Climate Change, Stakeholders and Adaptation

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KALME

VALSTS PĒTĪJUMU PROGRAMMA
KLIMATA MAIŅAS IETEKME UZ LATVIJAS ŪDEŅU VIDI

National Research Program *Climate Change Impact on the Water Environment of Latvia* - KALME

Goal

- Research impacts of CC on ***inland waters*** and ***Baltic Sea coast and coastal waters***
- **Translate research results into practical policy** and development planning **recommendations** to facilitate adaptation to and mitigation of adverse impacts of CC

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Research Methodology

- **Initial interviews** of KALME project work package leaders:

  - Is there a **common understanding** between KALME researchers regarding adaptation to CC?

  - What are **the linkages** between different research areas?

  - What aspects of CC may need **to be added** to research program?

- **Analysis of existing** development policies and planning documents to identify how CC issues including adaptation are presently addressed as goals and measures = baseline review

How is climate expected to change in Latvia?

- Warmer, longer, drier Summers
- Longer, warmer Falls and earlier Springs
- Shorter Winters, longer frost free and unfrozen ground, more precipitation falling as rain than snow
- More frequent intense storm events during Fall and Winter

Expected CC impacts on water environment of Latvia

Less rainfall in Summer

- Moisture deficit in soils
- Less surface runoff = decreased water levels in surface water bodies and lower flows in rivers
- Seasonal (long-term?) decrease in level of shallow ground water

How will expected CC impacts influence us?

Moisture deficit in soils and lower flows in rivers

- **Agriculture**

  - less optimal growing conditions for existing crops = reduced yields

Possible responses

- new crop species/types
- irrigation of existing crops
- government assistance programme to foster change, not subsidize losses

How will expected CC impacts influence us? (2)

Moisture deficit in soils and lower flows in rivers

- **Waste water treatment**

  - less dilution capacity by rivers receiving treated wastewater discharge

  - increased nutrient loading to surface water and Baltic Sea

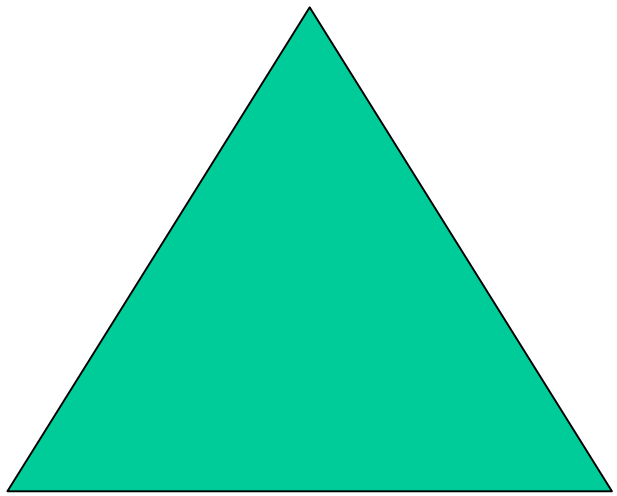
Possible responses

- upgrade design standards for WWTP?

- adjust surface water quality indicators for CC?

Possible conflict

Low flows in rivers



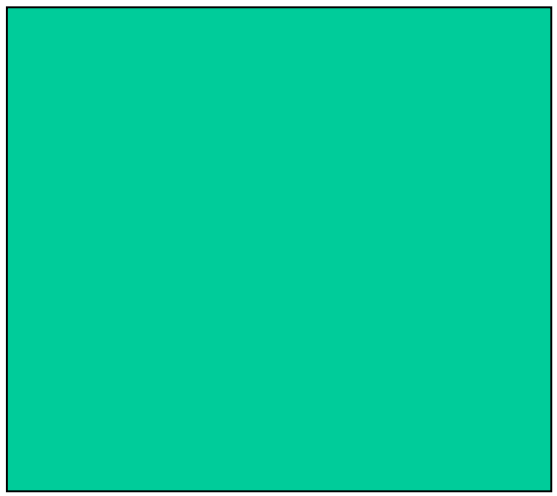
Water for irrigation

Water for wastewater treatment

Possible conflict

Low flows in rivers

Water for recreation



Water for irrigation

Water for wastewater treatment

More precipitation as rain – less and shorter period of snow cover

- More frequent intense runoff events
- More soil erosion and nutrient runoff from agriculture to surface water and Baltic Sea
- Less frequent major flood events in the Spring
- Bigger frost damage

Possible responses

- Vegetation cover on fields in Winter
- Runoff collection/ sedimentation basins
- Choise of crops

Sea level rise and more frequent intense storm events without ice cover

- Flooding of lowlying coast areas, river deltas/estuaries
- Erosion of shoreline areas

Possible responses

- ➢ Preserve shoreline protection zones
- ➢ Landuse restrictions
- ➢ Maintainance/enhancement of vegetation cover
- ➢ Construction of protective infrastructure
- ➢ No state infrastructure investments in vulnerable zones

Photo: Kaspars Funts

Solutions for problems are different for different reference time-scale

Stakeholders that need to act

- ✓ Scientists:

  - Dialogue between natural and social (behaviour) scientists is needed, for example, to know why people want to build houses in voulnerable areas – then natural science solutions for problems could be more adequate;

  - More appropriate way for spreading of information must be found.

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Photo: Andris Soms

Stakeholders that need to act

- ✓ Scientists
- ✓ National government and institutions
- ✓ Sectoral institutions
- ✓ Municipalities
- ✓ Mass media
- ✓ Etc.

Policies and measures for adaptation to climate change

- **No** Latvian National Climate Change Adaptation **Strategy**
- Analysis of statutes, policy goals and measures in four larger cities – **no mitigation and adaptation to CC issues**
- Analysis of zoning by-laws of Riga – flood zone based on standard 20 m, but **not defined for harbour area**
- Flood zone **not based** recent maximum flood event (January 2005)
- **No vulnerability assessment** of existing and planned infrastructure (WWTP, hazardous waste disposal site, petrol storage terminals)
- Planned infrastructure projects financed by EU funds (highway), national/municipal funds (National Concert Hall) **in flood zone**

Territory planned for building development Bolderāja, Riga (January 2005)

Photo: Ineta Plikša

Bolderāja, Riga, the same place (2005)

Photo: Ineta Plikša

Barriers at municipal level to CC adaptation policies and measures

- Lack of understanding of importance CC amongst politicians and administration staff
- Alternative political-adminstrative agenda = vested interest
- Lack of open and transparent consultative processes that can input to policy-making
- Sectoral policies = lack of coordination/ coherence of policy and minimal intersectoral cooperation mechanisms
- Lack of management systems and indicators to monitor mitigation and adaptation to CC

Recommendations

- National Climate Change Adaptation Strategy should establish policy coherence spatially and between national, regional and municipal stakeholders
- Create link between KALME project and National Climate Change Adaptation Strategy
- Coordinate new National Sustainable Development Strategy and National Climate Change Adaptation Strategy
- Make climate change an explicit responsibility of municipalities – incorporate in municipal statutes = "forced mainstreaming"

"life is what happens when you are busy making other plans"

John Lennon