

# Adaptation preparedness scoreboard

## Country fiche for Estonia

### Note to the Reader

Under Action 1 of the EU's Strategy on adaptation to climate change (COM(2013)216), in collaboration with the Member States, the Commission developed an 'adaptation preparedness scoreboard'. Using the scoreboard, the Commission prepared country fiches on each Member State in an iterative consultation process.<sup>1</sup> The country fiches assess the Member States' adaptation policy as of June 2018, including the content of NASs and plans, for the following aspects:

- Institutional structure
- Quality of national vulnerability assessments
- Knowledge creation (national observation systems in relevant sectors<sup>2</sup> and climate modelling), transfer and use
- Action plans:
  - Quality (incl. the basis used for assessment of adaptation options)
  - Actual implementation mechanisms
- Funding mechanisms
- Mainstreaming into sectoral policies, in particular:
  - Disaster risk reduction
  - Spatial planning
  - Environmental impact assessment (EIA) (how the Directive is transposed)
  - Insurance policy
- Transboundary cooperation
- Monitoring mechanisms in different sectors and governance levels

The fiches are based on internal work by the Commission and on targeted assistance from an external contractor. They also served as input to the assessment of Action 1 of the Strategy during its evaluation. Annex IX of the Commission's SWD(2018)461 on the evaluation of the

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<sup>1</sup> The first versions of the fiches, prepared in consultation with the Member States in 2014-15, were unpublished and used to fine-tune the scoreboard. The second drafts were published, after consulting the Member States, as background documents to the public consultation on this evaluation in December 2017.

[https://ec.europa.eu/clima/consultations/evaluation-eus-strategy-adaptation-climate-change\\_en](https://ec.europa.eu/clima/consultations/evaluation-eus-strategy-adaptation-climate-change_en) The final Member State consultation on the draft fiches took place in June 2018.

<sup>2</sup> These relate for example to meteorology, floods, drought, sea level, coastal erosion, biodiversity, human/animal/plant health etc.

Strategy presents a horizontal assessment of the 28 country fiches, while Annex X presents the list of scoreboard indicators and the methodology used in applying them.

The assessments in the country fiches (yes/no/in progress) need to be read in conjunction with the narrative that accompanies them. They assess the state of play within each EU Member State. While all effort has been made to ensure the coherence across fiches in the assessment of the same indicator, it should not be directly compared across the Member States. Two countries with a "yes" on the same indicator could have a different national situation leading to that assessment. Not all indicators have the "in progress" status, some can only be "yes" or "no".

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## **List of abbreviations**

AECM	Association of Estonian Cities and Rural Municipalities
CoM	Covenant of Mayors for Climate and Energy
EEA	European Economic Area
EIA	Environmental Impact Assessment
EUAS	EU Adaptation Strategy
IPCC	Intergovernmental Climate Change Panel
NAS	National adaptation strategy
NAP	National adaptation plan
NUTS	Nomenclature of Territorial Units
MoE	The Estonian Ministry of Environment
MS	Member State
SEA	Strategic Environmental Assessment
UNFCCC	United Nations Framework Convention on Climate Change

## **POLICY FRAMEWORK**

### **A1. National adaptation strategy**

The national adaptation strategy (NAS) – “Development Plan for Climate Change Adaptation until 2030”<sup>3 4</sup> – was adopted by the Government on 2<sup>nd</sup> March 2017.

The NAS was developed under a project "Elaboration of Estonia's Draft National Climate Change Adaptation Strategy and Action Plan" agreed between the Ministry of Environment and the Estonian Environmental Research Centre, with support from the European Economic Area (EEA) Financial Mechanism. Contributions were received from the representatives of relevant ministries, local government, non-governmental organisations and research institutions.

The NAS presents a framework for action, which serves as a basis for reducing the vulnerability of Estonia to climate change<sup>5</sup>. The goal of the NAS is to increase readiness and the ability to adapt to climate impacts at national, regional and local levels. The overall target is that by 2030 at least 35% of people should acknowledge the risks of climate change and take appropriate measures. The NAS calls for eight sub-goals for the following priority areas, which align with the country's economic and administrative structure:

1. Human health and rescue preparedness
2. Land use and spatial planning, including coastal areas, other flood-risk areas, landslide risk areas, land reclamation, and planning of cities
3. Natural environment, including biodiversity, terrestrial ecosystems, freshwater ecosystems and environment, marine ecosystems and environment, and ecosystem services
4. Bio-economy, including agriculture, forestry, fishing, hunting, tourism, and peat production
5. The economy, including insurance, banking, employment, businesses and industry
6. Societal awareness and cooperation, including education and science, and international relations and cooperation
7. Infrastructure and buildings, including transport and transport infrastructure, technical support systems, and buildings
8. Energy and energy supply systems, including energy independence, energy security, energy resources, energy efficiency, heat production and electricity generation.

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<sup>3</sup> Climate Change Adaptation, URL: <http://www.envir.ee/en/news-goals-activities/climate/climate-change-adaptation>, Date accessed: 04/05/2018

<sup>4</sup> Kliimamuutustega kohanemise arengukava, URL: <http://www.envir.ee/et/eesmargid-tegevused/kliima/kliimamuutustega-kohanemise-arengukava>, Date accessed: 04/05/2018

<sup>5</sup> Summary of Climate Change Adaptation Development Plan, URL: [http://www.envir.ee/sites/default/files/climate\\_change\\_adaptation\\_development\\_plan\\_until\\_2030\\_summary\\_0.pdf](http://www.envir.ee/sites/default/files/climate_change_adaptation_development_plan_until_2030_summary_0.pdf) Date accessed: 04/05/2018

## **A2. Adaptation strategies adopted at subnational levels**

There is no information or evidence about adaptation strategies existing at relevant subnational levels. Climate adaptation is, however, considered in the county and local municipal level risk assessments and crisis management plans. In addition, the capital city, Tallinn, and the municipalities of the cities of Rakvere, Jõgeva, Tartu, Viimsi and Rõuge have established processes for developing strategies and action plans for climate adaptation, and are signatories to the Covenant of Mayors (CoM). Action plan development has only started in Tallinn (approximately 34% of the population) and the plan is expected to be adopted by the end of 2018, with implementation not expected to be completed before 2019. In other cities, the development of adaptation plans has not yet been actively started.<sup>6</sup>

So far, the majority of climate adaptation activities at the subnational level have occurred through EU funded projects, such as ASTRA<sup>7</sup>, BaltCICA<sup>8</sup>, BalticClimate<sup>9</sup> and BaltAdapt<sup>10</sup> (see Indicator 9a below). Implementation is carried out through devolved government offices in the 15 counties, which are a subdivision of the Nomenclature of Territorial Units (NUTS) level III, and at the municipal level.

Traditionally, the regional level has not been very relevant in Estonia. Regions currently have no defined role in climate adaptation but local authorities (municipalities) may play an important role, particularly in implementation.

## **B. Adaptation action plans**

### **B1. National adaptation plan**

The detailed national adaptation plan (NAP) to implement the NAS was developed in parallel by the EEA project mentioned above. The NAP was adopted by the Government in March 2017<sup>11</sup>. The NAP includes specific costed activities and measures in the eight sectors identified in the NAS. Costs are identified for four years, distributed by year and by responsible authority.

### **B2. Adaptation plans adopted at subnational level**

Some activities related to climate adaptation have taken place at the local level in several municipalities, but not as part of a systematic process. The capital city, Tallinn, and the municipalities of the cities of Rakvere, Jõgeva, Tartu, Viimsi and Rõuge have started the process of elaborating adaptation strategies and action plans. Some cities, such as Pärnu,

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<sup>6</sup> Information provided by Member State representatives

<sup>7</sup> ASTRA: aims of the project, URL: [http://www.astra-project.org/01\\_aims\\_astra.html](http://www.astra-project.org/01_aims_astra.html), Accessed 04/05/2018

<sup>8</sup> BaltCICA: Estonia, URL: <http://www.baltcica.org/casestudies/estonia.html>, Accessed 04/05/2018

<sup>9</sup> BalticClimate: Estonia, URL: <http://www.balticclimate.org/en/project/target-ares/estonia>, Accessed 04/05/2018

<sup>10</sup> BaltAdapt, URL: <http://www.baltadapt.eu/>, Accessed 04/05/2018

<sup>11</sup> Kliimamuutustega kohanemise arengukava rakendusplaan 2017-2020, URL: [http://www.envir.ee/sites/default/files/kliimamuutustega\\_kohanemise\\_arengukava\\_aastani\\_2030\\_rakendusplaan\\_aastateks\\_2017-2020.xlsx](http://www.envir.ee/sites/default/files/kliimamuutustega_kohanemise_arengukava_aastani_2030_rakendusplaan_aastateks_2017-2020.xlsx), Access date: 14/05/2018

Tartu, Tallinn that have been influenced by extreme weather conditions (e.g. a particularly strong storm in 2005), have been implementing adaptation measures. These include establishment of a flood warning system<sup>12</sup> for Pärnu City within the ASTRA project, which sought to develop a Baltic Adaptation Strategy. The aim of the flood warning system is to notify citizens about potential hazards and what actions to take in case of significant sea-level rise. Since 2008, a 24-hour weather monitoring system has been used in Tallinn to inform citizens of extreme weather conditions, especially those that could cause floods.

At the moment no subnational or regional adaptation strategy has been adopted, but Tallinn has started the process of elaborating an adaptation strategy and action plan. In county-regions, risk assessments and crisis management plans have to be in place and be up-dated regularly. Cities also participate in regional crisis committees. They have performed risk analyses, which include extreme weather events, such as storms, floods and heavy rain. Local action plans have been developed to minimise the risks (flood boundaries, flood construction level, etc.).

### **B3. Sectoral adaptation plans**

Some adaptation measures have been included in sectoral development plans, action plans and laws (e.g. “The Estonian Forestry Development Plan until 2020”, “The Nature Conservation Development Plan until 2020”, the Water Act, the Emergency Act and risk analyses for emergencies, “The Action Plan for Mitigation and Adaptation to the Impact of Climate Changes in the Agricultural Sector”, “The Public Health Development Plan for 2009–2020”, “The Estonian Rural Development Plan for 2014–2020”, “The National Security Concept of Estonia until 2020”).

The Estonian low-carbon strategy named “General principles of Climate Policy until 2050”<sup>13</sup>, which was approved by the Parliament on 5<sup>th</sup> April 2017, set sectoral guidelines for adapting to the effects of climate change. The strategy considers: energy, infrastructure and buildings, health, economy, bio-economy, society, awareness and cooperation, land use and planning, and natural environment sectors

The entry into force of the NAS was originally planned to take place at the end of 2016, with implementation of the adaptation measures listed in the NAP beginning in 2017. However, due to a slight delay in adoption of the NAS, implementation is expected to begin in 2018 instead.<sup>14</sup>

## **SCOREBOARD**

### **Step A: Preparing the ground for adaptation**

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<sup>12</sup> Electronic landscape maps of the flood exposure areas in Tallinn, Kuressaare, Haapsalu, Pärnu and Tartu are available on the website of the Land Board at <http://geoportaal.maaamet.ee>, Accessed 04/05/2018

<sup>13</sup> Kliimapolitiika põhialused aastani 2050, URL: <https://www.riigiteataja.ee/akt/307042017001>, Date accessed: 04/05/2018

<sup>14</sup> Personal communication with MS representative

## **1. Coordination structure**

### **1a. A central administration body officially in charge of adaptation policy making**

**Yes** / No

The Estonian Ministry of Environment (MoE) is the institution responsible for all climate mitigation and adaptation-related activities in Estonia, including developing national policies, implementing measures, transposing EU legislation and integrating climate policy objectives and concerns into sectors that are not the MoE's responsibility.

Within the MoE, the Climate and Radiation Department is responsible for coordinating reporting activities under the United Nations Framework Convention on Climate Change (UNFCCC), its Kyoto Protocol and EU legislation, as well as for the development and implementation of climate mitigation and adaptation policies.

### **1b. Horizontal (i.e. sectoral) coordination mechanisms exist within the governance system, with division of responsibilities**

**Yes** / In progress / No

A Steering Committee was formed for the development and general management of the NAS<sup>15</sup>. The Steering Committee was led by the Estonian Environmental Research Centre, and included representatives of concerned government authorities, associations and organizations, including: Ministry of Environment, Ministry of Rural Affairs, Ministry of Social Affairs, Ministry of Finance, Ministry of the Interior, Ministry of Economic Affairs and Communications, Ministry of Education and Science, Government Office, Rescue Authority, Estonian Association of Municipalities, Association of Estonian Cities, Estonian Science Agency, Estonian Academy of Sciences, and Estonian Fund for Nature.

All ministries are responsible for coordinating the implementation of activities that fall under their responsibility in the NAP. The MoE is responsible for annual reporting to the Government on the implementation of the NAP and for the coordination of adaptation-related ministerial communication.

### **1c. Vertical (i.e. across levels of administration) coordination mechanisms exist within the governance system, enabling lower levels of administration to influence policy making**

**Yes** / In progress / No

The Estonian Association of Municipalities and the Association of Estonian Cities were part of the Steering Committee that led development of the NAS. Local governments have co-

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<sup>15</sup> Climate change adaptation: Draft process, URL: <http://www.klab.ee/kohanemine/en/strategy/draft-process/>, Date accessed: 04/05/2018

responsibility for implementation of relevant actions in the NAP, coordinated by the relevant ministries responsible.

The Association of Estonian Cities and Rural Municipalities (AECM) is the voluntary union established for representing the common interests and arranging co-operation of cities and rural municipalities. This association disseminates information about the CoM to the local municipalities.

## **2. Stakeholders' involvement in policy development**

### **2a. A dedicated process is in place to facilitate stakeholders' involvement in the preparation of adaptation policies**

**Yes** / No

In the process of developing the adaptation policy in Estonia, stakeholders from national governmental bodies as well as the scientific research communities were consulted. Some information was collected from regional-level governmental stakeholders.

The development of the NAS was promoted and followed up by a Steering Committee (see Indicator 1b). Several science and research institutions were included in the Steering Committee, including the Estonian Science Agency and the Estonian Academy of Sciences.

There was a 3-week period for public review of the NAS draft (in parallel with the public review of the strategic environmental assessment, SEA, report) with a public hearing at the end of the period. The draft NAS was published for public consultation through an online portal, and several public information seminars were held.

### **2b. Transboundary cooperation is planned to address common challenges with relevant countries**

**Yes** / No

The need for transboundary cooperation is acknowledged in the NAS, especially regarding the fishing sector in the Baltic Sea and Lake Peipus context<sup>16</sup>. However, no specific measures have been implemented yet. Nevertheless, Estonia participates in various transboundary initiatives and programmes.

Under the EEA Financial Mechanism project "Elaboration of Estonia's Draft National Climate Change Adaptation Strategy and Action Plan", bilateral cooperation contracts were signed between the Estonian Environmental Research Centre and the Norwegian Directorate for Civil Protection and Emergency Planning (donor country). The aim of the bilateral contract was to transfer Norwegian know-how on climate adaptation to Estonia and to

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<sup>16</sup> Republic of Estonia, Ministry of Environment, Climate Change Adaptation Development Plan until 2030, URL: [http://www.envir.ee/sites/default/files/national\\_adaptation\\_strategy.pdf](http://www.envir.ee/sites/default/files/national_adaptation_strategy.pdf),

provide consultation. The aforementioned research groups that developed adaptation research studies also had partners from EEA Financial Mechanism donor countries: Agricultural University of Iceland, Norwegian Fridtjof Nansen Institute, Norwegian Institute for Urban and Regional Research, NIBR.

The Ministry of Environment participates in the Baltic Sea Region working group on climate adaptation<sup>17</sup>. Furthermore, Estonia takes active part in the implementation of the EU Strategy for the Baltic Sea Region (EUSBSR, 2009)<sup>18</sup> and is a member of the Baltic Sea Region Climate Dialogue Platform<sup>19</sup>.

Several projects on climate adaptation in the Baltic Sea region have been implemented. Estonia has taken part in several transboundary projects, including Astra<sup>20</sup>, Baltadapt<sup>21</sup>, BaltCICA<sup>22</sup>, BalticClimate<sup>23</sup>, Baltclim<sup>24</sup>, RADOST<sup>25</sup>, iWater<sup>26</sup>.

Under the Joint Operational Programme of Estonia-Russia Cross-Border Cooperation 2014-2020<sup>27</sup>, a provision on transboundary cooperation concerning climate adaptation in the Baltic Sea and Lake Peipus is contained. The aims of the provision include preserving biodiversity on joint natural assets and fostering shared actions in risk management and a readiness to cope with environmental disasters.

## **Step B: Assessing risks and vulnerabilities to climate change**

### **3. Current and projected climate change**

#### **3a. Observation systems are in place to monitor climate change, extreme climate events and their impacts**

Yes / **In progress** / No

Climate observations of the Estonian Environment Agency weather service comprise systematic meteorological, atmospheric, oceanographic and terrestrial monitoring. Ensuring

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<sup>17</sup> Baltic Sea Commission: members, URL: <http://cpmr-baltic.org/who-we-are/member-directory-map/>, Access date 15/05/2018

<sup>18</sup> EU Strategy for the Baltic Sea Region, URL: <http://www.balticsea-region-strategy.eu/>, Access date 15/05/2018

<sup>19</sup> EUSBSR Horizontal Action Climate, URL: <http://www.cbss.org/strategies/horizontal-action-climate>, Access date 15/05/2018

<sup>20</sup> ASTRA project case studies: Cities of Tallinn and Pärnu, URL: [http://www.astra-project.org/02\\_estonia\\_tallin\\_paernu.html](http://www.astra-project.org/02_estonia_tallin_paernu.html), Access date 15/05/2018

<sup>21</sup> Baltadapt, URL: <http://www.baltadapt.eu/>, Access date 15/05/2018

<sup>22</sup> BaltCICA, URL: <http://www.baltcica.org/>, Access date 15/05/2018

<sup>23</sup> BalticClimate, URL: <http://www.balticclimate.org/>, Access date 15/05/2018

<sup>24</sup> URL: <http://www.bef-de.org/index.php?id=52>, Access date 15/05/2018

<sup>25</sup> RADOST, URL: <http://www.klimzug-radost.de/en>, Access date 15/05/2018

<sup>26</sup> iWater, URL: <https://www.integratedstormwater.eu/content/integrated-storm-water-management>, Access date 15/05/2018

<sup>27</sup> Joint Operational Programme of Estonia-Russia Cross-Border Cooperation 2014-2020, URL: [http://www.estoniarussia.eu/wp-content/uploads/2016/03/Estonia\\_Russia\\_CBC\\_JOP\\_FINAL\\_16012017.pdf](http://www.estoniarussia.eu/wp-content/uploads/2016/03/Estonia_Russia_CBC_JOP_FINAL_16012017.pdf), Access date 15/05/2018

operative and continuous provision of meteorological and hydrological forecasts, warnings and monitoring of data for the public and for authorities is the strategic objective of the Estonian Environment Agency weather service.

Other institutions involved in climate observations include Tartu Observatory<sup>28</sup>, the Estonian Marine Institute of the University of Tartu<sup>29</sup> and the Marine Systems Institute of Tallinn University of Technology<sup>30</sup>.

The Estonian Environmental Agency Weather Service publishes data and climatological information on weather observations and scenarios, weather events and climate science. The Estonian Weather Service publishes the climate averages, weather warnings, weather events, anomalies and weather records data<sup>31</sup>. The Weather Service also alerts the public to the possible occurrence of severe weather, such as heavy rain with risk of flooding, severe thunderstorms, gale-force winds, heat waves, forest fires, fog, snow or extreme cold with blizzards, avalanches or severe coastal tides (this information is also published on the European extreme weather alert portal<sup>32</sup> and is based on country awareness reports).

The on-line Sea Level Information System run by the Marine Systems Institute at Tallinn University of Technology provides information about the sea level status, trends, projections and water temperatures in different coastal regions of Estonia.

The Estonian Rescue Board website<sup>33</sup> publishes practical emergency instructions, also for extreme weather conditions (like storms, thunderstorms, extremely cold weather conditions, and floods).

There is no evidence of monitoring of climate impacts on Estonian society.

### **3b. Scenarios and projections are used to assess the economic, social and environmental impacts of climate change, taking into account geographical specificities and best available science (e.g. in response to revised IPCC assessments)**

**Yes** / In progress / No

Alongside development of the NAS and NAP, the Estonian Environment Agency developed a report of short-term and long-term climate scenarios for Estonia and described past trends<sup>34</sup>. The Estonian-specific future climate scenarios provide an overview of the projections and

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<sup>28</sup> Tartu Observatory, URL: <https://www.to.ee/>, Access date 15/05/2018

<sup>29</sup> Estonian Marine Institute of the University of Tartu, URL: <http://www.sea.ee/en>, Access date 15/05/2018

<sup>30</sup> Marine Systems Institute of Tallinn University of Technology, URL: <https://www.ttu.ee/en/?id=147569>, Access date 15/05/2018

<sup>31</sup> Estonian Weather Service, URL: <https://www.ilmateenistus.ee/kliima/kliimanormid/ohutemperatuur/?lang=en>, Access date 15/05/2018

<sup>32</sup> European extreme weather alert portal [www.meteoalarm.eu](http://www.meteoalarm.eu), Access date 15/05/2018

<sup>33</sup> The Estonian Rescue Board, URL: <https://www.rescue.ee/et/kodanikule/elanikkonnakaitse/>, Access date 15/05/2018

<sup>34</sup> Eesti tuleviku kliimastenaariumid aastani 2100, URL: [http://www.envir.ee/sites/default/files/kliimastenaariumid\\_kaur\\_aruanne\\_ver190815.pdf](http://www.envir.ee/sites/default/files/kliimastenaariumid_kaur_aruanne_ver190815.pdf), Access date 15/05/2018

assessments up to 2100. They use calculations of 28 global climatic models according to the Intergovernmental Climate Change Panel (IPCC) Fifth Assessment Report, the Second Assessment of Climate Change for the Baltic Sea Basin, results of the Baltadapt project, and IPCC special report SREX (Managing the Risks of Extreme Events and Disasters to Advance Climate Change Adaptation), which are downscaled to the Baltic region. This report presents an overview of observed climate changes during the 19<sup>th</sup> and 20<sup>th</sup> centuries in Estonia, as well as assessments and projections of future climate until the year 2100. The report gathers existing scientific knowledge concerning the surface and atmospheric climate changes in Estonia and the Baltic Sea region. The report focuses on two greenhouse gas emission scenarios, which are recommended as a basis for development of the Estonian NAS and NAP:

- RCP4.5 – recommended as a main scenario; moderate, significant mitigation measures are expected from the countries
- RCP8.5 – recommended as an additional scenario; pessimistic, weak international cooperation and mainly carbon-based economy.

The future climate scenarios are used as a basis for developing the NAS and NAP for Estonia.

While the available climate projections and socio-economic scenarios were used in the development of the NAS, it cannot be verified if they were consistently used for assessing the economic, social and environmental impacts of climate change.

### **3c. Sound climate risks/vulnerability assessments for priority vulnerable sectors are undertaken to support adaptation decision making**

**Yes** / In progress / No

The NAS was prepared based on comprehensive studies and analyses, which were carried out by experts and scientists from different institutions. These studies and analyses determined the potential climate impacts on priority areas and the adaptation measures that need to be taken in the short term until 2030, as well as in relation to a long-term vision until 2100.

To date, there have been few risk analyses concerning climate vulnerability at national level in Estonia, however, the NAS/NAP is an independent policy document (development plan) with a comprehensive analysis of sectoral climate impacts, including a risk and vulnerability assessment.

The NAS was drawn up based on four in-depth scientific studies<sup>35,36,37,38</sup>, which identified the sectoral climate impacts and vulnerabilities and determined the measures for climate

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<sup>35</sup> Climate change adaptation strategy and measures for thematic fields of natural environment and bioeconomy (BIOCLIM), URL: <http://pk.emu.ee/struktuur/maastikukorralduse-ja-loodushoiu-osakond/projektid/bioclim/projekt/>, Accessed 09/05/2018

adaptation in a short-term perspective (up to 2030) and long-term perspective (up to 2050 and 2100). The analysed sectors in these scientific studies, and also in the NAS, were as follows:

1. Health and rescue capability
2. Land use and planning, including coastal areas, other areas with a risk of flooding, areas with a risk of landslides, land improvement, and towns
3. Natural environment, including biodiversity, land ecosystems, freshwater ecosystems and environment, marine ecosystems and environment, and ecosystem services
4. Bioeconomy, including agriculture, forestry, fishing industry, hunting, tourism, and peat production
5. Economy, including insurance, banking, employment, entrepreneurship and industry
6. Society, awareness and cooperation, including awareness, education and science, international relations and cooperation
7. Infrastructure and buildings, including transport and infrastructure of transport, technical support systems, and buildings
8. Energy and security of supply, including energy independence, security, resources, efficiency, and heat and electricity production.

A thorough overview of the expected effects of climate change in Estonia is also given in the document “Estonia’s Sixth National Communication Under the United Nations Framework Convention on Climate Change”.<sup>39</sup>

### **3d. Climate risks/vulnerability assessments take transboundary risks into account, when relevant**

Yes / **In progress** / No

Climate risk/vulnerability assessments take transboundary risk into account in some sectors, such as fishing, especially in the Baltic Sea and Lake Peipus context. However, it is not clear

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<sup>36</sup> Estonian Climate Adaptation Strategy for Infrastructure and Energy (ENFRA), URL: <http://kliima.seit.ee/>, Accessed 09/05/2018

<sup>37</sup> Assessment of climate change impacts elaboration of adaptations measures: planning, land use, health and rescue management (KATI), link: <http://www.geograafia.ut.ee/et/teadus/kati-kliimakohanemine> Climate change impact assessment and elaboration of suitable adaptation measures in the fields of the economy and society (RAKE), URL: [https://www.envir.ee/sites/default/files/rake\\_lopparuanne.pdf](https://www.envir.ee/sites/default/files/rake_lopparuanne.pdf), Accessed 09/05/2018

<sup>38</sup> Climate change impact assessment and elaboration of suitable adaptation measures in the fields of the economy and society URL: [https://www.envir.ee/sites/default/files/rake\\_lopparuanne.pdf](https://www.envir.ee/sites/default/files/rake_lopparuanne.pdf), Accessed 09/05/2018

<sup>39</sup> Estonia’s Sixth National Communication Under the United Nations Framework Convention on Climate Change, URL: [https://unfccc.int/files/national\\_reports/non-annex\\_i\\_natcom/application/pdf/est\\_nc6.pdf](https://unfccc.int/files/national_reports/non-annex_i_natcom/application/pdf/est_nc6.pdf), Accessed 09/05/2018

whether transboundary risks are taken into account by the risk and vulnerability assessments for other relevant sectors.

The NAS identifies international relations and development cooperation as essential areas to promote adaptation to the effects of climate change, but it is not clear whether transboundary risks are enshrined in the NAS.

Estonia has engaged in a number of transboundary initiatives relating to climate impacts, as described in Indicator 2b. Climate risks/vulnerability assessments take transboundary risks into account, within the framework of the Baltic Sea Region Climate Change Adaptation Strategy, which focuses on such sectors as food supply (including fishery and agriculture), coastal infrastructure and coastal tourism.<sup>40</sup>

#### **4. Knowledge gaps**

##### **4a. Work is being carried out to identify, prioritise and address the knowledge gaps**

Yes / **In progress** / No

The NAS and four in-depth scientific studies aimed to contribute to a more climate-resilient Estonia. This was the first time that Estonia developed a coherent approach to adaptation and assembled all the available knowledge about different climate impacts in the region. Previously, information on climate impacts in different sectors was fragmented and scattered between different authorities and institutes, but since NAS adoption, Estonia can plan and implement its climate adaptation policy comprehensively through one development plan.

The MoE has conducted the four in-depth sectorial adaptation studies. This sector-specific research also contains an approach for addressing the knowledge gaps and dealing with uncertainties.

The adaptation measures in the NAS and NAP aim to increase the awareness and resilience, as well as to implement the precautionary principle. An important principle of the NAS/NAP is to increase the awareness of the general public and to reduce the knowledge gaps and the uncertainty related to climate change.

#### **5. Knowledge transfer**

##### **5a. Adaptation relevant data and information is available to all stakeholders, including policy makers (e.g. through a dedicated website or other comparable means)**

**Yes** / In progress / No

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<sup>40</sup>Climate Adapt, Assessments - Impacts & Vulnerability assessments: Estonia, URL: <http://climate-adapt.eea.europa.eu/countries-regions/countries/estonia>, Access date: 14/05/2018

The national climate adaptation web portal is part of the MoE's website. This website (in Estonian) is regularly updated with new information regarding the NAS, with relevant adaptation procedures and NAS/NAP materials and guidelines. There is also adaptation information on the Estonian Environmental Research Centre homepage<sup>41</sup>. Additionally, all of the NAS baseline studies have their own websites, which contain more detailed information on sectoral climate adaptation<sup>42 43 44 45</sup>.

## **5b. Capacity building activities take place; education and training materials on climate change adaptation concepts and practices are available and disseminated**

**Yes** / In progress / No

The capacity-building activities were implemented in the development of the NAS and NAP, as one of the priority sections is "society, awareness and co-operation".

The EEA Financial Mechanism project "Elaboration of Estonia's Draft National Climate Change Adaptation Strategy and Action Plan" organised several public awareness and knowledge transfer events, the most recent of which was in 2016<sup>46</sup>. The seminars aimed to raise awareness with regard to climate impacts in Estonia, and the importance of adaptation measures and ways to adapt. Some of the sectors addressed were health, rescue preparedness, spatial planning and land use, economy, natural environment, Buildings, infrastructure and energy supply systems.

The NAS Sub-objective 6 is to increase the awareness of the risks and opportunities presented by climate change. It elaborates on measures to achieve this sub-objective, such as disseminating updated adaptation knowledge to schools, education institutes and public bodies.

### **Step C: Identifying adaptation options**

#### **6. Adaptation options' identification**

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<sup>41</sup> Climate Change Adaptation, URL: <http://www.klab.ee/kohanemine/en/>, Access date: 14/05/2018

<sup>42</sup> Climate change adaptation strategy and measures for thematic fields of natural environment and bioeconomy (BIOCLIM), URL: <http://pk.emu.ee/struktuur/maastikukorralduse-ja-loodushoiu-osakond/projektid/bioclim/projekt/>, Accessed 09/05/2018

<sup>43</sup> Estonian Climate Adaptation Strategy for Infrastructure and Energy (ENFRA), URL: <http://kliima.seit.ee/>, Accessed 09/05/2018

<sup>44</sup> Assessment of climate change impacts elaboration of adaptations measures: planning, land use, health and rescue management (KATI), link: <http://www.geograafia.ut.ee/et/teadus/kati-kliimakohanemine> Climate change impact assessment and elaboration of suitable adaptation measures in the fields of the economy and society (RAKE), URL: [https://www.envir.ee/sites/default/files/rake\\_lopparuanne.pdf](https://www.envir.ee/sites/default/files/rake_lopparuanne.pdf), Accessed 09/05/2018

<sup>45</sup> Climate change impact assessment and elaboration of suitable adaptation measures in the fields of the economy and society URL: [https://www.envir.ee/sites/default/files/rake\\_lopparuanne.pdf](https://www.envir.ee/sites/default/files/rake_lopparuanne.pdf), Accessed 09/05/2018

<sup>46</sup> Climate-adapting Estonia 2030: Why and how?, URL: <http://www.klab.ee/kohanemine/en/climate-adapting-estonia-2030-why-and-how/>, Access date: 14/05/2018

**6a. Adaptation options address the sectoral risks identified in 3c, the geographical specificities identified in 3b and follow best practices in similar contexts**

Yes / No

The NAS/NAP is an independent policy document (development plan) including: identification and description of adaptation options, assessments of adaptation options and forecasting costs, and development of actions for the adaptation options.

The NAS identifies the domains that are most climate vulnerable and specifies the actions that improve Estonia's readiness and capability to cope with climate change. In each scientific baseline study, the scientists and experts mapped the current situation, i.e. described problems, opportunities, and threats in thematic areas/sectors, set the objectives and listed the most crucial measures for adaptation, as well as impacts of past weather events. Existing adaptation measures were also analysed. Risks, vulnerabilities and climate impacts on the topical areas and their sub-themes were assessed. Recommendations for future research were also given. The baseline studies created a set of scientifically-based suggestions for developing the national climate adaptation policies. The baseline studies also created a network of scientists and stakeholders who have the potential for knowledge co-generation in this field.

Before the elaboration of the NAS and its baseline studies, knowledge on climate change in Estonia concerned mainly water-related issues. The NAS and Estonian future climate scenarios 2100 provide more knowledge about sea-level rise, coastal erosion, floods and increased precipitation.

**6b. The selection of priority adaptation options is based on robust methods (e.g. multi-criteria analyses, stakeholders' consultation, etc.) and consistent with existing decision-making frameworks**

Yes / No

The adaptation options and measures in NAS are based on the analysis of existing scientific literature, (national) policies and legislation and information from different databases, as well as expert knowledge also gathered in the expert groups for the baseline studies. The selection of priority adaptation options is based on multi-criteria analyses, stakeholder consultations, and the opinion of the inter-ministerial committee.

**6c. Mechanisms are in place to coordinate disaster risk management and climate change adaptation and to ensure coherence between the two policies**

Yes / In progress / No

Measure 1.2. of the NAP provides for an increase in rescue capacity. This measure will underline coordination between disaster risk management and climate adaptation, and its implementation will begin in 2019. The implementation of this measure would include

improvement of risk management, risk communication, institutional capacity and the acquisition of equipment to address climate change-related emergencies.<sup>47</sup> Crisis management in Estonia is regulated by the Emergency Act, which entered into force in 2009. It provides the legal basis for crisis management, including ensuring the continuous operation of vital services, preparing for and resolving emergencies. Each ministry is responsible for implementation of the activities related to crisis management in their field of governance, coordinated by the Ministry of the Interior. Under the Emergency Act, emergency risk assessment and response plans must be prepared.

Estonia is planning work for further coordination between climate adaptation and disaster risk reduction. In the NAS, Objective 5.1 deals with "health and rescue capability," and has as a sub-goal to improve rescue capacity and the ability of people to protect their health and property, as well as reduce the negative effects of climate change on health and the quality of life. An identified measure is to improve risk management, for example, in relation to climate change. This entails, amongst others, early warning to the public, increasing hazard awareness, and cooperation between the civil and military institutions, as well as between public authorities and the private sector.

The Ministry of the Environment has initiated the formation of a working group and the main body responsible for conducting meetings is the Ministry of the Environment and the following members are appointed from the Commission: Ministry of Social Affairs, Ministry of Finance, Ministry of the Interior, Ministry of Economic Affairs and Communications, Ministry of Rural Affairs, Ministry of Education and Research, State Chancellery, Rescue Board, Association of Estonian Rural Municipalities, Estonian Research Agency, Association of Estonian Non-profit Organizations and Foundations and Estonian Village Movement Kodukant. The task of the working group is to coordinate the implementation and changes of the NAP. The working group will monitor the implementation of the development plan and make recommendations, if necessary. In addition, it will resolve open issues related to the development plan and discuss the implementation plan of the development plan before it is submitted for approval to the Government<sup>48</sup>.

## **7. Funding resources identified and allocated**

### **7a. Funding is available to increase climate resilience in vulnerable sectors and for cross-cutting adaptation action**

**Yes** / In progress /No

The cost estimation for the implementation of the NAS for the period 2017–2030 is EUR 43,745,000. The implementation of measures and activities takes into consideration the objectives and development plans from other fields, including the Estonian Rural Development Plan for 2014–2020, Operational Programme for the European Maritime and

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<sup>47</sup> Information provided by MS representatives

<sup>48</sup> Information provided by MS representative

Fisheries Fund for 2014–2020, and Operational Programme for Cohesion Policy Funds 2014–2020. Many activities related to adaptation together with their budget are also reflected in the implementation plans of the development plans of many other fields, such as the Nature Conservation Development Plan Until 2020, Estonian Forestry Development Plan Until 2020, Internal Security Strategy 2015–2020, National Transport Development Plan 2014–2020, and Development Plan for the Energy Sector Until 2030. Awareness raising is one of the objectives of the NAS and, as such, cross-cutting adaptation actions also have funding allocations.

The NAP determines the implementation of the objectives set in the NAS through specific activities. The NAP also includes financial forecast on the cost of these measures, as well as information on who are the responsible authorities for the incurred costs. The total cost of the NAP activities is expected to be EUR 6,700,000, of which the state contribution is planned to be EUR 3,310,000 and the support from the environmental programme of the Environmental Investment Centre and foreign sources is planned as EUR 3,390,000. Financing of the activities from the state budget is ensured within the cost limits of the implementing agencies.

The Estonian NAS and NAP has been developed in the framework of the EEA Financial Mechanism 2009-2014 program's "Integrated Marine and Inland Water Management" project "Elaboration of Estonia's Draft National Climate Change Adaptation Strategy and Action Plan" with a total budget of EUR 1.3 million (10% nationally co-financed)<sup>49</sup>.

## **Step D: Implementing adaptation action**

### **8. Mainstreaming adaptation in planning processes**

#### **8a. Consideration of climate change adaptation has been included in the national frameworks for environmental impact assessments**

**Yes** / No

Consideration of climate adaptation in Environmental Impact Assessment (EIA) and SEA is addressed by the Environmental Impact Assessment and Environmental Management System Act<sup>50</sup>.

#### **8b. Prevention/preparedness strategies in place under national disaster risk management plans take into account climate change impacts and projections**

Yes / **No**

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<sup>49</sup> Euroopa Majanduspiirkonna toetused 2009-2014, URL: <http://www.envir.ee/et/euroopa-majanduspiirkonna-toetused-2009-2014>, Accessed 15/05/2018

<sup>50</sup> Environmental Impact Assessment and Environmental Management System Act, URL: <https://www.riigiteataja.ee/en/eli/ee/Riigikogu/act/507072017002/consolide>, Access date: 15/05/2018

The Estonian Rescue Board has prepared risk analyses for emergency events that may occur as a result of extreme climate events and circumstances: “Floods on Densely Populated Areas”, “Extremely Cold Weather”, “Extremely Hot Weather” and “Extensive Forest or Landscape Fires”. An “Epidemic Emergency Risk Assessment” has been prepared under the guidance of the Health Board. It is, however, unclear how future climate projections are factored into disaster risk management plans.

The “Internal Security Strategy 2015–2020“ notes the increased risk of extreme weather conditions caused by climate change. The Water Act<sup>51</sup> establishes the obligation to prepare maps of flood risk areas, give an assessment of flood risks and prepare risk management plans for flood risks. Early warning systems are operating, and risk-prone communities receive timely, understandable warnings of impending hazard events. Some websites provide information to stakeholders:

- The Estonian Rescue Board website is used by government agencies and authorities to publish notices about their response to emergencies and provide guidance on how to cope with various emergencies, including extreme weather conditions
- The real-time sea-level information system<sup>52</sup> provides information for various parts of Estonia.

### **8c. Key land use, spatial planning, urban planning and maritime spatial planning policies take into account the impacts of climate change**

Yes / **No**

The NAS includes "spatial planning and land use" as a priority area with sub-sectors including:

- Coastal areas
- Other areas with risk of flooding or soil instability
- Landscape planning, irrigation and drainage
- Planning of cities.

The NAS does not include specific mainstreaming measures with regard to spatial planning and land use, rather it identifies the need for further research and development of guidance materials, including climate-proofing design criteria to be used by policy makers, land owners, and planners and developers. Nevertheless, climate adaptation is mainstreamed through Article 11 of the Planning Act<sup>53</sup>. It states that planners should consider relevant information that has an influence on spatial development, including emergency risk analyses

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<sup>51</sup> Water Act 1994, URL: <https://www.riigiteataja.ee/en/eli/512012017001/consolide>, Access date: 15/05/2014

<sup>52</sup> Meretaseme Infosüsteem, URL: <http://on-line.msi.ttu.ee/kaart.php?en>, Access date: 15/05/2018

<sup>53</sup> Planning Act 2018, URL: <https://www.riigiteataja.ee/en/eli/ee/503112017001/consolide#>, Access date: 15/05/2018

(e.g. in relation to flood risks in densely populated areas). No measures relating to maritime planning have been included in the NAS.

**8d. National policy instruments promote adaptation at sectoral level, in line with national priorities and in areas where adaptation is mainstreamed in EU policies**

Yes / **In progress** / No

The NAS outlines eight sectors where measures should be implemented, and adaptation should be considered in policy development. However, no specific policy instruments have taken adaptation into account as a result of the NAS at this stage.

The list of strategic documents below includes indirect adaptation measures, mostly related to disaster risk reduction (based on the Emergency Act and the Water Act). The Estonian Environmental Strategy Until 2030 also focuses on the health of people and the development of knowledge. The Nature Conservation Development Plan Until 2020 and the MoE's development plan for 2017–2020 address awareness, as well as the development of environmental education and climate research.

As regards Estonian legislation, climate adaptation is addressed primarily in the Emergency Act, which is the basis for the Rescue Board having prepared risk analyses for emergency events, including extreme weather. The effects of climate change are also addressed by the Water Act, which establishes an obligation to assess flood risks and prepare risk management plans and maps of flood risk areas.

Climate adaptation is included, to varying degrees, in the following national development plans, vision documents and strategies:

- Estonian low-carbon strategy “General Principles of Climate Policy until 2050”
- Estonian Forestry Development Plan until 2020 and its action plan
- Strategy for Estonian Development Cooperation and Humanitarian Aid 2016–2020
- Estonian Lifelong Learning Strategy 2020
- Estonian National Strategy on Sustainable Development "Sustainable Estonia 21
- Estonian National Development Plan for the Energy Sector Until 2020 and Development Plan for the Energy Sector 2030+
- Estonian Environmental Strategy Until 2030
- Estonian Rural Development Plan for 2014–2020
- Action plan 2012–2020 for mitigation of and adaptation to climate change for agricultural sector 2012–2020
- Programme of Measures of the Estonian Marine Strategy
- National Renewable Energy Action Plan Until 2020
- Estonian Research and Development and Innovation Strategy “Knowledge Based Estonia 2014–2020
- Development plan for the Ministry of the Environment for 2017–2020
- Nature Conservation Development Plan Until 2020

- Internal Security Strategy 2015–2020
- Estonian Regional Development Strategy 2014–2020
- Action programme of the Government of the Republic 2015–2019
- Estonian National Health plan 2009-2020
- Aquaculture Sector Development Strategy for 2014–2020
- National plan 'Estonia 2030+'
- Water Act and River Basin Management plans 2015-2021
- Emergency Act and national risk analysis.

The agricultural sector has been relatively active in raising awareness of climate impacts. In accordance with the Ministry of Agriculture's Directive 24 (2011), a working group was established to draw up an action plan for climate mitigation and adaptation in agriculture, including by mapping and analysing the possibilities of revising existing measures, and making proposals for their improvement.

Under the steer of the Ministry of Finance and the Government Office, a guidance document for drafting development plans entitled 'Mandatory topics of all area-based development plans' is being updated to include climate adaptation.

**8e. Adaptation is mainstreamed in insurance or alternative policy instruments, where relevant, to provide incentives for investments in risk prevention**

Yes / **No**

In the NAS, one of the priority sectors is economy, which also includes insurance. Although the insurance sector has evolved into one of the most important economic sectors relevant to adaptation, the volume of the Estonian insurance market is small, and the population is rather poor, which is why the compulsory and semi-compulsory types of insurance are prevalent in the country (e.g. motor third party liability insurance, home insurance). So far, the Estonian insurers have not dealt with spreading the climate risk.

**9. Implementing adaptation**

**9a. Adaptation policies and measures are implemented, e.g. as defined in action plans or sectoral policy documents**

Yes / **In Progress** / No

The implementation of Estonia's adaptation policies has begun. For instance, in the spring of 2018, the MoE submitted an application for financial implementation of the EEA 2014-2021 programme for financing some parts of the implementation plan for 2018. In addition, MoE

are also reviewing and updating nationally other sectoral development plans and their implementation plans for adaptation.<sup>54</sup>

Some autonomous adaptation actions are being undertaken and measures have been developed in the areas of agriculture, forestry, floods and human health, but their efficiency and sustainability has not yet been analysed.<sup>55</sup>

Some activities related to climate adaptation have taken place in several municipalities or at county level, but not as part of a systematic process. Some major cities, such as Pärnu, Tartu, and Tallinn that have been influenced by extreme weather conditions (a particularly strong storm in 2005) have been most active in implementing adaptation measures. These measures include the flood warning system that was established in Pärnu City within the Astra project. The aim of the system is to notify the citizens about potential hazards and what actions to take in case of significant sea-level rise. Since 2008, there has been a 24-hour weather monitoring system used in Tallinn to inform citizens of extreme weather conditions, especially those that could cause floods.

**9b. Cooperation mechanisms in place to foster and support adaptation at relevant scales (e.g. local, subnational)**

Yes / **No**

The MoE has initiated the development of a working group to implement the NAS and the NAP, which is expected to foster and support adaptation at the subnational level. The working group of the NAS will be formed by representatives from the following different institutions: the MoE, the Ministry of Social Affairs, the Ministry of Finance, the Ministry of the Interior, the Ministry of Economic Affairs and Communications, the Ministry of Rural Affairs, the Ministry of Education and Research, the Republic of Estonia Government Office, the Rescue Board, the Association of Municipalities of Estonia, the Association of Estonian Cities, the Estonian Research Council, the Network of Estonian Non-profit Organisations, and Kodukant (the Estonian Village Movement). It is expected that the first meeting of the working group will take place in June 2018<sup>56</sup>.

**9c. Procedures or guidelines are available to assess the potential impact of climate change on major projects or programmes, and facilitate the choice of alternative options, e.g. green infrastructure**

Yes / **No**

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<sup>54</sup> Information provided by MS representative

<sup>55</sup> Project proposal for the EEA Grants project “Elaboration of Estonia’s Draft National Climate Change Adaptation strategy (NAS) and Action Plan”

<sup>56</sup> Personal correspondence with a MS representative

In addition to the various guidelines issued by the European Commission, the MoE is planning to issue guidelines for assessing climate impacts on spatial planning, including recommendations for climate-proofing implementation of design criteria.

**9d. There are processes for stakeholders' involvement in the implementation of adaptation policies and measures**

Yes / **No**

The involvement of stakeholders in implementation of adaptation policies and measures is expected through the working group described in Indicator 9b.

**Step E: Monitoring and evaluation of adaptation activities**

**10. Monitoring and reporting**

**10a. NAS/NAP implementation is monitored and the results of the monitoring are disseminated**

Yes / **No**

Annual reporting of NAS and NAP implementation was planned to begin on 1<sup>st</sup> March 2018. However, as the NAS entered into force in March 2017 rather than in November 2016 (the expected date), reporting has been postponed by a year and will begin on March 1, 2019 instead.<sup>57</sup>

The MoE will organise annual reporting on the NAS and will coordinate the exchange of adaptation-related information between the ministries. The working group of the NAS, with the chair of the MoE, will discuss the NAP once a year before presenting it to the Government for approval, monitor the implementation of the NAS, give recommendations for changing the NAS and, if necessary, solve open issues related to the NAS.

As of 2019, the MoE is expected to report annually to the Government an overview about the execution of the development plan and the achievement of its objectives by 1 March, also making proposals about amending or changing the development plan, if necessary.

**10b. The integration of climate change adaptation in sectoral policies is monitored and the results of the monitoring are disseminated**

Yes / **No**

As of May 2018, no sectoral reporting has taken place. The sectoral mainstreaming is expected to be monitored and reported annually with the centralised single NAS/NAP report

(see Indicator 10a), which is organised by the MoE and presented to the Government for approval. The first report is expected to be published by March 2019.

**10c. Regional, subnational or local action is monitored and the results of the monitoring are disseminated**

Yes / No

There is no formal regional/local level-specific reporting commitment, but the feedback from the subnational to national level will be collected via the working group of the NAS, in which members from the Association of Municipalities of Estonia, the Association of Estonian Cities and Kodukant (the Estonian Village Movement) are involved. This information will also be published in the annual NAS/NAP report from March 2019.

**11. Evaluation**

**11a. A periodic review of the national adaptation strategy and action plans is planned**

Yes / No

As explained in 10a, from 2019 the NAS and NAP will be reviewed annually following the presentation of a report on execution and implementation presented by the MoE to the Government.

**11b. Stakeholders are involved in the assessment, evaluation and review of national adaptation policy**

Yes / No

It is planned that the stakeholders in the NAS working group (see Indicator 9b) will be involved in the assessment, evaluation and review of national adaptation policy. Nevertheless, as indicated in Indicators 10a and 11a, monitoring and evaluation has not started yet.

## SUMMARY TABLE

<b>Adaptation Preparedness Scoreboard</b>		
<b>No.</b>	<b>Indicator</b>	<b>Met?</b>
<b>Step A: Preparing the ground for adaptation</b>		
<b>1      <i>Coordination structure</i></b>		
1a	A central administration body officially in charge of adaptation policy making	<u>Yes</u> / No
1b	Horizontal (i.e. sectoral) coordination mechanisms exist within the governance system, with division of responsibilities	<u>Yes</u> / In progress / No
1c	Vertical (i.e. across levels of administration) coordination mechanisms exist within the governance system, enabling lower levels of administration to influence policy making.	<u>Yes</u> / In progress / No
<b>2      <i>Stakeholders' involvement in policy development</i></b>		
2a	A dedicated process is in place to facilitate stakeholders' involvement in the preparation of adaptation policies	<u>Yes</u> / No
2b	Transboundary cooperation is planned to address common challenges with relevant countries	<u>Yes</u> / No
<b>Step B: Assessing risks and vulnerabilities to climate change</b>		
<b>3      <i>Current and projected climate change</i></b>		
3a	Observation systems are in place to monitor climate change, extreme climate events and their impacts	Yes / <u>In progress</u> / No
3b	Scenarios and projections are used to assess the economic, social and environmental impacts of climate change, taking into account geographical specificities and best available science (e.g. in response to revised IPCC assessments)	<u>Yes</u> / In progress / No
3c	Sound climate risks/vulnerability assessments for priority vulnerable sectors are undertaken to support adaptation decision making.	<u>Yes</u> / In progress / No
3d	Climate risks/vulnerability assessments take transboundary risks into account, when relevant	<u>Yes</u> / In progress / No
<b>4      <i>Knowledge gaps</i></b>		
4a	Work is being carried out to identify, prioritise and address the knowledge gaps	Yes / <u>In progress</u> / No

<b>Adaptation Preparedness Scoreboard</b>		
<b>No.</b>	<b>Indicator</b>	<b>Met?</b>
<b>5 Knowledge transfer</b>		
5a	Adaptation relevant data and information is available to all stakeholders, including policy makers (e.g. through a dedicated website or other comparable means).	<u>Yes</u> / In progress / No
5b	Capacity building activities take place; education and training materials on climate change adaptation concepts and practices are available and disseminated	<u>Yes</u> / In progress / No
<b>Step C: Identifying adaptation options</b>		
<b>6 Identification of adaptation options</b>		
6a	Adaptation options address the sectoral risks identified in 3c, the geographical specificities identified in 3b and follow best practices in similar contexts	<u>Yes</u> / No
6b	The selection of priority adaptation options is based on robust methods (e.g. multi-criteria analyses, stakeholders' consultation, etc.) and consistent with existing decision-making frameworks	<u>Yes</u> / No
6c	Mechanisms are in place to coordinate disaster risk management and climate change adaptation and to ensure coherence between the two policies	Yes / <u>In progress</u> / No
<b>7 Funding resources identified and allocated</b>		
7a	Funding is available to increase climate resilience in vulnerable sectors and for cross-cutting adaptation action	<u>Yes</u> / In progress / No
<b>Step D: Implementing adaptation action</b>		
<b>8 Mainstreaming adaptation in planning processes</b>		
8a	Consideration of climate change adaptation has been included in the national frameworks for environmental impact assessments	<u>Yes</u> / No
8b	Prevention/preparedness strategies in place under national disaster risk management plans take into account climate change impacts and projections	Yes / <u>No</u>
8c	Key land use, spatial planning, urban planning and maritime spatial planning policies take into account the impacts of climate change	Yes / <u>No</u>
8d	National policy instruments promote adaptation at sectoral level, in line with national priorities and in areas	Yes / <u>In progress</u> / No

<b>Adaptation Preparedness Scoreboard</b>		
<b>No.</b>	<b>Indicator</b>	<b>Met?</b>
	where adaptation is mainstreamed in EU policies	
8e	Adaptation is mainstreamed in insurance or alternative policy instruments, where relevant, to provide incentives for investments in risk prevention	Yes / <b><u>No</u></b>
<b>9     <i>Implementing adaptation</i></b>		
9a	Adaptation policies and measures are implemented, e.g. as defined in action plans or sectoral policy documents	Yes / <b><u>In Progress</u></b>  / No
9b	Cooperation mechanisms in place to foster and support adaptation at relevant scales (e.g. local, subnational)	Yes / <b><u>No</u></b>
9c	Procedures or guidelines are available to assess the potential impact of climate change on major projects or programmes, and facilitate the choice of alternative options, e.g. green infrastructure	Yes / <b><u>No</u></b>
9d	There are processes for stakeholders' involvement in the implementation of adaptation policies and measures.	Yes / <b><u>No</u></b>
<b>Step E: Monitoring and evaluation of adaptation activities</b>		
<b>10     <i>Monitoring and reporting</i></b>		
10a	NAS/NAP implementation is monitored and the results of the monitoring are disseminated	Yes / <b><u>No</u></b>
10b	The integration of climate change adaptation in sectoral policies is monitored and the results of the monitoring are disseminated	Yes / <b><u>No</u></b>
10c	Regional-, subnational or local action is monitored and the results of the monitoring are disseminated	Yes / <b><u>No</u></b>
<b>11     <i>Evaluation</i></b>		
11a	A periodic review of the national adaptation strategy and action plans is planned	<b><u>Yes</u></b> / No
11b	Stakeholders are involved in the assessment, evaluation and review of national adaptation policy	Yes / <b><u>No</u></b>