	Organisation and Governance
2.1	Changes in the organisational structure of the Government Office and the intention to modernise the e-Cabinet shall probably redesign the Government's decision-making process, including roles and responsibilities, but the scope, terms and conditions of changes is unknown at the time of issuing this report.
2.2	The e-Cabinet information system is mostly outdated and is undergoing a modernisation process. Also, the e-Consultation (EIS) information system will be replaced by the new co-creation workspace (KOOS) currently under development. Such developments must be considered throughout this Project to better understand how the use of data and analytics can be organised.
2.3	Government's decision-making process has accelerated in recent years due to Covid-19 and process participants are under time pressure which affect the use of data and quality of decision making for the worse.
2.4	It was highlighted that operational decision-making could be better supported by real-time and dynamic management dashboards. Executives are interested in regularly monitoring the performance of their policy areas and the impact of policy changes, including decision-making on special matters.
2.5	It was acknowledged, advised, and supported to continue working with initiatives and projects led

Findings

by Statistics Estonia and the Ministry of Economic Affairs and Communications which enhance the data quality. The importance of data governance was highlighted as the key enabler of data-driven decision-making.

Attention was drawn to the high cost of providing Statistics Estonia's services and it was found necessary to find a solution to the issue of underfunding of Statistics Estonia, as it significantly inhibits both the use of existing data and the collection of new ones. Small projects often require individual contracts and funding to collect data, which takes time and makes the analysis process time-consuming. As a result, in some cases the necessary data is not gathered or made available, and therefore the quality of policy-making suffers.

3. Operational

- Due to large number of datasets and registers used by government sector (from both public and private data sources), the know-how of availability, location and accessibility of specific and relevant data is limited in civil service.
- The most common data analysis tool in civil service is MS Excel, but the quantitative data analytics competencies are modest. In urgent situations, which would benefit from the use of more advanced tools, and require both software licenses and know-how, making the data processing faster and more automated is crucial.
- Interviewees also highlighted that the formulation of the research questions could be improved in order to respond with high quality and best address the intention and needs of the decision maker.
- Data quality varies and is in some cases poor meaning that different datasets cannot be easily merged for analysis purposes. It was also mentioned that the data should always be treated with caution. Data alone cannot be blindly trusted and the ability to interpret data becomes important.
- 3.5 Several data-related initiatives and developments were identified during the as-is situation analysis and it was emphasised and recommended to cooperate with the existing initiatives to encourage the use of data in the government sector and avoid any duplication of initiatives.

4. Technology

- The variety of technologies used across the government sector impact, for instance, the arrangement of central trainings for digital upskilling and data analytics as these trainings should cover and consider all tools and technologies.
- 4.2 Management reports should be prepared centrally or agreed on a single and easy-to-use central system. The need for additional manpower or other resources in the public authorities and ministries should be avoided.
- Further support on increasing technical data analytics capabilities (People, Technology) is expected to enhance and widen the know-how outside of the analysis units of ministries.
- Several ministries are developing the so-called data warehouses (Government Data Warehouse, GDW) which aim to enable easy access to accurate, consistent, and integrated government data for better and faster decision-making and for statistical purposes. Such practice has been well supported.

At the same time, it has been pointed out that GDW's may need further governance, but also take into account the fact that they further fragment the management of databases and the establishment of common data governance rules / guidelines / standards.

Lühikokkuvõte

Aruande eesmärk ja ulatus

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

Aruandes kajastatakse ainult Projekti esimese tulemiga piiritletud teemasid – **andmepõhise otsustusprotsessi edendamine**. Eraldi aruanded väljastatakse Projekti teise ja kolmanda tulemi kohta, mis kokku moodustavad lepingus ettenähtud väljundid.

Käesolev aruanne on koostatud eesmärgiga anda ülevaade Vabariigi Valitsuse otsustusprotsessist, kirjeldada tehnoloogia ja andmete kasutust ning tuua välja protsessi osaliste rollid ning vastutused. Aruandes antakse ülevaade ka asjakohastest regulatsioonidest ning poliitikatest, suunistest, põhimõtetest ja headest tavadest, mida asutused otsuste ettevalmistamisel järgivad.

Vabariigi Valitsuse pikaajaline eesmärk on teha paremaid andmepõhiseid otsuseid, et toetada poliitika tegemist. Andmete kasutamisega seotud väljakutsete lahendamisel juhindutakse järgmisest hüpoteesist: "Otsuste tegemise ettevalmistamisel ei kasutata kõiki olemasolevaid andmeid ja otsused põhinevad sageli intuitsioonil ja ainult piiratud andmetel."

Hetkeolukorrast arusaamise omandamiseks viidi läbi dokumendianalüüs ja intervjuud (nii grupi- kui ka individuaalsed) ministeeriumide ja ametiasutustega.

#	Tähelepanek
1.	Õigus
1.1	Piiratud juurdepääs registritele ja andmekogudele avalikus teenistuses takistab andmete kogumist ja kasutamist.
1.2	Õiguslikud alused erasektorilt andmete pärimiseks puuduvad, ennekõike ajakriitilises olukorras.
2.	Valitsemine ja struktuur
2.1	Valitsuse istungite infosüsteemi (VIIS) kaasajastamise tulemusena tehakse ettepanek protsessi muutmiseks, sealhulgas vaadatakse üle rollid ja vastutused, nõuded ja vajadused, kuid selliste muudatuste ulatus ja tingimused ei ole veel teada.
2.2	e-Kabineti süsteem on osaliselt vananenud ja kaasajastamisel. Eelnõude infosüsteem (EIS) asendatakse uue, hetkel arendamisel oleva koosloome keskkonnaga (KOOS). Selliseid arenguid tuleb kogu selle projekti jooksul arvesse võtta ning teha koostööd, et tuvastada kus ja kuidas andmete ning analüütika kasutamist kõige mõistlikumalt korraldada.
2.3	Valitsuse otsustusprotsessi töötempo on viimastel aastatel Covid-19 tõttu oluliselt kiirenenud ning protsessi osalejad on ajasurve all, mis mõjutab negatiivselt andmete kasutamise ulatust ja otsustamise kvaliteeti.
2.4	Rõhutati, et operatiivset otsustamist saaks paremini toetada reaalajaliste ja dünaamiliste juhtimisaruannete abil. Juhid on huvitatud oma poliitikavaldkondade tulemuslikkust ja mõjusust regulaarsemalt jälgima.
2.5	Tunnustati Statistikaameti ning Majandus- ja Kommunikatsiooniministeeriumi eestvedamisel juhitavaid andmete kvaliteeti ja -kasutust tõstvate algatuste ning projektide tähtsust.
	Tähelepanu juhiti Statistikaameti teenuste osutamise kõrgele hinnale ning leiti, et vaja on leida lahendus Statistikaameti alarahastamise küsimuses, kuna see pärsib olulisel määral nii olemasolevate andmete kasutamist kui ka uute kogumist. Väiksemahuliste päringute puhul tuleb

Tähelepanek

tihti sõlmida eraldi lepingud ja leida rahastus andmete kogumiseks, mis võtab aega ja muudab analüüsiprotsessi aeganõudvaks. Kohati jäävad seetõttu ka vajalikud andmed saamata ning poliitikakujundamise kvaliteet kannatab.

3. Protseduurid ja oskused

- Asjakohaste andmete tuvastamise, kogumise, töötlemise, analüüsimise oskused on avalikus teenistuses madalad, seda mh seetõtu, et nii avalikke kui eraõiguslikke (nii siseriiklikud kui rahvusvahelised) andmekogusid ja registreid on palju ning olulise eristamine ebaolulisest on aeganõudev ning nõuab valdkondlikku kompetentsi.
- Levinuim andmeanalüüsi tööriist avalikus teenistuses on MS Excel. Leiti, et andmeanalüütika kompetentsid on tagasihoidlikud ning piirnevad väheste analüütikute võimekusel. Just kärmet reageerimist nõudvates olukordades teevad andmetöötluse kiiremaks ja automaatsemaks kaasaegsed töövahendid, mis eeldavad nii tarkvara litsentside kui oskusteabe olemasolu.
- Intervjueeritavad tõid välja, et otsustajad võiksid eesmärke ja uurimisküsimuste sõnastust täiustada, et ametnikud saaksid kvaliteetsemalt vastata ning paremini otsustaja kavatsusi mõista, sh andmeid vastuste kujundamisel kaasata.
- Andmete kvaliteet on varieeruv ja mõnel juhul kasin, mis tähendab, et erinevaid andmekogumeid ei saa analüüsi eesmärgil hõlpsasti liita. Mainiti ka, et lähteandmetesse tuleb alati reservatsiooniga suhtuda. Ainult andmeid ei saa usaldada ning oluliseks muutub oskus andmeid tõlgendada.
- Hetkeolukorra analüüsi käigus tuvastati mitmeid andmetega seotud algatusi ja arendusprojekte. Intervjuude käigus rõhutati ja soovitati teha selle projekti raames koostööd olemasolevate algatustega, et soodustada andmete kasutamist valitsussektoris ja vältida algatuste dubleerimist.

4. Tehnoloogia

- 4.1 Valitsussektoris kasutatavate tehnoloogiate mitmekesisus mõjutab näiteks kesksete koolituste korraldamist digiõppe ja andmeanalüüsi alal. Tehnoloogia valikuid ei ole keskselt ette öeldud ning asutused on olnud vabad otsustamisel.
- **4.2** Juhtimisaruanded peaks olema koostatud keskselt või leppida kokku ühtses ja lihtsasti kasutatavas süsteemis. Vältida tuleks lisa tööjõu või muu ressursi vajaduse tekkimist asutusse/valitsemisalasse.
- 4.3 Soovitati toetada ministeeriumeid ja asutusi andmeanalüütika võimekuse suurendamisel ja laiendada digi- ja andmeoskuseid väljaspool ministeeriumide analüüsiüksusi.
- Mitmed ministeeriumid arendavad nn andmeladusid, mille eesmärk on mh võimaldada lihtsamat juurdepääsu laialdasematele ning vajalikele andmetele kiiremate otsuste tegemiseks, aga ka järjepidevalt operatiivsete ning statistiliste näitajate analüüsimiseks. Selliseid arendusprojekte on heade praktikatena esile tõstetud.

Samal ajal on juhitud tähelepanu, et andmelaod võivad vajada täiendavat õiguslikku reguleerimist, aga arvestada ka asjaoluga, et need killustavad veelgi andmekogude haldamist ning ühtsete andmehalduse reeglite/juhiste/standardite kehtestamist.

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1 Introduction

1.1 Scope of the Project

1.1.1 Project Outcomes and Deliverables

This Project will **contribute towards 3 outcomes.** It is expected that Estonia, having been closely involved in implementation of the Project and consulted by the PwC on all draft deliverables, endorses the deliverables through its internal mechanisms and implements the work/recommendations contained in the final deliverables. As a result, Estonian government is supposed to:



Project long-term impact

The Estonian Government takes better, data-driven decisions (in particular in the case of crisis management and prevention areas), resulting in better policy making and better investment planning, measured by the following indicators:

- The redesigned DDDM approach is used across the government sector.
- The redesigned risk mapping and disaster loss data management approaches are used in crises management and prevention.

Project deliverables and tasks

Figure 1. Overview of Project Deliverables and Tasks

Project deliverables (D)				
Outcome 1	Outcome 2			
Deliverable 1.1: DDDM Current situation report	Deliverable 2.1: Risk mapping and disaster loss data management current situation report			
Deliverable 1.2: DDDM Catalogue of requirements	Deliverable 2.2: Risk mapping and disaster loss data management catalogue of requirements			
Deliverable 1.3: DDDM Evaluation of alternative to-be scenarios and recommendation report	Deliverable 2.3: Evaluation of alternative to-be scenarios and recommendation report			
Deliverable 1.4: DDDM To-be situation report	Deliverable 2.4: Risk mapping and disaster loss data management to-be situation report			
Deliverable 1.5: DDDM Implementation roadmap	Deliverable 2.5: Risk mapping and disaster loss data management implementation roadmap			
Deliverable 1.6: DDDM Proof of concept	Deliverable 2.6: High level specification for disaster loss data management system			
Outcome 3	Deliverable 3.1: Estonian risk report			

1.1.2 Project Organisation

The following key Stakeholders are drawn at the figure below which make up the highest level of authority for the Project and whose representatives shall belong to the Project Steering Committee.

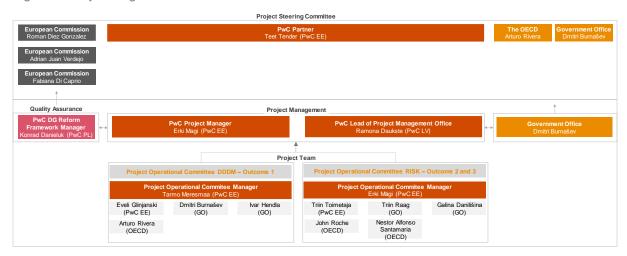
Figure 2. Project Key Stakeholders



The OECD has not been engaged and involved in the Project work as of February 28, 2022, but The Contracting authority and the Beneficiary shall continue the discussions to agree on the conditions involving the OECD.

The detailed list of all participants is included below on Figure 3.

Figure 3. Project Organisation



Project Steering Committee

For purposes of overseeing the Project progress, the Project Steering Committee is set up with the following responsibilities:

- Oversee the execution of the Project and provide strategic guidance.
- Make decisions on the Project's progress.
- Agree on steps to solve potential issues.

Project Operational Committee

For purposes of overseeing the Project progress, the Project Operational Committee for Outcome 1 is set up with the following responsibilities:

- Oversee the execution of the Project and provide strategic guidance.
- · Make decisions on the Project's progress.
- · Agree on steps to solve potential issues.

Working Principles

Several principles and practices have been discussed and agreed for effective management of the Project Organisation:

- Project Steering Committee shall meet once in 3 months.
- Project Status Update Monthly Meeting once in every month.
- Project Operational Committee for Outcome 1 shall meet once in every month.
- Project Status Update Weekly Meeting once in every Tuesday.

Details of the key events and meetings are introduced in Appendix 5.1 Key meetings of the Project Organisation.

Microsoft SharePoint site has been also registered to encourage and simplify document exchange and co-work between the Contractor and the Beneficiary. Other ad-hoc type of meetings are set up on need basis.

1.2 Scope of the Report

1.2.1 Purpose and Outcome

The report has been drafted for the purpose to describe the current situation of Government decision-making process and explains the use of Technology, Data and People, including Public Authorities involved in the Process. It further aims to give an overview of the relevant regulations as well as Policies, Guidelines, Principles and Good Practices that Estonian Public Authorities follow.

This report covers only Outcome 1 – Government data-driven decision-making framework implementation (see Figure 1). Separate reports are issued for Outcome 2 and 3 which all combined make up the complete package of deliverables.

1.2.2 Scope of Outcome 1

Project scope and focus was also discussed at early stage of the Project and it was agreed to concentrate and map the current situation covering the responsibility¹ areas of Ministries and Government Office (see Figure 4).

Figure 4. Scope of the Project by Institutions in Outcome 1



It was acknowledged that certain types of Documents are handed over to the Parliament for proceedings and approvals as well as Legal Drafts go to the President for announcement and publishing at Riigi Teataja, but considering the purpose of the Project, **the working process and practices at the Parliament and President are not covered**.

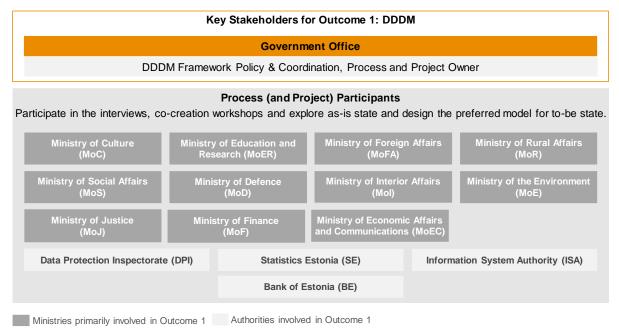
Limiting the scope does not mean that the Project does not consider the challenges and needs of all process participants, hence the whole process is taken into consideration while providing conclusions and recommendations.

¹ Process Responsible is a Process Participant who does the work to complete the task. Originates from the RACI model – responsibility assignment matrix.

1.2.3 Stakeholders for Outcome 1

To conduct an effective stakeholder engagement, we have identified the following key stakeholders and process participants for the Outcome 1, as well as included their key tasks in the Project.

Figure 5. Outcome 1: Key Stakeholders and Project Participants



Individuals considered, invited and included into the Project work are both top executives in civil service (Secretary Generals of Ministries, Deputy-Secretary Generals of Ministries and Director General of Public Authorities) as well as other executives and specialists. See the list of conducted individual and/or group interviews from the Appendix 5.2 List of conducted Interviews.

1.2.4 Hypothesis of Outcome 1

This Project has been set the following hypothesis: "Not all available data is used in the preparation of the decision-making and decisions are often based on intuition and on limited data only."

The working hypothesis acts as a useful guide to address problems related to the use of data and over the course of the Project we aim to evaluate and specify the hypothesis, define the problem the Project is authorised and capable to work with and search for the solutions.

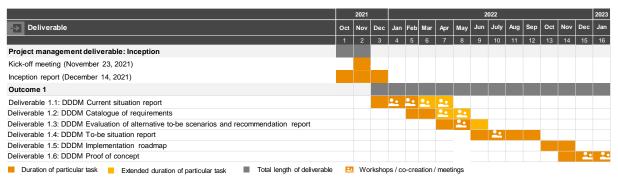


1.3 Methodology and Approach

To deliver the current situation report, several combined methods were taken to map the current situation of the Government decision-making process. The aim of the mapping was to create an understanding of the overall process and how data is used to support the decision-making from the initiation of the decision to be made until the draft decision is discussed during the government's cabinet meeting.

Figure 6 gives a high-level overview of the project activities and timeline. The activities of current situation mapping took place from December 2021 to April 2022.

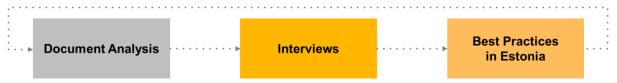
Figure 6. Project Activities and Timeline



Three different methods were used and combined to map the decision-making process (see Figure 7), as well as map the best practices used within the civil service and the obstacles that the process participants experience when using data to support the messages in a draft decision document.

Document analysis involved the analysis of publicly available resources and documents, mapped during the interviews and collected from the ministries after interviews. Documents and various analysed sources are referred throughout the report at footnotes.

Figure 7. Methods used to map the decision-making process



Semi-structured individual and group interviews were conducted with Deputy-Secretary Generals of Ministries as well as with Ministries' Heads of Departments, Advisers, Data Experts and Analysts who have participated in preparing a decision draft for the government. Interviews focused on the following topics:

- High-level process of drafting the decision for government described by top Executives;
- Detailed process mapping of memorandums (see Paragraph 3.2) described by mid-level Executives and Specialists;
- How data is used in this process to support the government's decision-making;
- What is the overall approach to using data, technology and analytical tools in the ministry;
- What are the key obstacles and constraints related to data-driven decision-making.

Overview of all interviews, key events and meetings are listed in the Appendixes 5.1 and 5.2. During the interviews, ministries referred to various data-related initiatives taking place within or outside of the ministries and documents created by the ministries that are descriptions of the decision drafting procedures and structured draft decision document templates. Those procedures and templates work as guidelines, frameworks or checklists for the officials who are drafting the decisions.

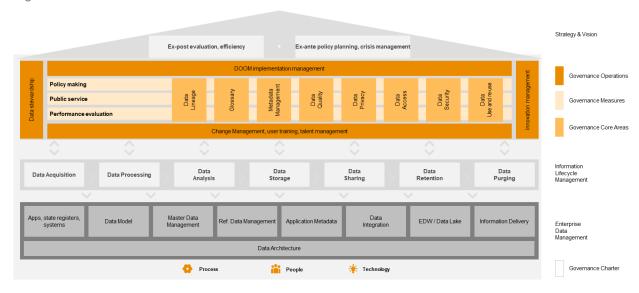
Some practices of the data governance in Estonia were also mapped using the insights from Estonian data governance network and a selection of few practices are presented in the Appendixes 5.8. aimed to support the Project and illustrate the data related initiatives at public authorities.

PwC Data Governance Framework (DGF)

PwC Data Governance Framework considers current and next-generation data landscapes and Data Governance challenges and puts it into practice. The framework encompasses all domains of governance from three perspectives:

- 1. Process
- 2. People
- 3. Technology

Figure 8. PwC Data Governance Framework



PwC Data Governance Framework was used to formulate specific process, people and technologyoriented questions that were discussed with Ministries' Data Experts and Analysts to map the current situation from their data-specific perspective and identify observations and provide recommendations.

1.4 Limitations

During the current decision-making process mapping the team faced certain limitations that were communicated and acknowledged at the status update meetings with the Beneficiary and DG Reform:

- Limited access to organisation and people. The data-driven decision-making project was introduced to the Secretary Generals in December 2021 where a mandate was given to the project to interview Deputy-Secretary Generals from all Ministries to gather their insights on the current decision-making process, how the drafts are prepared at ministries and how data is used throughout the legislation drafting process. Due to the Ukrainian War and foreign policy situation, not all contacts have been always available for an interview and/or validation during the current situation mapping phase of this project.
- Limited access to and the lack of written procedures for decision-making process in the Government Office and ministries, therefore further meetings and mapping tasks were required that have extended the duration of tasks set in initial timeline.
- Limited ability to involve the OECD as one of the key stakeholders. Due to the delayed cooperation agreement signing between the DG Reform and the OECD. The OECD representatives were not participating in the project organisation meetings, e.g. Operational committee and Steering committee meetings, until June 15, 2022.
- Organisation's structural changes took place in Government Office as of Feb 1, 2022 as well
 as changes in decision-making process due to the planning of modernising the e-Cabinet
 system.

2 Policy and Legal Framework

2.1 General Policy Documents

The Government Office's mission is to support the Government of the Republic and the Prime Minister in policy drafting and implementation. The Government Office (1) supports the planning of the government's work, (2) prepares the government's action plan (VVTP²) and coordinates its implementation, (3) prepares and organises government sessions and cabinet meetings, (4) ensures compliance of draft government legislation with the Constitution and other laws, (5) coordinates Estonia's positions, and (6) advises and supports the Prime Minister on EU affairs.

The following policies, regulations, good practices and guidelines govern and support the decision-making process in general:

- Basic Principles for Legislative Policy until 2030³ (Poliigika põhialused aastani 2030)
- Rules for Good Legislative Practice and Legislative Drafting⁴ (Hea õigusloome ja normitehnika eeskiri, HÕNTE)
- Handbook of the Good Legislative Practice⁵ (Normitehnika käsiraamat)
- Methodology of Impact Assessment⁶ (Mõjude hindamise metoodika), including different supporting tools and guidelines such as Checklist for Conducting Impact Assessment⁷
- Methodology of Ex-post Impact Assessment⁸ (Järelhindamise korraldamise juhend)
- Good Practices for Inclusion⁹ (Kaasamise heat ava), including Handbook for Inclusion
- Public Legislative Yearly Plans of Ministries¹⁰ (Ministeeriumide õigusloomeplaanid)
- Handbook of European Union for Public Servants¹¹ (Ametniku Euroopa Liidu käsiraamat)
- Rules of Procedure of the Government of the Republic¹² (Vabariigi Valitsuse reglement) which set out the planning of the work of the Government of the Republic, matters submitted to the Government of the Republic for discussion and decision-making, preparation of drafts and other matters, procedure for the sessions of the Government of the Republic, formation and dissolution of government committees, government communication, and assumption of office and resignation by the Government of the Republic and ministers.

The following matters are submitted to the Government of the Republic for discussion and decision-making:

- 1) drafts of Acts and resolutions of the Riigikogu;
- 2) drafts of the regulations and orders of the Government of the Republic;
- 3) positions and overviews of European Union affairs;
- 4) domestic and foreign policy matters of significant importance;

² VVTP – Vabariigi Valitsuse Tegevusprogramm

³ Riigikogu. *Approval of Basic Principles for Legislative Policy until 2030.* 12.11.2020. Available: https://www.riigiteataja.ee/en/eli/508052021001/consolide

⁴ https://www.riigiteataja.ee/en/eli/508012015003/consolide

⁵ https://www.just.ee/media/774/download

⁶ https://www.just.ee/media/562/download

⁷ https://www.just.ee/media/2945/download

⁸ https://www.just.ee/media/1495/download

⁹ https://www.riigikantselei.ee/valitsuse-too-planeerimine-ja-korraldamine/kaasamine-ja-osalemine

¹⁰ https://www.just.ee/oigusloome-arendamine/hea-oigusloome-ja-normitehnika/ministeeriumide-oigusloomeplaanid

¹¹ https://www.just.ee/media/3062/download

¹² https://www.riigiteataja.ee/en/eli/514062019001/consolide

- 5) other matters deriving from law and other legislation that are within in the competence of the Government of the Republic.
- Government of the Republic Act¹³ (Vabariigi Valitsuse seadus) which regulates that the Government of the Republic shall make its decisions on the proposal of the Prime Minister or an appropriate minister. Decisions of the Government of the Republic shall be made by a majority of the members of the Government participating in a session. Each member of the Government of the Republic shall have one vote. If votes are equally divided, the vote of the Prime Minister shall govern. The decision on an issue shall be postponed at the reasoned request of the Prime Minister or an appropriate minister.
- Riigikogu Rules of Procedure and Internal Rules Act¹⁴ (Riigikogu kodu- ja töökorra seadus).

¹³ https://www.riigiteataja.ee/en/eli/522062021002/consolide

¹⁴ https://www.riigiteataja.ee/en/eli/504062020005/consolide

2.2 Data and Digitalisation

2.2.1 Regulations, Principles and Strategy

Data is everywhere and more data are continuously generated. Without data management, the data lose much of their value. Data management is necessary to make sure that data could be quickly found and effectively used.

Statistics Estonia

• **Digital Society Development Plan 2030**¹⁵ (Digiühiskonna arengukava).

The plan contains the vision and action plan on how to further develop the Estonian economy, state, and society over the next decade. The Plan until 2030 strengthens the necessary foundations in three areas: (i) digital state development, (ii) national cyber security, and (iii) transmission connections.

Public Information Act¹⁶ (Avaliku teabe seadus (AvTS))

The purpose of this Act is to ensure that the public and every person has the opportunity to access information intended for public use, based on the principles of a democratic and social rule of law and an open society, and to create opportunities for the public to monitor the performance of public duties.

This Act introduces several **Principles** and defines **Core Vocabulary** of which some are highlighted in the following section by paragraphs:

- Public information is information which is recorded and documented in any manner and on any medium and which is obtained or created upon performance of public duties provided by law or legislation issued on the basis thereof.
- The re-use of information is the use of such public information, the public use of which is not restricted by law or pursuant to the procedure established by law (hereinafter open data), by natural persons or legal persons for commercial or non-commercial purposes other than the initial purpose within the public duties for which the information was obtained or produced. The exchange of information between holders of information for the performance of their public duties does not constitute re-use of information.

If this is possible and appropriate, the holder of information shall grant access to open data in a file format which is structured so that software applications can easily identify, recognise and extract specific data, including individual statements of fact, and their internal structure (hereinafter machine-readable format), and in a format that is platform-independent and made available to the public without any restriction that impedes the re-use of documents (hereinafter open format) together with data descriptions describing data sets and data contained therein. If conversion of open data into digital format, machine-readable format or open format is impossible or would involve disproportionately great effort, the holder of information shall grant access to open data in their original format or in any other format.

 Access to information shall be ensured for every person in the quickest and easiest manner possible.

¹⁵ https://www.mkm.ee/et/eesmargid-tegevused/infouhiskond/digiuhiskonna-arengukava-2030

¹⁶ https://www.riigiteataja.ee/en/eli/ee/510122021005/consolide/current

 Upon granting access to information, the inviolability of the private life of persons and protection of copyright shall be ensured. Before giving information for public use, the holder of information shall assess the need to establish restrictions on the public use of the information.

Access to information shall be granted **without charge** unless payment for the direct expenses relating to the release of the information is prescribed by law. The conditions for access shall not be unnecessarily restrictive or detrimental to competition.

- A database is a structured body of data processed within an information system of the state, local government or other person in public law or person in private law performing public duties which is established and used for the performance of functions provided in an Act, legislation issued on the basis thereof or an international agreement.
- Collection of data in the database shall be based on the one-request-only principle.
- The state information system (see more details in paragraph 3.3.6) consists of databases which are connected to the data exchange layer of the information system and registered in the administration system of the state information system, and of the systems supporting the maintenance of the databases.
- Establishment of separate databases for the collection of the same data is prohibited.
 - Before the establishment of a database or changing the composition of the data collected in a database, introducing a database or terminating a database, the technical documentation of the database shall be approved by the Estonian Information System's Authority, the Data Protection Inspectorate and the Statistics Estonia.
- The chief processor of a database (Estonian andmekogu vastutav töötleja) is responsible for the legality of the administration of the database and for developing the database. The chief processor of a database may authorise, within the extent determined by the chief processor, another state or local government agency, legal person in public law or, based on a procurement contract or a contract under public law, a person in private law to perform the tasks of processing of data and housing of the database. An authorised processor (Estonian volitatud töötleja) is required to comply with the instructions of the chief processor in the processing of data and housing of the database and shall ensure the security of the database.

The following support systems are introduced for the maintenance of databases:

- 1) the classifications system;
- 2) the geodetic system;
- 3) the system of address details;
- 4) the system of security measures for information systems;
- 5) the data exchange layer of information systems;
- 6) the administration system of the state information system.
- Supervision over compliance with this Act and legislation established on the basis thereof shall be exercised by:
 - 1) the Data Protection Inspectorate;
 - 2) the Estonian Information System's Authority;
 - 3) Statistics Estonia;
 - 4) The Consumer Protection and Technical Regulatory Authority.

- The document register (named also as Document Management System, DMS) of an agency is a digital database to register documents received by the agency and prepared in the agency and to ensure access thereto.
- Handbook for Database by the Data Protection Inspectorate¹⁷ (Andmekaitse Inspektsiooni andmekogu juhend).
- Regulation on Principles for Managing Services and Governing Information¹⁸ (Teenuste korraldamise ja teabehalduse alused), including Guidelines for the adoption of this Regulation¹⁹ which establishes the requirements for: (i) management and development of services; (ii) information governance.
- List of different Guidelines, Research Papers and Documents all supporting the development of Public Services and Information Governance²⁰.
- Personal Data Protection Act²¹ (Isikuandmete kaitse seadus).
- EU Data Governance Act²².
- EU Directive on Open data and the re-use of public sector information²³.
- EU Interoperability solutions for public administrations, businesses and citizens²⁴.

The above listed regulations, guidelines and handbooks do not refer to a complete list of all documents related to the use of data but are the most relevant that are commonly referred to and used in normal course of work in Public Sector.

2.2.2 Data Security and Privacy

Data and Information Security

Three-level IT Baseline Security System ISKE²⁵

It is an information security standard that was developed for the Estonian public sector. According to Government Regulation no. 273 of 12 August 2004, **ISKE is compulsory for state and local government organisations who handle databases/registers**. The first version of the ISKE implementation manual was completed by October 2003.

The preparation and development of ISKE was based on a German information security standard – IT Baseline Protection Manual (IT-Grundschutz in German) – which was adapted to suit the Estonian situation.

A three-level baseline system means three different sets of security measures for three different security requirements have been developed (different databases and information systems may have different security levels).

¹⁷ https://abi.ria.ee/riha/files/4620376/4620481/1/1587724781269/AKI_Andmekogude+juhend.pdf

¹⁸ https://www.riigiteataja.ee/en/eli/502062021006/consolide

¹⁹ https://www.mkm.ee/sites/default/files/content-editors/lyhijuhised_tkta_rakendajatele_vers_1_1.pdf

²⁰ https://www.mkm.ee/et/tegevused-eesmargid/infouhiskond/infouhiskonna-teenused

²¹ https://www.riigiteataja.ee/en/eli/523012019001/consolide

²² https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52020PC0767

²³ https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32019L1024&gid=1643118771300

²⁴ https://ec.europa.eu/isa2/home_en

²⁵ https://www.ria.ee/en/cyber-security/it-baseline-security-system-iske.html

Estonian information security standard E-ITS²⁶

The Estonian information security standard (E-ITS) is a basis for handling information security. **The standard is in Estonian language and compatible with the Estonian legal system**. It is compliant with the internationally acknowledged ISO/IEC 27001 information security management standard.

The purpose of E-ITS is to develop and promote the level of information security of the Estonian public authorities as well as private businesses. Until now, the ISKE information security system has been used for the same purpose. The intention is also to make dealing with information security more manageable for smaller organisations.

The Estonian information security standard will present a baseline protection system, which will help organisations to achieve the information security system matching their needs. The management board of the organisation has more freedom to decide which objects and processes require protection. Baseline protection matches the objects and processes protected with the standard modules of the baseline protection catalogue. Organisations can reuse the best practices of information security and thereby save on the funds spent on implementing information security.

E-ITS became mandatory in January 2022. The new standard must be implemented by any organisation fulfilling public duties. Private business may also use E-ITS to achieve their information security goals.

The current ISKE information security system will remain valid until 31 December 2023. By this time, all ISKE users must transfer to the new information security standard. E-ITS web page can be found from here https://eits.ria.ee/.

According to National Cyber Security Index²⁷ Estonia places 5th in the world.

Supervision

Information System Authority (ISA) which belongs to the administrative area of the Ministry of Economic Affairs and Communications, **inspects the implementation of security measures**²⁸:

- on the information systems of state and local government agencies,
- on the information systems of providers of essential and vital services,
- · on the information systems of providers of telecommunications services,
- · on the information systems of providers of digital services,
- on the information systems of providers of trust services,
- on the information systems of other organisations listed in legislation.

In supervision, ISA relies on the following legislation: Public Information Act, Emergency Act, Cybersecurity Act, Electronic Communications Act and Electronic Identification and Trust Services for Electronic Transactions Act.

Data Protection and Privacy

General principles of personal data processing are introduced by Data Protection Inspectorate (DPI) which state that the activities of a state agency are generally public. In Estonia, all documents can be investigated through the document register or by submitting a request for information. DPI also publishes the precepts and challenge decisions that have entered into force on their website. Relevant Data Protection and Privacy related guidelines and policies can be found from the DPI's web page in here: https://www.aki.ee/et/koik-juhised-loetelus.

²⁶ https://www.ria.ee/en/cyber-security/estonian-information-security-standard.html

²⁷ https://ncsi.ega.ee/country/ee/

²⁸ https://www.ria.ee/en/cyber-security/supervision.html

2.2.3 Leading Public Authorities related to Data Governance

Statistics Estonia

Data Governance in Estonia is mostly coordinated by Statistics Estonia which concentrates to the following data management requirements²⁹:

- to have an up-to-date and content overview of databases and datasets that are used in analysis and statistics;
- to standardise data descriptions so that datasets, including open data, could be quickly found and the data would be described once with quality, which would allow to understand the necessary data and support their adoption;
- to monitor data quality and improve it so that users would be quickly convinced that the data are correct, complete and timely.

Statistics Estonia manages the system of classifications and monitors that the same classifications are used in databases and information systems. In addition, Statistics Estonia coordinates the adoption of international classifications and standardizing lists of consistent objects used in information systems and creation of classifications of these.

Ministry of Economic Affairs and Communications

The information society policy of the Republic of Estonia is shaped and coordinated by the Ministry of Economic Affairs and Communications (MoEC) and it is also responsible for the implementation of digital agenda. Furthermore, MoEC is also responsible for the development of Public Services, standardisation and establishment of a user-friendly service environment.

Data Protection Inspectorate

The purpose of the Data Protection Inspectorate is to help shaping a society where the individual's right to privacy and the transparency of state activities is valued. The Inspectorate monitors the compliance with the Public information Act, Personal Data Protection Act and ensures the protection of Personal data. The Inspectorate is an active member of the European Data Protection Board and participates in several international working groups.

Bank of Estonia

Eesti Pank is responsible for compiling the statistics for the Estonian financial and external sectors and for the financial account. As a **producer of official statistics**, the central bank supplies good quality, reliable, up to date and impartial information that is used in analysis, forecasting and policy setting, and is released publicly. Eesti Pank also helps compile statistics for the European economic and monetary union and works in developing new statistical methodologies.

2.2.4 Relevant Data Governance Initiatives in Estonia

For the coordination of data governance there is an action plan and a cooperation network. The data governance action plan lists the duties and responsible bodies for years 2021 and 2022. Here are some of selected Data Governance initiatives which the leading Public Authorities are managing:

 Statistics Estonia together with the Information System Authority are developing a data description tool (RIHAKE) for organisations. It allows describing the organisation's datasets and transmit the description in a machine-readable format to the administration system of the state information system (RIHA). Please see more details about the Information Systems, including RIHA in section 3.3.

²⁹ https://www.stat.ee/en/statistics-estonia/data-governance

- Development of the **Data Governance Knowledge Space** (http://www.andmehaldus.ee/).
- **Central Training Events** on Data Management under the leadership of the Ministry of Economic Affairs and Communications and in cooperation with Statistics Estonia.
- Continuous development of the **Estonian Open Data Portal** (https://avaandmed.eesti.ee/). Please see further information about Open Data Portal, including the screenshot of the Portal in Appendix 5.7.
- New Classifier Portal of Statistics Estonia and its content management, including inventory of classifiers used in databases aimed to develop and optimise classifiers.
- Analysis of Data Administration related concepts, terms and requirements to Estonian legal
 framework, for instance the need to define and regulate the Core Data Terms such as General
 Registers, Basic Data in the data sets, High-Value Data Sets or data quality requirements for data
 management of Public Authorities.
- Activities related to compiling sectoral keywords and multi-domain vocabulary and ensuring interoperability to ontologise and provide URI's³⁰.
- Development of the Data Quality Assurance Process and Methods (i.e. Automatic Data Quality Control Function in the Open Data Portal).

More details can be found from here: Data Governance and Open Data Action Plan (in Estonian): https://digiriik.ee/index.php/andmehalduse-tegevuskava/.

³⁰ Wikipedia. Uniform Resource Identifier (URI) is a unique sequence of characters that identifies a logical or physical resource used by web technologies. URIs may be used to identify anything, including real-world objects, such as people and places, concepts, or information resources such as web pages and books.

3 Government Decision Making Process

3.1 Process and Participants

3.1.1 Process Overview

Government decision-making process consists of **6** high level **process steps** (see Figure 9). First three steps take place at the ministry level, where the initiative can be proposed by various stakeholders such as the Government, the Parliament etc. Preparation of the Draft Act (draft) is normally done by the policymaking advisors in cooperation with lawyers and legal experts. Preparation phase involves finding and analysing various data to support and give reasons for the decision to be made, including conducting the impact analysis of the proposed decision and following other relevant good practices. Finding and analysing relevant data is typically the task on policymaking advisors and legal experts who may or may not be supported by the ministries' inhouse analytical units.

Third step is the pre-approval of the draft and within this step all ministries and relevant stakeholders analyse the draft, add suggestions and comments to improve, amend or remove the draft. Often this step includes searching for relevant data in other ministries to analyse whether the decision has wider impact in the areas of other ministries. Once the draft is finalised and pre-approved by all ministries, the process proceeds into fourth step which is the approval of the draft at Government level³¹.

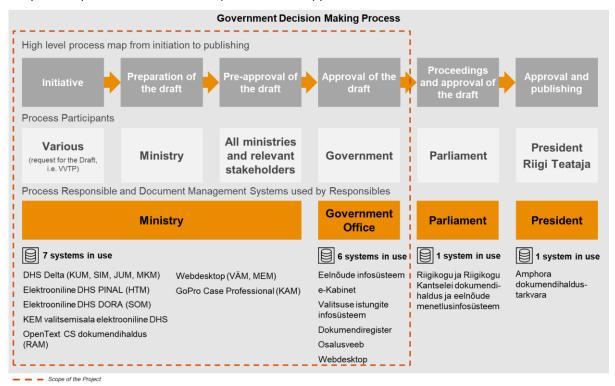


Figure 9. High-level overview of the Government decision-making process

In the fourth step, the Government Office reviews and when necessary, updates the draft to ensure that the draft meets all relevant quality standards and compliance to technical norms. When the draft

³¹ In some circumstances and depending on the type of Document the Government could be the final decision maker and the process ends.

is reviewed and finalised by the Government Office, the draft of the decision will be discussed at the Government Session and approved once the Government acknowledges the decision.

Current analysis is focused on the four process steps described above, from the initiation of the decision to be made until the Government approves the draft. The decision-making procedure in the Government Session together with the use of digital e-Cabinet system is described in this introductory video³².

After the government's approval of the draft, in the fifth step of the process, the draft will proceed to the parliament where it is discussed and approved. In the final, sixth step, the president approves the decision made and new legislation will be published in Riigi Teataja.

3.1.2 Type of decisions and documents

It is important to acknowledge that **decision-making processes involve several different types of legal documents** and the drafting process and conditions vary due to the type of legal document. Types of government decisions and related legal documents are shown on Figure 10.

Figure 10. Types of Government decisions and related legal documents



The amount of data collected, analysed, and synthesised for each type of document varies. The depth and breadth of data analysis also depends on time available for preparing the decision drafts.

3.1.3 Government Memorandum

It was discussed and agreed to **select the Government Memorandum** as a special type of Government decision and document **for detailed mapping** aimed to obtain a thorough understanding of the working practices of each ministry. The Government Memorandum belongs to the other matters category as shown on the Figure 10 and is not excessively regulated if at all. The Government Memorandum process descriptions are described in paragraph 3.2.

3.1.4 Statistics of Government Work in 2020³³

Table 1 below gives an overview of the statistics of decision drafts prepared by the ministries to Government Sessions. Most drafts were prepared by the:

- Ministry of Finance: 208 drafts;
- Ministry of the Interior: 181 drafts;
- Ministry of Foreign Affairs: 109 drafts;
- Ministry of Economic Affairs and Communication: 79 drafts;
- Ministry of Environment: 78 drafts.

³² Government Office Youtube channel, e-Cabinet of Estonia, https://youtu.be/Y6Mp_Vsh1f4

³³ Statistics of Government Work for 2021 was not made available during the mapping of current situation process in January-February, 2022.

The Government Office prepared 68 drafts that were related to the Covid-19.

During the interviews Deputy-Secretary Generals explained that the most data-intensive analytical work in the ministries takes place when Draft Acts are prepared. By the Rules for Good Legislative Practice and Legislative Drafting, Draft Acts are **required to have an impact assessment**. That means extensive gathering of quantitative and qualitative data, analysing it and based on data, providing arguments for the decision makers.

In 2020, most Draft Acts were prepared by the:

- Ministry of Economic Affairs and Communication: 16 Draft Acts;
- Ministry of Finance: 15 Draft Acts;
- · Ministry of the Interior: 13 Draft Acts;
- Ministry of Justice: 11 Draft Acts;
- Ministry of Social Affairs and Ministry of Rural Affairs: both 10 Draft Acts.

At the Government Sessions in 2020, more than half of the decisions made were regarding the Draft Orders (see detailed numbers in Table 1).

Table 1. Statistics of Draft Decisions prepared by the ministries and sent to Government Sessions in 2020³⁴

Ministry / Government Office	Total number of Draft Decision prepared by the Ministries to Government Sessions in 2020	Draft Acts (Seadus- eelnõud)	Draft Resolutions of the Riigikogu (Riigikogu otsuste eelnõud)	Opinions on Draft Acts (Arvamus ed SEde kohta)	Drafts Regulations (Määruste eelnõud)	Drafts Orders (Korralduste eelnõud)	Draft Decisions appended to the minutes of the Government Session (Istungi protokolli märgitavate otsuste eelnõud)
Total ³⁵	912	92	19	45	103	474	114
Ministry of Finance	208	15	5	12	17	121	24
Ministry of the Interior	181	7	0	4	8	158	4
Ministry of Foreign Affairs	109	13	0	0	3	38	37
Ministry of Economic Affairs and Communication	79	16	0	1	4	29	21
Ministry of Environment	78	7	0	2	23	34	4
Government Office	68	1	1	0	1	52	8
Ministry of Social Affairs	58	10	0	7	24	6	5
Ministry of Education and Research	36	2	0	3	11	16	2
Ministry of Justice	29	11	0	12	0	4	1
Ministry of Rural Affairs	23	10	0	1	4	6	1
Ministry of Culture	14	0	0	2	1	5	6

³⁴ Data Source: Government Office, Government work statistics in 2020

³⁵ Please note that the total numbers are bigger than the sum of numbers displayed in the table because some drafts were discussed several times at the Government Sessions

Following Figure 11 illustrates the many Government Sessions were held in years 2011 to 2020 and how many matters have been in the session agendas to discuss and decide.

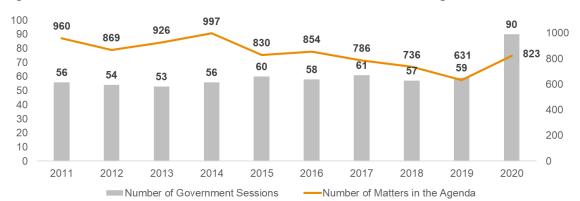


Figure 11. Number of Government Sessions and Matters in the Session Agenda³⁶

Statistics show that the number of sessions has been relatively stable in last 10 years, varying from 53 to 61 sessions a year before Covid-19. In 2020 due to Covid-19 a special situation was declared in Estonia and during the situation, 26 sessions took place which explains the unusually high number of sessions in 2020. Before 2020 the number of matters in government agendas have been in steady decline which outlines that the number of decisions made by the government have decreased in last 10 years (before Covid-19) by more than 30%.

3.1.5 Process Participants

Government Office

The Government Office is a government institution established at the Government of the Republic and its function is to **support the Government of the Republic and the Prime Minister** in planning and implementing policy and ensuring good governance. The head of the Government Office is Secretary of State. The Government Office³⁷:

- supports the planning of the government's work, organises and coordinates country's strategic planning, prepares the government's programme and coordinates its implementation;
- prepares and organises government sessions and cabinet meetings;
- ensures that the government's draft legal acts are constitutional and in conform to other legislation;
- coordinates the shaping of Estonia's positions and advises and supports the Prime Minister in European Union affairs;
- organises public relations for the government and the Prime Minister and internal public relations work related to the European Union;
- advises the Prime Minister on national security, organises the work of the Government Security Committee and manages the coordination of national security and defense management;
- advises and supports the Prime Minister in directing the work of the Research and Development Council;

³⁶ Data Source: Government Office, Government work statistics in 2020

³⁷ Government Office [https://riigikantselei.ee/en/organisation-news-and-contacts/government-office/about-government-office]

- organises recruitment, selection and development of top-level public servants.
- The Government Office also organises matters related to state and local government insignia and performs other obligations imposed on it by legislation and other legal acts.

Cabinet Meetings and Government Sessions

Cabinet Meetings are the **working meetings** of the members of the Government, where various important issues within the competence of the Government are discussed. The Cabinet Meeting shapes policy and reaches political agreements. No formal decisions are made there. Cabinet Meetings are closed and are usually held on Tuesday at 2 pm.

Ordinary Sessions of the Government of the Republic (**Government Sessions**) are usually held once a week, starting at 10 am on Thursdays. A sitting of the Government of the Republic is convened by the Prime Minister, and the Prime Minister also approves the agenda of the sitting. The Government has a quorum if at least half of the members of the Government participate in the sitting in addition to the Prime Minister. Government Sessions are closed unless the Government decides otherwise. Regulations and orders adopted at a Government Session shall be prepared for signature by the Government Office.

Ministries

There are 11 ministries in Estonia. Ministries are established to manage the areas of government. Every ministry receives control over a specific field of life. A ministry is headed by a minister, who is a member of the Government of the Republic.

The work of the structural units of a ministry is directed by the secretary general of the ministry, who also coordinates the activities of state authorities within the area of government of the ministry and manages the operations of the ministry. Every ministry performs the functions provided by law and assigned by the Government of the Republic and serves as the superior body of executive agencies and inspectorates and of other state authorities within its area of government.³⁸

Decision preparation at ministries

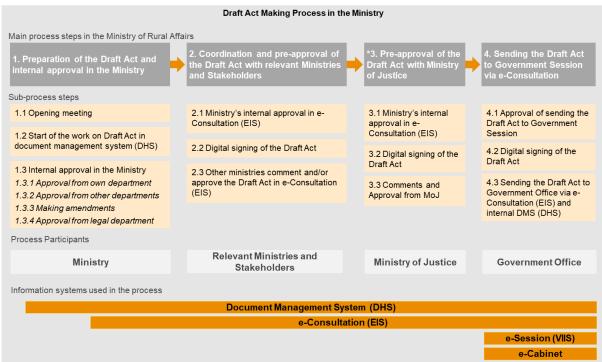
The process scheme introduced in Figure 12 is an example of the drafting legislation from Ministry of Rural Affairs. Not all the ministries have described their end-to-end decision-making process in detail or are in condition to be shared with this Project, but the process is mostly known to its participants (public servants) and guided by the administration (support services) and executives once needed. Other internal documents, such as Administrative Procedures of the Ministry, may cover aspects and regulate the decision-making process sufficiently and the need for a separate and specific procedure for decision-making process has not been identified.

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³⁸ State Portal [https://www.eesti.ee/en/republic-of-estonia/government-of-the-republic]

The Draft Act making process consists of **4 main steps** and several sub-steps.

Figure 12. Draft Act Making Process in the Ministry of Rural Affairs



The ministry initiating the decision, prepares the Draft Act and approves the legislation initiative firstly within own ministry. In the next step the draft is coordinated with relevant ministries and stakeholders to receive their comments and approvals to proceed with the initiative.

When necessary, the legislation draft is pre-approved by the Ministry of Justice and in the final step the draft will be sent to the Government Office for reviewing and to be discussed at the Cabinet Meeting and Government Session.

Throughout the legislation drafting process, ministries use Document Management Systems (DMS, Estonian abbreviation DHS) which vary from ministry to ministry. No central decision has been made to use one single DHS across ministries. Examples of DHS used are Delta, PlanPro, Postipoiss, TPIS.

Government sector uses central web-based information system, e-Consultation, to exchange, comment and approve legislative draft documents (see more in paragraph 3.3.2). The Government Office uses two additional information systems, e-Cabinet and e-Session (see more in paragraph 3.3.1), where documents are made available for government for discussion and decision-making purposes.

3.2 Government Memorandum

3.2.1 What is the Government Memorandum

Government Memorandum is an analytical type of legal document that is used for delivering subject matter analysis and decision drafts to the Government. In document classification, Government Memorandum is considered as other type of document and there are few rules in place regulating that specific type of document.

Memorandum has fixed document format (see Appendix 5.3) which includes information of the memorandum submission, memorandum summary, analysis of the specific matter, proposal of Government's decision, reference to appended documents if there are any and contact information of the person who prepared the memorandum document. However, there are no specific rules or guidelines in place how the subject matter analysis should be structured and what is the suggested or expected length of the analysis. The length of the memorandum documents has varied between 1 and 20 pages depending on the length of the analysis.

Memorandums are prepared by the ministries' subject matter experts and submitted to the Government Office for discussion purposes at the Government's cabinet meeting. Memorandum documents are submitted with official letter from ministries' document registers to the e-Cabinet information system and they may or may not have appendices such as detailed analytical papers. The practices of including the analysis directly into memorandum and appending the analysis to the memorandum document both exist. In the first approach, the memorandum may include as many as 10-20 pages. In the second approach, the memorandum document length is 1-2 pages, and the analytical overview of the subject can be found in the appendix. Yet shorter memorandums are preferred by the Government as the time for reviewing them is limited.

Important addition to the Government Memorandum document is presentation slide deck that is used during the Government's cabinet meeting to introduce the subject matter analysis' results and present the arguments that support the decision drafted for the Government's decision-making. Presentation slide deck is usually prepared right before the cabinet meeting and presentation slides are not part of the official memorandum document package submitted to the Government Office.

3.2.2 Approach to mapping Government Memorandum Process

To establish a detailed understanding of how the Government Memorandums are prepared, an eightstep approach (see Figure 13) was used to map the business process of memorandum preparation.

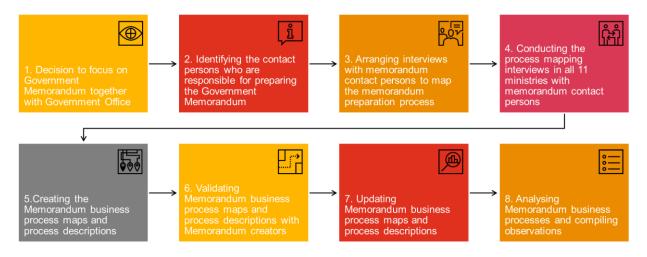


Figure 13. Approach to mapping the Government Memorandum preparation business process

The first step included discussions with Government Office and a decision was made to focus on the Government Memorandum. Because the memorandum usually includes a subject matter analysis and therefore qualitative and/or quantitative data is used throughout the memorandum preparation process to present analytical arguments and propose draft decisions for Government's discussion at the cabinet meeting.

The second step to mapping the business process was identifying contact persons from all ministries who have been responsible for preparing the Government Memorandum with the past year. The goal was to interview people who had gone through the full process of memorandum preparation – from initiation of the memorandum preparation to the final step of presenting the memorandum to the Government at cabinet meeting. The contact details of suitable contact persons from all ministries were provided by the Government Office as they have the knowledge and information of memorandums submitted to cabinet meetings.

The third step was arranging interviews with memorandum contact persons (see Table 2) to map the memorandum preparation process. Personal interviews were agreed on with 11 people, one from each ministry in Estonia. Personal interviewing method was selected because the aim of the meetings was to go and talk through the specific memorandum preparation processes step by step. Individual interviews helped to map the specific actions and use of various sources of data throughout the memorandum preparation process taking place in each ministry.

Table 2. Interviewees responsible for Government Memorandum preparation

Ministry	Responsible	Interview Date	Government Memorandum (in Estonian)
Ministry of Finance	Ülle Harak	18.03.2022	Kaugtöö võimaluste edendamine
Ministry of Education and Research	Kristi Raudmäe	22.03.2022	Analüüs ja ettepanekud kõrghariduse rahastamise põhimõtete kohta
Ministry of Defence	Eneli Saabas	24.03.2022	Analüüs ja ettepanekud Eesti kaitsetööstuspoliitika uuendamise kohta
Ministry of Rural Affairs	Argo Peepson	25.03.2022	Analüüs ja ettepanekud biomajanduse arendamise kohta
Ministry of the Environment	Sigrid Soomlais	25.03.2022	Analüüs ja ettepanekud ohtlike jäätmete valdkonna korraldamise kohta
Ministry of Economic Affairs and Communications	Rando Härginen	25.03.2022	Väikeelamute energiatõhususe toetamine
Ministry of Justice	Mari-Liis Sööt	04.04.2022	Lobi reeglid ja huvide konflikti vältimise juhised
Ministry of Interior Affairs	Viljar Kärk	04.04.2022	Eesti idapiiri ambitsiooni tõstmine
Ministry of Culture	Katre Väli	05.04.2022	Analüüs ja ettepanekud kultuurikiirendi loomise kohta
Ministry of Social Affairs	Brit Rammul	06.04.2022	Analüüs ja ettepanekud töötuskindlustussüsteemi muutmise kohta
Ministry of Foreign Affairs	Kadi Metsandi	08.04.2022	Analüüs ja ettepanekud Eesti rahvusvahelise arengukoostöö edendamise kohta

The fourth step included conducting the Government Memorandum preparation process mapping interviews in all 11 ministries. Interviews took place at the site in ministries as well as through the video calls. At the beginning of each interview, the aim of the mapping and the business process modelling methodology was elaborated. During the interviews, interviewees were asked to describe the memorandum preparation actions step by step, name the process participants and their roles, explain the use of both qualitative and quantitative data, name the data sources used and elaborate on the selection and use of various analysis methods. The information was collected and based on it, the process descriptions and process maps were created.

The fifth step consisted of creating the Government Memorandum preparation process documentation for each ministry, based on the insights and process steps information gathered during the interviews. For documenting the processes, BPMN³⁹ – Business Process Model and Notation – standard and methodology and RACI responsibility framework (see Figure 14) were used. BPMN is widely used in Estonian public sector institutions for process mapping and analysis, and it is supported and guided by locally published Public Sector Business Process Handbook⁴⁰ which gives structured guidelines on how to use the BPMN standard. The handbook was used as a reference for documenting the memorandum processes.



Figure 14. RACI responsibility framework

For each ministry, three process mapping documents were created:

- Government Memorandum process description in editable (.docx) document format, including
 the information on process participants and their roles with responsibilities according to RACI
 matrix, process AS-IS overview, process inputs and outputs, and supporting systems and
 databases.
- 2. Government Memorandum process diagram in editable (.bpm) document format.
- 3. Government Memorandum process diagram in non-editable (.png) document format.

All the ministries' process mapping documents, 33 in total (3 documents for each 11 ministries), are listed in the Appendix 5.4 and attached in separate ZIP file.

In the sixth step, the process mapping documents were sent to validation to the interviewees, who were responsible for their subject matter analysis and preparation of the Government memorandum. Each ministry validated their process documentation by reviewing, commenting and changing the process description where it was necessary and sent it back for updating both the process description as well as the process diagram documents.

After the validation of processes, in the seventh step, process documentation – all 33 documents - were updated according to the given feedback and comments, and the final versions of the process documents were shared with memorandum creators.

In the eight step, the analysis of Government Memorandum preparation business processes was conducted and observations were listed that were found during the comparison of the all the ministries processes. The observations and insights of the memorandum preparation process were shared with the interviewees for another round of validation.

³⁹ Object Management Group, Business Process Model and Notation (BPMN)

⁴⁰ Avaliku sektori äriprotsessid. Protsessianalüüsi käsiraamat.

During a discussion with Government Office, it was decided that for further analysis of the Government Memorandum process it is relevant to create a generalised memorandum process diagram that includes the main steps of the memorandum preparation process but is not as detailed as the individual ministry- and subject-specific processes are.

Also, a workshop was held on April 22nd, 2022 with the interviewees from all ministries together with the project's operational committee. The aim of the workshop was to review and critique the generalised memorandum process diagram as well as point out the issues and bottlenecks that exist in the current memorandum creation process and the use of data.

3.2.3 Government Memorandum Process Overview

After the Government Memorandum preparation processes were individually mapped in all ministries, a generalised memorandum preparation process diagram was created, see Figure 15. The generalised version of the process diagram is created following the BPMN standard and includes

- 1. an overview of process participants in process pools and swim lanes,
- 2. main process tasks which are distinguished by two colors: blue tasks refer to regular tasks and orange tasks refer to process tasks where data is or could be used,
- 3. references to tasks which are related to databases or information systems.

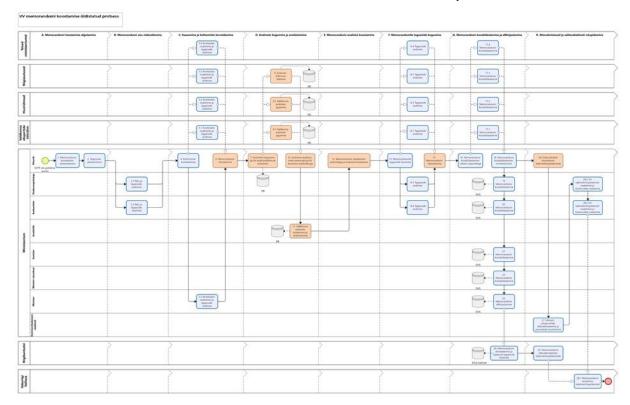


Figure 15. Generalised Government Memorandum preparation process diagram.

This process diagram is structured by using the milestones to separate the various stages within the process.

The milestones of the generalised Government Memorandum preparation process are

- A. Initiation of the Government Memorandum preparation,
- B. Adjustment of Government Memorandum content,
- C. Coordination of meetings and collaboration,
- D. Data collection and analysis,
- E. Preparation of the analysis of Government Memorandum,
- F. Collection of feedback to Government Memorandum,
- G. Coordination of approvals and signing the Government Memorandum,
- H. Discussion of the Government Memorandum at the cabinet meeting.

The process participants, as shown in the process diagram, are:

- External participants (roles outside of the ministry which is preparing the memorandum)
 - o Other ministries
 - State Institutions
 - Stakeholder
 - Working Group of Experts
- Internal participants (roles inside of the ministry which is preparing the memorandum)
 - Adviser in Subject Matter
 - Head of Department
 - o Deputy Secretary General
 - o Analyst
 - o Secretary General
 - Minister's Advisers
 - Minister
 - Communications Department
- Government Office
- Government

Table 3 gives an overview of the responsibilities of the process participants according to the RACI responsibility matrix.

Table 3. Government Memorandum process RACI responsibility matrix

Process stage Process participants	A. Initiation of the Government Memorandum preparation	B. Adjustment of Government Memorandum content	C. Coordination of meetings and collaboration	D. Data collection and analysis	E. Preparation of the analysis of Government Memorandum	F. Collection of feedback to Government Memorandum	G. Coordination of approvals and signing the Government Memorandum	H. Discussion of the Government Memorandum at the cabinet meeting
Other ministries			С			С	С	
State Institutions			С	R		С	С	
Stakeholder			С	R		С	С	
Working Group of Experts			С	R		С	С	
Adviser in Subject Matter	R	R	R	R	R	R	R	R
Head of Department		С	С			С	I	С
Deputy Secretary General		С				С	I	С
Analyst				R				
Secretary General							I	
Minister's Advisers							ı	
Minister	Α		С				Α	
Communications Department								R
Government Office							R	R
Government								Α

Government Memorandum preparation process consists of **8 process stages** (see Figure 15) and the process is usually coordinated by the subject matter expert in the ministry responsible for preparing the memorandum. The subject matter expert is usually an adviser in a policy department, but it can also be covered by other roles, for example by a head of the department.

The first stage of the process is an initiation of the Government Memorandum preparation. The input to creating the memorandum can come from two sources, it can either be a task listed in the Government Program or a political order from the minister to create an analysis on specific subject and prepare the memorandum for discussion at the Government cabinet meeting. The first stage includes the planning of tasks and timeline or the memorandum preparation as it may take as long as one year to conduct the analysis necessary to deliver the draft decisions to Government.

The second stage of the process is an adjustment of Government Memorandum content and within this stage discussions are held between the memorandum coordinator, head of the policy department and deputy secretary general to clarify the focus, key topics and key questions to be covered during the analysis of the memorandum and which will be the analytical base for drafting the decisions for Government's discussion.

The third stage of the process is the coordination of meetings and collaboration between external process participants. Memorandum coordinator is the facilitator of several meetings and discussions between industry and field experts. The aim of these meetings is to gather the insights from the

industry specialists and their feedback on the possible policy directions that may have an impact on their work in the future. Sometimes the minister is also present at the meetings with external process participants. In between or after the meetings the initial content of the Government Memorandum is created, based on the qualitative insights collected from the process participants.

The fourth stage of the process is data collection and analysis. In this stage, quantitative data is collected from various data sources. Memorandum coordinator may conduct the data collection and analysis herself when her analytical skills are more advanced. When the data analytics skills of the memorandum coordinator are limited, the data analysis task is often delegated to more skilled person inside the ministry and when the analysis team is present inhouse, the task is forwarded to the analyst. When there are no data analysts available in the ministry, the analytical task can be forwarded to state institutions who are completing analytical tasks upon request. Such state institutions are for example, Statistics Estonia, Environment Agency, Environmental Investment Centre.

The fifth stage of the process is preparation of the analysis of Government Memorandum and in this stage the memorandum coordinator is writing the analytical content of the memorandum using the data analysis results, combining the insights of both qualitative and quantitative data.

The sixth stage of the process is collection of feedback to the Government Memorandum from the external and internal process participants. The feedback is collected in written format via emails and attached documents. Depending on the number of process participants, the collection and analysis of feedback may be very time-consuming process. Replying to process participants, possibly iterating the wording of the analysis or wording of the draft decision and then sending the memorandum for reviewing is a process that may repeat several times, as long as the consensus is found between the process participants. Finding the consensus between external process participants is important, because the possible policy changes taking place after government's decision-making has an impact on their field.

The seventh stage of the process is coordination of approvals and signing the Government Memorandum. The coordination and approvals are firstly gathered from the external process participants, so that there is a consensus on the memorandum and the wording of the analysis and draft decisions are approved. After the external approvals, internal round of approving and signing the Government Memorandum is arranged within the ministry and this process takes place in ministry's document management system, where approval round is a standard procedure and pre-configured. The final step of the approval round is always minister digitally signing the Government Memorandum and after that the memorandum is sent to Government Office for reviewing.

The eighth stage of the process is discussion of the Government Memorandum at the cabinet meeting. Before the cabinet meeting takes place, the memorandum coordinator prepares a presentation slide deck for the minister which communicates the key messages of the memorandum and its analysis to the Government. Also, the ministry's communication department is involved in this stage and they prepare the talk points to the minister for the press conference that takes place after the cabinet meeting. Meanwhile the Government Office prepares the memorandum to be discussed at the cabinet meeting. During the discussion of the memorandum at the cabinet meeting, guests can be invited to the meeting. When the minister wishes, the memorandum coordinator, head of the department or deputy secretary general are invited to the cabinet meeting discussion to answer to questions that Government raises during the meeting.

3.2.4 Conclusions and observations

During the Government Memorandum process mapping interviews, process validations and workshop with memorandum coordinators were used to identify and outline the specific observations regarding the Government Memorandum preparation process.

The observations and were mapped and categorised by following perspectives:

- Legal perspective,
- Organisational and governance perspective,
- Operational perspective,
- Technical perspective.

Observations listed in Table 4 were identified during the interviews with the **memorandum** coordinators from all 11 ministries, see the full list of interviewees in Appendixes on page 49). Identified constraints and observations were introduced to and further detailed with the Project's Operational committee and memorandum coordinators in the workshop on April 22, 2022 and validated by the memorandum coordinators after the workshop.

Table 4. Government Memorandum process observations

#	Observation
1.	Legal
1.1	There are no specific instructions, guidelines, or requirements for drafting a memorandum. Administrative procedure descriptions, instructions for the use of the document management system and similar documents are used in the ministries, but they are not specific to the memorandum.
1.2	The drafting of the memorandum is approached logically and creatively, with the best intentions in mind and using the previous work experience of both oneself and colleagues. Despite the lack of specific guidelines, the procedure of drafting a memorandum is generally well known in the ministries.
1.3	Collaboration and involvement
	The process of drafting a memorandum usually involves experts, stakeholders and/or partners in the field, but the collaboration and involvement takes time. In some cases, at an early stage of the work there has not been enough thought about who and to what extent should be involved in the process. As a good practice, roadmaps and/or project plans for planned activities and involvement have been prepared at the beginning of the process.
	The following of the Good Practice of Involvement is not required when drafting a memorandum, but in practice there is a need to involve the parties, gather and consider views, and reach agreements that affect proposals for government decisions. The compilers of memorandums suggest that the discussions and decisions during the collaboration could be recorded so that they can be consulted retrospectively.
1.4	Coordination
	In the process of drafting a memorandum, it is generally necessary to provide for institutional coordination with other relevant ministries and / or agencies. The sooner the relevant authorities are involved, the faster and easier it will be to refer the final version to decision-makers, to avoid tensions and to meet deadlines. The multiplicity of coordinators and finding consensus can inadvertently prolong the process of drafting a memorandum.
2.	Organisation and Governance
2.1	The compilers of the memorandum pointed out that decision-makers could improve their

#	Observation				
	expectations, objectives, and wording of the research questions so that officials could respond better and better understand the decision-maker's intentions, including the involvement of data in memorandum.				
2.2	It is important to be aware of and consider political sensitivities when drafting memorandum, and there have been situations where a decision already exists before the analysis. According to the compilers of the memorandums, it is important to assume that there is an analysis first and then a decision.				
2.3	The initial task (input) for drafting a memorandum usually stems from the Government's Programme of Action and is reflected in the ministry's annual work plan with a specific deadline and person in charge (usually the Undersecretary of the field).				
	The input for the memorandum can also take the form of an ongoing policy guideline or order, the duration of which varies from a few days to a month.				
2.4	The concepts of roles and responsibilities are not always clearly acknowledged or formalized, but the responsible author of each memorandum (the so-called "pen holder") and the team involved are known.				
	The choice of the compiler of the memorandum depends on the memorandum's topic and sometimes there is no clear understanding of who should be responsible for leading the memorandum as a specific person.				
	Both the heads of departments and the advisers can play the role of responsible for the memorandum. The role of the accountable is generally at the level of the undersecretary and fixed in the work plan of the ministry but may also be at the level of the Secretary General. Analysing the roles of the responsible owner, it is appropriate to classify them into two:				
	responsible owner in the ministry - Undersecretary, Secretary General;				
	responsible owner of the policy area - Minister				
2.5	In some cases, there has been no ongoing support from the ministry for drafting the memorandum, so the memorandum compiler and the owner have not supported each other during the process. It is suggested that it is important to make sure at an early stage of work that key stakeholders in the memorandum process are involved, understand the purpose, and contribute and collaborate. This is also important in order to maintain the process consistency in the case of creating a memorandum over a longer period, even in the event of staff changes (eg during the change of Undersecretaries or Secretary General).				
2.6	The output of the memorandum is a text document prepared in accordance with the form and mostly intended for internal use, together with an official cover letter . The memorandum may be accompanied by optional annexes, such as an analysis report as a text document or data analysis with Excel tables/figures. An informal annex to the memorandum is usually a PowerPoint presentation, which is usually reviewed with the Minister just before the cabinet meeting.				
2.7	The presentation is considered to be a very important means of communication between the compiler of the memorandum and the government (decision makers). The presentation will deliver the messages of the memorandum effectively and inspiringly to the government. Presentation materials delivered with a clear presentation are considered to be more important than the text document of the memorandum and/or its annexes.				
2.8	The memorandum and its annexes are in some cases not readily available to those involved and in some cases the compiler of the memorandum does not have the latest version or can no longer find them in the e-Consultation system, as various parties may have requested clarification and re-signing the memorandum. There are examples where the final version is not available to all participants of the process.				

#	Observation				
2.9	Memorandums are generally marked for internal use, but there are also examples where memorandums have been disclosed in the e-Consultation system with the internal use (AK) note (e.g. Ministry of Culture "Analysis on Ensuring the Continuity of the Song and Dance Festival Movement", AK note 29.06.2021) or vice versa. In some cases, it was thought that the attribution and management of AK notes could be more comprehensible and clearer.				
3.	Operational				
3.1	It is important for the compiler of the memorandum to obtain an overview of previous work done in a similar field or on a similar topic (memorandums, studies, analysis documents), to which the memorandum should refer and/or on which to base the analysis. To obtain such an overview, a creation of information system was suggested that would allow searching for previously prepared memorandums, including titles, and getting acquainted with the analytical content of the previous memorandums.				
3.2	There are similarities between the ministries in the process of drafting the memorandum, but in general the process is ad-hoc and significantly depends on the topic of the memorandum, the responsible compiler (and the team of compiler), deadlines and conditions.				
3.3	The main steps in the process of drafting a memorandum are an initial event, forming the team of the compilers, selection of methodologies and approaches (combination of qualitative and quantitative methodologies), planning and implementation of collaboration and involvement, informal and formal coordination with both internal and external stakeholders.				
3.4	The purpose or objectives of drafting a memorandum, as well as the location of responsibility organizing the work, affect the nature of the drafting process, so that memorandums can be classified differently, for example:				
	 business process dependent on the initial task - a "regular process", ie a mo predictable, better planned and controlled process. The initial task arises from the Government Programme of Action, which enables the planning of tasks within the ministry work plan; 				
	 business process dependent on the location of the responsibility – the initiating ar leading role of the process may be located within the ministry, where civil servants propos important topics for discussion, analysis and decision-making, or the leading role is of political level; 				
	 business process dependent on previous and/or concurrent projects/activities/plans - eg there has been other routine/regular work prior to initiating the memorandum, but the ministry has deemed it necessary to inform the government of its intentions before submitting the draft. 				
	Different considerations must be considered when planning conclusions and changes.				
4.	Technology				
4.1	During the collaboration activities, freeware or ministry-specific collaboration platforms are used.				
4.2	Popular and modern data analysis tools (eg MS Power BI, Tableau) are mostly not used or are very rarely used in the preparation of memorandums.				
4.3	During the compilation of the memorandum, the data/activities/inputs are used and included that are generally known and that have been used in the past in the day-to-day work in field and to which the access is provided.				
4.4	Memorandums are prepared using both qualitative and quantitative data to support decisions. Data is collected and analysed using the various methods and parties listed below.				
	Qualitative data is collected and analysed through				

#	Observation				
	interviews and meetings/discussions in own ministry;				
	interviews and meetings/discussions in other ministries;				
	 collaboration with external partners, eg different matter-specific organisations are involved in the process and in some cases international institutions are involved (ie OECD-DAC). 				
	Quantitative data is collected and analysed through				
	 ordering an analysis, which the compiler of the memorandum sends to an authority conducting the analysis within the governance field of own or other ministries; 				
	 ordering an analysis, which the compiler of the memorandum sends to an external partner conducting the analysis; 				
	 independent analytical work, where the compiler of the memorandum collects the available quantitative data (publicly available or within the limits of its power) and conducts the necessary analytics independently. 				
4.5	It is considered important to refer to the data sources and used web links, which has not been done systematically in the practice of drafting memorandums so far.				

The observations listed in the table are used as an input to identify, develop, and validate user requirements in the Deliverable 1.2.

3.3 Relevant Information Systems

The following Information Systems are brought out in the following sub-sections that are supporting the Government decision-making process of which only the most relevant are listed.

3.3.1 e-Cabinet⁴¹

In 2000, the Estonian Government introduced a digital system – **e-Cabinet**. This system has been **designed to prepare and conduct government meetings in an electronic form – entirely without paper**. e-Cabinet enables ministers (key users) access the system simply from their own portable digital devices, be it a laptop, a tablet or smartphone.

Ministers securely log into e-Cabinet with their ID-card or mobile-ID. They can access all items submitted to government for discussion (Cabinet Meeting) or decision (Session). They can view the forthcoming meeting's agenda, notify colleagues on their views, or give input and even give preliminary votes on a proposal well before the actual meeting has begun. The items on the agenda with no objections will not be debated but will be adopted by default at the beginning of the government session.

Furthermore, e-Cabinet enables the secure digital signing of government legal acts and other documents. For example, all government regulations are digitally signed by the Prime Minister, the responsible minister, and the cabinet secretary during or shortly after the sessions.

The system is connected to another information system that has been designed for consulting draft legislation and other government instruments between the ministries as well as with the public – the e-Consultation System. Both effectively link the different branches of Government into one seamless information network.



Development project to modernise the e-Cabinet has been started in late 2021 and is led by the Government Office. It is expected to introduce new functionalities, provide innovative solutions, and enhance the user friendliness and interactions, reduce manual tasks and link other minor systems into one single platform. Modernised e-Cabinet is expected to be launched in production in 2023 and is currently in pre-analysis phase at the time of issuing this report.

3.3.2 e-Consultation System⁴²

The Government of Estonia places a strong focus on accessibility and transparency of regulatory policy. All steps in the legislative process conducted by the Government and Parliament are public and can be tracked online from the initiation of a legislative proposal by the Estonian Government to the official publication of a regulation in the State Gazette (Riigi Teataja). A range of online tools are used to engage with stakeholders in regulation making and support the accessibility of regulation, including an online list of laws to be prepared, modified, reformed or repealed, **the Electronic Coordination System for Draft Legislation (EIS)**, an interactive website for public consultations, and an official online State Gazette.

The Electronic Coordination System for Draft Legislation (EIS), also named as e-Consultation System, tracks the development of all Estonian and EU draft legal acts, and makes available documents of legislative intent (describing the problem to be addressed, analysing policy options and determining initial likely impacts).

⁴¹ https://riigikantselei.ee/en/supporting-government-and-prime-minister/organisation-and-planning-work-government

⁴² Web address of the e-Consultation System [https://eelnoud.valitsus.ee/main#D1dKaE2P]

EIS is the official system used for⁴³:

- inter-ministerial consultations,
- public consultations at an early stage in the legislative development process on the basis of legislative intent documents,
- public consultations at a later stage on draft regulations,
- · submission of legislative drafts to the Government, and
- submission of legislative proposals by the Government to Parliament.

EIS allows any member of the general public to follow the development of a draft legal act, search for documents in the system, and give their opinion on the documents open for public consultation. Input from stakeholders (e.g., formal letters with stakeholder feedback, proposals etc.) can be sent directly or uploaded by a responsible ministry to EIS. Please see screenshots of EIS in Appendix 5.5.

3.3.3 Co-creation Workspace

The aim of the co-creation workspace is to make the Estonian legislative process **more transparent**, **open**, and **better monitored**. The new workspace (see the screenshot of the workspace and the roadmap in Appendix 5.6) will bring many changes. Draft legislation will no longer be created in a Word document, but in a dedicated workspace that ensures an improved **traceability of changes**. It also has a number of automated solutions that significantly reduce the technical work involved in preparing both legislative intents and draft legislation. Amendments to an act begin with the introduction of the amendments to the consolidated text, after which a draft legislation to amend the act is created automatically on the basis thereof. One of the main advantages of the workspace is, as its name suggests, the **possibility of co-creation**. For example, several legislators, lawyers, language editors, and external experts can work with the text of the draft legislation at the same time, comfortably, and safely in the new workspace.⁴⁴

The IT solution is created in co-operation between the Ministry of Justice, the Government Office, and the Chancellery of the Riigikogu. The initiative has reached the pilot phase and means that the Ministry of Justice will start writing the first draft legislation and legislative intent in the new workspace.

3.3.4 Document Management Systems

Ministries and Public Authorities use Document Management Systems (DHS) which vary from ministry to ministry. Examples of DHS used are Delta, PlanPro, Postipoiss or TPIS.

DHS is typically an electronic business environment that allows the user to manage documentation tasks across the organisation. These environments provide an overview of tasks and workflows, allow to assign and manage tasks, and to carry out tasks as a substitute. The users have rights-based access to organisation-wide documentation. The rights system can be configured flexibly for internal needs of the organisation as well as for disclosure of information.

No central decision has been made to use one single DHS across ministries.

⁴³ https://www.oecd.org/gov/regulatory-policy/EST-Online-Tools.pdf

⁴⁴ Source: the Ministry of Justice [https://www.just.ee/oigusloome-arendamine/riigi-koosloome-keskkond]

3.3.5 Analysis tools used for Data Analytics and Reporting

Optimise your data assets. Make faster and better decisions. Work more efficiently and save money. Find new sources of revenue. Capitalise on the untapped business intelligence you already own.

PwC

Data is an asset Authorities already own and in the era of big data being generated every day, data plays a crucial role in decision making for business operations. We asked about the common and popular tools that are used in Data Analytics while conducting the interviews and the following technologies are used:

- Microsoft Excel and other Office products, including Word and PowerPoint
- Microsoft Power BI
- Tableau
- R and R Studio
- Python
- SPSS
- Qlik Sense and Qlik View
- · SAP Business Objects
- WebFOCUS
- SAS Institute.

Government has not decided on to select and prefer certain technologies across ministries and authorities, hence no common tools exist, and authorities are free to decide which technologies to use and invest into.

The digital state largely depends on trust, and the role of the state is to build that trust.

Information System Authority

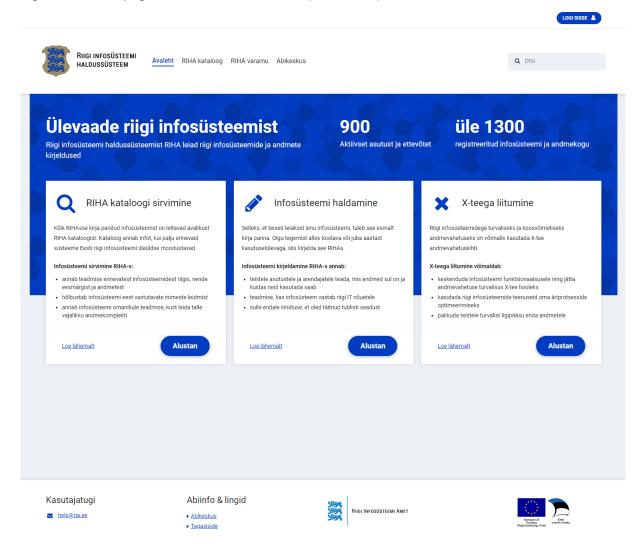
3.3.6 Administration system for the state information system RIHA

RIHA serves as a **catalogue for the state's information system** and it was first opened in 2008. At the same time, it is a **procedural and administrative environment** via which the comprehensive and balanced development of the state's information system is ensured.⁴⁵

RIHA gives information on the following:

- which are the information systems that make up the state's information system;
- · which data are collected and processed and in which information systems;
- who are the information systems' owners, maintainers and contact persons;
- on which legal basis are the information systems operated and the data processed;
- the reusable components that ensure the interoperability of information systems (XML assets, classifications).

Figure 16. Home page of the RIHA environment (in Estonian)



In Estonia, data is stored in distributed form, i.e., there is no single central database. This method has many advantages, but it also presents challenges as data is scattered across the country.

⁴⁵ https://www.ria.ee/en/state-information-system/administration-system-riha.html

RIHA provides an overview of the information systems of the Estonian state, but the overall picture could be more up to date and of higher quality. The value of RIHA - if the state knows as precisely as possible what data, services, and reusable code lines exist in the state, both the public and the private sector can offer completely new services. RIHA has more than 2,600 registered information systems and databases and some 900 active institutions and companies as of 2020.

⁴⁶ The 2020 yearbook of the ISA. [https://www.ria.ee/sites/default/files/content-editors/RIA/ria_aastaraamat_2020_eng.pdf]

4 Observations

4.1 Observations and constraints

During the current situation mapping, combined methods of the document analysis, semi-structured interviews and best practices of the data governance and legislation drafting were used to identify and outline the constraints that have an impact on the data-driven decision-making.

The observations and constraints were mapped and categorised by following perspectives:

- Legal perspective,
- · Organisational and governance perspective,
- · Operational perspective,
- Technical perspective.

Constraints and observations listed in Table 5 were identified during the interviews with the **Government Office**, **Ministries** and **Statistics Estonia** (see the full list of interviewees in Appendixes on page 49). Identified constraints and observations were introduced to the Project's Operational committee on February 18, 2022 and validated by interviewees in April 2022.

Table 5. Observations identified from interviews with top Executives

#	Findings		
1.	Legal		
1.1	Restricted or limited access to state databases and registers within civil service limit the use of data.		
1.2	Limited legislation to enquire data from private sector in time critical situation.		
2.	Organisation and Governance		
2.1	Changes in the organisational structure of the Government Office and the intention to modernise the e-Cabinet shall probably redesign the Government's decision-making process, including roles and responsibilities, but the scope, terms and conditions of changes is unknown at the time of issuing this report.		
2.2	e-Cabinet information system is mostly outdated and is in modernisation. e-Consultation (EIS) information system will be replaced by the new co-creation workspace (KOOS) currently under development. Such developments must be considered throughout this Project to best understand how the use of data and analytics can be organised.		
2.3	Government's decision-making process has accelerated in recent years due to Covid-19 and process participants are under time pressure which affect the use of data and quality of decision making for the worse.		
2.4	It was highlighted that operational decision-making could be better supported by real-time and dynamic management dashboards. Executives are interested in regularly monitoring the performance of their policy areas and the impact of policy changes, including decision-making on special matters.		
2.5	It was acknowledged, advised, and supported to continue working with initiatives and projects led by Statistics Estonia and the Ministry of Economic Affairs and Communications which enhance the data quality. The importance of data governance was highlighted as the key enabler of data-driven decision-making.		
	Attention was drawn to the high cost of providing Statistics Estonia's services and it was found necessary to find a solution to the issue of underfunding of Statistics Estonia, as it significantly		

#	Findings			
	inhibits both the use of existing data and the collection of new ones. Small projects often require individual contracts and funding to collect data, which takes time and makes the analysis process time-consuming. As a result, in some cases the necessary data is not gathered or made available, and therefore the quality of policy-making suffers.			
3.	Operational			
3.1	Due to large number of datasets and registers used by government sector (both public and private data sources), the know-how of availability, location and accessibility of specific and relevant data is limited in civil service.			
3.2	The most common data analysis tool in civil service is MS Excel, but the quantitative data analytics competencies are modest. In rapid situations, which expect the use of more modern tools, and require both software licenses and know-how, make the data processing faster and more automatic.			
3.3	Interviewees also highlighted that the formulation of the research questions could be improved in order to respond with high quality and best address the intention of the decision maker.			
3.4	Data quality varies and is in some cases poor meaning that different datasets cannot be easily merged for analysis purposes. It was also mentioned that the data should always be treated with caution. Data alone cannot be blindly trusted and the ability to interpret data becomes important.			
3.5	Several data-related initiatives and developments were identified during the as-is situation analysis and it was emphasised and recommended to cooperate with the existing initiatives to encourage the use of data in the government sector and avoid any duplication of initiatives.			
4.	Technology			
4.1	The variety of technologies used across the government sector impact, for instance, the arrangement of central trainings for digital upskilling and data analytics as these trainings should cover and consider all tools and technologies.			
4.2	Management reports should be prepared centrally or agreed on a single and easy-to-use central system. The need for additional manpower or other resources in the public authorities and ministries should be avoided.			
4.3	Further support on increasing technical data analytics capabilities (People, Technology) is expected to enhance and widen the know-how outside of the analysis units of ministries.			
4.4	Several ministries are developing the so-called data warehouses (Government Data Warehouse, GDW) which aim to enable easy access to accurate, consistent, and integrated government data for better and faster decision-making and for statistical purposes. Such practice has been well supported.			
	At the same time, it has been pointed out that GDW's may need further legal regulation, but also take into account the fact that they further fragment the management of databases and the establishment of common data governance rules / guidelines / standards.			

In chapter 1.2.4 the project hypothesis was outlined: "Not all available data is used in the preparation of the decision-making and decisions are often based on intuition and on limited data only." To take into consideration the information gathered during interviews conducted with deputy secretary generals, memorandum coordinators and analysts from all 11 ministries, as well as the document analysis, the hypothesis assumption has not been fully confirmed. The hypothesis will be further discussed in the Deliverable 1.2

4.2 Good Practices

During the interviews (see full list of interviewees in the Appendices on page 49) Deputy-Secretary Generals of Ministries, Head of Departments, Data Experts and Analysts highlighted several initiatives and best practices that support and promote data-driven decision-making.

Interviewees emphasised following initiatives and practices:

- Some ministries (for instance Ministry of Defence, Ministry of Rural Affairs) have created
 internal guidelines and standardised document templates to structure the legislation drafting
 procedure. In some cases, such internal guidelines require draft decision to be connected to a
 long-term objective set in the sectoral development plan. The decisions made should in these
 cases align with the existing objectives and support the achievement of chosen long-term
 objective.
- Ministries (for instance Ministry of Social Affairs, Ministry of Finance) have prioritised digital
 upskilling, including data analysis and have formed analysis units that support both the
 leadership and advisers in ministries with analytical insights based on large quantitative
 datasets. Further support on increasing technical data analytics capabilities is expected to
 enhance and widen the know-how outside of the analysis units.
- Across ministries, networks of specialty experts have been formed to share knowledge, initiatives, and best practices between for example data governance experts and legislations experts. For example, Data Officers Network is formed and they meet on monthly basis to share their data-related practices.
- Some ministries (for instance Ministry of Social Affairs, Ministry of Rural Affairs, Ministry of Interior Affairs) are developing so called data warehouses (Government Data Warehouse, GDW) which aim to enable easy access to accurate, consistent and integrated government data for better and faster decision making and for statistical purposes. GDW enables further analysis of government data and the calculation of key performance indicators for better decision-making processes and for improving the quality of the services provided within the public service and eventually to the public. An example of such initiative is introduced in Appendix 5.8.1 by the Estonian Rescue Board.

5 Appendices

5.1 Key meetings of the Project Organisation

Table 6. Key Events of the Project Organisation

Date	Туре	Comments (if any)
23.11.2021	Steering Committee	Project Opening Meeting
09.12.2021	Project Status Monthly Update	Meeting no 1
12.01.2022	Operational Committee DDDM	Meeting no 1
19.01.2022	Project Status Monthly Update	Meeting no 2
16.02.2022	Project Status Monthly Update	Meeting no 3
18.02.2022	Operational Committee DDDM	Meeting no 2
09.03.2022	Steering Committee	Meeting no 1
16.03.2022	Project Status Monthly Update	Meeting no 4
23.03.2022	Operational Committee DDDM	Meeting no 3
20.04.2022	Project Status Monthly Update	Meeting no 5
22.04.2022	Operational Committee DDDM	Meeting no 4
19.05.2022	Project Status Monthly Update	Meeting no 6

5.2 List of conducted Interviews

Table 7. List of Interviews conducted during the current situation mapping

	9	
Date	Organisation	Participants
04.01.2022	Government Office	Dmitri Burnašev, Deputy Strategy Director Ivar Hendla, Strategy Adviser
12.01.2022	Government Office	Oliver Ojamaa, Head of Information Technology
12.01.2022	Statistics Estonia	Urmet Lee, Director General
14.01.2022	Government Office	Aivar Rahno, Head of Session Department
14.01.2022	Government Office	Kristi Purtsak, Head of Legal Department
14.01.2022	Ministry of Social Affairs	Hede Sinisaar , Head of Analysis and Statistics Department
17.01.2022	Statistics Estonia	Veiko Berendsen, Data Governance Expert
18.01.2022	Ministry of Social Affairs and Ministry of Economics and Communications	Sten Andreas Ehrlich, Deputy-Secretary General of Labour and Employment Policy Kristi Talving, Deputy-Secretary General of Business and Consumer Environment Karel Lember, Analyst in Strategic Planning Department Maris Paumets, Analyst in Strategic Planning Department
18.01.2022	Government Office	Krista Zibo, Head of Support Services Department Kristi Purtsak, Head of Legal Department Kaire Karp, Head of Office and Document Management in Support Services Department
26.01.2022	Government Office	Krista Zibo , Head of Support Services Department Kaire Karp , Head of Office and Document Management in Support Services Department
26.01.2022	Ministry of Environment	Andrus Pirso, Head of Budgeting and Strategy Department Eda Pärtel, Head of Legal Department
27.01.2022	Statistics Estonia	Veiko Berendsen, Data Governance Expert
27.01.2022	Statistics Estonia	Iljen Dedegkajeva, Analyst Evelin Ahermaa, Analyst
28.01.2022	Ministry of Rural Affairs	Marko Gorban, Deputy-Secretary General of Agricultural and Rural Life Policies Alo Aasma, Deputy-Secretary General of Administrative Affairs Liilia Kristal, Head of Information Technology Departmenr
31.01.2022	Ministry of Justice	Heddi Lutterus, Deputy-Secretary General of Legislative Policy Mari-Liis Sööt, Head of Analysis Markus Kärner, Deputy-Secretary General of Criminal Policy Viljar Peep, Deputy-Secretary General of Judicial Administration Policy Margit Juhkam, Director of Legislative Quality Division Eveli Voolens, Analyst of Legislative Quality Division
31.01.2022	Ministry of Culture	Tarvi Pürn, Deputy-Secretary General of Sports

Date	Organisation	Participants
		Reelika Väljaru, Head of Strategy and Innovation Department
01.02.2022	Ministry of Education and Research	Liina Põld, Deputy-Secretary General of General Education and Youth Policy Renno Veinthal, Deputy-Secretary General of Research and Development, Higher Education, and Vocational Education and Training Policy Pärt-Eo Rannap, Deputy-Secretary General of Planning and Administration Keit Parts, Head of Strategic Planning and Communications Department
02.02.2022	Ministry of Environment	Andrus Pirso, Head of Budgeting and Strategy Department Marku Lamp, Deputy-Secretary General of Living Nature Kaupo Heinma, Deputy-Secretary General of Environmental Management Margit Martinson, Deputy-Secretary General of Support Services and Land Policy
02.02.2022	Government Office	Lauri Luht, Deputy Director of National Security and Defence Coordination Unit, Director of the Situational Centre Triin Raag, Adviser
04.02.2022	Ministry of Environment	Karl Viilmann, Chief Data Expert
07.02.2022	Ministry of Finance	Kaia Sarnet, Deputy-Secretary General of Regional Policy Siiri Tõniste, Head of Insurance Policy Department Pille-Liis Milvere, Head of Development Department Ülle Harak, Head of Public Administration and Civil Service Department Kristel Mesilane, Head of Public Procurement and State Aid Department Andrus Jõgi, Adviser Reelika Vahopski, Adviser Sulev Liivik, Head of the Local Municipalities Financial Management Department
08.02.2022	Ministry of Economics and Communications	Kristi Talving, Deputy-Secretary General of Business and Consumer Environment Sille Kraam, Deputy-Secretary General of Economic Development Luukas Kristjan Ilves, Deputy-Secretary General of Digital Development
09.02.2022	Ministry of Economics and Communications	Timo Tatar, Deputy-Secretary General of Energy and Mineral Resources Ahti Kuningas, Deputy-Secretary General of Transportation Kaupo Läänerand, Deputy-Secretary General of Maritime Economy Jüri Rass, Deputy-Secretary General of Construction Policy
10.02.2022	Ministry of Finance	Sven Kirsipuu, Deputy-Secretary General of Fiscal Policy Raoul Lättemäe, Head of Fiscal Policy Department

Date	Organisation	Participants
11.02.2022	Ministry of Rural Affairs	Olavi Petron, Head of Rural Policy and Analysis Department Eveli Naaris, Head of Economic and Enviromental Data Analysis
16.02.2022	Ministry of Defence	Margit Gross, Head of the Legal Department Guido Pääsuke, Head of Legislation in Legal Department Kristina Grau, Head of the Department of Audit and Development
16.02.2022	Ministry of Finance	Lemmi Oro , Adviser of Tax and Customs Policy Erle Kõomets , Head of the Tax and Customs Policy Department
17.02.2022	Ministry of Finance	Ülle Harak , Head of the Public Administration and Civil Service Department
21.02.2022	Ministry of the Interior	Raivo Küüt, Deputy-Secretary General of Population Facts and Civil Society Piret Lilleväli, Deputy-Secretary General of Resources, Planning and Technology Viola Murd, Deputy-Secretary General of Rescue, Emergency Services and Crisis Management Veiko Kommusaar, Deputy-Secretary General of Internal Security, Migration and Public Order Liisi Lillipuu, Adviser
18.03.2022	Ministry of Finance	Ülle Harak , Head of the Public Administration and Civil Service Department
22.03.2022	Ministry of Education and Research	Kristi Raudmäe, Higher Education Department, Chief Expert
24.03.2022	Ministry of Defence	Eneli Saabas, Adviser of Defence Industry Policy Department
25.03.2022	Ministry of Rural Affairs	Argo Peepson, Adviser of Bio Economics
25.03.2022	Ministry of the Environment	Sigrid Soomlais, Head of Environmental Management Department Piret Otsason, Adviser of Environmental Management Department
25.03.2022	Ministry of Economic Affairs and Communications	Rando Härginen, Strategic Planning Department, Field Manager of External Funds
04.04.2022	Ministry of Justice	Mari-Liis Sööt, Head of Analysis
04.04.2022	Ministry of the Interior	Viljar Kärk, Adviser of Border Guard Policy Department
05.04.2022	Ministry of Culture	Katre Väli, Deputy Head of Arts Department
06.04.2022	Ministry of Social Affairs	Brit Rammul, Head of Employment Department
08.04.2022	Ministry of Foreign Affairs	Kadi Metsandi, Acting Director General of Department for Development Cooperation and Humanitarian Aid
03.05.2022	Government Office	Kaire Karp, Head of Office and Document Management in Support Services Department Kristina Liik, Project Manager of the KOOS Information System Development

5.3 Format of the Government Memorandum

MEMORANDUM VALITSUSKABINETI NÕUPIDAMISELE/FOR GOVERNMENT OFFICE MEETING

ASUTUSESISESEKS KASUTAMISEKS/ FOR INTERNAL USE

Märge tehtud (kuupäev)/Last updated kehtiv kuni (kuupäev)/Valid until või Alus/Part of: Alusdokumendi osa

ESITATUD/SUBMITTED TO: valitsuskabinet, kellele on memorandum esitatud

ESITAJA/SUBMITTED FROM: esitaja nimi, ametikoht

ESITAMISE AEG/DATE: xx.xx.2022

TEEMA/SUBJECT: Memorandumi pealkiri, teema

SISUKOKKUVÕTE/SUMMARY: Sissejuhatus teemasse

Selgitused/Explanations: Analüüsi mõistmiseks vajaminev teave

(MEMORANDUMI SISU)

1. PEATÜKK/ 1.CHAPTER

1. Alampeatükk/väide/Statement: sisu

2. PEATÜKK/ 2.CHAPTER

• Väide/Statement: sisu

3. PEATÜKK/ 3.CHAPTER

Väide/Statement: sisu

ETTEPANEK VALITSUSE OTSUSEKS/ PROPOSAL FOR GOVERNMENT DECISION:

LISATUD DOKUMENDID/ ADDED DOCUMENTS:

KOOSTAJA/AUTHOR:

Figure 17. Government Memorandum document format

5.4 Government Memorandum Mapping Documents

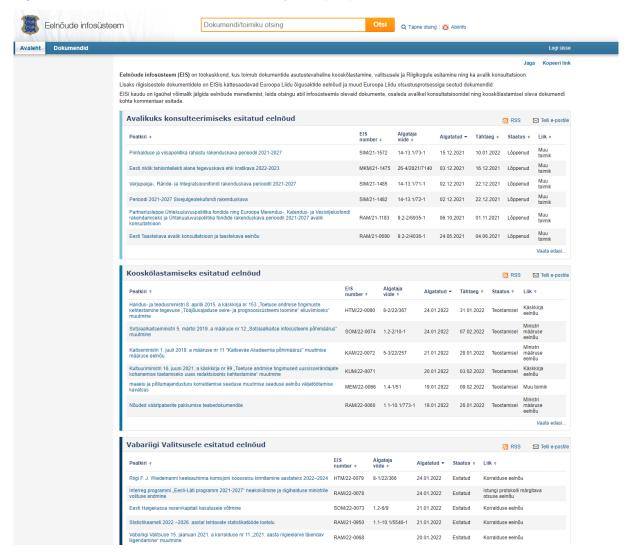
Table 8. List of Government Memorandum process mapping documents

Ministry	Government Memorandum (in Estonian)	Mapping Document Name	
Ministry of Finance	Kaugtöö võimaluste edendamine	RAM_memorandumi_koostamise_protsessi_kirjeldus_14.04.2022.docx	
· manos	- Cueriudiliilic	RAM_memorandumi_koostamise_protsessi_skeem_14.04.2022.png	
		RAM_memorandumi_koostamise_protsessi_skeem_14.04.2022.bpm	
Ministry of Education and	Analüüs ja ettepanekud kõrghariduse rahastamise põhimõtete kohta	HTM_memorandumi_koostamise_protsessi_kirjeldus_18.04.2022.docx	
Research		HTM_memorandumi_koostamise_protsessi_skeem_18.04.2022.png	
		HTM_memorandumi_koostamise_protsessi_skeem_18.04.2022.bpm	
Ministry of Defence	Analüüs ja ettepanekud Eesti	KAM_memorandumi_koostamise_protsessi_kirjeldus_30.03.2022.docx	
	kaitsetööstuspoliitik a uuendamise	KAM_memorandumi_koostamise_protsessi_skeem_30.03.2022.png	
	kohta	KAM_memorandumi_koostamise_protsessi_skeem_30.03.2022.bpm	
Ministry of Rural Affairs	Analüüs ja ettepanekud biomajanduse arendamise kohta	MEM_memorandumi_koostamise_protsessi_kirjeldus_18.04.2022.docx	
		MEM_memorandumi_koostamise_protsessi_skeem_18.04.2022.png	
		MEM_memorandumi_koostamise_protsessi_skeem_18.04.2022.bpm	
Ministry of the Environment	Analüüs ja ettepanekud ohtlike jäätmete valdkonna korraldamise kohta	KEM_memorandumi_koostamise_protsessi_kirjeldus_21.04.2022.docx	
		KEM_memorandumi_koostamise_protsessi_skeem_21.04.2022.png	
		KEM_memorandumi_koostamise_protsessi_skeem_21.04.2022.bpm	
Ministry of Economic Affairs	Väikeelamute energiatõhususe	MKM_memorandumi_koostamise_protsessi_kirjeldus_20.04.2022.docx	
and Communications	toetamine	MKM_memorandumi_koostamise_protsessi_skeem_20.04.2022.png	
		MKM_memorandumi_koostamise_protsessi_skeem_20.04.2022.png	
Ministry of Justice	Lobi reeglid ja huvide konflikti vältimise juhised	JUM_memorandumi_koostamise_protsessi_kirjeldus_14.04.2022.docx	
		JUM_memorandumi_koostamise_protsessi_skeem_14.04.2022.png	
		JUM_memorandumi_koostamise_protsessi_skeem_14.04.2022.bpm	
Ministry of Interior Affairs	Eesti idapiiri ambitsiooni	SIM_memorandumi_koostamise_protsessi_kirjeldus_14.04.2022.docx	
	tõstmine	SIM_memorandumi_koostamise_protsessi_skeem_14.04.2022.png	

Ministry	Government Memorandum (in Estonian)	Mapping Document Name	
		SIM_memorandumi_koostamise_protsessi_skeem_14.04.2022.bpm	
Ministry of Culture	f Analüüs ja ettepanekud kultuurikiirendi loomise kohta	KUM_memorandumi_koostamise_protsessi_kirjeldus_19.04.2022.docx	
Juliure		KUM_memorandumi_koostamise_protsessi_skeem_19.04.2022.png	
		KUM_memorandumi_koostamise_protsessi_skeem_19.04.2022.bpm	
Ministry of Social	Analüüs ja ettepanekud	SOM_memorandumi_koostamise_protsessi_kirjeldus_27.04.2022.docx	
Allalis	töötuskindlustussüs teemi muutmise	SOM_memorandumi_koostamise_protsessi_skeem_27.04.2022.png	
	kohta	SOM_memorandumi_koostamise_protsessi_skeem_27.04.2022.bpm	
Ministry of Foreign Affairs	Analüüs ja ettepanekud Eesti rahvusvahelise arengukoostöö edendamise kohta	VÄM_memorandumi_koostamise_protsessi_kirjeldus_11.04.2022.docx	
i oreign Anans		VÄM_memorandumi_koostamise_protsessi_skeem_11.04.2022.png	
		VÄM_memorandumi_koostamise_protsessi_skeem_11.04.2022.bpm	
N/A	Government Memorandum generalised process	VV_memorandumi_koostamise_üldistatud_protsess_21.04.2022.png	
		VV_memorandumi_koostamise_üldistatud_protsess_21.04.2022.bpm	
N/A	Government Memorandum preparation process to Government	RK_memorandumi_ettevalmistamise_protsessi_kirjeldus_06.05.2022.d ocx	
		RK_memorandumi_ettevalmistamise_protsessi_skeem_06.05.2022.png	
	Cabinet Meeting	RK_memorandumi_ettevalmistamise_protsessi_skeem_06.05.2022.bp m	

5.5 e-Consultation System

Figure 18. Screenshot of the e-Consultation System (EIS)



5.6 Co-creation workspace

Figure 19. Screenshot of co-creation workspace (KOOS, in development)

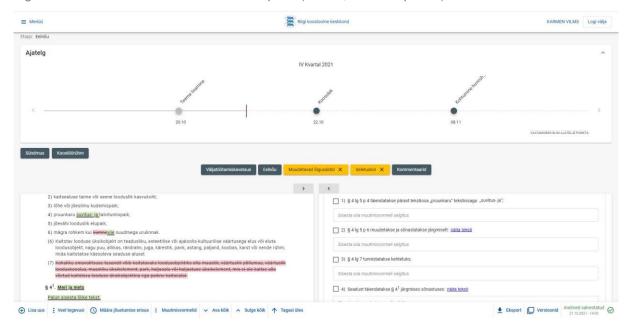
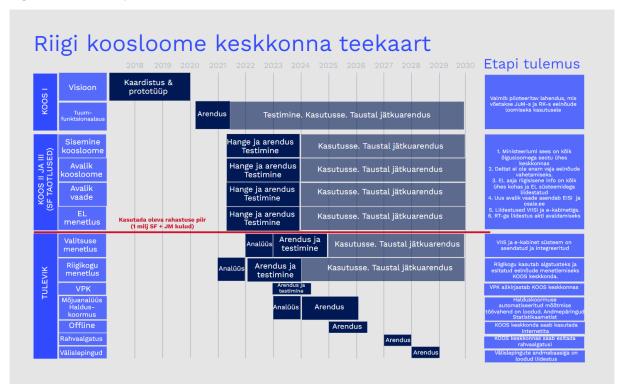


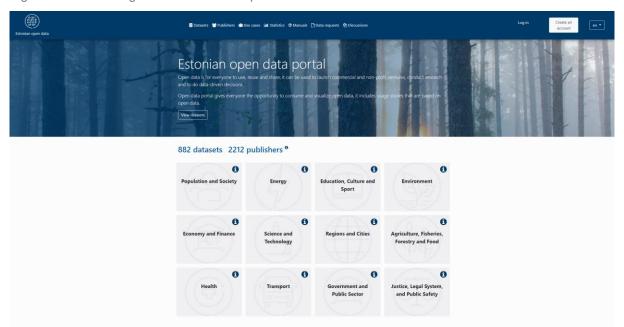
Figure 20. Roadmap



5.7 Estonian Open Data Portal

Open data is for everyone to use, reuse and share, it can be used to launch commercial and non-profit ventures, conduct research and to do data-driven decisions. Open data portal gives everyone the opportunity to consume and visualise open data, it includes usage stories that are based on open data.

Figure 21. Home Page of the Estonian Open Data Portal



The Open Data Maturity Assessment 2021 benchmarks the development of European countries in the field of open data. The group of top performers (see Figure 22) is completed by Ireland, Spain, Poland, and **Estonia**, as well as Ukraine who showed an impressive growth from 17th to 6th place in the overall ranking.

Three trends found during the assessment are highlighted below:

- 1. the transposing of the Open Data Directive into national law,
- 2. the more prominent focus on measuring open data impact, and
- 3. the continued value creation of the COVID-19 pandemic.

OPEN DATA MATURITY REPORT 2021

The overall Open Data Maturity scores in 2021

Figure 2 illustrates the overall open data maturity scores of all 34 participating European countries in 2021.

- European countries are becoming more mature across the board. Countries' maturity scores are concentrated in the higher end of the spectrum.
- In 2021, the average open data maturity score of the EU27 countries is 81%, an increase of 3 percentage points compared to 2020.
- After being a top performer for seven years in a row, this year France leads the ranking for the first time with a score of 97,5%.
- The group of top performers is completed by Ireland, Spain, Poland, and Estonia, as well as Ukraine who showed an impressive growth from 17th to 6th place in the overall ranking.

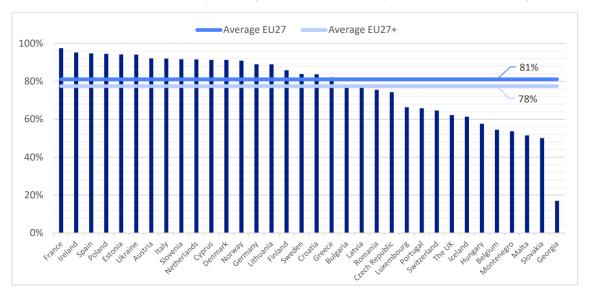


Figure 2: The overall open data maturity scores of the 2021 assessment

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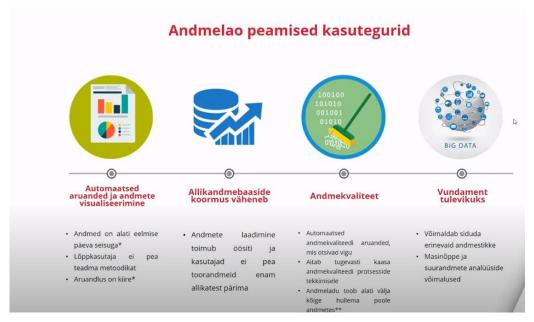
⁴⁷ https://data.europa.eu/sites/default/files/landscaping_insight_report_n7_2021.pdf

5.8 Example Practices of Data Governance in Estonia

5.8.1 Estonian Rescue Board

Development of Government Data Warehouse and Management Reports. Technical platform WebFOCUS⁴⁸.

Figure 23. The benefits of Government Data Warehouse (in Estonian)



Data is made available through Reports which are organised in catalogues at internal website by domains and areas. User access can be managed at catalogue and/or report level.

Figure 24. Catalogue of Reports



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⁴⁸ http://www.infobuild.ee/

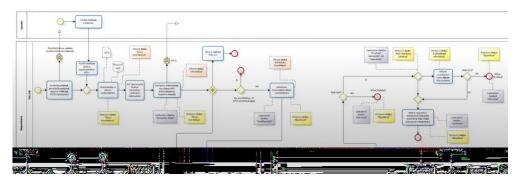
5.8.2 Food and Veterinary Office

Good and well-proven practice ensuring high quality Public Service and Data Quality is understanding the problem in-depth, mapping the process in detail and creating user stories.

Figure 25. Example of Process Mapping by Bizagi

Kvaliteetsete e-teenuse/(äri)protsessi ja andmekvaliteedi tagamise eeldused

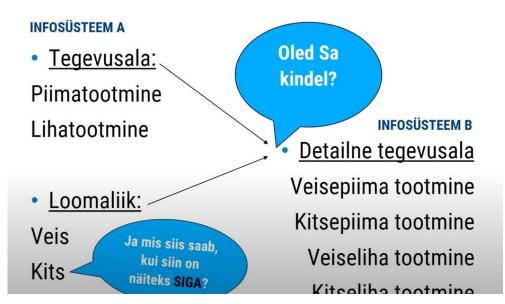
- Aukudeta (äri)protsessid (sh joonised)
- Kasutajate vajadused (nii kliendi kui asutus(t)e vaates)



Introducing and implementing common Classification system (multilevel) is important ensuring Data Quality and making sure all users understand and describe the events the same.

Figure 26. Example of the importance of developing multilevel classification system

Kaks andmevälja VS mitmetasandiline klassifikaator



Regular changes and updates in X-Road Configuration must be timed once changes are made at relevant Databases, otherwise the data is not exchanged correctly between systems.

Kogemused, millest õppinud oleme (2)

- Hästi hoolega luua (täiendada) x-tee spekki ja tagada, et seal <u>oleks kõik (äri)reeglid kirjas.</u>
- Süsteemi arenduse võib tähendada vajadust x-tee spekki muuta – x-tee spekk peab jooksma kaasa süsteemi arendusega.
- X-tees on sageli vaja, et andmeväljad sisaldaksid andmeid, mida kasutajal kasutajavaates ei ole vaja, aga äriloogikate loomiseks on vaja (nt seoste loomiseks/unikaalsuse kontrollimiseks jne).





