Low-cost heating in low-cost housing

Albania
Low-cost heating for low-cost housing

• Memories from the childhood
• Challenges and opportunities
• Affordable energy efficient housing and low-cost heating
Memories... the fireplace

- Nice warm
- Socializing
The stove

• Once it was a piece of art
Memories...multi functional woodstove

- It was used not only for heating, but for cooking, heating water, drying clothes
Memories...some challenges

- Physical strength needed to cut the wood
- Outdoor place
Memories...some challenges

- Ability to light the fire
- Smoke – not healthy
- Make dirty
- Risk for fire
Memories...some challenges

- Ordering with cubic meters or lata (1 lata = 0.4m$^3$), possibly in August
- It occupied approx. 8m$^2$ of the garden
Private households by main type of energy used for heating

- Wood: 0.37%
- Electricity from the grid: 5.95%
- Gas: 20.81%
- Solar panel: 0.04%
- Other type of energy (coal, oil, other): 15.37%
- No heating: 57.46%
Private households by main type of energy used for heating

- Wood: 80.00% Urban, 90.00% Rural
- Electricity from the grid: 0.00% Urban, 10.00% Rural
- Gas: 20.00% Urban, 30.00% Rural
- Solar panel: 40.00% Urban, 50.00% Rural
- Other type of energy (coal, oil, other): 60.00% Urban, 70.00% Rural
- No heating: 90.00% Urban, 80.00% Rural
Challenges of using wood

- Forests occupy 36% of the country’s territory
- Unsustainable use of forests – cutting trees 3 times higher than the natural growth
- Recent development – 10-years moratorium to stop deforestation
Private households by main type of heating

- Common heating in the building: 8.66%
- Separate central heating in the dwelling: 5.95%
- Stove: 5.96%
- Fireplace: 8.53%
- Electric heater: 4.39%
- Air conditioner: 1.16%
- Other type of heating: 2.02%
- No heating: 63.34%
Korca – households survey

• Korca is located in the South-East of Albania
• It has a continental climate
• Located at 850 m (2,789 ft) above sea level, surrounded by mountains
• It receives about 2300 hours of solar radiation per year
Korca –

Cooler temperature than the rest

Average Temperature (°c) Graph for Korce
NHA affordable housing projects

- NHA has built 144 dwellings between 1995 and 2007 in Korca
- 21 families interviewed
  - HH size 4.6
  - dwelling size 66.5 m²
  - average income ALL 32,430 (= Euro 235)
Some results from the survey

• 95% of HH use Individual heating
• 100% of HH use wood for heating
• No HH uses cooling
• On average a HH consumes 14 lata (= 5.6 m3) of wood
• m2/y
Some results

• Yearly costs for wood heating - ALL 30,000 (€ 217)
• On average, each HH dedicates 12% of its income for energy and for heating one room using wood
• Electric energy consumption = 50 Kwh/m²/year
• Total energy consumption (including energy from wood for heating) = 344 kWh/m²/year
Households in Korca consume a considerable amount of energy from burning wood, to heat only one room and they dedicate 12% of their income for energy costs.

CONCLUSIONS FROM THE SURVEY
DEFINING THE PROBLEM

How to improve the quality of life of poor households and reduce their costs for energy?
New affordable and energy efficient housing