Estonian Climate Change Adaptation: Responsibilities and Practices in Estonia

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Responsibility to address resilience to climate change in Estonia

Government (10 ministries) Ministries are responsible for sector specific policy planning and implementation.
Act on Government of Republic does not contain word "climate". It is stated that MoE is responsible for **"weather monitoring"**

Ministry for Environment has **Climate and Radiation Department** (**9 staff**)
Environment Board under MoE has **1staff** who's responsible for climate but registries of pollutants and allowances
Environment Agency under MoE has National Weather Service (55 staff)
Environmental Research Centre coordinates Adaptation Strategy projects (**3 staff**)

Rescue Board of the Ministry for Interior deals with emergency response incl. environmental disasters. RB has prepared risk assesments for extreme events incl. storms,
Local Government : Responsible for Spatial planning and issuing permits –
Act on Local Governments does not contain word "climate"

Acts containing word “climate”

2014-2020 Structural Assistance Act
Act on Granting International Protection to Aliens
Ambient Air Protection Act
Biocidal Products Act
Building Act
Environmental Impact Assessment and Environmental Management System Act
Farm Animals Breeding Act
Occupational Health and Safety Act
Plant Propagation and Plant Variety Rights Act
Public Health Act
Composition and quality requirements for honey and requirements for the provision of food information Minister of Agriculture regulation
Format and procedure of issuance of energy performance certificates Minister of Economic Affairs and Communications regulation
Methodology for calculating the energy performance of buildings Minister of Economic Affairs and Communications regulation
Minimum requirements for energy performance Government regulation
Requirements for the building design documentation

Ambient Air Protection Act

§1(2) This **Act regulates the operations which involve** the affecting of the ambient air by chemical or physical exposure, damage to the ozone layer or **appearance of factors which cause climate change.** **-***MITIGATION*

§ 117. Organisation of activities to reduce climate change

Activities to reduce climate change are organised by the Ministry of the Environment on the basis of the requirements for restriction of the emissions of greenhouse gases provided by the United Nations Framework Convention on Climate Change (hereinafter *Framework Convention on Climate Change*) and the Kyoto Protocol to the United Nations Framework Convention on Climate Change (hereinafter *Kyoto Protocol*). *-MITIGATION*

Ambient Air Protection Act

§ 119[4]. Sale of emission allowance credits by auction

(1) The state shall auction all emission allowances which are not allocated free of charge as of 2013 according to § 119[5] of this Act and the European Commission Decision 2011/278/EU.

(8) **At least 50 per cent of the revenues** specified in subsection (1) of this section and **generated from the auctioning**, including the total revenue received from the emission allowances allocated to Estonia for the purpose of solidarity and economic growth or the amount equivalent to such revenues, **shall be used for financing** the targets restricting the generation of greenhouse gases.

These objectives are:...

5) financing of greenhouse gas emission reduction <u>and **climate change adaptation research, development and demonstration projects**</u>;

6) contributing to the Global Energy Efficiency and Renewable Energy Fund and <u>**the Adaptation Fund**</u>;

7) <u>**adaptation to the impact of climate change;**</u>

...

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Ambient Air Protection Act

§ 119[4]. Sale of emission allowance credits by auction

...

(9) The whole **revenue generated from the auctioning of the emission allowances of aircraft operators** specified in subsection (4) of this section shall be used for financing of the following targets limiting greenhouse gas emissions:

...

2) **research and development in connection with the climate change** mitigation and **adaptation process, particularly in the field of aeronautics and air transport.**

Drivers of Adaptation Policy in Estonia

- European climate adaptation platform (Climate-ADAPT) launched in March 2012;
- **EU Strategy on Adaptation to Climate Change adopted in April 2013**;
- BaltAdapt Project: Strategy for adaptation to climate change in the BSR and Action Plan, December 2013
- IPCCC WGII Report on Impacts, Adaptation and Vulnerability released in March 31st, 2014
- Climate Change Adaptation Round-tables CBSS Agenda 21 Group

Climate Change Adaptation policy in Estonia

- There is **no comprehensive strategy for adaptation in place in Estonia**.
- However, a **process for drawing up a National Adaptation Strategy (NAS) has started** and is coordinated by the Climate and Radiation Department in the Ministry of the Environment (MoE) and Estonian Environmental Research Centre.
- There are other indirect strategies and laws on climate change adaptation in Estonia, for example the Estonian Forest Development Plan until 2020 (Estonian version), the National Health Plan 2009-2020 and the HELCOM Baltic Sea Action Plan.

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Climate Change Adaptation policy in Estonia

- The management of extreme weather conditions is regulated by the Emergency Act (Estonian version) that came into force in July 2009. According to the Emergency Act there is a need to draw up emergency risk assessments and crisis management plans in case of storms and floods. The 2011 Review of Emergency Risk Assessment (Estonian version) describes, among other high risk emergencies, windstorms, flooding in high density areas, and health issues or deaths caused by accidents due to the formation or deformation of ice-cover. At least once in every two years, the value of emergency risk assessment is revisited.
- There are websites www.kriis.ee and http://www.rescue.ee/loodusjoud (Estonian-versions), providing information about major emergencies and practical emergency instructions.

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Climate Change Adaptation policy in Estonia

- **Emergency Act § 34. Vital service, continuous operation thereof and organiser of continuous operation** states that (2) The Ministry of Economic Affairs and Communications shall organise the continuous operation of the following vital services:
  1) functioning of electricity supply;
  2) functioning of gas supply;
  3) functioning of liquid fuel supply;
  4) functioning of airports;
  5) functioning of air navigation services;
  6) functioning of management of public railway;
  7) functioning of rail transport, including public passenger carriage;
  8) functioning of ice breaking activities;
  9) functioning of ports;
  10) functioning of vessel traffic management system;
  11) functioning of maintenance of main and basic roads in the country;
  12) functioning of telephone network;
  13) functioning of mobile telephone network;
  14) functioning of data communication network;
  15) functioning of marine radio communication network;
  16) functioning of cable network;
  17) functioning of broadcasting network;
  18) functioning of postal network;
  19) functioning of uninterrupted communication.

Climate Change Adaptation policy in Estonia

- Adaptation as a topic has recently been added to the updated draft of the National Environmental Action Plan 2007-2013 of Estonia, to the draft versions of the Development Plan for Ministry of the Environment 2012-2015 and to the Nature Conservation Development Plan up to 2020.
- MoAgri has adopted (29.05.2013) “Climate Change Mitigation and Adaptation Action Plan for Agriculture Sector 2012-2020” http://www.agri.ee/et/pollumajandussektoris-kliimamuutuste-leevendamise-ja-kliimamuutustega-kohanemise-tegevuskava-2012
- MoE has ordered flooding risk maps and developed flooding risks mitigation plans http://www.envir.ee/et/uleujutusohuga-seotud-riskide-maandamiskavad
- Climate adaptation is also slightly addressed (forest fires fighting, renovation of small harbours) by the Operational Programmes for EU Structural Funds 2014-2020

International projects on CCA

- Several intarnational projects addressing adaptation have been carried out like: Astra; BaltCica; BaltAdapt; BaltClim; Baltic Climate
- **The BalticClimate toolkit** is an empowering knowledge transfer instrument for actors on the local and regional level who are not necessarily the experts on climate change, but who have an important role to play in the preparation, financing and decision making related to the implementation of climate change measures: **policy makers**, **spatial planners** and **business people**.
- Toolkit is available in 6 languages: ENG, BYL, DEN, GER, EST, LAT, LIT, NOR, POL, RUS, FIN, SWE
  http://www.toolkit.balticclimate.org/en/home

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Preparation of the National Adaptation Strategy

Asustus ja planeeringud KATI (TÜ)	Elurikkus ja biomajandus BioClim (EMÜ)	Energia ja taristu ENFRA (SEI Tallinn)	Ühiskond (TÜ RAKE)

- EEA Norway Financial Instrument pre-defined project
- Project start 2014 IV q, end 2016 I q
- Budget 329 500 EUR for predefined project (+704 179 EUR open call). Co-financing provided by the Environmental Investment Centre
- Coordinated by the Estonian Environmental Research Centre
- 4 subprojects
- Project web site http://www.klab.ee/kohanemine/

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Key messages from IPCC AR5 from March, 2014

•The impacts of climate change on the critical infrastructure and territorial integrity of many states are expected to influence national security policies (medium evidence, medium agreement).

•Throughout the 21st century, climate-change impacts are projected to slow down economic growth, make poverty reduction more difficult, further erode food security, and prolong existing and create new poverty traps, the latter particularly in urban areas and emerging hotspots of hunger (medium confidence).

•Adaptation is place and context specific, with no single approach for reducing risks appropriate across all settings (high confidence).

Key messages from IPCC AR5

• A first step towards adaptation to future climate change is reducing vulnerability and exposure to present climate variability (high confidence).

• Poor planning, overemphasizing short-term outcomes, or failing to sufficiently anticipate consequences can result in maladaptation (medium evidence, high agreement).

•Greater rates and magnitude of climate change increase the likelihood of exceeding adaptation limits (high confidence).

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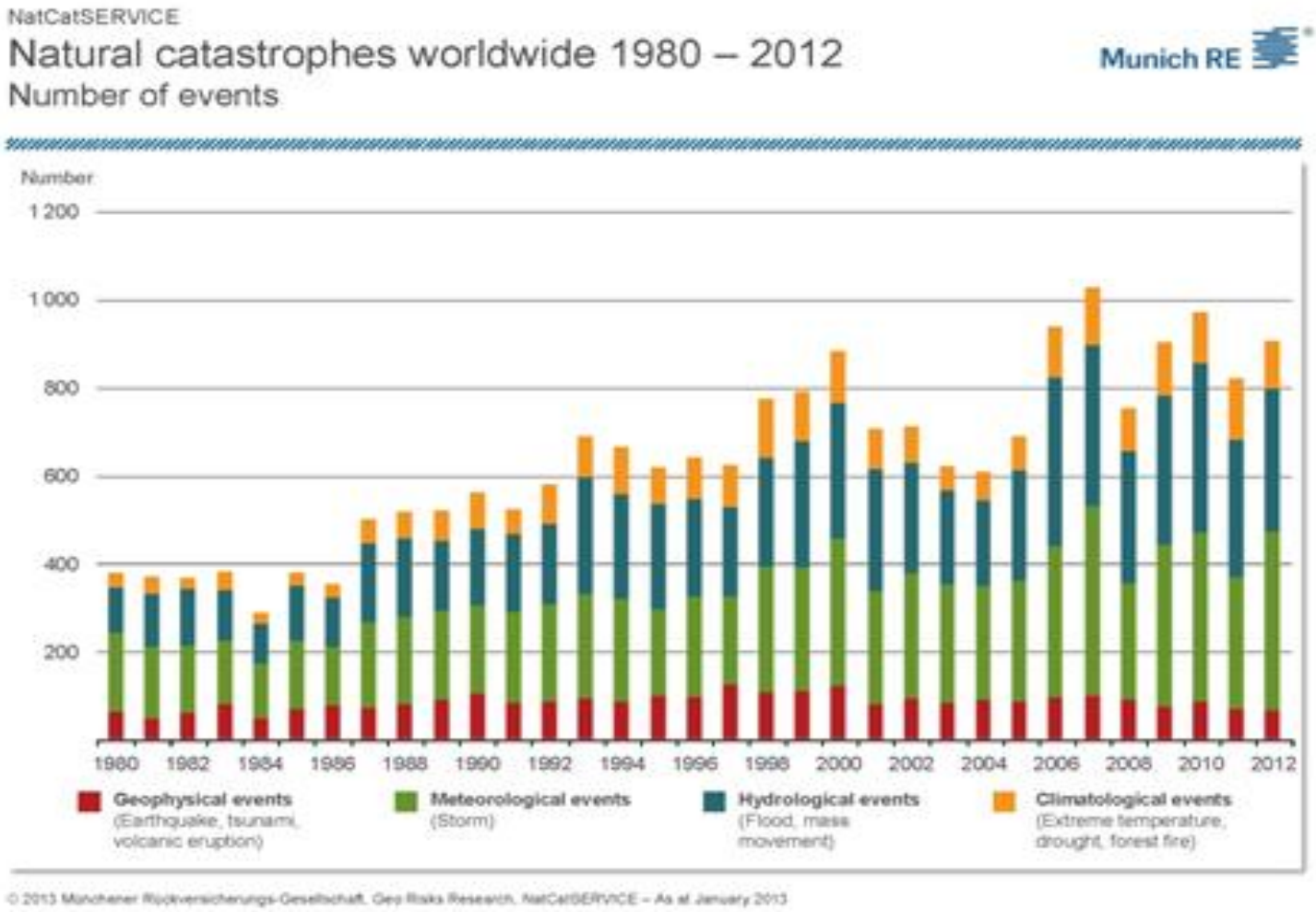
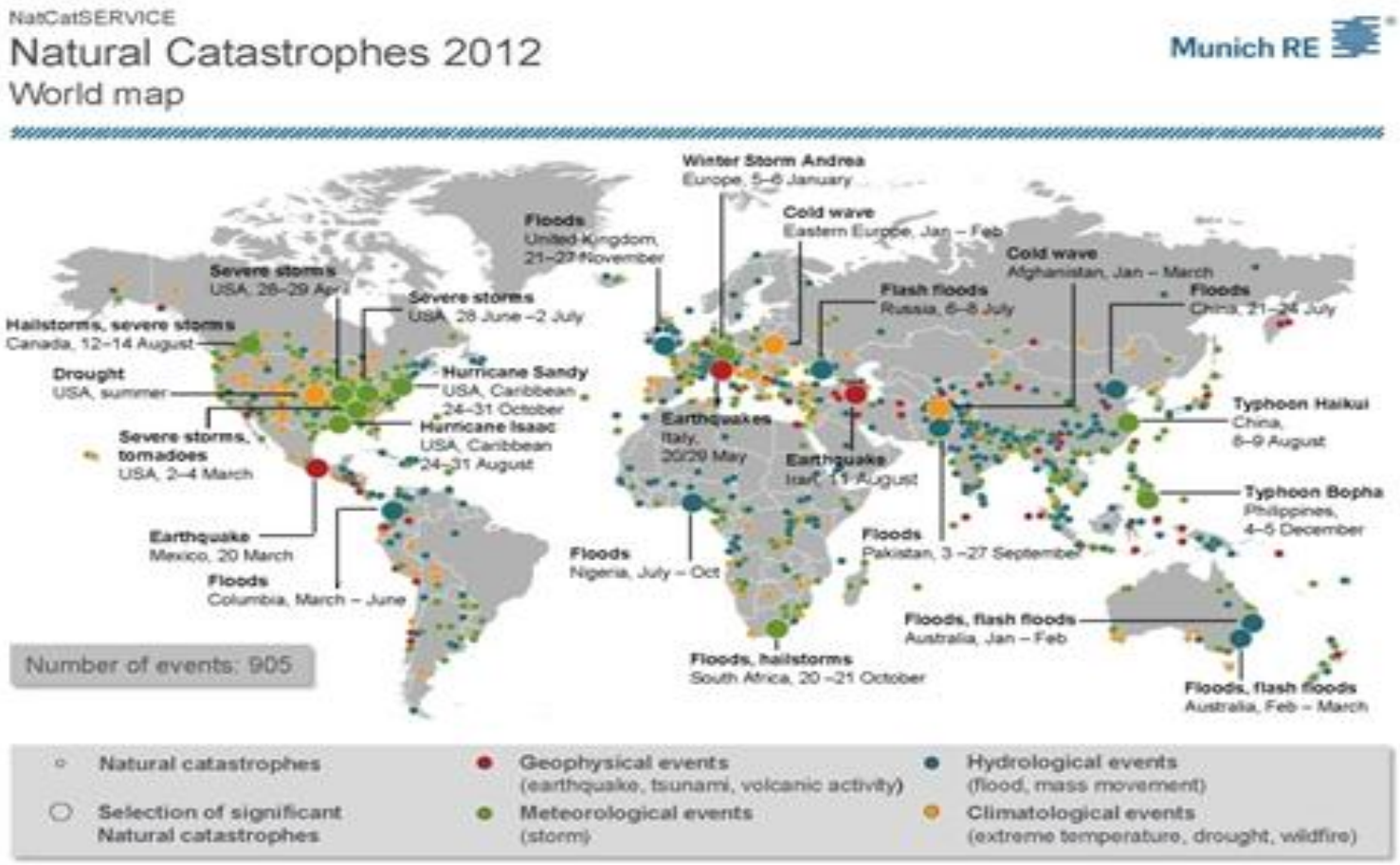
Risks and adaptation potential:Europe

Europe				
Key risk	**Adaptation issues & prospects**	**Climatic drivers**	**Timeframe**	**Risk & potential for adaptation**
Increased economic losses and people affected by flooding in river basins and coasts, driven by increasing urbanization, increasing sea levels, coastal erosion, and peak river discharges (*high confidence*) [23.2-3, 23.7]	Adaptation can prevent most of the projected damages (*high confidence*). • Significant experience in hard flood-protection technologies and increasing experience with restoring wetlands • High costs for increasing flood protection • Potential barriers to implementation: demand for land in Europe and environmental and landscape concerns		Present Near-term (2030-2040) Long-term (2080-2100) 2°C 4°C	Very low – Medium – Very high
Increased water restrictions. Significant reduction in water availability from river abstraction and from groundwater resources, combined with increased water demand (e.g., for irrigation, energy and industry, domestic use) and with reduced water drainage and runoff as a result of increased evaporative demand, particularly in southern Europe (*high confidence*) [23.4, 23.7]	• Proven adaptation potential from adoption of more water-efficient technologies and of water-saving strategies (e.g., for irrigation, crop species, land cover, industries, domestic use) • Implementation of best practices and governance instruments in river basin management plans and integrated water management		Present Near-term (2030-2040) Long-term (2080-2100) 2°C 4°C	Very low – Medium – Very high
Increased economic losses and people affected by extreme heat events: impacts on health and well-being, labor productivity, crop production, air quality, and increasing risk of wildfires in southern Europe and in Russian boreal region (*medium confidence*) [23.3-7, Table 23-1]	• Implementation of warning systems • Adaptation of dwellings and workplaces and of transport and energy infrastructure • Reductions in emissions to improve air quality • Improved wildfire management • Development of insurance products against weather-related yield variations		Present Near-term (2030-2040) Long-term (2080-2100) 2°C 4°C	Very low – Medium – Very high

Climate Change is happening



Climate Change is happening



Climate impacts in Estonia Flooding

Peetriküla near Tallinn
10.04.2010

Water in Sindi 3,5 m above normal due to the ice blockage downstream
09.april 2011

Soomaa 5th Season

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Climate impacts in Estonia: Wind

Fallen trees in Pärnu streets after 30 m/s wind

Wind damage in Järvakandi 13.12.2013

65000 housholds left without power in 2013 december -storm

Climate impacts in Estonia
Snowing and icing

Black ice in Jõelähtme
14.01.2015 13 car collision

Pärnu Supluse tn 28.12. 2010

Ice in Kuivastu harbour
Spring, 2011

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Climate impacts in Estonia: Landslides, water erosion

Landslide in Sauga shore of Sauga river in Eametsa on December, 2005

Water washed dam, bridge and road in Antsla Community 15.10.2015 after beavers blocked overflow

Climate impacts in Estonia: Coastal erosion

Kiipsaare Lighthouse in Saaremaa County

Meriküla, Harju County

Kakumäe Peninsula in Tallinn

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Climate impacts in Estonia: Heatwaves and fires

Heatwave June 2011

Vihterpalu
Metsatule-
kahju
May 2008

Peatbog on fire

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Climate impacts in Estonia: Other

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Mainstreaming CC Adaptation

STEPS TO CONSIDER

- **raise** the understanding of the CC and adaptation,
- **identify** how climate change will affect specific areas,
-**inform** about the essential elements with regard to climate change as well as sustainable development,
-**plan** relevant actions for increased resilience
-**support** knowledge transfer from the global to the local level and trans-nationally,
-**enhance** capacities to deal with the issue of climate change in a cooperative, integrated and sustainable manner
-**always consider** climate resilience in mind when planning and/or investing

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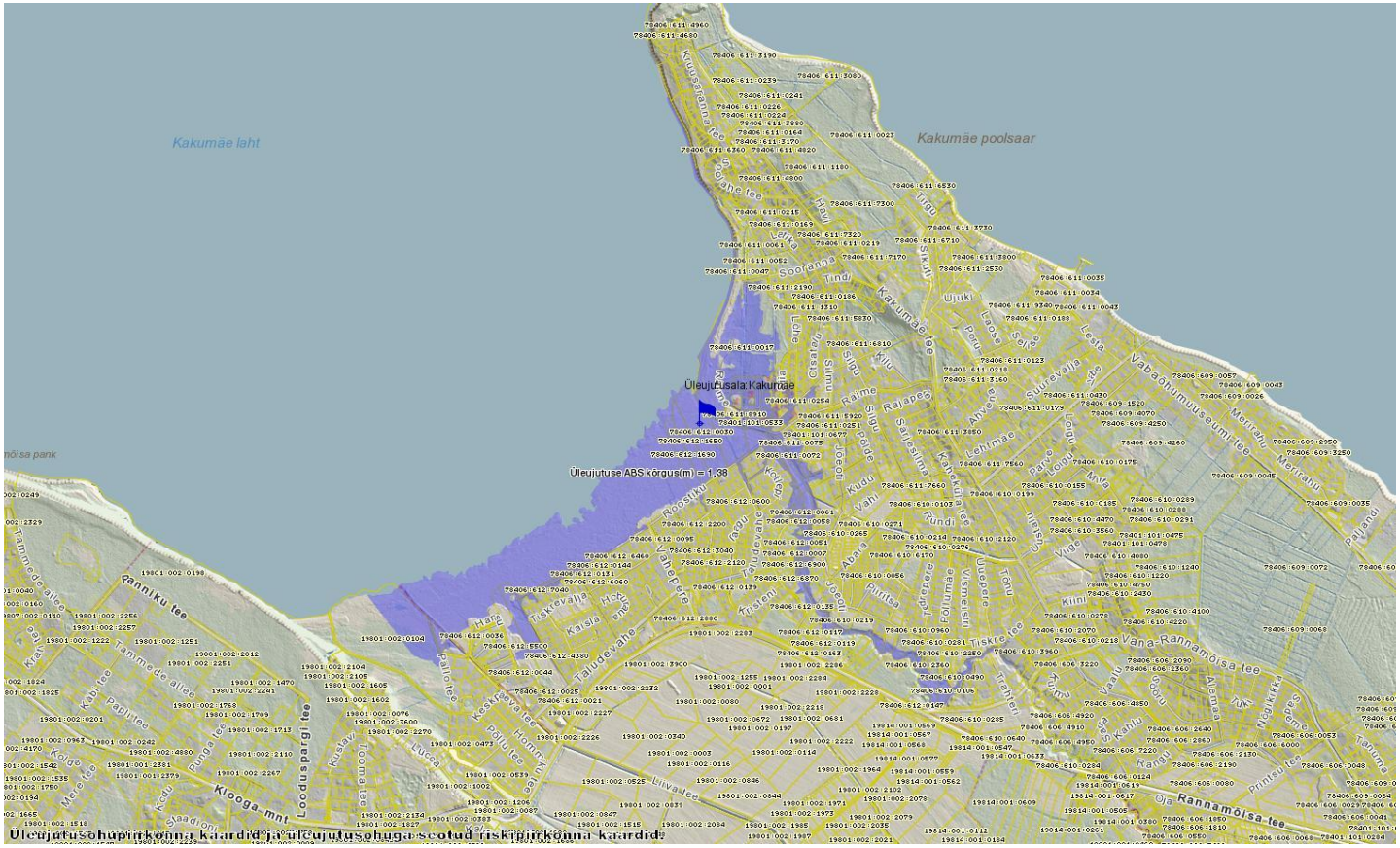
Mainstreaming CC Adaptation



Mapping of flooding risk areas. Tallinn, Haabersti

http://www.envir.ee/et/uleujutusohupiirkonna-ja-uleujutusohuga-seotud-riskipiirkonna-kaardid

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Useful sources for climate change adaptation related information

- http://climate-adapt.eea.europa.eu/transnational-regions/baltic-sea/adaptation-actions
- http://ec.europa.eu/clima/policies/brief/eu/index_en.htm
- http://www.baltadapt.eu/
- http://mayors-adapt.eu/
- http://www.toolkit.balticclimate.org/
- http://www.baltex-research.eu/ecosupport/dss/index.html

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SEI climate change adaptation global knowledge sharing platform

weADAPT http://weadapt.org/

Thematic areas:

- Adaptation Decision Making
- Climate Adaptation Training
- Communicating Climate Risk
- Economics of adaptation
- Ecosystem-based Adaptation
- Forests and Climate Change
- National Adaptation Planning
- Synergies between adaptation and mitigation
- Transforming Governance
- Urban adaptation to climate change
- Using Climate Information
- Vulnerability

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Climate Change Adaptation in nothing special but systematic consideration of the vulnerabilities to the climate, risks related to the coming future changes in climate and just taking proper measures to increase resilience.

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