

## **Component 3: Explorative qualitative study of heat impacts and preventive approaches**

### **1.1. Aims**

The aim of the qualitative Hothaps study component is to describe how people experience the heat exposure situation where they live and work, how they are affected by heat and what they do to reduce heat stress and strain. The study builds on data presented in the Hothaps pilot study and will provide additional information about heat exposure, effects and interventions in the location being studied. The use of Open-ended questions allows the worker to express their own perception of the heat situation at work and what can be done to prevent heat exhaustion. The qualitative study will provide baseline information that can be used for hypothesis generation and planning of subsequent quantitative studies, including the assessment of the effectiveness of heat stress interventions .

### **1.2. Study design, study groups**

The qualitative study will use an exploratory social research approach to tell the story of what is happening in workplaces and households. In broad terms the study collects data to answer with systematic methodology the following questions about occupational heat impacts in the study location (these questions can also be used in the pilot study in interviews with key informants as mentioned earlier):

- What is the climate profile in the location (seasonal and typical daily variations)?
- Which types of occupations in this location may be most affected by heat during the hot season?
- How are people in these occupations affected by heat at work?
- How does heat exposure change their capacity to carry out work?
- Are women and children affected in any particular way?
- What are the working people doing, or could they do, to avoid heat exposures and heat effects at work? (includes descriptions of current preventive interventions and ideas for new interventions)
- Is air conditioning or other cooling systems used in these workplaces? If air conditioning is used, how often is it not available (ie power outages).
- What are the government regulations or other standards for maximum occupational heat exposure, and how are these enforced?
- How do working people travel to and from work and how does heat exposure during travel affect them?
- Is air conditioning available in transport vehicles? How often is it unavailable?
- How does heat exposure change people's capacity to carry out daily household activities during the hot season?
- What are people doing to avoid these heat effects?
- Is air conditioning or other cooling systems used in households? If air conditioning is used, how often is it not available (ie power outages).
- Is high temperature at night a problem during the hot season (does it affect sleeping patterns)?
- Other information about heat impacts in the hot season & how it compares with the less hot season?

Workers in selected workplaces (and key informants) are interviewed with (or given) questionnaires, (examples in Appendix 1). As this is a qualitative study, responses in every completed questionnaire will provide valuable information. The aim would be to include a variety of occupation groups, with at least 10 respondents from each group in each location. The study can also use “focus groups” representing the occupation groups of interest, in order to get information from several people during the same session.

### **1.3. Data required**

Standard questionnaires for workplace and household exposures have been developed (see example in Appendix 1). These have several parts as described in Table 3. There are open questions that can record “stories” about heat, work and health in that location. The questions asked vary slightly depending on whether the respondent is an individual active working person or someone representing a group of workers or someone responding on behalf of a government department or enterprise (all questionnaires included in Appendix 1).

Appendix 1 includes four different, but similar, questionnaires:

1. Representatives of enterprises, e.g. Health and Safety Officers
2. Trade union or other collective worker representatives
3. Officials in a government department or similar organizations
4. Individual working people (employed or self-employed)

The content of the questionnaire covers the headings listed in Table 3.

#### **Table 3.**

#### **Questionnaires about work, household activities and heat; qualitative study**

*Part 1. General information about person interviewed and the organization she/he represents*

*Part 2. Questions concerning the type of work*

*Part 3. Questions in relation to heat exposure at work*

*Part 4. Questions concerning impacts of heat on health*

*Part 5. Questions concerning impacts on work activities and productivity*

*Part 6. Heat prevention approaches*

*Part 7. Experience of climate change to date and other questions (e.g. heat exposure outside of work)*

In addition, questionnaire 5 (see Appendix 1) collects information about heat exposure and effects in the households.

### **9.4 Data collection**

The questions could be asked in person-to-person interviews, telephone interviews, via Internet in some places, or as mailed or emailed questionnaires. Answers from individuals may be reported as “case studies”.

If a focus group is used, the responses will be recorded on behalf of the whole group. Make sure you record any dissention??)

Each person interviewed should be informed of the purpose of the study and be asked for "informed consent" to the use of their answers in the analysis for the reports of the project. In many places formal ethics approval from a research management organisation is required. The answers will only be reported in an anonymous manner via the Hothaps reports.

## **9.5 Data analysis and reporting**

The experience of heat conditions and impacts described by the respondents will be summarized for each location in tables and figures as well as case study descriptions. Qualitative approaches to analysis and "grounded theory" will be used to identify recurrent themes and concepts occurring in the answers from different informants. The measures workers take to reduce their heat exposure and effects (interventions) will be recorded in detail.

The heat exposure at the selected workplaces can be monitored (as described in component 2 (may be easier to track down if you put the chapter number here), but data for the complete hot season may not be available. The Population Heat Exposure Profile for the location can be produced and used to describe the typical heat exposure situation for each month of a year. The questionnaire results can then be interpreted in the context of the heat exposure at each location, and particular patterns of heat impacts identified. The "stories" about heat exposure and effects can also be used to describe the kind of hazards people are exposed to and what action they take to mitigate these.

A report can be prepared summarizing current and potential future interventions. These are likely to include cooling methods, approaches to re-scheduling work to cooler parts of the night/day, protective clothing, and methods to reduce heat stress and dehydration effects. The way that these methods are put into practice in occupational health can be described in detail. The results from different locations can be compared and used to choose interventions to test in the quantitative studies (Study component 4).