Protecting health in an environment challenged by climate change: European Regional Framework for Action
Protecting health in an environment challenged by climate change:
European Regional Framework for Action
PHASE 1: National health impact and vulnerability assessments

Dr. Bettina Menne
19/7/2010
Costa Rica
What is the current burden of climate-sensitive health outcomes?
How is the burden of climate sensitive health outcomes likely to change over the coming decades?
Who is most vulnerable?
What is the size of impact if no action taken?
How effective are current activities?
What needs to be strengthened or newly developed?
Fig. 2.1. Schematic of relationships between vulnerability, adaptive capacity and potential health impact
Steps in assessing vulnerability and adaptation

- Building on lessons learnt in assessments carried out;
- Equal wait to process and content, e.g. stakeholders;
- Building on a step wise approach;
- Building on/in risk management;
- Revise over time

(WHO meeting in Victoria (2001) and Geneva (2002))
The process

- Stakeholders
- Management of the assessment
- Levels of the assessment
- Peer review
- Communication and dissemination
Stakeholder involvement

**INTEREST** - how much interest you think the stakeholder legitimately has in your policy objectives, irrespective of whether or not they are aware of the policy/proposals or have any views on it.

**INFLUENCE** - how much influence the stakeholder can exert on the Department's ability to deliver the policy or proposal and implementation of the objectives.

- **INFORM**
- **CONSULT**
- **INVOLVE**
- **PARTNER**
Part II

Generality
• Attributing health effects
• Literature review
• Scenarios
• Describing and quantifying uncertainty

For each health outcome
what is the evidence
methods for estimating current burden
methods for estimating future effects
measures and policies for adaptation
Fig. 4.4. Qualitative types of uncertainty

- Established but incomplete
- Well-established
- Speculative
- Competing explanations

Amount of evidence: High
Level of agreement, consensus: Low

Amount of evidence: Low
Level of agreement, consensus: High
Protecting health in an environment challenged by climate change: European Regional Framework for Action
<table>
<thead>
<tr>
<th>Country</th>
<th>Stakeholder</th>
<th>Current burden</th>
<th>Future</th>
<th>Interventions</th>
<th>Adaptation</th>
<th>Multisector assessment</th>
<th>Economic costs</th>
<th>EURO guide</th>
<th>Health co</th>
</tr>
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<tbody>
<tr>
<td>Finland</td>
<td>☹</td>
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<td>Germany</td>
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<td>Sweden</td>
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<td>Kyrgyzstan</td>
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<td>The Netherlands</td>
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<td>TYMacedonia</td>
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<td>United Kingdom</td>
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<td>EC/ WHO/JRC</td>
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</tbody>
</table>
### Strengths
- Knowledge exchange;
- Tackling existing health problems too;
- Broadens the scope of public health;
- International contribution;

### Opportunities
- New alliances;
- Multi-sectoral collaboration;
- Upgrades current curricula;
- Building institutional capacities;

### Weaknesses
- Data quality and scale;
- Few standardized methodologies for analysis available of observed effects;
- Scenarios and narratives;
- Uncertainties;
- Priority setting;
- CO2 intensive;

### Threat
- Lack of political interest;
- Non health agencies development of earlier assessments;
- Media attention;
- Decisions under uncertainty
Requests from MS

- Which data do we need?
- What resolution, frequency?
- Give us the analysis protocol?
- How can we get data from meteo free of charge?
- How good are they - a mass - years are missing....
- How do we work with scenarios ..
- How can we estimate costs?
- How can we make decisions under uncertainty...
PHASE 2: Developing national adaptation strategies
Elaboration of key issues

• Driven by scientific evidence
• Solution oriented
• Anticipatory
• Driven by best practice
• Leading by example
• Replicable and building in evolution over time
Protecting health in an environment challenged by climate change:
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Strengthen health systems to protect health from climate change

Build institutional capacity

1. Extreme weather events preparedness and response;
   Infectious disease surveillance and control;
   Respiratory diseases early detection and early warning;
   Air quality measurement;
   Water management plans and small scale,
   Food and nutrition action plan;
   Energy efficiency and promote renewable energy for health services

Adaptation strategies

2. to assess the health impacts and vulnerability and to develop national or sub-national health adaptation plans

Intelligence and Outreach

3. Steering committees
   Stakeholder involvement
   Enhancing a national dialogue
   Enhancing a regional – national dialogue
   Building media capacity
   Training young journalists to improve coverage
   Increasing Children and youth awareness
National adaptation strategies

- 7 government nominated multi-sectoral steering committees;
- 210 senior officials trained;
- 30 specific working groups established;
- International advisory board;
- A public health framework;
- Technical assistance
Problem definition

- What is the current burden of climate-sensitive health outcomes?
- How is the burden of climate-sensitive health outcomes likely to change over the coming decades?
- Who is most vulnerable?
- What is the size of impact if no action taken?
- How effective are current activities?
- What needs to be strengthened or newly developed?
Prioritizing action

• Size of population at risk of harm
• Likelihood of the harm
• Timescale of risk: short/medium/long-term (S/M/L)

• Identification of interventions:
  – Legal, behavioural, institutional, informational…..
Prioritizing action

Governance:
- Are existing institutional mechanisms in place?
- If yes: What is the current coverage?
- What can be newly developed within existing structures or strengthened?
- Which new mechanisms need to be put in place?
- Short-long term feasibility?

Criteria for prioritizing action
- Feasibility
- Barriers
- Cost-benefits/effectiveness
- Opportunities
- Size of population that benefits
- Environmental, social and economic benefits
- Potential harm
Measures proposed in NAS and NCs (22 countries)

Planned policies by countries in percentage (23 Countries)

- Strengthening health system in general, for cardio or infectious diseases
- Preparedness for natural disaster
- Warning system for meteo events and heat waves
- Surveillance system for infectious disease and/or vector monitoring
- Specific actions against pests, vectors, pollen, etc.
- Increasing awareness, information for behaviours, general information for civil society
- Review legislation for buildings, new construction
- Restructuring/ architectural design existing buildings (heat defence and/or cooling)
- Green and recreational areas in towns, shade buildings, trees and related
- General infrastructure defence or improvement
- General investment on research incl. capacity building
- Interdisciplinary approach enhancement
- Vulnerable areas and risk area (e.g., for vectors) mapping
- Generic assessment to be carried out

Awareness raising

Early warning

Infectious disease surveillance
Strengthen health systems and services

<table>
<thead>
<tr>
<th>Functions the health system performs</th>
<th>Goals/outcomes of the system</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stewardship</td>
<td>Health</td>
</tr>
<tr>
<td>Creating resources</td>
<td>(level and equity)</td>
</tr>
<tr>
<td>(investment and training)</td>
<td></td>
</tr>
<tr>
<td>Service delivery</td>
<td>Responsiveness</td>
</tr>
<tr>
<td>(personal and population-based)</td>
<td>(to people’s non-medical</td>
</tr>
<tr>
<td></td>
<td>expectations)</td>
</tr>
<tr>
<td>Financing</td>
<td>Financial protection</td>
</tr>
<tr>
<td>(collecting, pooling and purchasing)</td>
<td>(and fair distribution of</td>
</tr>
<tr>
<td></td>
<td>burden of funding)</td>
</tr>
</tbody>
</table>

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Template for the content of a health adaptation plan

- Priority actions
- Delivery process
- Timetable
- Roles and responsibilities
- Communication Plan
- Performance management processes
- Monitoring and evaluation
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### Outcome evaluation

A balanced & comprehensive picture of all the EURO Region using inter- & national data

<table>
<thead>
<tr>
<th>Population exposures</th>
<th>Health effects</th>
<th>Policy actions</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Outdoor air Ozone</td>
<td>• Respiratory mortality (monthly)</td>
<td></td>
</tr>
<tr>
<td>• Selected allergen flowering</td>
<td></td>
<td>• Heat-health action plans</td>
</tr>
<tr>
<td>• Selected pollen episodes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Ragweed</td>
<td>• Respiratory morbidity (proxy)</td>
<td></td>
</tr>
<tr>
<td>• Floods</td>
<td>• Excess heat-wave related mortality</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Lyme borreliosis incidence</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Salmonellosis (changes with T⁰)</td>
<td>• Prevent infectious diseases</td>
</tr>
<tr>
<td></td>
<td>• Cryptosporidiosis (per rainfall)</td>
<td>• Secure water safety</td>
</tr>
<tr>
<td></td>
<td></td>
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</tr>
</tbody>
</table>
PHASE 3: Example: Impact assessment of policies to protect health from climate change in the European Union

Dr Bettina Menne
19/7/2010
Costa Rica
The process
Four policy options

• Strengthen intelligence
• Mainstream health in mitigation and adaptation policies
• Strengthen health systems
• Health awareness
**Example of results: health intelligence**

Table 6. Major costs of health intelligence

<table>
<thead>
<tr>
<th>Increased costs of health intelligence</th>
<th>Level of involvement</th>
<th>Approx. commitment (per country)</th>
<th>budget (per country)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Increase institutional capacity to compile and exchange information and conduct research (e.g. PEER study)</td>
<td>Long-term capacity development (see 2-4 below)</td>
<td>See 2 to 4 below</td>
<td></td>
</tr>
<tr>
<td>2. National health impact, vulnerability and adaptation assessments</td>
<td>Periodic consultancy</td>
<td>&lt; €100,000 each</td>
<td></td>
</tr>
<tr>
<td>3. Conduct research to</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a. Improve risk assessment</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b. Identify effective and cost-effective interventions</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>c. Understand co-benefits for health of mitigation &amp; adaptation interventions in other sectors</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>d. Explore alternatives for infectious disease surveillance</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>e. Explore alternatives for extreme events health action planning (and other decision-support tools)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>f. Assess damage and adaptation costs</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Integrate or establish an integrated information platform for data, indicators, trends and best practices/policies</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Implementation costs of health protection measures</td>
<td>See sections 5, 6 and 7</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1. Utilises capacity of networked institutions. Budget reflects additional coordination and planning costs.
Example: health benefits in mainstreaming health

Figure 7. Attributable reduction in disease burden and in carbon dioxide equivalent emissions for household energy and food and agriculture case studies (A) Disability-adjusted life-years (DALYS) saved and carbon dioxide equivalent (CO₂e) reduction per million of the 2010 population. (B) Reduction in total of DALYS and CO₂e for each country.
Example: environment benefits of greening health services

- An overall reduction of 1% of total EU GHG emissions

Table 17: Estimated savings in the short to medium term in European health service GHG emissions

<table>
<thead>
<tr>
<th>Sector</th>
<th>Sub sector</th>
<th>CO₂ Emissions</th>
<th>% of total</th>
<th>Control group</th>
<th>Low estimate</th>
<th>High estimate</th>
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<tr>
<td></td>
<td></td>
<td>MtCO₂e</td>
<td></td>
<td></td>
<td>Effectiveness</td>
<td>Saving MtCO₂e</td>
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<tr>
<td>Travel</td>
<td>Patient, own travel</td>
<td>25.1</td>
<td>7%</td>
<td>3</td>
<td>5%</td>
<td>1.25</td>
</tr>
<tr>
<td></td>
<td>Visitor travel</td>
<td>6.2</td>
<td>2%</td>
<td>3</td>
<td>5%</td>
<td>0.31</td>
</tr>
<tr>
<td></td>
<td>Staff commuting</td>
<td>12.5</td>
<td>4%</td>
<td>2</td>
<td>10%</td>
<td>1.25</td>
</tr>
<tr>
<td></td>
<td>NHS business travel</td>
<td>12.8</td>
<td>4%</td>
<td>1</td>
<td>20%</td>
<td>2.56</td>
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<tr>
<td>Travel: sub total</td>
<td></td>
<td>56.6</td>
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<tr>
<td>Building</td>
<td>Electricity</td>
<td>40.0</td>
<td>11%</td>
<td>1.3</td>
<td>10%</td>
<td>4.00</td>
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<tr>
<td></td>
<td>Heating/hot water - gas</td>
<td>32.0</td>
<td>9%</td>
<td>1</td>
<td>10%</td>
<td>3.20</td>
</tr>
<tr>
<td></td>
<td>Heating/hot water – coal</td>
<td>1.3</td>
<td>0%</td>
<td>1</td>
<td>10%</td>
<td>0.13</td>
</tr>
<tr>
<td></td>
<td>Heating/hot water - oil</td>
<td>1.8</td>
<td>1%</td>
<td>1</td>
<td>10%</td>
<td>0.18</td>
</tr>
<tr>
<td>Total building energy use</td>
<td></td>
<td>75.3</td>
<td>22%</td>
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<td>Procurement</td>
<td>Pharmaceuticals</td>
<td>74.9</td>
<td>21%</td>
<td>1.3</td>
<td>10%</td>
<td>7.49</td>
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<tr>
<td></td>
<td>Medical</td>
<td>30.8</td>
<td>9%</td>
<td>3.4</td>
<td>5%</td>
<td>1.54</td>
</tr>
<tr>
<td></td>
<td>instruments/equipment</td>
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<td></td>
<td>Business services</td>
<td>18.4</td>
<td>5%</td>
<td>3</td>
<td>10%</td>
<td>1.84</td>
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<td>Paper products</td>
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<td>NHS freight transport</td>
<td>12.3</td>
<td>4%</td>
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<td>1.23</td>
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<td></td>
<td>Other manufactured products</td>
<td>11.3</td>
<td>3%</td>
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<tr>
<td></td>
<td>Manufactured fuels, etc.</td>
<td>9.7</td>
<td>3%</td>
<td>4</td>
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<td>0.57</td>
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<td>Food and catering</td>
<td>11.8</td>
<td>3%</td>
<td>2</td>
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<td>1.18</td>
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<td></td>
<td>Construction</td>
<td>5.2</td>
<td>2%</td>
<td>3</td>
<td>10%</td>
<td>0.62</td>
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<td></td>
<td>ICT</td>
<td>5.9</td>
<td>2%</td>
<td>3</td>
<td>10%</td>
<td>0.59</td>
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<tr>
<td></td>
<td>Water and sanitation</td>
<td>3.9</td>
<td>1%</td>
<td>1.3</td>
<td>10%</td>
<td>0.39</td>
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<tr>
<td></td>
<td>Waste products and recycling</td>
<td>10.7</td>
<td>3%</td>
<td>1.4</td>
<td>10%</td>
<td>1.07</td>
</tr>
<tr>
<td></td>
<td>Other procurement</td>
<td>4.3</td>
<td>1%</td>
<td>4</td>
<td>5%</td>
<td>0.21</td>
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<td>Procurement: sub total</td>
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<td>217.1</td>
<td>62%</td>
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<tr>
<td>Total emissions</td>
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<td>349.0</td>
<td>100%</td>
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<td>31.79</td>
<td>80.48</td>
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</table>
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