HOPE Briefing Sheet 1

What were the HOPE methods to study household preferences for reducing greenhouse gas emissions?

Background, objectives and study design

HOusehold Preferences for reducing greenhouse gas emissions in four European high income countries

At the United Nations climate conference in Paris (COP 21), the world has agreed to limit global warming to 2°C, and possibly 1.5°C, to avoid dangerous climate change. It is increasingly acknowledged that emissions from household consumption need to be included into climate policies to reach this ambitious goal. Additionally, climate-friendly lifestyles have substantial health co-benefits. But so far it is unclear if households consider health co-benefits in decisions on climate change mitigation. The HOPE project applied an innovative mixed-methods approach to investigate household preferences for reducing greenhouse gas emissions and assess the role of the health argument in their decision-making. The study was conducted in four European case-study cities: Bergen (Norway), Communauté de Pays d'Aix (France), Mannheim (Germany), and Umeå (Sweden).

The main objective: investigate the role of households in reaching the 1.5°C climate goal

It is clear that European climate policies are not sufficient to reach the 1,5°C goal under the Paris Agreement. Current climate policies mainly focus on reducing greenhouse gas (GHG) emissions by targeting production (e.g. energy production, factories). Policies addressing consumption (e.g. nutrition, mobility behaviour) have received less attention. Measuring GHG emissions from the consumption perspective implies that emissions are not measured within country boarders, but through life-cycle assessments of consumed goods and services (e.g. emissions from the production and transportation of imported goods). From this perspective, households control up to 70% of global GHG emissions. Thus, to fulfil the Paris Agreement reducing consumption related carbon emissions is inevitable, independent of the geographical origin of these emissions. Relying on negative-emissions technologies is not the safest option. The Intergovernmental Panel on Climate Change (IPCC) increasingly emphasises the relevance of addressing consumption-related emissions as well as changing lifestyles.

Therefore, the HOPE project investigated the role of households and health in reaching the 1.5°C climate goal. HOPE stands for HOuseholds' Preferences for reducing greenhouse gas emissions in four European high-income countries. The objectives of the HOPE project were:

1. Which mitigation actions are households willing to implement under a voluntarily and under a forced scenario of a 50% carbon footprint reduction by 2030 (in line with the 1,5 °C goal)?

2. What role do financial considerations play in this area and what are other barriers and facilitators for households to reduce their carbon footprint?

3. What role does the health argument play when households take decisions about reducing their carbon footprint?

4. Which political instruments on local, regional and national level can support households to reduce their carbon footprint?

Analysis of climate polices targeting households & stakeholders involved

Within the interdisciplinary research team, a policy analysis on climate policies targeting households in the four partner countries was conducted. This policy analysis included local and regional polices in the case-study cities, as well as national policies.

Furthermore local, regional and national stakeholders were involved in one policy advisory board (PAB) per city that met once a year to co-advise the research team and interpret the policy relevance of project results.

Umeå, Sweden

Bergen,Norway

Aix-en-Provence, France

Mannheim, Germany

Data collection was accomplished in three interactions

The study was conducted in three interactions with households. Interaction 1 started with an assessment of households' current carbon footprints. The carbon footprint is a core concept in consumption related climate research. We included all GHGs (measured as CO_2-equivalents in tons) in a household's carbon footprint that were caused directly or indirectly by the household's activity in one year.

In Interaction 2 we assessed, preferences for reducing greenhouse gas emissions in a simulation game. This was the core of the HOPE project and will be explained in more in detail below.

In our mixed methods approach, we finished the data collection with qualitative in-depth interviews. This helped us to understand households barriers and motivators to reduce their carbon footprint.

Figure 1: The data collection in 3 Interactions
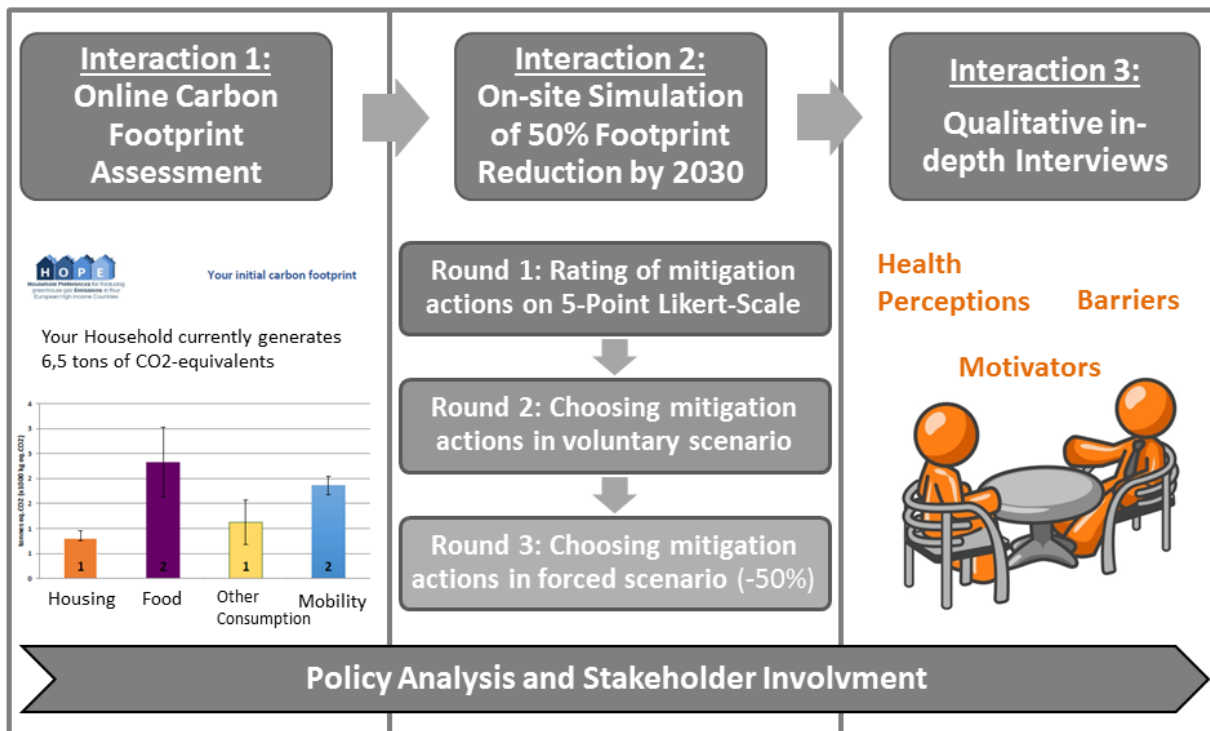
The data collection was conducted in three steps, called interactions, and it was accompanied by a policy analysis and stakeholder involvement.

Interaction 2: each household goes through a voluntary and a forced scenario of GHG reduction

Participants' preferences to reduce their carbon footprint were assessed in three rounds:

- Task Round 1 – Rating of mitigation options: "Imagine you would be required to reduce your carbon footprint by 50% by 2030. To reach this goal, how willing are you to implement the following actions?"
- Task Round 2 – Voluntary scenario: "Which actions would you actually like to implement to reduce your carbon footprint by 50% by 2030?

Choose action cards. In this round, it is your decision how many actions you choose."

- Task Round 3 - Forced scenario: "Which actions would you choose if you were forced to reduce your carbon footprint by 50% by 2030? You may add to your choices [from the previous round], or change them".

This choice of having a voluntary and a forced scenario allows us to distinguish the spontaneous choices from the ones made under specific obligations.

Information included on action cards: GHG reduction and financial impacts of the action, tailored to each household

Interaction 2 was centred around 65 household mitigation options (e.g. using public transport more; eating less meat; reducing room temperature by 1 °C). Each possible mitigation option was displayed on an "action card" and fell into one of the four sectors *Housing, Food & Recycling, Mobility*, and *Other Consumption*.

In addition to the description of the mitigation action, every action card displayed information on the amount of CO_2 emissions that this action could save and the monetary costs or savings of the action. The information was calculated individually for each household with the FCS-Tool.

Figure 2: Action card examples from the sectors Housing and Food & Recycling.
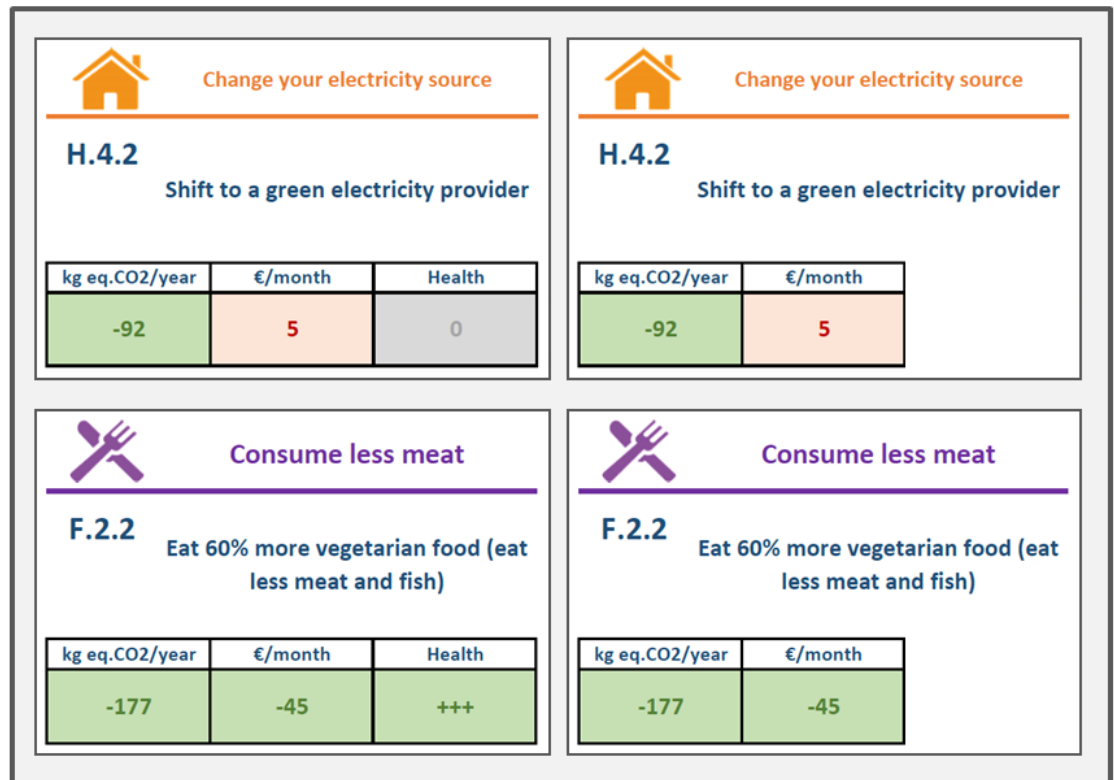
Cards on the left side for the experimental group included information on health effects of mitigation actions.

Half of the households received information about health impacts of mitigation actions, the other half did not.

Half of the households also received information on the health effect of some actions. Health information displayed the health benefits or harms associated with implementing the measure. The health information was calculated on a generic level based on the concept of quality-adjusted life years (QALYs). To break it down for households, health effects were expressed as '+' to indicate a small positive effect, '++' to indicate a moderate positive effect, '+++' to indicate a substantial positive effect and '-'to indicate a negative effect.

In the analyses of household preferences were compared between the two groups to see if health information influenced households choices.

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