



UNIVERSITY OF CENTRAL ASIA
GRADUATE SCHOOL OF DEVELOPMENT
Institute of Public Policy and Administration

Development of Sheep Meat Production in Kyrgyzstan and the Effects of Climate Change

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Background

- FAO-supported study on sheep meat value chain and joint research project with IFPRI on the climate change impact on the Kyrgyz agriculture
- Sheep meat and wool used to be among the main export products of Kyrgyzstan; now wool production almost disappeared, and sheep meat production is almost entirely for domestic market
- The number of sheep declined from 10 mil. in 1990 to 3.7 mil. in 2003 and somewhat recovered to 5.9 mil. in 2015
- Has the sheep meat production overcome the crisis? What is needed for the sector's sustainable development?
- How would the climate change affect sheep meat production in Kyrgyzstan?

Key Facts about the Sector

- Small farmers prevail in the sector (3-20 sheep per farm); there are also large farmers with hundreds of sheep
- Almost no farmers specializing on sheep breeding only
- Kyrgyz sheep breeds have been almost lost
- Shift from wool to fatty meat type of sheep demanded on local market, but with limited export prospects
- Average live weight of sheep has declined from 42 kg (2005) to 38 kg (2014)
- The number of lambs per 100 ewes declined from 96 (2005) to 93 (2014)
- Sheep meat is one of the main types of meat consumed in Kyrgyzstan; its share is 29% of total meat consumption

Key Facts about the Sector (2)

- Domestic prices for sheep meat are relatively high and keep growing
- Almost no exports
- Government support to the sector is tiny
- Pasture degradation – overgrazing on winter pastures (70% degraded) and underutilization of summer pastures (36% degraded)
- Epizootic situation is serious; veterinary system has been severely and chronically underfunded, sanitary rules are not observed; some recent improvements related to the accession to the EAEU, but still long way to go
- Lack of capital and insufficient investments

Value Chain Study

- Qualitative study
- 48 respondents in four oblasts of Kyrgyzstan
 - farmers (48%)
 - intermediaries (33%)
 - slaughterhouses (19%)
- Traditional way of sheep breeding
- Small-scale farming
- Very high level of informality – barrier for external investments
- Serious technological limitations
- Lack of any processing and even refrigerator capacities
- Near perfect competition at every stage of the value chain

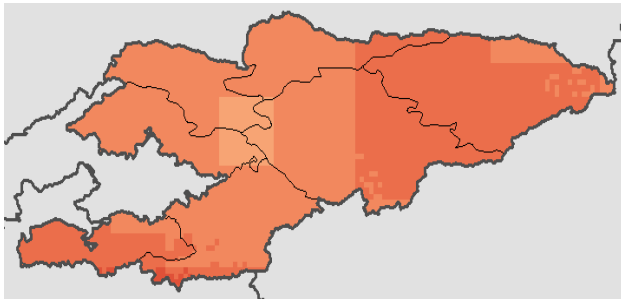
Climate Change Study

- Based on IFPRI's IMPACT model adapted to Kyrgyzstan
- Partial equilibrium model for key crops allowing to trace the climate change impact on global and local crop prices, yields, areas, trade, calorie intake
- Five climatic scenarios (no climate change, GFDL, Hadgem, IPSL, MIROC) from the relatively mild (GFDL) to the harsh (Hadgem)
- One demographic and three economic growth scenarios
- The Kyrgyz model covers the following crops: wheat, barley, maize, fruits, vegetables, beans, potatoes
- For livestock study, key fodder crops—wheat, barley, maize—are relevant

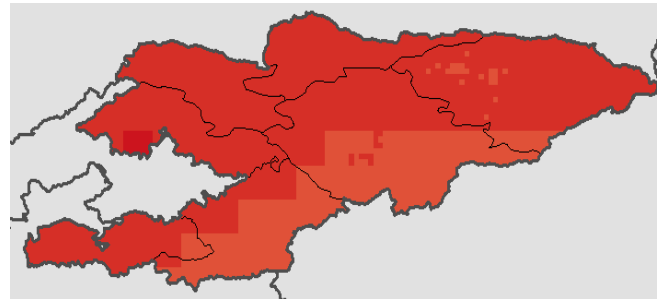
Climate Change Scenarios

Temperature

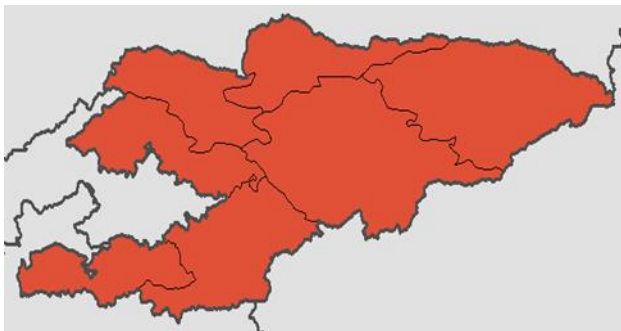
GFDL



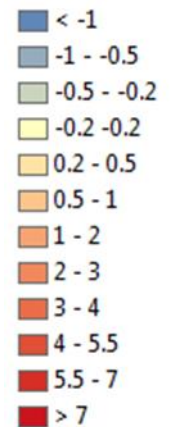
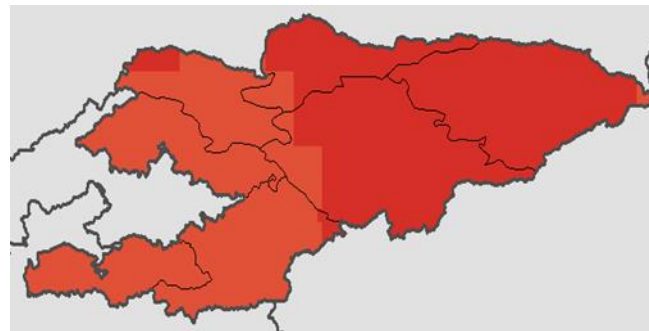
Hadgem



IPSL



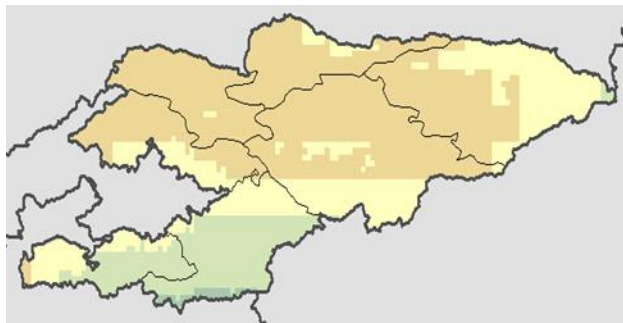
MIROC



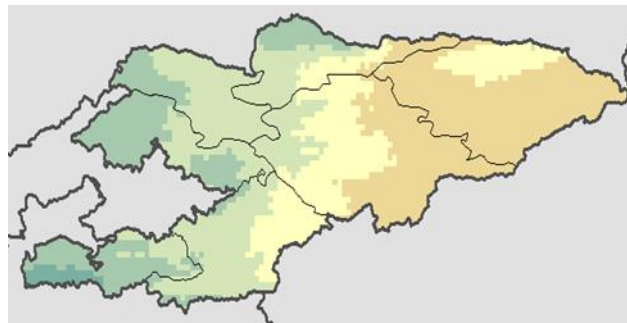
Climate Change Scenarios (2)

Precipitation

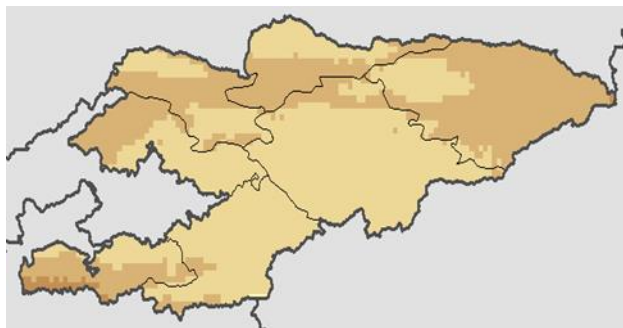
GFDL



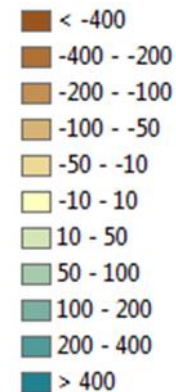
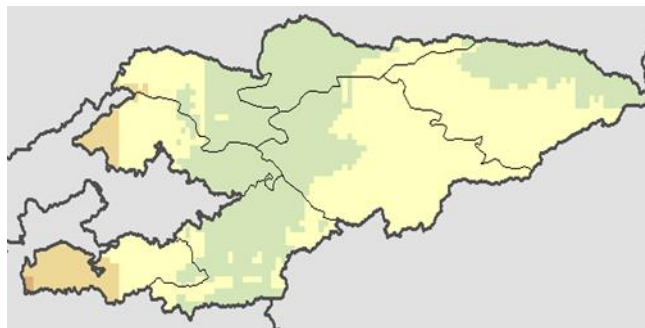
Hadgem



IPSL

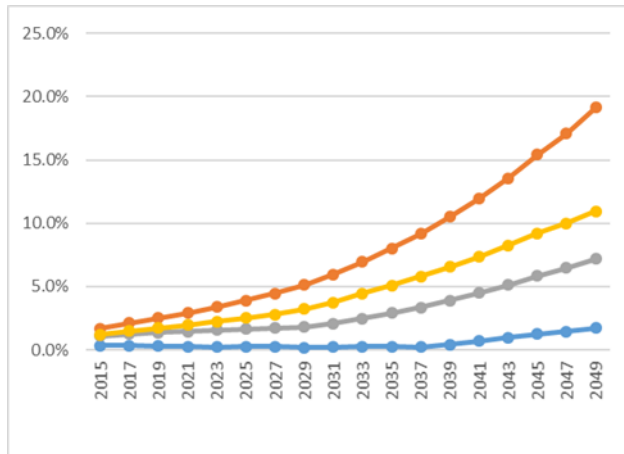


MIROC

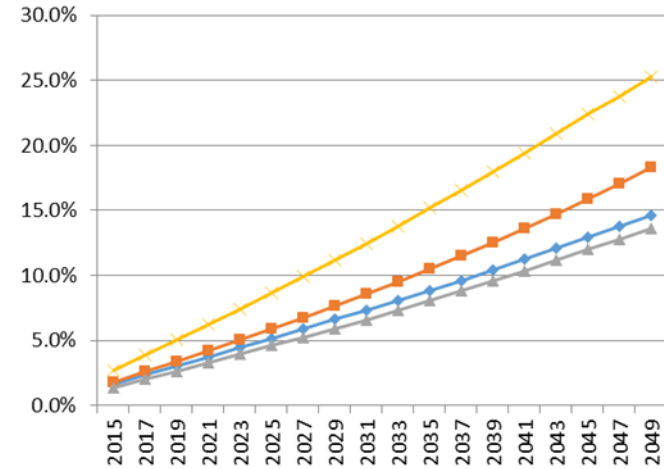


Climate Change Effects – Wheat

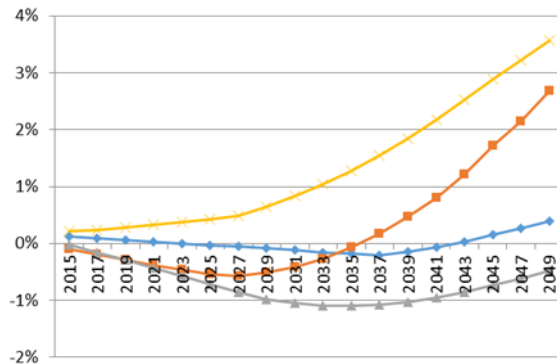
Producer prices



Yield



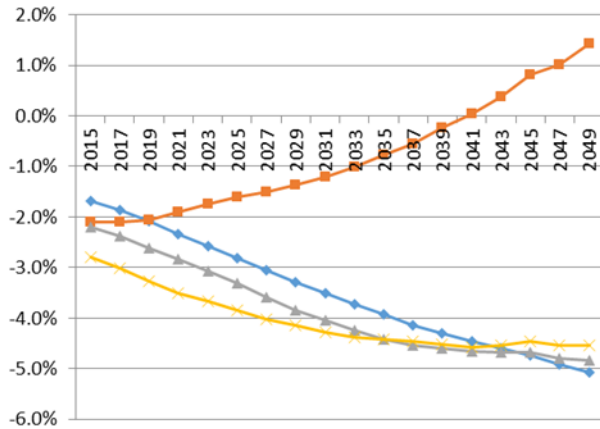
Area



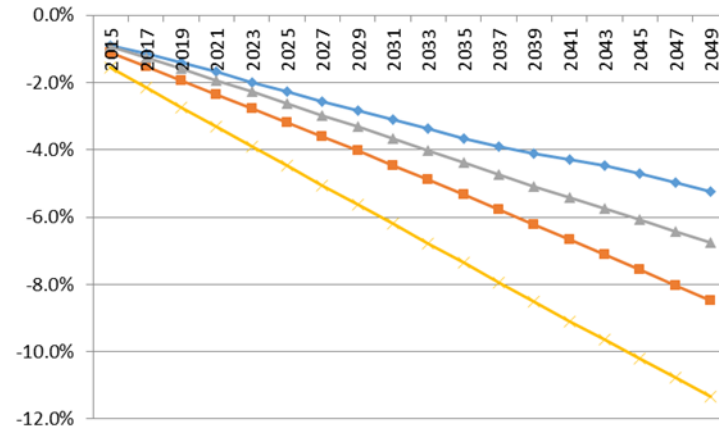
- ◆— GFDL
- Hadgem
- ▲— IPSL
- ×— MIROC

Climate Change Effects – Barley

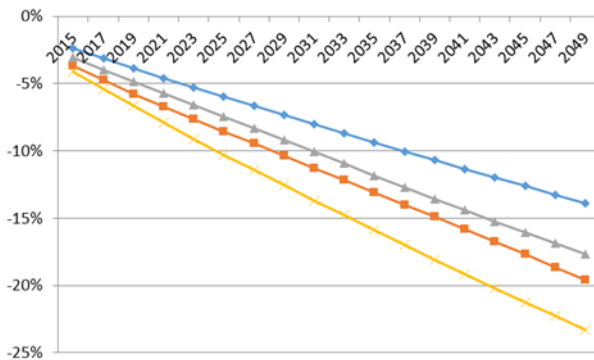
Producer prices



Yield

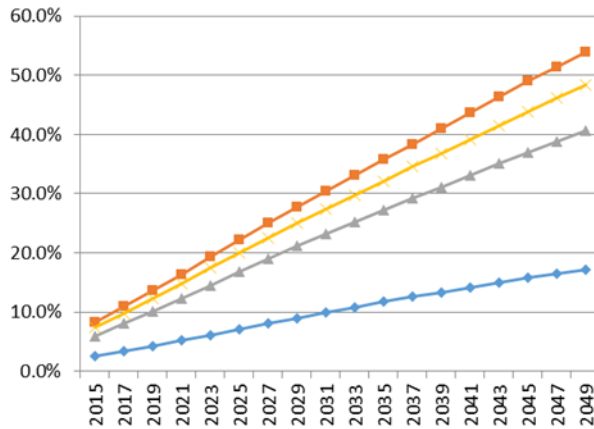


Area

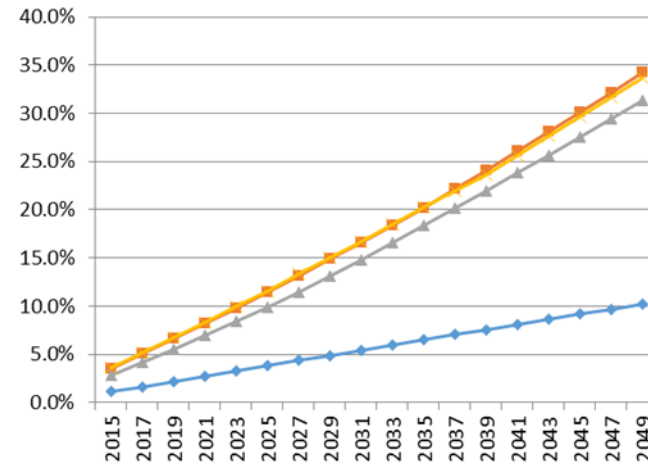


Climate Change Effects – Maize

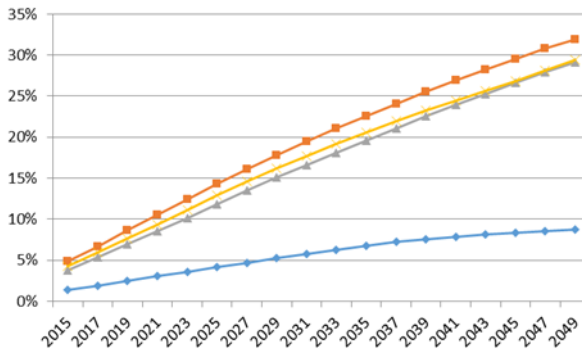
Producer prices



Yield



Area



Climate Change Implications

- Availability of fodder (wheat and maize) is going to increase
- This fodder is mostly used for cattle, so less demand for winter pastures from cattle
- Therefore, arguably pasture access for sheep may somewhat improve
- General expected climate-change-induced shift in the Kyrgyz agriculture is towards more export/market-oriented types of production rather than subsistence type of farming
- Sheep meat production should also follow the trend

Conclusions and Policy Implications

- Current sheep meat production faces the challenges of technological under-development, veterinary risks, and pasture degradation
- On the other side, local demand is high and export demand for the Kyrgyz sheep meat could become very considerable
- Climate change may foster the sector's development
- Government should focus on major upgrade of the veterinary system, support to use of summer pastures, encourage investments into services for farmers and downstream segments of value chain

Thank you!