



MINISTERSTWO
ŚRODOWISKA

ADAPTATION OF TRANSPORT SECTOR TO CLIMATE CHANGES IN POLAND

PRESENTATION TO GROUP OF EXPERTS ON CLIMATE CHANGE IMPACTS AND ADAPTATION
FOR TRANSPORT NETWORKS AND NODES, 14-15 JANUARY, 2015.

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Plan of Presentation

- **KLIMADA Project, KLIMADA Portal and Polish „*National Strategy for Adaptation to Climate Change 2020*”.**
- **“*Guide to investment preparation respecting climate change mitigation and adaptation as well as resilience to natural disasters*”, and its appendixes.**
- **Selection of climate projection maps concerning temperature and level of rainfall.**
- **The main consequences of climate change in Poland.**



KLIMADA Project

(conducted in 2011-2013)

The White Paper: Adapting to climate change: Towards a European framework for action, COM (2009) 147 published by the European Commission on 1 April 2009 - KLIMADA Project

“Development and implementation of the Polish National Strategy for Adaptation to Climate Change – KLIMADA” - research project carried out by the **Institute of Environmental Protection – National Research Institute** financed by the **National Fund for Environmental Protection and Water Management**.

Outcomes:

- climate change scenarios for Poland
- vulnerable sectors
- adaptation instruments
- preliminary cost estimation
- Portal covering relevant information.



KLIMADA
directions for adaptation
in 2070 perspective





Polish National Strategy for Adaptation to Climate Change 2020 – adoption and transport perspective

➤ **October 2013** – adoption of NAS 2020
by the Government.

Adaptation measures envisaged in NAS 2020 for transport sector :

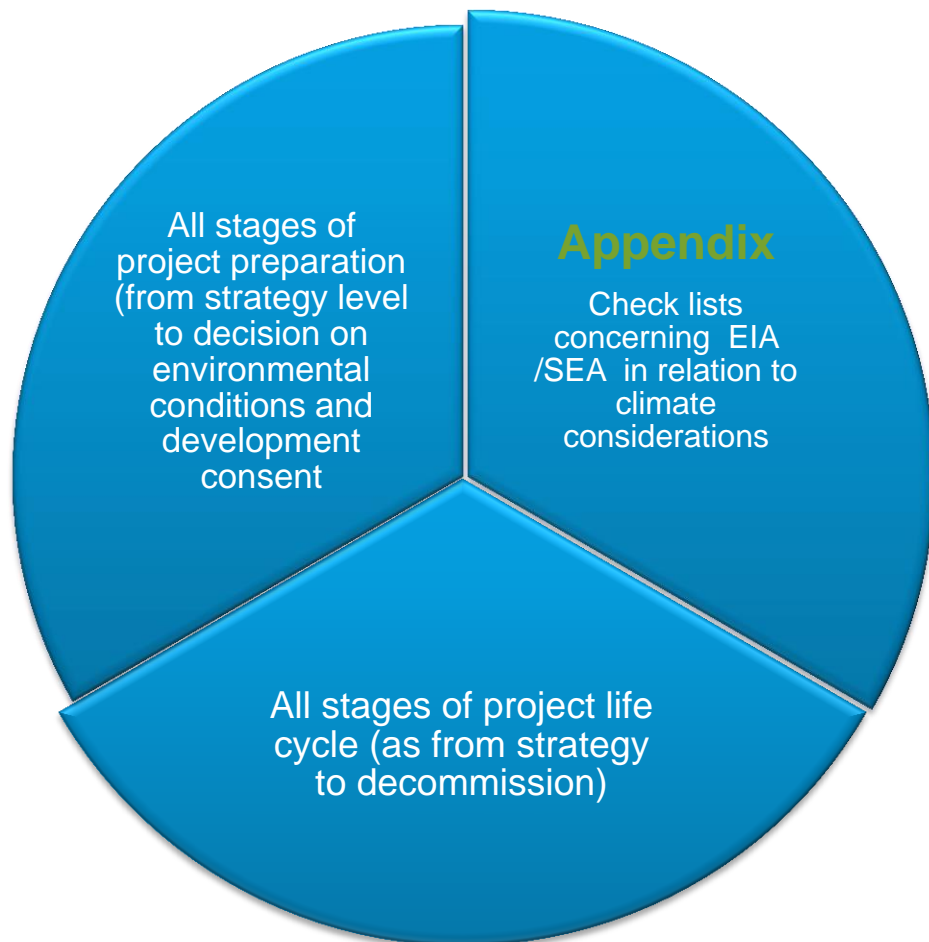
- Climate conditions should be taken into account in the process of designing and construction of transport infrastructure
- Constant monitoring should be established in order to control transport construction and infrastructure elements which are sensitive and vulnerable to climate changes
- Measures and plans should be developed/carried out or reviewed in order to maintain transport routes passable or in order to change routes or to apply alternative means of transport





“Guideto investment preparation respecting climate change mitigation and adaptation as well as resilience to natural disasters”

Scope of the Guide



Guide Addressees

- Beneficiaries preparing projects to be financed by UE Funds in the 2014-2020 financial perspective
- Relevant government authorities issuing or consulting decisions and consents.
- Managing, intermediary and implementing authorities including authorities responsible for appraisal of the applications/projects submitted for EU funding





Scope of the Guide

The aim of the Guide is to provide methodologies and hints concerning the way in which climate issues should be included in /integrated into the process of developing of investments and projects at the stage of :

SEA and EIA in relation to:

1. Climate mitigation,
2. Climate adaptation and resilience including eco-system based approaches

Cost- Benefit Analysis, including calculation of shadow costs and external costs of GHG emissions, carbon footprint analysis, sensitivity and vulnerability analysis of projects in relation to climate changes and natural disasters
- Methodologies for carrying out cost-effectiveness analysis when there are not significant externalities

Risk analysis including climate-related risks

Climate options analysis and assessment, including climate impact on projects and projects impacts on climate.



Aim of the Guide in relations to transport sector

In relation to transport the purpose of the Guide is consistent with the „Transport Development Strategy by 2020” and it covers:

- Improved resistance of transport infrastructure and services to extreme climatic events:
 - ✓ development and application of methodologies to design large infrastructural projects that account for climatic conditions,
 - ✓ development of new construction standards,
 - ✓ promoting best practices.



Key issues of the Guide

Biodiversity and
its interactions
with climate
changes

Eco- system
based
approaches

Green
infrastructure
and ecosystem
services

GIS tools

Scenarios

Vulnerability and
risk analysis

Monitoring and
management

No regret or low
regret options

Robust and win-
win solutions

LCA



Selection of the main sources of the Guide

- Europe 2020 Strategy
- Polish National Strategy for Adaptation to climate changes, 2013.
- White paper – EU framework for adaptation to climate change.
- An EU Strategy on adaptation to climate change
- Guide to Cost-benefit Analysis of Investment Projects Economic appraisal tool for Cohesion Policy 2014-2020.
- Guidance on Integrating Climate Change and Biodiversity into Environmental Impact Assessment. European Union, 2013.
- Guidance on Integrating Climate Change and Biodiversity into Strategic Environmental Assessment, European Union, 2013.
- Non-paper Guidelines for Project Managers: Making vulnerable investments climate resilient
- Assessment of the potential of ecosystem-based approaches to climate change adaptation and mitigation in Europe. Environmental Change Institute 2011.
- Methodologies for climate proofing investments and measures under Cohesion and Regional Policy and the Common Agricultural Policy. Institute for European Environmental Policy 2012
- EU Guidelines on climate change and Natura 2000. European Union, 2013...

...And many more...





The main sources establishing the legal basis for the Guide

Common Provisions Regulation (CPR) 1303/2013 - The Regulations

Commission Delegated Regulation (CDR) 480/2014 - Quality Review Criteria

Commission Implementing Regulation (CIR) 1011/2014 - IQR Report Requirements

Commission Implementing Regulation (CIR)- 2015/207 -Application Form Template

The revised EIA Directive (2014/52/EU) which pays greater attention to climate change and disaster prevention,

Commission Implementing Regulation No 215/2014, which sets out the methodologies and coefficients for climate change support.



Checklists concerning EIA and SEA

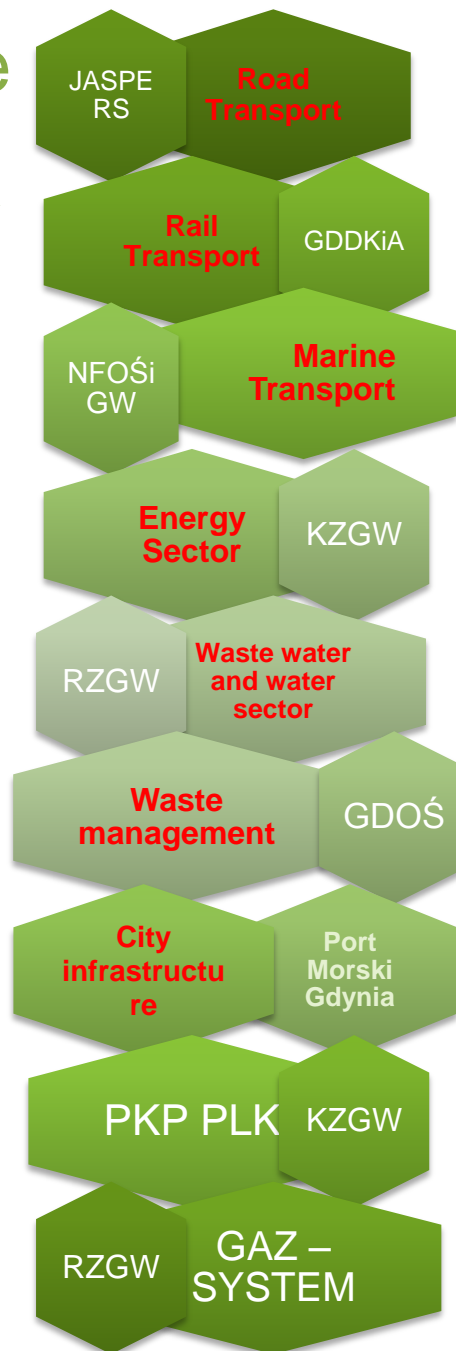
- Ministry of Environment developing detailed checklists concerning EIA and SEA procedures in the context of climate change adaptation and mitigation. These checklists will be supportive for investors, beneficiaries and relevant authorities (e.g. issuing environmental decisions, development consents etc.).





Pilot of the Guide

- The pilot of the Guide was kicked off on June, 2015.
- The purpose of the pilot is to carry out relevant analysis, develop documentation, including feasibility studies, EIA Reports, designs of projects, engineering documentation, applications for financing etc. according to the Guide.
- Members of the pilot group are instrumental beneficiaries from crucial sectors in the context of climate adaptation, mitigation and from the allocation of EU Funds from 2014-2020 financial perspective.
- On July and August, 2015, Ministry of Environment developed in consultations with the Pilot Group horizontal instruction for horizontal template of application form for EU funds for 2014-2020 financial perspective
- Pilot Group members reviewed and formulated opinions to first version of the Guide which were taken into account in the final version of the Guide.
- Final version of the Guide was published in October, 2015.
- The Pilot will be continued during 2016 and 2017.
- The Pilot elaboration and outcomes of the Pilot works will help to improve, refine and supplement the Guide regarding more practical approach on the basis of these studies carried out. Ministry of Environment is also considering to develop a good practise guidebook on basis of the pilot (eg. as an annex to the Guide).
- Mature and immature projects will be selected to the Pilot





Transport Beneficiaries in the Pilot and other important members of the Pilot Group

Transport Beneficiaries:

- General Directorate for National Roads and Highways (GDDKiA)
- Polish National Rail – Polish Railways (PKP PLK)
 - Port of Gdynia Authority

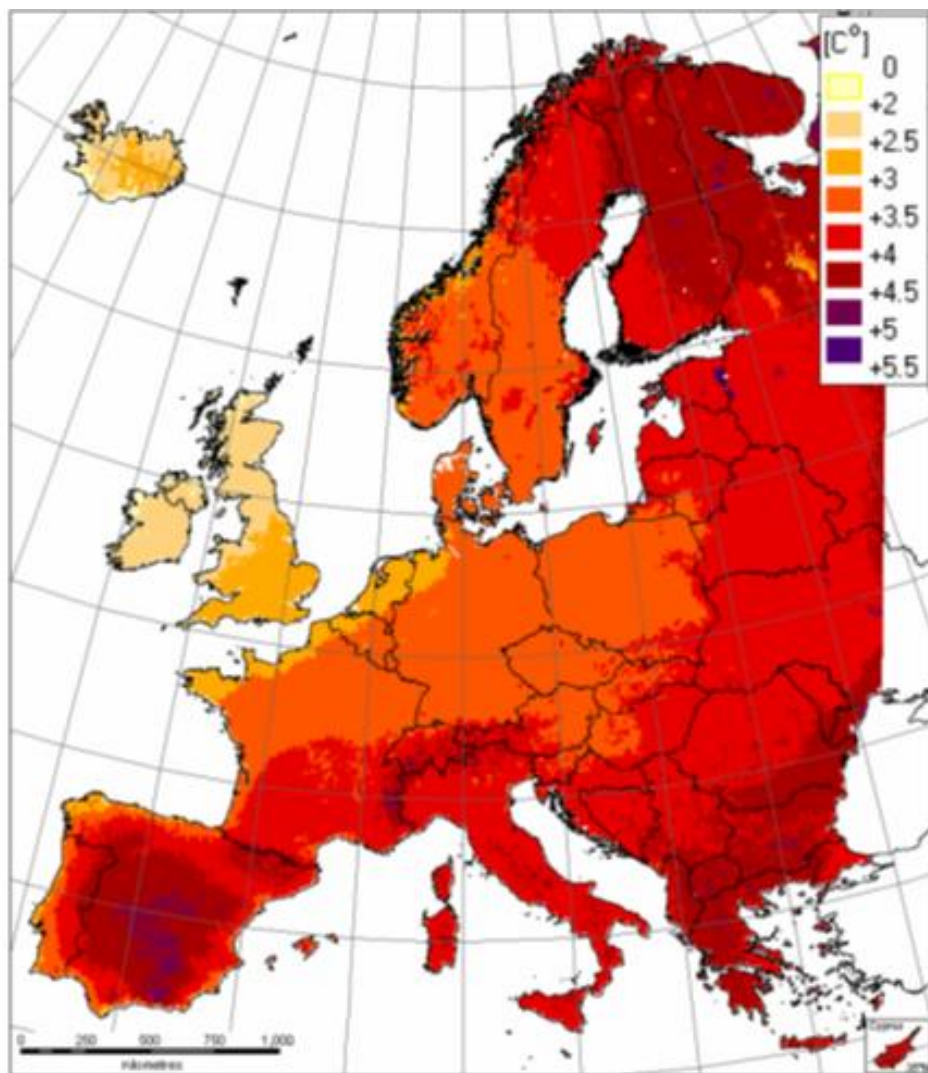
Other important members of the Pilot:

- Ministry of Development
- Ministry of Infrastructure and Construction
- National Fund for Environmental Protection and Water Management
- General Directorate for Environmental Protection.



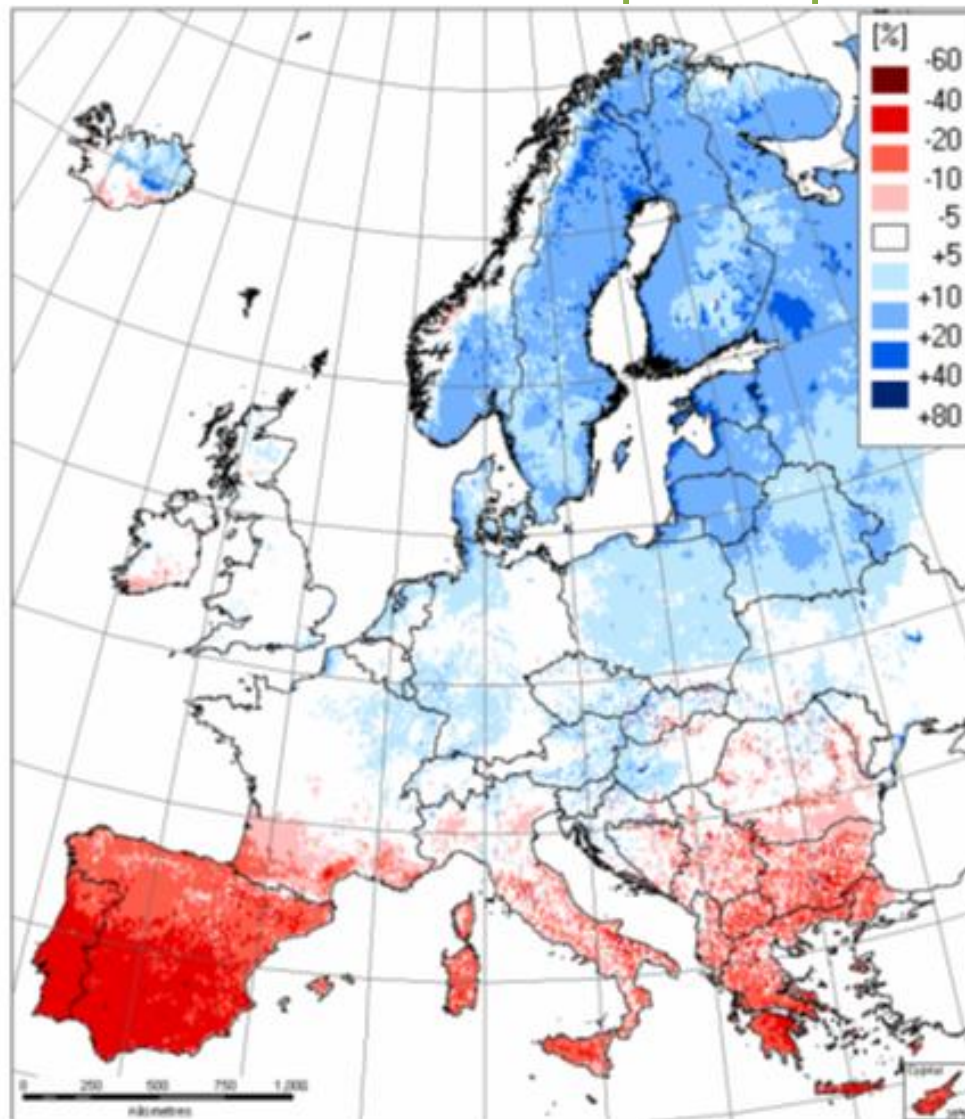


Projected change of average year temperature for Europe for period 2071-2100





Projected change of average year level of precipitation (rainfall) for Europe for period 2071-2100





The main consequences of climate change in Poland

Poland

Main impacts of climate changes

- Rise in frequency of extreme temperatures
- Decrease in the overall level of rainfall in the summer
- More frequent floods
- Increase in temperature of water
- Increase in risk of forest fires





Climate indicators changes during the period 2001- 2030 for 3 Polish cities

Climate indicators	Wrocław		Łódź		Suwałki	
	2010	2030	2010	2030	2010	2030
Average year temperature	9,02	9,48	8,34	8,81	7,09	7,63
Days with temperature below 0°C	98,68	93,81	103,30	98,56	121,50	115,30
Days with temperature over 25°C	39,42	46,57	34,71	41,67	23,99	30,90
Days with temperature over 5°C	253	262	235	246	216	221
Max day rainfall (mm)	28,90	31,00	24,38	23,22	25,62	25,87
Duration of dry periods in days (rainfall below 1 mm)	20,48	21,38	21,44	22,99	20,24	22,70
Duration of wet periods in days (rainfall over 1 mm)	7,30	7,49	7,05	7,19	8,06	8,09
Days with snow layer	66,86	55,49	83,36	71,34	104,50	93,19



Urban flooding - surface water, adaptation context

- More flooding
- More extreme rainfall events
- Dealing with the extra water on the surface

Rain gardens

**Blue and green
factor**

Green roofs

Surface water used as a resource





 **Thank you for your attention!**

Piotr Czarnocki

Chief Expert

Ministry of Environment

