

Republic of Croatia
Ministry of Environmental and Nature
Protection
Visnja Grgasovic

Adaptation Strategy development

Ankara, 18-19 February 2016

teamwork

Fragmented dealing with adaptation

-National Meteorological and Hydrological Service (DHMZ) supports various regional climate modeling activities.

Disaster Risk Assessment, climate change is not treated as a separate risk but as a driving force of other risks

-physical planning, Ordinance on measures for protection against natural disasters and war threats in spatial planning and development,

-rural development program.

-flood and drought risk management,

-management of the risk of sea level rise, tide gauge stations



teamwork

- **AST Step 1.** **set up the process**
 obtain high level support

Air Protection Act (Official Gazette 130/2011, 47/2014)

- Modeling, assessment of the vulnerability and impact and adaptation measures are implemented by the central bodies of state administration bodies and other public bodies responsible for meteorology, environmental protection, agriculture, fisheries, forestry, water management, energy, spatial planning, nature protection, sea, tourism and protection human health.
- Committee for inter-sectoral coordination of policies and measures on climate change adaptation and mitigation
- Coordination And Technical working groups



teamwork

- AST Step 1.** **set up the process**
 identification of the funding opportunities



Air Protection Act prescribes obligation to develop:

Strategy on adaptation to climate change for the period until 2040 with a view to 2070 with an action plan:

- Main document of **climate change adaptation**
 - prepared within the Transition Facility project
 - By the end of 2015 a High Performance Computing System for climate modeling has been placed in SRCe (The University Computing Centre)
 - Preparation of strategy will start in the beginning of 2016, adoption expected in 2017



teamwork

AST Step 1. set up the process

Air Protection Act recognizes sectors exposed to climate change impacts and prescribes the obligation of undertaking adaptation measures in those sectors

hydrology and water resources;
 agriculture;
 forestry;
 biological diversity and natural inland ecosystems;
 biological diversity and marine ecosystems;
 coast and coastal area;
 tourism, and
 human health

teamwork

5

AST Step 1. set up the process

Steps in the strategy development:

- Assessment of current situation
- Modeling, vulnerability and impact assessment for vulnerable sectors until 2040
- Preparing the impact and vulnerability scenarios and assessing the adaptation measures
- Risk assessment and defining the priority measures and activities in different sectors
- Defining the way of integrating the adaptation measures in sectorial development plans, the order of implementation, timeframe
- Assessment of financial resources needed for implementation
- Cost-benefit analysis of adaptation measures
- Developing a set of indicators for monitoring the implementation of the objectives and measures defined in the adaptation strategy and action plan



teamwork

6

AST Step 1.**Collect information****Communicate and raise awareness**

UNDP, Good climate for all, 2008

VI National Communication, January 2014

Project CroAdapt, July 2014. - December 2015.

GEF, "The integration of climate change and variability in the national strategy for the implementation of the Protocol Integrated Coastal Zone Management in the Mediterranean,,

- Assessment of potential damage from sea rising for Croatia
- Estimate the costs of climate change for Sibenik-Knin County
- modeling and projections, using the DIVA (Dynamic and Interactive Vulnerability Assessment), Climagine



teamwork

7

AST Step 2.
climate

**Assessing risks and vulnerabilities to
change**

- - Analyze how past weather events have affected your area
- - Undertake a climate change vulnerability and risk assessment
- - Take trans-boundary issues into account
- - Develop an approach for addressing knowledge gaps and for dealing with uncertainties

- - overview of current research and activities related to the impact of climate change and adaptation to climate change, including biodiversity and Natura-in and risk management , transboundary issues

- Preparation and implementation of modeling the climate system and impacts on sectors HPC, using data from climate scenarios DHMZ, of the National Protection and Rescue Directorate and on the basis of V. Report of the Intergovernmental Panel on Climate Change (IPCC), in all sectors vulnerable to climate change, with projection up to 2040. and 2070th



teamwork

▪ **AST Step 3. identifying adaptation option**

AST Step 4. Assessing adaptation options



- Assessment of adaptation options, assessing the options for each vulnerable sector, taking into account the existing solutions and examples of good practice in countries with similar geographical and climatic characteristics
- Analysis of cost effectiveness for the adaptation options and their ranking
- It is necessary to assess the benefits and impact of the implementation of adaptation measures to climate change on the GDP, taking into account the costs and availability of financial resources, complexity measures, barriers, capacity and timeline for their implementation. Options should include risk assessment and damage in case of not taking the measures and their cost to the environment, society and economy.

9

teamwork

▪ **AST Step 5. Implementation**

• **AST Step.6 Monitoring**



Air Protection Act (Official Gazzette 130/2011, 47/2014)

- Development documents of certain areas and activities must comply with the principles, the basic objectives, priorities and adaptation measures identified for individual sectors in the adaptation strategy with action plan
- The state administration bodies and other public bodies in charge of meteorology, nature protection, environmental protection, agriculture, fisheries, forestry, water management, energy, spatial planning, sea, tourism and human health protection shall every four years, report to the Ministry on the activities related to adaptation to climate change in accordance with Article 15 of Regulation (EU) no. 525/2013.

10

teamwork

AST Step 5. Implementation

- Ministry requires that adaptation is included in all new Strategic Environmental Assessments, Environmental Impact Assessments, Environmental protection studies and other documents
- E.g. (from the beginning of 2015):
 - Spatial development strategy
 - SEA for strategies, plans, and programmes (transport, spatial planning, water sector)
 - Environmental protection studies (waste transfer stations, water supply and drainage systems...)
- Translation of EU Guidelines
 - Guidelines for Project Managers: Making vulnerable investments climate resilient (translated, http://www.mzoip.hr/doc/smjernice_za_voditelje_projekta.pdf)
 - Guidance on Integrating Climate Change and Biodiversity into Strategic Environmental Assessment (SEA), Guidance on Integrating Climate Change and Biodiversity into Environmental Impact Assessment (EIA),

teamwork

11

AST Step 1. identification of the funding opportunities

Operational Programme – Competitiveness and cohesion (2014 – 2020)

- The funds will be used in accordance with the objectives and priorities identified within the framework of future NAS
- Until the adoption of the NAS, framework and preconditions for the activities of adaptation to climate change will be determined in accordance with the 6th National Communication to the UNFCCC
- modernization of existing climate observation and prediction system
- Stimulation of applied researches in vulnerable sectors that should be carried out in order to identify and better understand possible climate change effects and to find best solutions for adaptation measures, strengthening capacities, and awareness-raising, support for local action plans

teamwork

12

AST Step 1. identification of the funding opportunities

Programme for stimulating research and development activities in the area of climate change for the period 2015 – 2016 (adopted in November 2015)

- part of collected funds from the sale of emission allowances will be allocated for **applied research and development** related to climate change adaptation

Plan of usage of financial resources received from the sale of emission allowances through auctions in the Republic of Croatia for the period from 2014 to 2016 (OG 140/2014)

- collected funds from the sale of emission allowances are paid to the Fund for Environmental Protection and Energy Efficiency

teamwork

13

AST Step 6. Monitoring and evaluation

Action plan, five-year period,

- detailed description of measures by sector,
- the responsible bodies,
- financing sources for implementation of the measures,
- the means of monitoring
- timeframe for implementation and completion of certain measures;
- definition of the baseline situation,
- definition and developed indicators
- proposal for the upgrading legislative and institutional framework;
- detailed elaboration of normative and economic-financial instruments
- description of barriers
- plan to minimize the risk of certain barriers.

teamwork



AST Step 1. Communicate and raise awareness

IPCC Report (WG1 - observed changes and their causes; WG2 – assessment of needs, options, opportunities, constraints, resilience, limits, and other aspects associated with adaptation to climate change; WG3 - assessment of all relevant options for mitigating climate change):

<http://www.ipcc.ch/>

EEA Report No 12/2012 on Climate change, impacts and vulnerability in Europe 2012

http://www.eea.europa.eu/publications/climate-impacts-and-vulnerability-2012/at_download/file

6th National Communication under the UNFCCC:

<http://www.mzoip.hr/hr/klima/emisije-staklenickih-plinova.html>

teamwork

15

AST Step 1. Communicate and raise awareness

- Ministry of Environmental and Nature Protection
<http://www.mzoip.hr/hr/klima.html>
<http://www.mzoip.hr/hr/klima/prilagodba-klimatskim-promjenama.html>
- Result 1.1. Increased Capacities of experts for performing climate models and scenarios to assess vulnerability and impacts to climate change and adaptation measures for each sector, trainings, workshops, assessment of past researches and capacity needs
- Result 1.2. Officials at the national and local level and the interested public will be educated on the impact of climate change and on measures to adapt to climate change, communication plan, 7 workshops, informative materials, brochures,

teamwork

16

THANK YOU



- Višnja Grgasović
Head of Service for Climate
Activities and Ozone Layer
Protection
Ministry of Environmental and
Nature Protection
Radnička 80
HR-Croatia, 10000 Zagreb
Tel. +385 1 3717 217
Mob. + 385 91 3782 895
e-mail: visnja.grgasovic@mzoip.hr



teamwork