Component 1: Pilot studies for Hothaps field studies

The pilot study can be considered a preparation for the other Hothaps studies. Interested research institutions will first of all carry out a pilot study with existing resources. The report from the pilot study can be used in fundraising for the other components of the field studies.

The first activity in the pilot study is to compile basic information on the climate conditions in the location of the proposed Hothaps field study, including seasonality of maximum and minimum temperature, humidity and other available climate data. In many places the Hothaps team can assist by providing a Population Heat Exposure Profile.

Some preliminary climate variable measurements in selected workplaces may also be carried out to ascertain what the heat exposure levels may be in actual workplaces (see Component 2).

The second activity is to identify the occupational and community groups that are most likely to be vulnerable to heat exposure and could be included in the field studies. The investigators should engage with these groups in a participatory manner and ask "key informants" to describe how these groups consider that they may be affected by heat exposure. The target groups may be workers at risk of over-heating due to working outdoors in the hot season or in other work situations where heat reducing interventions (e.g. air conditioning) cannot or have not been applied. This initial information collection from key informants should ideally include questions used in the qualitative study (see component 3). This covers briefly the heat exposure situation at work, as well as during travel to/from work and at night (potential sleep disturbance from heat).

The suggested table of contents of the pilot study report is:

1. *Geographic conditions*: Description of the proposed study location: region, country, geographic and other features (altitude, inland, coastal, economy, industries, history, etc.).

2. *Climate conditions*: Description of the climate situation at the study location: typical seasonal and daily variations in temperature and humidity conditions, cloud cover, length of hot season, wind speed, rainfall patterns and other factors of relevance to heat exposure. If such data cannot be collected locally, the data can in many cases be produced by the Hothaps team in the form of a Population Heat Exposure Profile (PHEP) for a nearby weather station.

3. *Population*: size of population, age and sex distribution, and basic health statistics indicators, if available (e.g. infant mortality rate, adult mortality rates ages 15-64 years, life expectancy, occupational injury rates, and any other variables that are easily accessible) .

4. *Occupational features*: Occupational distribution in different age and sex groups (agriculture, construction, mining, manufacturing, services, etc). The type of occupations requiring work in hot outdoor or indoor environments during the hot season, and the current practices used to deal with heat should be identified (early morning start, siesta, seasonal work, etc.).

5. *Current heat experiences at work*: Findings from the discussions with and questions to key informants (from worker groups, managers, occupational health responsible officials), including measures taken to avoid overheating in workplaces. This information can be complemented by the experiences of heat exposure among the researchers themselves.

6. *Current heat experiences during travel to/from work:* Heat exposures and discomfort reported by key informants.

7. *Current heat experiences in households*: Comments on heat exposures, heat disturbance of sleep and measures taken to avoid overheating in peoples' households.

8. *Literature on local situation*: Brief review of any literature (in local language or any other language, including grey literature) dealing with the climate situation in the location and health aspects of climate factors there. The latter may include seasonal (monthly) variations in relevant health data. Translated reference list should be included.

9. *Feasibility of local field studies*: Assessment of the possibility of setting up Hothaps field studies in this location.

10. *Tentative budget estimate and time table*: Tentative budgets for local Hothaps field study components that are feasible, including costs for personnel, equipment, travel, analytical services, and other costs, as well as a preliminary timetable for key stages of each study component.