Financing Energy Efficiency and Climate Adaptation Measures on Household Level in Kyrgyzstan

Market Based Approaches in a Post-Soviet Country?

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Bundesministerium für wirtschaftliche Zusammenarbeit und Entwicklung

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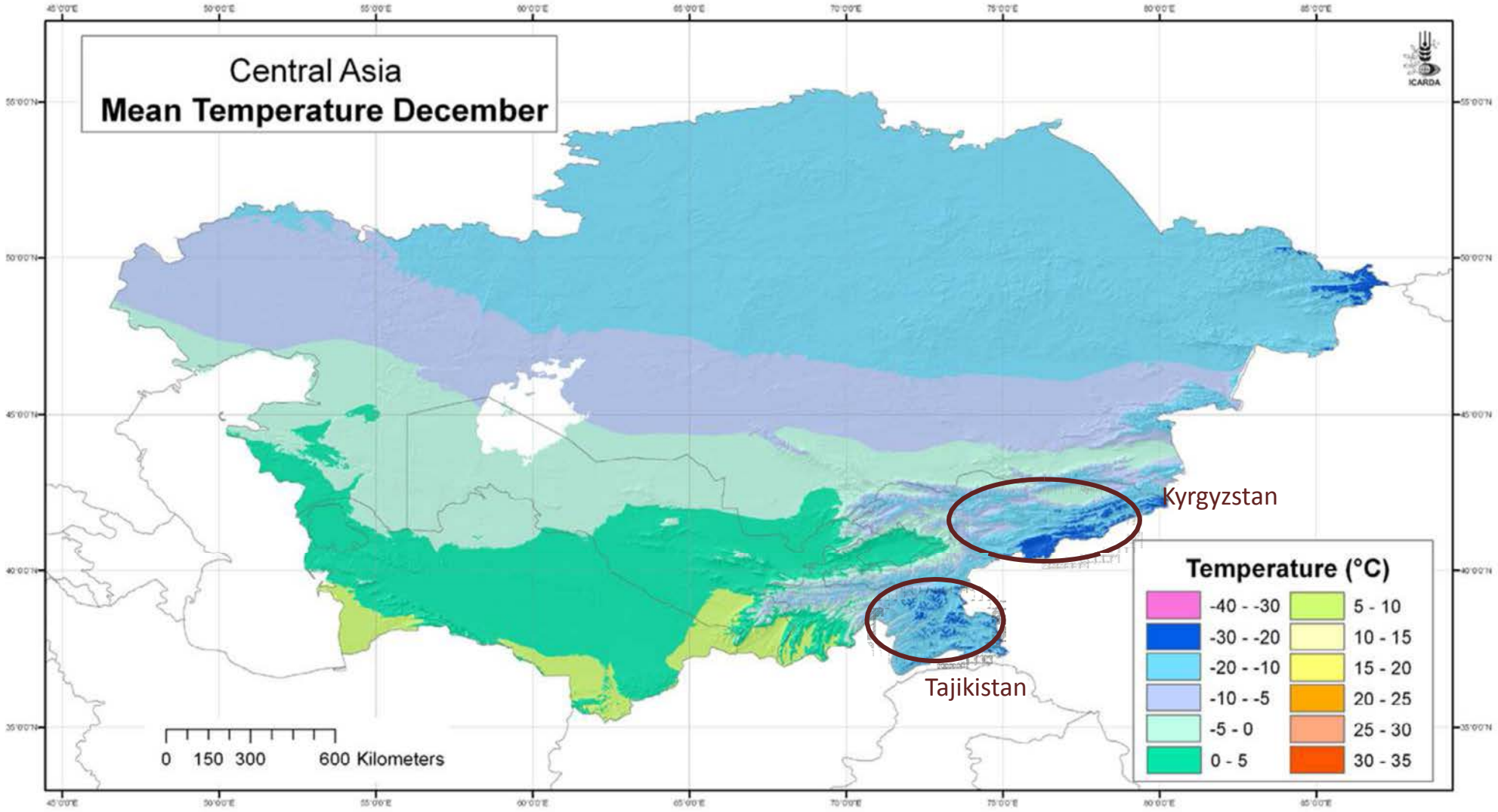
Climate in Central Asia



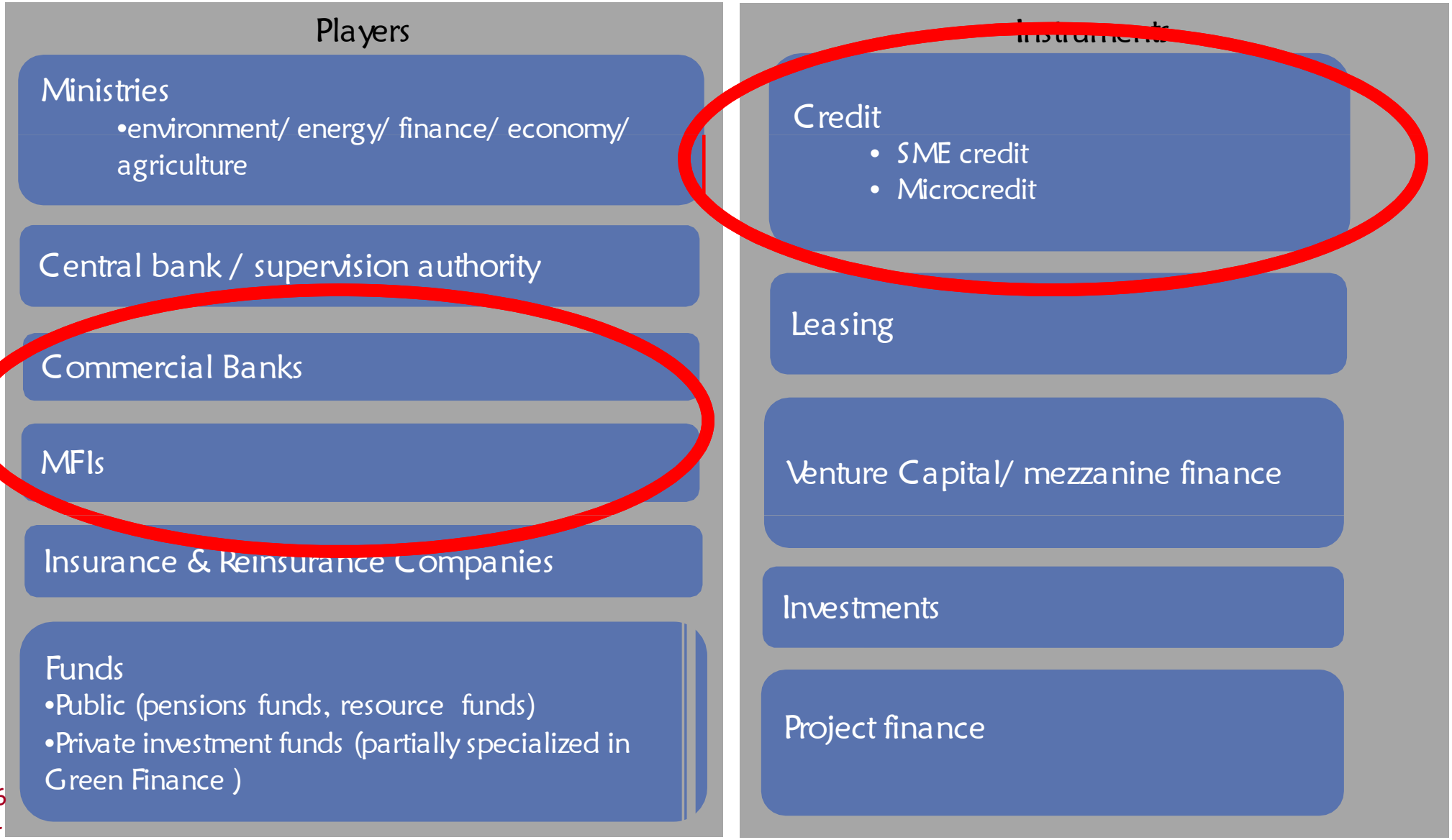
The Kyrgyz Energy Sector

Housing conditions

Housing conditions

Green Finance

Source: GIZ



Can green finance foster the implementation of climate adaptation measures on household level such as housing thermal insulation in Kyrgyzstan?

Objectives

- Market demand analysis: Assessment of the demand for microloans on thermal insulation and energy efficient heating stoves in rural regions of Kyrgyzstan;
- Market supply analysis: Assessment of the current supply market manufacturing and providing thermal insulation products and services;
- Feasibility of loan product for thermal insulation: Providing the information necessary to enable microfinance institutions to assess the commercial viability of a loan product for thermal insulation of households in Kyrgyzstan;




Methodology

- Quantitative survey
  - 384 respondents from the Naryn and Issyk-Kul regions
  - Covered topics: Housing conditions, Household energy consumption, Satisfaction and Awareness of EE, Experience with Microfinance and Microcredits, Household economy, Migration and Mobility)
- Qualitative household interviews
  - In-depth Interviews with 10 households
- Two focus group discussions




Is there a need for thermal insulation measures in the two regions in Kyrgyzstan?

Overview of heating patterns (1):

- Average heating season lasts 6 months
- Average number of rooms heated in winter time: 2 in Issyk-Kul, 2-4 rooms in Naryn
- Traditional stoves without water pipe systems are the most commonly used heating technology

Overview of heating patterns (2):

- Coal is the most commonly used heating fuel
- Electricity is used to complement coal for heating



The missing concept of thermal insulation – "making the house warmer"

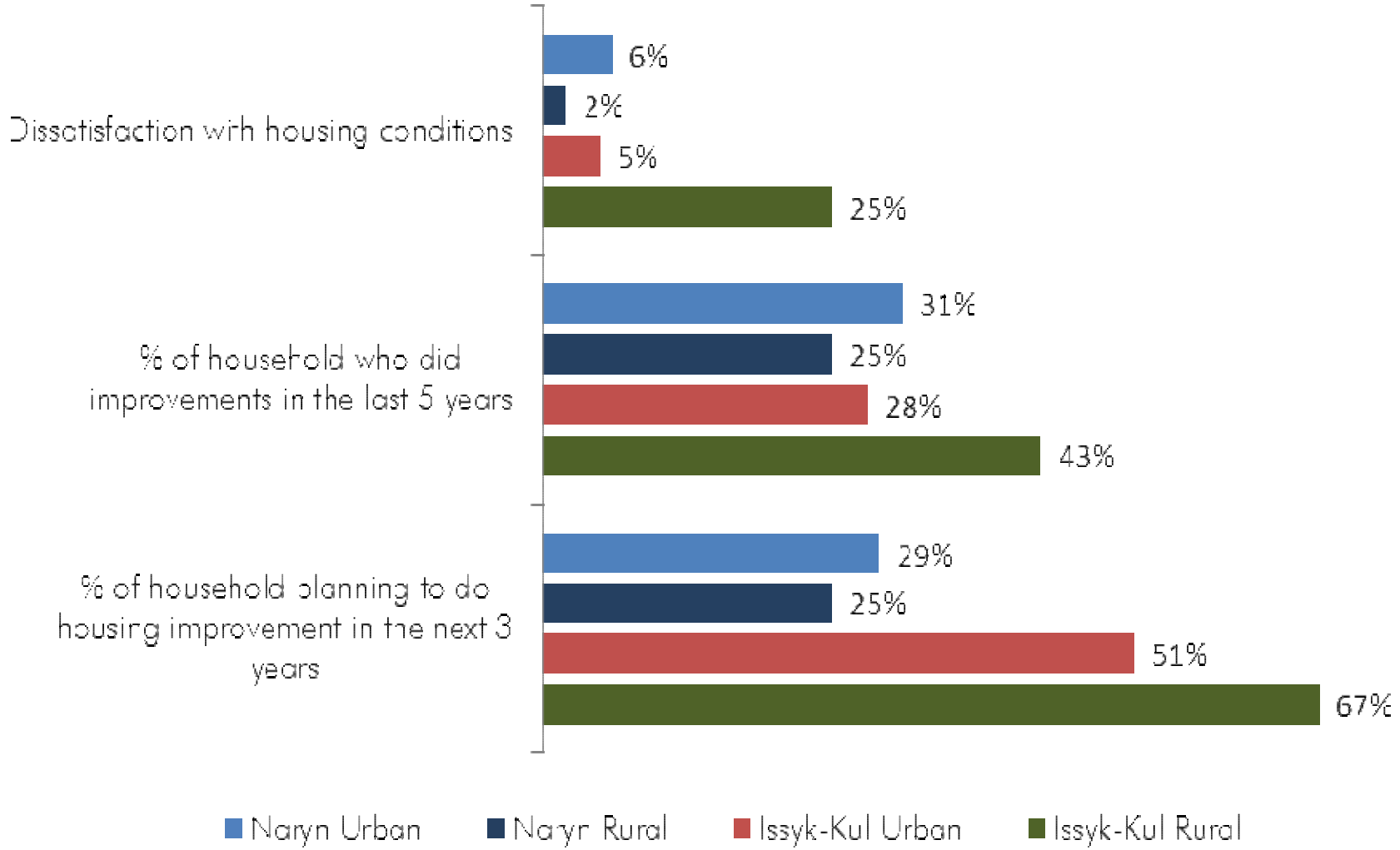
Strategies for warming the house - *Uteplenie*:

- Minimize the number of rooms to be heated
- Move to a smaller house for the winter season ("Vremaynka")
- Burn more fuel
- Cover windows with cellophane in winter
- Switch between different fuels: coal, electricity, wood, manure
- Get used to the cold

Is there a demand for thermal insulation measures in the two regions in Kyrgyzstan?

Demand for thermal insulation

Demand patterns for thermal insulation measures across districts (n=384)



Demand for thermal insulation

- 22% of respondents indicated that they faced a lack of heat in the winter;
- 45% of respondents are going to undertake housing improvements in the next 3 years,
- Replacement of heating system and windows are the first targets for housing improvements
- The main motivation for thermal insulation is comfort and saving money

Motivation for housing insulation

Response to: *"Below is a list of reasons why improving insulation is beneficial. Please indicate how you feel about them by ranking them from least to most important"*, % (1 - least important, 5 – the most important; n=384).

Issyk-Kul					
	1	2	3	4	5
Comfort	9,4	5,2	13,6	20,9	50,8
Save money for heating fuel	18,8	22,5	22,5	26,2	9,9
Health	13,6	15,2	22,5	25,1	23,6
House will be cleaner	14,1	33,5	26,2	15,7	10,5
House will look	44,0	23,6	15,2	12,0	5,2

Naryn					
	1	2	3	4	5
Comfort	3,1	17,7	13,5	18,8	46,9
Save money for heating fuel	6,8	6,8	13,5	42,7	30,2
Health	14,1	22,9	33,9	16,7	12,5
House will be cleaner	33,9	34,4	20,3	7,8	3,6
House will look nicer	42,2	18,2	18,8	14,1	6,8

Is there a demand for thermal insulation *loans* in the two regions in Kyrgyzstan?

Financing thermal insulation

Prices of thermal insulation measure:

- 4 PVC windows: 280 – 420 EUR
- 4 wooden windows: 240-280 EUR
- Materials for insulation of walls, ceiling, and floor: 460 EUR

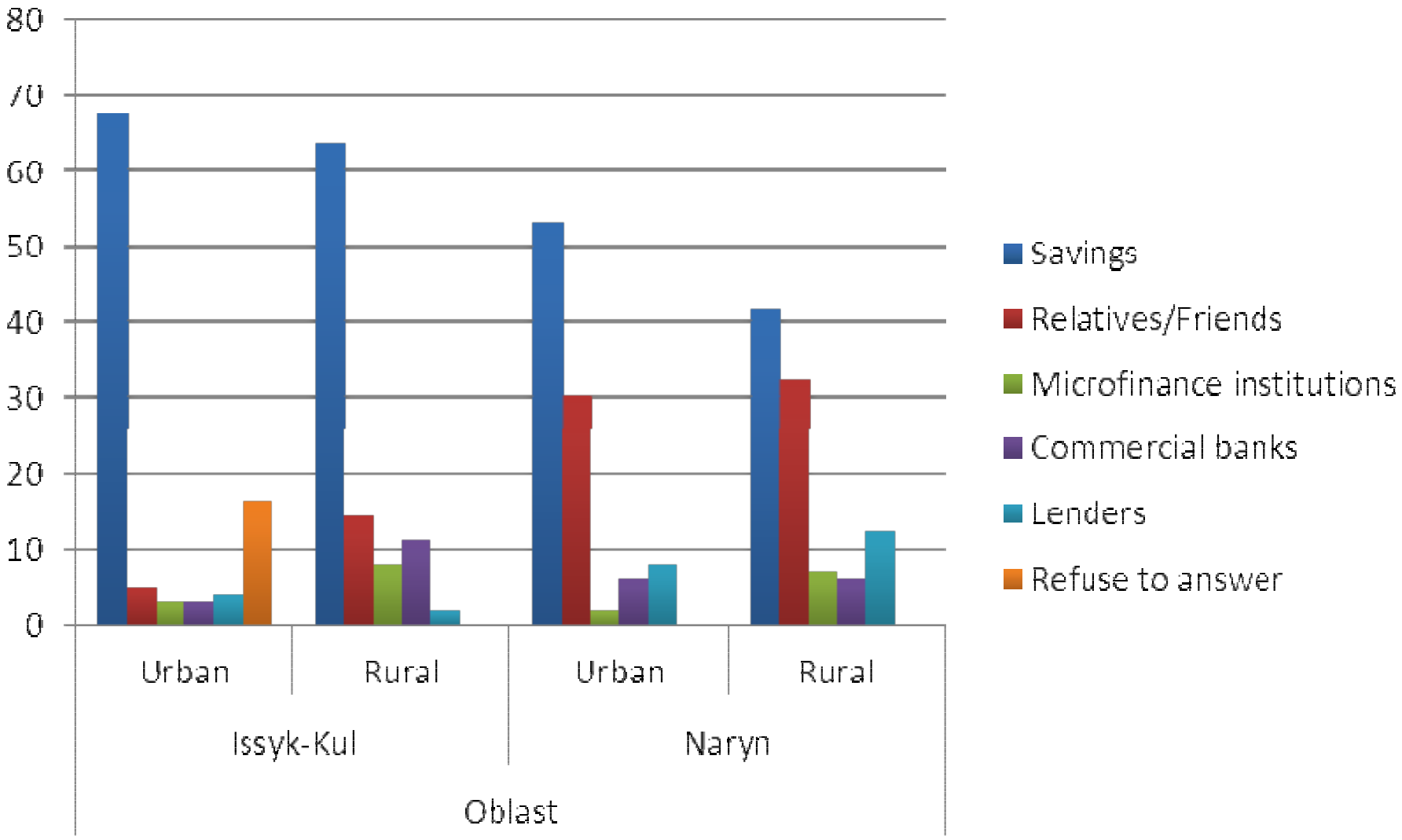
Average household income: 5 000 and 10 000 KGS per month (78 – 156 EUR)

Main financial resources for housing Improvements:

- Savings
- Sale of livestock
- Loan
- Relatives/Friends
- Remittances

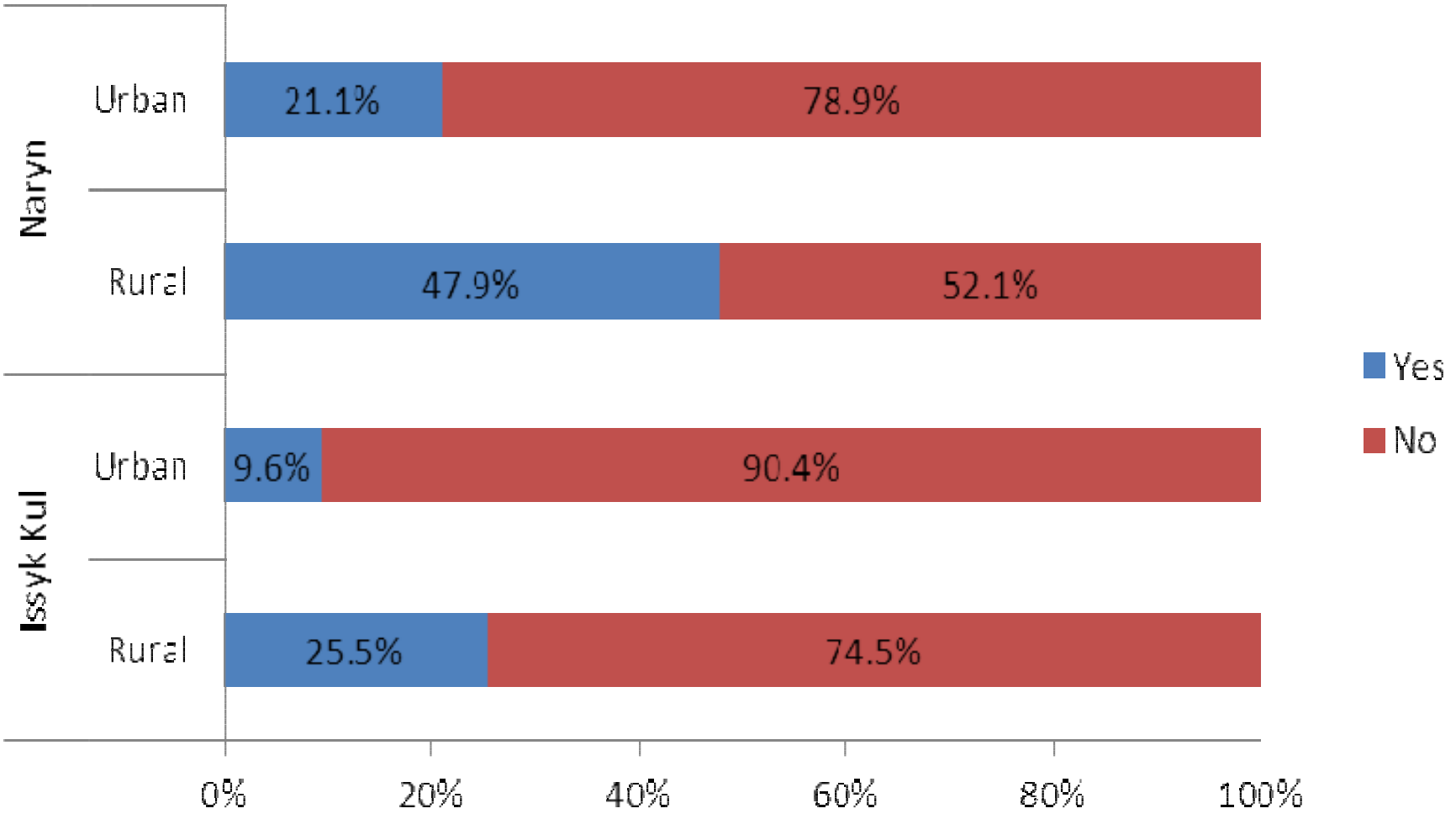
Financing thermal insulation

Sources of financing in case of need (n=384):



Financing thermal insulation

Willingness to apply for an insulation loan (N = 384, n=379)



Conclusions

Conclusions

- There is a considerable potential for market-based approaches if they target a more efficient use of thermal energy in households, particularly for space heating.
- There is evidence of poor housing conditions, for example in regard to indoor winter temperatures, which leads to large heating fuel expenses among the population.
- It was shown in the study that this need does indeed translate into a demand for retrofitting measures.
- This demand is rather driven by the desire for more comfort, then by economic calculations of households.

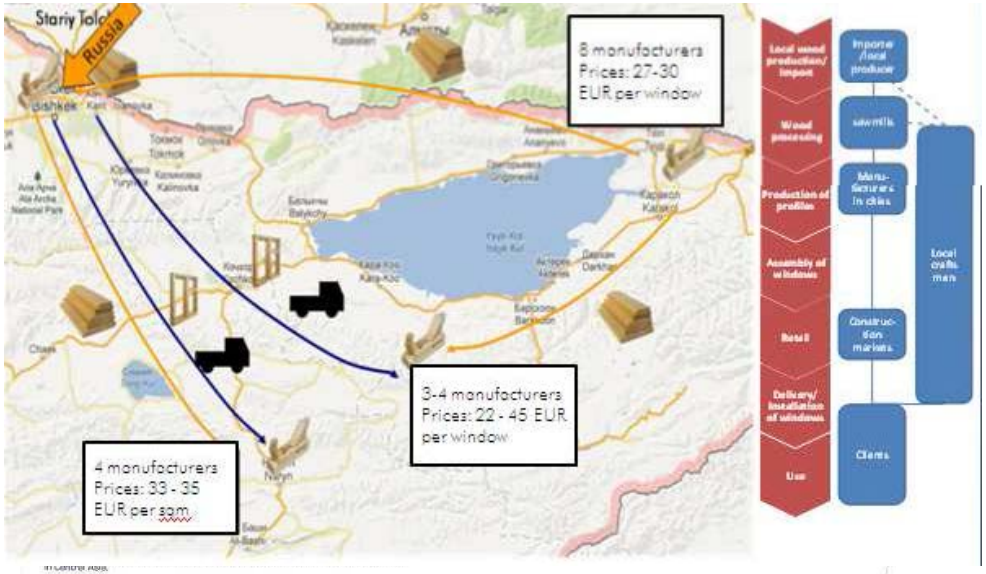
Conclusions

- Households in colder and more remote regions, with…
  - poorer housing conditions,
  - a higher savings potential
  - a higher motivation to realize it,
- ….express the highest willingness to apply for thermal insulation loans but find it hardest to access these loans.

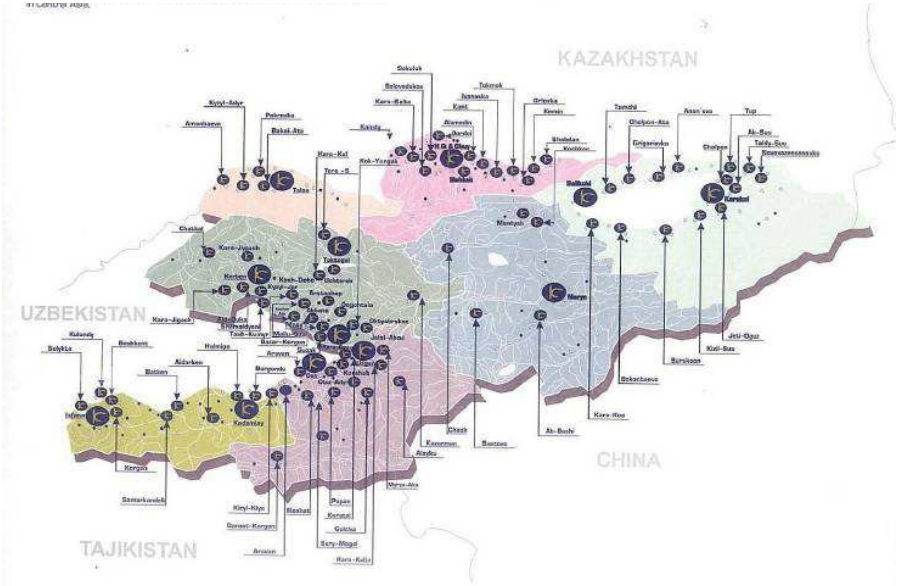
If market-based approaches are supposed to address the energy and climate change adaptation needs of the most vulnerable households, they have to bridge this financing gap with innovative and adapted financing tools, such as green microfinance.

Precondition for an implemantation of thermal insulation loans

- Supply chain development and management



- Capacity building on the MFIs side



Outlook of longer-term initiatives

- Raise awareness of the market potential of energy efficient housing improvements in rural Kyrgyzstan;
- Build onto the existing programs framework and extend it to rural households and MSMEs;
- Incorporate electric utility companies for end-user financing;
- Promote the formation of an association of craftsmen and suppliers to improve knowledge transfer, collaboratively identify industry challenges and lobby for supportive framework conditions;
- Investigate renewable energy technologies for application at the household and MSME level;
- Enforce housing regulations to protect against seismic activity.