

Climate-TRAP



Project no: 2008 11 08
Project acronym: Climate TRAP

Project title: Climate TRAP: Climate Change Adaption by Training, Assessment and Preparedness

Instrument: Coordination Action

Thematic Priority:

Deliverable D11: Proceeding of regional workshops (workshops will be held in M30,M32 and M34)

Due date of deliverable: M34
Actual submission date: M34

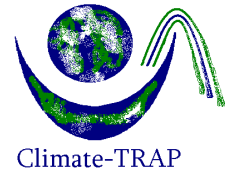
Start date of project: 14/4/2009

Duration: 36 Months

Organisation name of lead contractor for this deliverable: HGM

Revision Draft 1

| Project co-funded by the Executive Agency for Health and Consumers | | |
|---|---|---|
| Dissemination Level | | |
| PU | Public | X |
| PP | Restricted to other programme participants (including the Commission Services) | |
| RE | Restricted to a group specified by the consortium (including the Commission Services) | |
| CO | Confidential, only for members of the consortium (including the Commission Services) | |



Climate-TRAP

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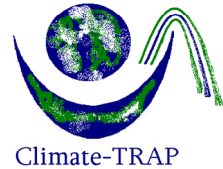
Report workshop Maribor

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REGIONE DEL VENETO



Workshop

Climate Change and Health Effects

Impact, preparedness, guidelines and good examples



*Cultural Center Don Orione Artigianelli
Zattere Dorsoduro, 909/A - Venice (Italy)
March 1-2, 2012*



Workshop
Climate Change and Health Effects
 Impact, preparedness, guidelines and good examples

Preliminary Programme

| March 1, 2012 | Time | Activity |
|---------------|-------------|-------------------------------------|
| | 12:00-13:00 | Lunch |
| | 13:00-13:10 | Welcome and opening the meeting |
| | 13:10-13:30 | Introduction to Climate-TRAP |
| | 13:30-14:00 | Climate Change in Europe |
| | 14:00-15:00 | Climate and Health: Stressors |
| | 15:00-15:30 | Coffee Break |
| | 15:30-16:00 | Health Impact Assessment |
| | 16:00-16:15 | Capacity Assessment |
| | 16:15-17:00 | Adaptation Plans/Guidelines |
| | 17:00-17:30 | Climate Change Adaptation in Europe |
| | 17:30 | Closing remarks |
| | 19:30 | Dinner |

| March 2, 2012 | Time | Activity |
|---------------|-------------|--|
| | 9:00-9:30 | Feedback from the day before and opening remarks |
| | 9:30-10:30 | Presentations by country representatives |
| | 10:30-11:00 | Discussion |
| | 11:00-11:30 | Coffee break |
| | 11:00-12:00 | Presentations by country representatives |
| | 12:00-12:30 | Discussion |
| | 12:30-13:00 | Summing up and closing the meeting |
| | 13:00-14:00 | Lunch |

Report workshop Venice March 1-2, 2012

MARCH 1, 2012

PARTICIPANTS:

- Berencsi György (Hungary)
- Dedeu Antoni (Spain)
- Drakulovic Mitra (Serbia)
- Fayard Tatiana (France)
- Menne Bettina (WHO)
- Messeri Alessandro (Italy)
- Pozza Francesca (Italy)
- Russo Francesca (Italy)
- Squarzon Laura (Italy)
- Tonnisson Rene (Estonia)
- Van Den Hazel Peter (Netherlands)
- Van Loenhout Joris (Netherlands)
- Veronese Stefano (Italy)

- 1) Welcome - *Russo Francesca*.
- 2) Welcome and opening the meeting – *Van Den Hazel Peter*.
- 3) Introduction to Climate-TRAP – *Van Den Hazel Peter*.
Additional pilot-training in Serbia in June 2012.
- 4) Climate Change and Health – *Messeri Alessandro*.
In Italy and in Spain does not exist a national climate surveillance and alerting system, there are only regional/local system adopting different risk indicators and scales.
In Hungary there is a national climate surveillance and alerting system.
- 5) WHO activities on Climate Change and Health – *Menne Bettina*.
In June 2012 there will be the Climate Change Conference in Bonn.
It is necessary to know what it is make in each Country for climate changes and to built a network for exchanging information.
- 6) Flood and Health – *Van Loenhout Joris*.
In Estonia and in Hungary there is a national surveillance and alerting system for floods.
- 7) Climate-dependent changes of arthropod- and rodent-borne infections – *Berencsi György*.
- 8) West-Nile surveillance in Veneto Region – *Squarzon Laura*.
In Italy there is a specific surveillance of blood donors, from June 15 to November 15. In Spain this surveillance does not exist.
There are not WHO guidelines for the surveillance in blood donors.
The West-Nile human cases in Italy and in Israel have the same lineage. Probably the infection occurs during the return migration (from East-Europe to Africa).
- 9) Impact of Heath on Health – *Van Den Hazel Peter*.
It is necessary to increase the sensitization of health professionals on climate change effects on health.
- 10) Climate change adaptation in Estonia – *Tonnisson Rene*.
- 11) Closing of day 1 – *Van Den Hazel Peter*.

MARCH 2, 2012

PARTICIPANTS:

- Berencsi György (Hungary)
- Capelli Gioia (Italy)

- Dedeu Antoni (Spain)
- Drakulovic Mitra (Serbia)
- Fayard Tatiana (France)
- Pozza Francesca (Italy)
- Russo Francesca (Italy)
- Tonnisson Rene (Estonia)
- Van Den Hazel Peter (Netherlands)
- Van Loenhout Joris (Netherlands)

1) Opening of day 2 – *Van Den Hazel Peter*.

2) Vectors in Veneto Region: what happened in the last 20 years – *Capelli Gioia*.

Till now there are no data that explain the relation between climate changes and the presence and the behaviors of vectors. In future it will be possible because data collection was initiated. There is an ECDC project for defining guidelines for standardizing data collection and their analysis at local, national and international levels.

There are data on migration and presence of ticks in East-Europe useful to compute risk models. In Netherlands there is a study able to calculate the risk that ticks stabilize in area in which they are till now no present.

For West-Nile vector cases in Italy the infection probably occurs during the return migration (from East-Europe to Africa). The lineage of the cases is the same of Hungary.

3) Climate change adaptation in France – *Fayard Tatiana*.

In France, it is difficult to raise awareness about renewable energy and alternative resources.

4) Feedback from the day before and 1st Interactive Discussion – *Van Den Hazel Peter*.

In general, it is necessary to give clear and understandable information to the population about health issues, they could not be too technical. It is also necessary to give positive messages and not messages of forbiddances.

5) Presentation from Serbia – *Drakulovic Mitra*.

6) Climate change adaptation in Spain – *Dedeu Antoni*.

7) 2nd Interactive Discussion, summing up and closing the meeting – *Van Den Hazel Peter*.

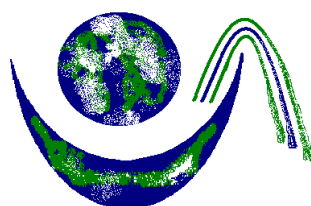
It is essential to collect data duo to make estimates and forecasts.

To contrast the climate change effects, collaboration and information sharing between Countries are necessary.

Workshop Programme - Climate change and health effects

Maribor (Slovenia), 5th and 6th of December 2011

| | | |
|----------------|---|--------------------------------|
| MONDAY | | |
| 12:00 | <i>Lunch</i> | |
| 13:00 | Welcome | Zora Levacic, RPHI MB (SI) |
| 13:10 | Introduction to Climate-TRAP | Joris van Loenhout, VGGM (NL) |
| 13:30 | Climate change in Europe | Heimo Truhetz, WEGC (AT) |
| 14:00 | Climate change adaptation tools for infectious diseases | Jan Semenza, ECDC (SE) |
| 14:30 | Impact of heat on health | Peter van den Hazel, VGGM (NL) |
| 14:50 | Floods and health | Joris van Loenhout, VGGM (NL) |
| 15:10 | Climate change and air pollution | Hanns Moshhammer, MUW (AT) |
| 15:30 | <i>Coffee break</i> | |
| 16:00 | Capacity assessment | Peter van den Hazel, VGGM (NL) |
| 16:20 | Climate change adaptation in Europe | Hanns Moshhammer, MUW (AT) |
| 16:50 | Public health action on climate change in Slovakia | Zuzana Klochanova, TU (SK) |
| 17:10 | Implementation of adaptation plans and guidelines | Peter van den Hazel, VGGM (NL) |
| 17:30 | Closing of day 1 | |
| 19:00 | <i>Dinner at Mirch Cottage</i> | |
| TUESDAY | | |
| 8:30 | Slovenia as a low carbon society | Barbara Simonc, GOCC (SI) |
| 8:50 | Climate change and health in Serbia | Biljana Filipovic, MOE (SP) |
| 9:10 | Effect of temperature on Lyme disease in Hungary | Attila Trájer, NIEH (HU) |
| 9:30 | Introduction to break out session | Joris van Loenhout, VGGM (NL) |
| 9:45 | Group discussions (<i>including coffee break</i>) | |
| 11:00 | Recommendations from working groups | |
| 11:45 | Summing up and closing of the meeting | Peter van den Hazel, VGGM (NL) |
| 12:00 | <i>Lunch</i> | |



Climate-TRAP

Report workshop Maribor December 2011

Participant list

| name | organisation | Originating from |
|-------------------------|---|------------------|
| Hazel, Peter van den | VGGM | Arnhem, NL |
| Grile, Eva | National Institute of Public Health | Slovenia |
| Trájer, Attila | National Institute Environmental Health | Budapest |
| Loenhout, Joris van | VGGM | Arnhem, NL |
| Moshammer, Hanns | Institute Environmental Health, Medical University Vienna | Wien, AT |
| Filipovic, Biljana | Ministry of Environment Mining and Spatial Planning | Belgrado |
| Feenstra, Odo | Public Health of Fyria, Austria Amt der Steirmaerkischen Landesregierung | Graz, AT |
| Pollhammer, Christian | Public Health of Fyria, Austria Fachabteilung 8B Gesundheitswesen | Graz, AT |
| Simonc Bocquet, Barbara | Government office of climate change | Ljubljana |
| Klochanova, Zuzana | Trnava University, Faculty of Health Care and Social Work | Trnava |
| Truhetz, Heimo | Wegener Center for Climate and global Change (WEGC) University of Graz | Graz, AT |
| Vuzem, Sanja | ZZV MB | Maribor(|
| Semenza, Jan | ECDC | Sweden |
| Debevec-Gerjevič, Vanja | Park Skocjanske Jame | Divača |
| Bengtsson, Elisabeth | Department of public Health Regionhuset | Malmö |
| Vujosevic, Mladenka | | Slovenia |
| Vasiliu-Isac, Gabriela | NFP EEA/EIONET (Ministry of Environment and Forestry) | Boekarest |
| Konstrošová, Jana | Climate Change Department | Praag, CZ |
| Kofol Seliger, Andrea | National Institute of Public Health | Ljubljana |
| Marega, Milena | Regional Environmental Center for CEE, CO, Slovenia | Ljubljana |

Climate-TRAP Regional Workshop II Maribor Climate Change and Health Effects

Climate Change and Health Effects - Impact, preparedness, guidelines and good examples

Date and Venue of the Workshop

Conference Centre of the Hotel Arena, Maribor (Slovenia) on 5th and 6th of December 2011.

Participants of the Workshop

Participants were invited from Central European countries neighbouring Slovenia .
List of participants registered for the workshop:

1. Barbara Simonič Bocquet
2. Hanns Moshhammer
3. Odo Feenstra
4. Andreja Kofol Seliger
5. Christian Pollhammer
6. Vanja Debevec Gerjevic
7. Biljana Filipovic
8. Zuzana Klochanova
9. Joris van Loenhout
10. Peter van den Hazel
11. Jan Semenza
12. Igor Krampac
13. Jelena Krivograd
14. Nina Pavletič
15. Zora Levacic
16. Brigita Canc
17. Heimo Truhetz
18. Milena Marega
19. Attila Trájer
20. Zoran Simonovic
21. Emil Zerjal
22. Marjeta Kersic Svetel

Anex 1: List of participants

Workshop Programme - Climate change and health effects

Maribor (Slovenia), 5th and 6th of December 2011

MONDAY 5th December 2011

| | | |
|-------|--|--------------------------------|
| 12:00 | <i>Lunch</i> | |
| 13:00 | Welcome | Zora Levacic, RPHI Maribor |
| 13:10 | Introduction to Climate-TRAP | Joris van Loenhout, VGGM (NL) |
| 13:30 | Climate change in Europe | Heimo Truhetz, WEGC (AT) |
| 14:00 | Mapping climate change vulnerabilities for infectious diseases in Europe | |
| 14:30 | Impact of heat on health | Jan Semenza, ECDC (SE) |
| 14:50 | Floods and health | Peter van den Hazel, VGGM (NL) |
| 15:10 | Climate change and air pollution | Joris van Loenhout, VGGM (NL) |
| 15:30 | <i>Coffee break</i> | Hanns Moshhammer, MUW (AT) |
| 16:00 | Capacity assessment | |
| 16:20 | Climate change adaptation in Europe | Peter van den Hazel, VGGM (NL) |
| 16.50 | Public health action on climate change in Slovakia | Hanns Moshhammer, MUW (AT) |
| 17:10 | Implementation of adaptation plans and guidelines | Zuzana Klochanova, TU (SK) |
| 17:30 | Closing of day 1 | |
| 19:00 | <i>Dinner</i> | Peter van den Hazel, VGGM (NL) |

TUESDAY 6th December 2011

| | | |
|-------|--|--------------------------------|
| 8:30 | Slovenia as a low carbon society | Barbara Simoncic, GOCC (SI) |
| 8:50 | Climate change and health in Serbia | Biljana Filipovic, MOE (SP) |
| 9:10 | Effect of temperature on Lyme disease in Hungary | |
| 9:30 | Introduction to break out session | Attila Trájer, NIEH (HU) |
| 9:45 | Group discussions | Joris van Loenhout, VGGM (NL) |
| 11:00 | Recommendations from working groups | |
| 11:45 | Summing up and closing of the meeting | |
| 12:00 | <i>Lunch</i> | Peter van den Hazel, VGGM (NL) |

Report of the Workshop

The European project Climate-TRAP (funded by the Executive Agency for Health and Consumers) has performed a health impact assessment due to climate change, which was followed by a capacity assessment for the health sector. An inventory of existing early warning systems, surveillance systems and adaptation plans with respect to climate change related health effects and disease vectors has been carried out. Based on this, training modules for the (public) health sector will be developed and region-specific guidelines for all EU and associated Member States will be created. These guidelines contain information on what can be expected the coming years with respect to health, actions that should be taken and adaptation plans that can be implemented.

Within Climate-TRAP, three regional workshops were organised in Europe for policy makers that are involved in climate and health on a national or regional level. During the workshops the results from the project were presented and discussed. The Workshop II was organized in Maribor, Slovenia, for participants of the Central European countries neighbouring Slovenia.

5th December 2011

In absence of Zora Levacic, RPHI Maribor director opening of the Workshop was performed by Igor Krampac – head of the Regional Centre of Public Health and Health Promotion, RPHI Maribor.

Introduction to Climate-TRAP project was presented by Joris van Loenhout, VGGM (NL). In his presentation he gave a general aspect about the climate change in Europe in regard to climate change that can affect human health directly (Heat stress, Flooding) or indirectly (Disease Vectors, Water Quality, Food Availability); about knowledge of public health authorities and first responders that is not sufficient; about climate zones and changes expected in Europe in near future. The topic of Climate-TRAP project: Climate Change Adaptation, by Training, Assessment and Preparedness was presented as also the goal to strengthen the preparedness of the (public) health sector on the health impact due to key stressors in climate change and in relation to key European action plans and adaptation strategies. Stressors related to climate were discussed: temperature (heat), flooding, vector-borne infectious agents, food-borne infectious agents, water-borne infectious agents, allergens, air pollution (Ozone) and UV radiation. Development of guidelines, Training of public health professionals and training of other potential stakeholders was presented in the introduction of the workshop.

Annex 2: Introduction to Climate-TRAP Presentation

Climate change in Europe was the presentation given by Heimo Truhetz, WEGC (AT).

Mapping climate change vulnerabilities for infectious diseases in Europe presented by Jan Semenza, ECDC (SE).

Impact of heat on health was the topic of presentation of Peter van den Hazel, VGGM (NL).
Annex 3 : Impact of heat on health presentation

Joris van Loenhout, VGGM (NL) reported about Impact of Floods and health.
Annex 4 : Impact of Floods and health

Hanns Moshhammer, MUW (AT) spoke about the topic Climate change and air pollution.

Annex 5 : Climate change and air pollution

Capacity assessment was presented by Peter van den Hazel, VGGM (NL).

Climate change adaptation in Europe as topic was reported by Hanns Moshhammer, MUW (AT).

Zuzana Klochanova, TU (SK) presented actual information about Public health action on climate change in Slovakia.

About the Implementation of adaptation plans and guidelines reported Peter van den Hazel, VGGM (NL).

6th December 2011

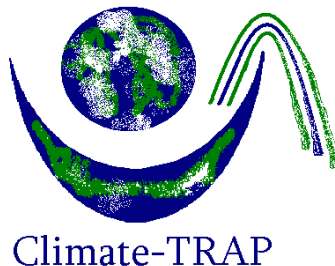
The second day of the workshop started with the host country presentation: Slovenia as a low carbon society given by Barbara Simoncic, GOCC (SI), followed by Biljana Filipovic, MOE (SP), who presented the actual data upon Climate change and health in Federal Republic Serbia and Attila Trájer, NIEH (HU), with report on theme Effect of temperature on Lyme disease in Hungary.

Joris van Loenhout, VGGM (NL) gave an introduction to break out session with group discussion and elaboration of recommendations from working groups.

Recommendations of the workshop in Maribor:

- ❖ An overview about existing early warnings systems is necessary because in most countries in Central European region it is insufficient or not existing
- ❖ Insight in expected impact of climate change on health and on needed capacity (personnel/material) in Central European region is needed
- ❖ Awareness of climate change & health issue has to be present in all strategic decisions in countries with the implementation of Guidelines on preparedness and training of public health professionals and other potential stakeholders
- ❖ Training modules should be prepared in different languages used in countries of the Central European region
- ❖ Participants of the workshop expressed the need to inform relevant Agencies and Ministries in their countries about the Climate TRAP project outcomes and recommendations and if possible to organize similar workshops or round table discussions in their countries about impact of climate change on health early warnings systems and training

Summing up and closing of the meeting was performed by Peter van den Hazel, VGGM (NL) and Igor Krampac, RPHI Maribor.



Climate change and health effects, Workshop in Östersund, Sweden, Oct 5-7 2011

Program

| | | |
|-----------|--|---|
| WED 19.00 | Study visit and welcome reception at SNIPH | Host: Anita Linell, SNIPH |
| THU 09.00 | <i>Registration, Coffee</i> | Clarion Hotel Grand, Östersund |
| THU 10.00 | Workshop opening | Jan Cedervärn, Dept Director General, SNIPH |
| THU 10.15 | The Climate-TRAP project | Bertil Forsberg, UmU (SE) Joris van Loenhout, VGGM (NL) |
| THU 10.30 | Climate change in Europe | Joakim Langner, SMHI (SE) |
| THU 11.00 | Climate change and health | Bertil Forsberg, UmU(SE) |
| THU 11.15 | Mapping climate change vulnerabilities for infectious diseases in Europe | Jan Semenza, ECDC (EU) |
| THU 11.45 | Climate and food borne illness | Bertil Forsberg, UmU(SE) |
| THU 12.00 | <i>Lunch and Poster viewing</i> | |
| THU 13.15 | Floods and health | Joris van Loenhout, VGGM (NL) |
| THU 13.30 | Heat vulnerable groups | Daniel Åström, UmU (SE) |
| THU 13.45 | Future impacts of heat on health | Christofer Åström, UmU (SE) |
| THU 14.00 | Climate warming and ozone in Europe | Joakim Langner, SMHI (SE) |
| THU 14.15 | Future impacts of ozone on health | Hans Orru, Tartu Univ (EE) |
| THU 14.30 | Wild fires and air pollution | Timo Lanki, THL (FIN) |
| THU 14.45 | <i>Coffee break and Poster viewing</i> | |
| THU 15.15 | Climate change adaptation in Europe | Hanns Moshhammer, MUW (AT) |
| THU 15.45 | Climate change adaptation in Denmark | Lis Keiding, SST (DK) |
| THU 16.00 | The climate municipalities in Sweden | Karin Thomasson, ÖSD (SE) |
| THU 16.15 | Rainfall and drinking water production | Andreas Tornevi, UmU (SE) |
| THU 16.30 | Safe drinking water production in relation to future climate change | Jari Hiltula, ÖSD (SE) |
| THU 17.00 | Discussion <i>Refreshments and Poster viewing</i> | |
| THU 19.00 | <i>Dinner at the City Hall</i> | Host: Karin Thomasson |
| FRI 08.30 | Heatwave plans and warning systems | Graham Bickler, HPA (UK) |
| FRI 09.00 | Ozone criteria and warning systems | Hans-Guido Mücke, UBA (DE) |
| FRI 09.30 | Introduction to the workshop break out session How to proceed... | Joris van Loenhout, VGGM (NL) Bertil Forsberg, UmU(SE) |
| FRI 09.45 | Group discussions (including Coffee break) | |
| FRI 11.00 | Presentations and recommendations | |
| FRI 11.45 | Summing-up and closure of the meeting | Joris van Loenhout, VGGM (NL) Bertil Forsberg, UmU(SE) Hanns Moshhammer, MUW (AT) |
| FRI 12.00 | <i>Lunch</i> | |

Climate-TRAP

Climate Change Adaptation by Training, Assessment and Preparedness

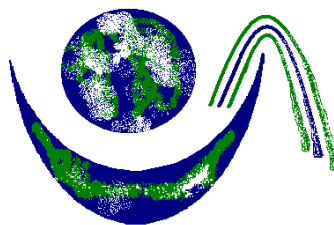


Climate Change and Health Effects

Impact, preparedness, guidelines and good examples

Workshop Report

Maribor (Slovenia), December 5-6, 2011



Climate-TRAP

“Climate change, more than any other challenge facing the world today, is a planetary crisis that will require strong, focused global action.” – *Ban Ki-moon, Secretary-General of the United Nations, September 2009*

Report Workshop Östersund

List of participants

| User | Firstname | Surname | Organization | Country | Email |
|------|-------------|--------------|--|----------------|-------------------------------------|
| 1 | Louise | Andersson | Yrkes- och miljömedicin, Umeå universitet | Sverige | louise.andersson@envmed.umu.se |
| 2 | Toril | Attramadal | Norwegian Institute of Public Health | Norway | toril.attramadal@fhi.no |
| 3 | Graham | Bickler | Health Protection Agency | England | graham.bickler@hpa.org.uk |
| 4 | Hanne Krage | Carlsen | University of Iceland, Centre of Public Health | Iceland | hannekarlsen@gmail.com |
| 5 | Jan | Cedervärn | Swedish National Institute of Public Health | Sweden | jan.cedervarn@fhi.se |
| 6 | Cecilia | Davelid | Socialstyrelsen | Sweden | cecilia.davelid@socialstyrelsen.se |
| 7 | Lise | Ekenberg | County Administrative Board of Gävleborg | Sweden | lise.ekenberg@telia.com |
| 8 | Charlotta | Eriksson | Karolinska Institutet | Sweden | charlotta.eriksson@ki.se |
| 9 | Bertil | Forsberg | Umeå University Occup Environ Medicine | Sweden | bertil.forsberg@envmed.umu.se |
| 10 | Gunnar | Geijer | Jämtlands läns landsting | Sweden | gunnar.geijer@jll.se |
| 11 | Olena | Gruzieva | Karolinska Institutet | Sweden | olena.gruzieva@ki.se |
| 12 | Tove | Hammarberg | Swedish Environmental Protection Agency (Naturvårdsverket) | Sweden | tove.hammarberg@naturvardsverket.se |
| 13 | Britta | Hedlund | Swedish Environmental Protection Agency | Sweden | britta.hedlund@naturvardsverket.se |
| 14 | Jari | Hiltula | Municipality of Östersund | Sweden | jari.hiltula@ostersund.se |
| 15 | Martin | Holmberg | Socialstyrelsen | Sweden | martin.holmberg@socialstyrelsen.se |
| 16 | Lis Marie | Keiding | National Board of Health | Denmark | lke@sst.dk |
| 17 | Ida | Knutsson | Swedish National Institute of Public Health | Sweden | ida.knutsson@fhi.se |
| 18 | Sara | Kollberg | Statens folkhälsoinstitut | Sweden | sara.kollberg@fhi.se |
| 19 | Joakim | Langner | Swedish Meteorological and Hydrological Institute | Sweden | joakim.langner@smhi.se |
| 20 | Timo | Lanki | National Institute for Health and Welfare (THL) | Finland | timo.lanki@thl.fi |
| 21 | Anita | Linell | Swedish National Institute of public Health | Sweden | anita.linell@fhi.se |
| 22 | Kristoffer | Mattisson | Occupational and Environmental Medicine Lund | Sweden | kristoffer.mattisson@med.lu.se |
| 23 | Emmanuel | Mbaogu | Kristianstad University | United Kingdom | chiidy2000@hotmail.com |
| 24 | Hanns | Moshammer | Med Uni Vienna, Inst. Environmental Health | Austria | hanns.moshammer@meduniwien.ac.at |
| 25 | Hans-Guido | Mücke | Federal Environment Agency | Germany | hans-guido.muecke@uba.de |
| 26 | Hans | Orru | University of Tartu | Estonia | Hans.Orru@ut.ee |
| 27 | Daniel | Oudin Åström | Occupational and Environmental Medicine, Umeå University | Sweden | daniel.astrom@envmed.umu.se |
| 28 | Saman | Rashid | Swedish National Institute of Public Health | Sweden | saman.rashid@fhi.se |
| 29 | Barbara | Schumann | Umeå University / Dept. of Public Health and Clinical Medicine | Sweden | barbara.schumann@epiph.umu.se |
| 30 | Jan C. | Semenza | ECDC | Sweden | jan.semenza@ecdc.europa.eu |
| 31 | Raminta | Siurkaite | Centre for Health Education and Disease Prevention | Lithuania | raminta.siurkaite@smlpc.lt |
| 32 | Jonny | Springe | Jämtlands läns landsting | Sweden | jonny.springe@jll.se |
| 33 | Karin | Thomasson | Östersunds kommun | Sweden | karin.thomasson@ostersund.se |
| 34 | Andreas | Tornevi | Miljömedicin, Umeå Universitet | sweden | andreas.tornevi@envmed.umu.se |
| 35 | Dick | van Lith | Ministry of Spatial Planning and the Environment | Netherlands | dick.vanlith@minienm.nl |
| 37 | Karin | Åkerstedt | Länsstyrelsen Jämtlands län | Sweden | karin.akerstedt@lansstyrelsen.se |
| 38 | Christofer | Åström | Umeå University | Sweden | christofer.astrom@envmed.umu.se |



Photo: T Lanki, Finland, presenting during one the plenary sessions. The workshop included both plenary sessions with state of the art presentations, and presentation of results from the Climate-TRAP Project, as well as poster viewing and a break out session where participants circulated between rooms where different topics were discussed.

Break-out session

1. Health effects: How realistic are the discussed health effects due to climate change? What is the relevance and the magnitude? What should be the message to the politicians and the health sector?
(Chair Jan Semenza, Rapporteur: Bertil Forsberg)

2. Early warning systems: What are the criteria that need to be incorporated in the most ideal warning system? What makes a system effective? What aspects are really necessary to be added to an early warning system; what kind of implementation aspects need to be given in advance? Make a good practice content list for a warning system.

(Chair: Graham Bickler, Rapporteur: Christofer Åström)

3. Adaptation and training: Who is the leading actor in adaptation to climate change? Who needs to be trained and in what, especially in the health sector?

(Chair: Lis Keiding, Rapporteur: Hanns Moshhammer)

4. Preparedness: What different measures can be taken now to avoid a large impact when a sudden incident happens? Are measures feasible in spatial planning, transport logistics, etc.?

(Chair: Hans-Guido Mucke, Rapporteur: Joris van Loenhout)

5. Adaptation and mitigation: What do we know about potential co-benefits and goal conflicts between climate change adaptation and mitigation? What do we need to study further?

(Chair: Anita Linell, Rapporteur: Hans Orru)

Health effects: How realistic are the discussed health effects due to climate change? What is the relevance and the magnitude? What should be the message to the politicians and the health sector?

Realistic effects

The health impacts of climate variability and extreme events like heatwaves are well documented, and the extreme events have become more frequent, likely due to climate change. The recent severe European heatwaves in 2003, 2006 and 2010 are very unlikely without a changed temperature distribution. For other effects, indirect or ecosystem driven, it is more difficult to estimate the magnitude.

Do policymakers suggest adaptation also to “small changes” in climate when other changes are going on; urbanization, the aging population...

Message

The health sector and society needs to be prepared for climate variability and extreme events even if we cannot calculate the role of climate change. Climate change is now another factor to consider in long-term planning. Extreme heat and rainfall causing flooding are already public health problems, and will increase according to climate projections.

All changes we see should not be taken as related to climate change. Good research is important for the adaptation process.

The message should be that adaptation is less of a private responsibility than changes in behavior (use of resources, emission of pollutants).

If the society is going to be planned in a different way, all levels need to know to what should we adapt and how (better information).

Adaptation and training: Who is the leading actor in adaptation to climate change? Who needs to be trained and in what, especially in the health sector?

Who is the leading actor?

Not necessarily the health care sector. Depending on national policy structure, often environmental sector leads the process. But also need to have a coordinating institution for the health aspects.

Need for coordinating activity at MoH. (National governmental level)

Activities on regional level but coordination and financial support from national government are important.

Coordinating group among relevant ministries (DK) is a good example.

Level of adaptation (national/regional/municipality) depends on kind of stressor.

Who needs to be trained?

Institutions responsible for preventive medicine / public health (including occupational health)

Institutions responsible for health care / curative sector: hospital administration, GP, home care (nurses)

Care for population groups: Elderly care homes, schools, kindergardens, etc.

Administration in charge of surveillance (Statistics Institutes, General administration,...)

Education of practitioners: Medical schools about newly emerging diseases, Nurses schools, Social workers regarding needs of special groups. Basic curriculum and post-graduate training.

General public: family / neighbourhood help.

Long term measures (city planning, architecture) besides experts also input from health experts needed (they often need to be trained first to give input to other sectors).

Additional discussions

Using existing structures and institutions: E.g. housing control agencies (example of municipalities in Sweden): several standards set for private house owners that let flats. Controlled by municipality staff

– but no criteria for CC adaptation need (e.g. behaviour during heat waves, flooding,...) some relevant criteria (e.g. sewage treatment) although often not optimal.

Food safety authorities, manager of drinking water plants, etc.

Relief and emergency organisations / regular exercises including health care providers.

How to train/inform the GP?

Keep it simple! Short and to the point.

Inform target groups so that they put pressure on their GP (“For further questions ask your doctor”)

How to inform the public?

Internet easy, but maybe not accessed by high risk groups.

Television / include in weather forecast,... (e.g. UV index)

Social networks, local groups/clubs. Aid stations for homeless people.

Doctors as society leaders and representatives, declarations and political pressure by national medical association, policy statements.

Preparedness: What different measures can be taken now to avoid a large impact when a sudden incident happens? Are measures feasible in spatial planning, transport logistics, etc.?

(Chair: Hans-Guido, Rapporteur: Joris)

Warning systems should be aimed at professionals, and the health sector should be included. If people are bothered with too many warning systems, they lose their effectiveness. Even if people know about the existence, they often do not change their behaviour accordingly.

Long term preparation is very important, not only ad hoc during an incident. This includes preparing hospitals, managing drinking water and taking Urban Heat Islands into account. In some countries (Germany, France), measures for preventing flooding problems are already taken, e.g. replacing bitumen on streets and increasing the height of pavements.

Evidence on the effects of extreme events is needed to motivate why certain actions should be taken.

An example of this is the number of excess deaths during a heatwave, or learning from previous incidents like the Cryptosporidium outbreak in Östersund. A step further would be quantifying the risks, like a cost-benefit analysis: how can you save money by preventing morbidity / mortality? This can be done by using Disability Adjusted Life Years (DALY's). For politicians, it's very useful to have such information.

In general, an overview containing the risks for each climate change related stressor for a certain area should be made: what are potential problems with heat, vector borne diseases, air pollution, etc? For each risk, potential solutions should be listed in the form of a management plan, including stakeholders that should be involved. Potential conflicts of interest need to be listed as well (e.g. prevention of landslides in skiing areas).

Psychological effects need to be taken into account when preparing for sudden incidents, since this can form a big part of care that is needed. Anxiety was present in Finland during the wild fires in Russia, since people were constantly exposed to smoke.

Educate children, since it is relatively easy to include certain actions in children's normal behaviour: how should they behave during a sudden incident? Also, children often transfer this knowledge to their parents. This system is already in practice in California, where all children carry water in case of an earthquake.

Communication is very important: Which persons need to be informed during a sudden incident? Is the whole population reached if measures are taken? If not, how we can we make sure everyone is included, e.g. by using the military? This should all be part of a warning system.

What do we know about potential co-benefits and goal conflicts between climate change adaptation and mitigation? What do we need to study further?

Not so many co-benefits were identified by participants, but more conflicts were mentioned. One of the potential policies with co-benefits is a reduction in emissions of black carbon, it reduce – mitigates the climate effects and good for health due to improved air quality. Also the use bicycles instead of cars.

Do we all have same definition of mitigations and adaptation? It seems we have the same definitions. Mitigation is for the long-term perspective, adaptation works also in a very short-term perspective.

A conflict: Urbanization – more dense cities.

Finnish government for instance is supporting it through planning. Good for mitigation, but bad for adaptation.

Negative aspects: more air pollution and noise. Less green areas, which are good for cooling and reduce risk for floods. Green roofs make it more difficult to put solar systems, but they can also put on walls. Compact city: trees around the streets that affect microclimate. Good possibility to use green areas to shade buildings.

Architecture of the houses – better insulation is good for mitigation and adaptation. However, in Nordic countries windows are now getting bigger, it may increase the need to heat and cool buildings.

Mitigation of energy consumption indoors can reduce indoor air quality.

Tourism – a little studied topic

Artificial snow production consumes more energy. Furthermore, going higher up in mountains cause damages in the nature. Tourism is a very polluting and energy consuming sector. However, this is politically very difficult to change, since it is about telling people they should change their behaviour.

Housing, transport and energy

Air conditioning

Conflict: good for adaptation but consumes energy and outdoor air gets warmer in a city.

Socioeconomic and cultural differences.

In Japan during recent heat wave, work places allowed staff to not wear suits.

There are examples of wind turbines that make noise.

Biomass burning mitigates CO₂, but causes PM and HC pollution.

To produce and consume electricity the same time is complicated.

Electric cars: much energy goes into heating up or cooling the car, batteries are heavy. Perhaps small gasoline/diesel cars are better? Energy efficiency of cars is getting better; however, cars have become bigger.

Some adaptation techniques consume a lot of energy

More protection against floods cost a lot of energy in Netherlands. Constructions disturbs the landscape.