STEP-IN

FINAL REPORT
MOUNTAINOUS LIVING LAB

SUMMARY OF CONTEXT, WORKING METHODS AND RESULTS OF THE MOUNTAINOUS LIVING LAB (METSOVO AREA) WITHIN THE STEP-IN PROJECT

Metsovo area

3
municipal units

10
local units

32
rural settlements and villages

6.2
thousand inhabitants

2.2
thousand households

Challenges encountered

1. Harsh climate

Metsovo is a mountainous settlement of Greece, situated at an altitude of 1100 m. The heating degree-days range between 2,275 °C*days and 3,194 °C*days and are significantly high. It is noteworthy that heating degree-days in Metsovo are 50% more than in the nearby city of Ioannina, whose distance from Metsovo is only 50 km.

2. Remoteness and terrain inclination

Remoteness and terrain inclination, which characterise the mountainous areas increase fuel costs by about 5-7%. Apart from geographical characteristics, incomes of mountainous populations are usually lower than those of lowland and urban areas, due to various reasons (e.g. low productivity land, lack of investments, etc.).

3. Housing characteristics

More than 80% of Metsovo's residences were built before 1979 (1st Thermal Insulation Regulation applied in Greece). The building stock lacks energy efficiency (nearly 6 out of 10 residences in Metsovo have no insulation), reflecting the crucial issues of low energy performance and very high thermal losses of the residential sector in the area.

4. Limits to the advisor visits

The baseline assessment revealed that many energy-related household challenges concern the high portion of household budget absorbed by energy needs, especially heating (more than 20% on average). This is associated with the fact that heating is an "inelastic" need in Metsovo due to the cold climatic conditions, which means that people have to keep their houses warm, regardless of the housing characteristics.

5. Technological challenges and opportunities

Using monitoring equipment and IT tools helps convincing people to get involved in energy conservation and adopt advice provided by the Energy Advisors and is useful for identifying faulty appliances. 80% of the participants who had monitoring equipment installed said that it motivated them to check regularly their electricity consumption and almost all of the participants said that they were helped in taking energy efficiency decisions, i.e. replacement of thermostat, purchase of a dehumidifier, etc.

Methodology

Benchmarking

Market segmentation

Focus groups

Energy cafés

Recruitment of Lab participants

Information campaigns

Information centres

ICT tools

Impacts monitoring

Home energy advisor visits

Energy advisor home visits

- About 85% stated that the total area of their house is heated.
- About 80% use central heating systems. The main fuel used is diesel oil (about 51%), followed by firewood (23%) and pellet (3%).
- On average, households spend annually €2,100 for heating and €900 for electricity.
- About 30% reported moisture/mould problems, 14% reported thermal discomfort and a same percentage mentioned arrears in energy bills.
- Energy advisors implemented 'small' energy saving measures including the replacement of old analogue thermostats with digital ones and maintenance of heating systems in certain houses. Assuming an average annual household heating bill of €2,100, the small measures resulted in a minimum direct estimated saving of €110 per year and household.
- About 75% of those taking part in the LL activities stated that the project was useful to them and 40% stated that they realized an improvement in the quality of their lives during the LL's operation, mainly by improving the level of thermal comfort at home, by facing less moisture/mould problems and by reducing energy costs.

Energy cafés

- Practically all attendees found the information and advice provided at the energy cafés to be useful.
- Many attendees found the event useful and helpful towards gaining more detailed knowledge about energy saving issues.
- Many attendees said that the major value was in influencing them to plan energy efficiency interventions, such as purchase of energy efficient appliances, replacement of old incandescent light bulbs, maintenance of heating systems, etc.
- Several respondents stated that the value of energy cafés goes beyond the provision of energy advice, e.g. they reduce social isolation and increase social capital.

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