Vulnerability Assessment and Adaptation strategy Development in Health Sector due to Climate Change in the Republic of Macedonia

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Vulnerability in the Republic of Macedonia

1998, Party to the UNFCCC
Non-Annex I Party

UNDER THE SECOND NATIONAL COMMUNICATION ON CLIMATE CHANGE /2008/

More information can be found on:
www.moepp.gov.mk
www.unfccc.org.mk
Climate scenarios

- The largest increase of air temperature up to year 2100 is expected in the summer season, associated with a strong decrease in precipitation.
- Almost no change in precipitation is expected for the winter season in general, but a decrease is expected in all other seasons.
- More vulnerable southeast and central part.
Vulnerability assessment
Human health Sector

- Increased risk from food or vector-born diseases, increased frequency and duration of heat waves, other extreme events, increased mortality from cardiovascular diseases

- For some of the winter months decrease of total mortality (expressed as a monthly average) is expected in the country

- For the summer months increase of the monthly mortality rate in the country of 10% average is expected, compared to the period 1996-2000.
1. Mortality

(concerns entire population of Macedonia)

In the period 1960-2005 in the Republic of Macedonia the average number of deaths was 14,425, or 7,808 males and 6,617 females. For the same period, average excess mortality of 18% has been registered among the males compared with females. The difference between total average monthly mortality in absolute numbers is 28% (from +16 to -12) for January (month with highest mortality) and September (with lowest).

Due to climate changes, in the next decades, decrease of several percents in some of the colder months is expected regarding the total annual monthly mortality (January 4%, October 4%, November 2%). On the other hand, in the warmer months increase of 4-11% of the total annual monthly mortality is expected (mostly in April, May, June and it will be average 10% higher than the period 1996-2000).

Under the Project “Protecting health from climate change in southeast Europe, central Asia and the northern Russian Federation - seven-country initiative” *we defined our*

**Project goals and target group**

**Goals**

• Assess the health impacts of climate change and develop a National climate change health adaptation strategy;

• Develop and implement Heat health action plans;

• Pilot energy efficiency and renewable energy sources in two health facilities

• Develop early information on climate related infectious disease risks on municipal and national level

**Target groups**

Health professionals at all levels, media, representatives from other sectors..
Action taken

• Establishing the National Committee for climate change and health (June, 2009)

• Organizing the First Workshop for preparing the National Adaptation Strategy for climate change in health sector (June, 2009)

  • Draft Strategy (Dec, 2009)

  • 3 working groups for Action Plan priority drafting (Feb-Apr 2010)

  • Second Workshop (May, 2010)

  • Draft Strategy and Action Plan (May, 2010)
A public health approach to strategy development

Public Health Steps to Prevention

1. Create a vision
2. Define and describe the nature of the problem
3. Identify Effective Interventions
4. Develop into Priorities and Strategies
5. Create an Action Plan
6. Evaluate and share learning

Vulnerability and adaptation assessment

Leadership and Advocacy

Working with Stakeholders
Background – size and nature of problem

- **Policy Context** - Links with international and national policy and strategies and climate change predictions
- **Health Impacts of climate change** – current, medium and long-term predictions; size and nature of problem:
  - E.g. Heatwaves and fires
  - Flooding, windstorms
  - Infectious Diseases: including vector-borne, Food-borne and Water-borne disease
  - Changes in air pollution
  - Ultraviolet radiation
  - Food security
  - Migration

- **Vulnerable groups and geographical regions**
- **Summary of priority risks to address in short, medium and long-term**
Stakeholder Mapping

1. **INFORM** - Proactively provide information to keep stakeholder informed

2. **CONSULT** - Get feedback on formulated plans, proposals or decisions

3. **INVOLVE** - Allow stakeholder to participate in shaping and planning activities

4. **PARTNER** - Collaborate consistently with stakeholder in decisions, as well as planning and activities.

0. **NO ACTION** - There are no grounds to pay attention to the stakeholder. However, particularly in Government this is most unlikely unless you have selected a stakeholder who is not relevant at all or their stake in your work is being dealt with by an intermediate or national organisation.

- Identify research gaps and information needs

| Key climate change exposures | Potential health impacts? | What evidence do you have? (studies, reports, assessment(s)?) | What information, data, etc are required to know this? | Is there a need for additional research? If yes what? | Experts in the country Who can provide, data, information or research? | Which type of information can you provide by when? |
Establishment of priority areas to take forward in the Strategy should have defined clear criteria for prioritisation, based on size and impact of risk (size of population at risk of harm and likelihood of the harm) and timescale of risk (short, medium or long-term). Other considerations include approximate costs, identification of wider gains including health, from the intervention, calculation of the feasibility to mainstream within existing services or systems, potential harm from intervention, barriers and obstacles and opportunities.

<table>
<thead>
<tr>
<th>Health priority</th>
<th>Score</th>
<th>Comment/debate</th>
<th>Final score</th>
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<tbody>
<tr>
<td></td>
<td>Size</td>
<td>Likelihood</td>
<td>Timescale</td>
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<td>Heat waves</td>
<td>5–10</td>
<td>3</td>
<td>3</td>
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<tr>
<td>Food safety</td>
<td>5–8</td>
<td>2</td>
<td>3</td>
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<tr>
<td>Water safety</td>
<td>2–8</td>
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<tr>
<td>Air quality</td>
<td>6–10</td>
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<tr>
<td>Infectious diseases</td>
<td>5–9</td>
<td>2, 3</td>
<td>1-3</td>
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Pathways of climate change affecting human health in Macedonia

**Climate change**
- Long term changes in climate
- Inter-annual climate variability
- Short-term climate variability
- Extreme events

**Environmental conditions**

**Direct exposures (extreme events)**
- Heat/cold waves
- Heat stress
- Cardiovascular failure

**Indirect exposures**
- Water, agriculture, ecosystems, energy

**Health systems**

**Social & economic disruption**

**Socio-economic conditions**

**Prevention and adaptation**

**Sustainable development and mitigation**

**Health systems**

**Food security**

**Prevention and adaptation**

**Water stress**

**Infectious diseases**
- Respiratory and cardiovascular diseases
- Vector- and rodent borne disease
- Leishmania
- Chikungunya
- Water- and food borne diseases
- Salmonella
- Campylobacter
- Leptospirosis
- Toxic infections (mycotoxins)
- Seasonality in gastro-intestinal diseases

**Vector- and rodent borne disease**
- Leishmania
- Chikungunya

**Heat/cold waves**
- Heat stress
- Cardiovascular failure

**Allergies**

**Air pollution**
- Respiratory and cardiovascular diseases
Excess number of deaths during the summer 2007 in the R. Macedonia by months, compared with average deaths during the period 1994-2007

- May: 14.8%
- June: 17.7%
- July: 16.5%
- August: 17.2%
- September: 6.8%

Deferece in °C between average monthly temperature in 2007 and period 1994-2008 in Skopje, R. Macedonia

- May: 0.3°C
- June: 1.4°C
- July: 3.4°C
- August: 1.2°C
- September: 0.7°C

The threshold for heat-related deaths for maximum daily temperatures during the period May-September, 1996-2000 for Skopje was 30.1 °C. The increasing of the temperature for 1 °C above the this threshold will resulted by increasing of the total mortality for 0.8% (95% CI:0.4-1.2%).

During the heat waves, the increasing of the temperature for 1 °C is associated with 3.2% increasing of the mortality (OR).

The effects of the heat to the mortality in Skopje were highlighted the some day or day after the heat exposure.

During the next decades, due to climate changes, is very likely, that the heat waves as weather extreme events in the R. Macedonia during the summer will be increasing.

The projected temperatures for 2025 in R. Macedonia compared by basic 2000.
Results

Specific results

Heat health action plan

Heat waves alert system developed
(www.toplotnibranovi.mk)

Heat – related syndromes monitoring in place

Heat waves protection leaflets
Adaptation strategy
Heat waves

- Coordinative body for conducting the Heat health action plan
- ALERT system for a timely announcement of heat waves ([www.toplotnibranovi.mk](http://www.toplotnibranovi.mk))
- Communication plan in place (communication with the public, the health professionals and managers, the social sector etc)
- Recommendations for reducing heat exposure inside closed areas
- Long term planning for preparedness of the health and social sector
- Monitoring and evaluation of the plan
Flow of the Meteo Alert service

www.meteo.gov.mk

No alert (phase 0) for putting in place defined actions

PHASE 0
Green level
Flow of the Meteo Alert service

Alert for phase 1 (taking action in this phase)

Base with recommendation and alarming

Base with participants list of stakeholders need to act the actions

Phase 1
Yellow level
Flow of the services

www.meteo.gov.mk

Alert for phase 2 (taking action in this phase)

Base with recommendation and alarming

Base with participants list of stakeholders need to act the actions

Phase 2

Red level
Specific results

Communicable diseases and climate change

Upgrading of the existing early warning system for communicable diseases surveillance

Raising awareness on communicable diseases related to climate change at regional and local level

Media involvement and training
Draft National Climate Change Health adaptation strategy completed and action plan for its implementation developed (to be submitted for adoption by the government in May 2010)

Climate change health vulnerability assessment - additional researches and desk analysis undertaken (heat waves, salmonelosis, UV, floods etc)

Energy efficiency assessment of two pilot hospitals (Stip and Gostivar) performed and measures identified.

Guideline on Climate change and communicable diseases developed with support of experts from Germany and involvement of local experts
Results

General results

• National task-force on climate change and health
• Inter – sectoral cooperation in place
• Information exchange
• Capacity building
• Health and climate change agenda included into the UNFCCC speech of the President on COP15
• Inclusion of the health aspects of climate change into the Parliament debates, UN country agenda etc.)
SUCCESS FACTORS:

BARRIERS