International Institute for Applied Systems Analysis
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science for global insight

Baseline Development

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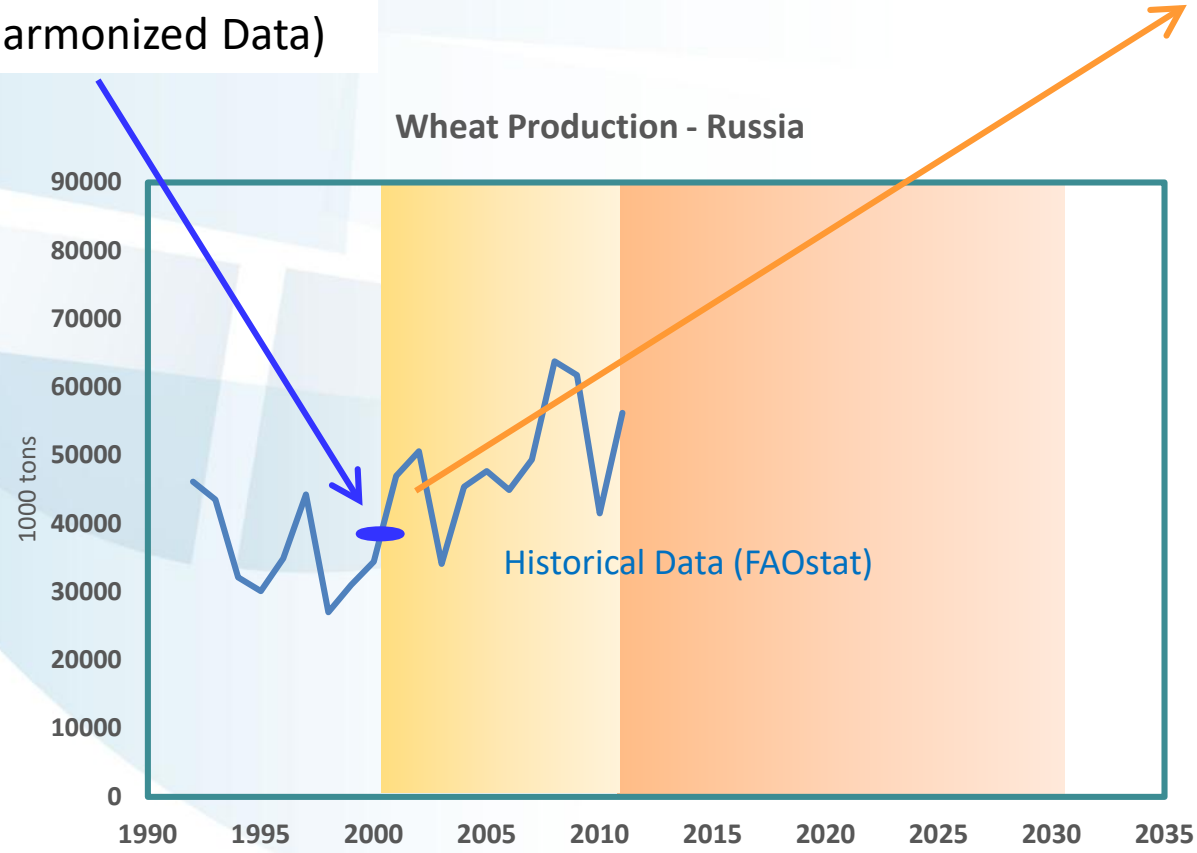
Baseline development

Base year
(Harmonized Data)



Model structure (Behavioral Parameters)

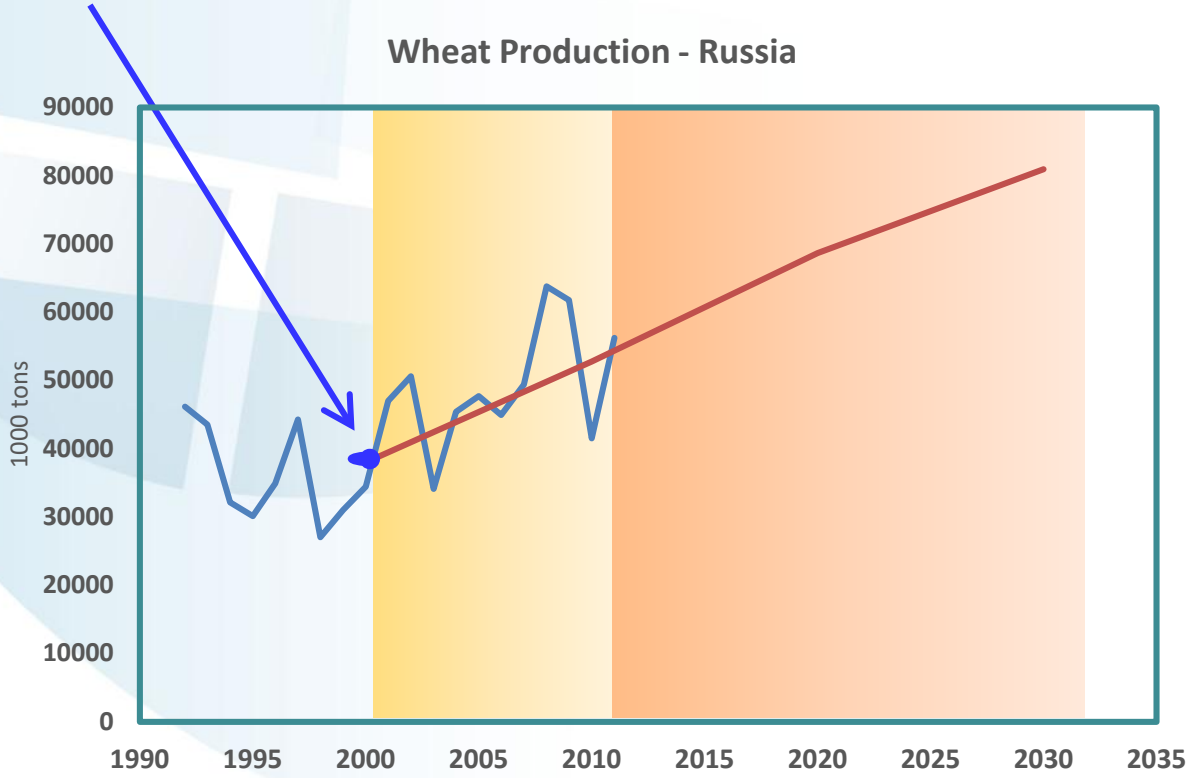
+

Exogenous Parameter (Projections)

- **Population growth**
- **GDP growth**
- **Crop and livestock productivity**
- **Diet preferences**
- **Trade openness**
- **Waste reduction**
- **…**

Baseline development

Base year
(Harmonized Data)

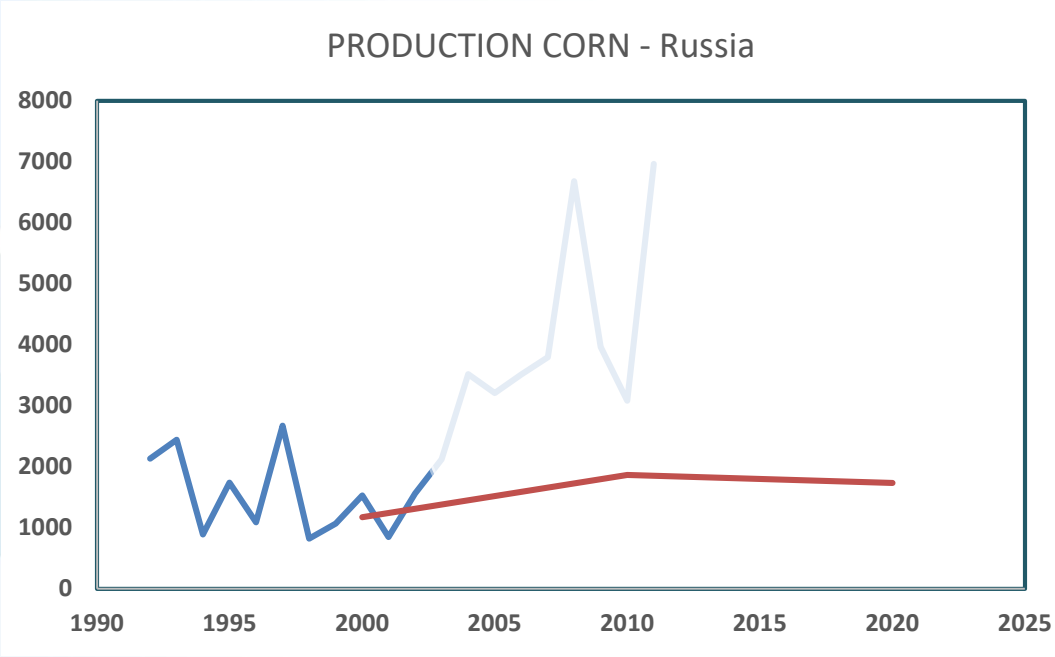


Validation Period

1) **Check development**
2) **(if necessary) adjust GLOBIOM trends**
3) **Mostly: if structural breaks**

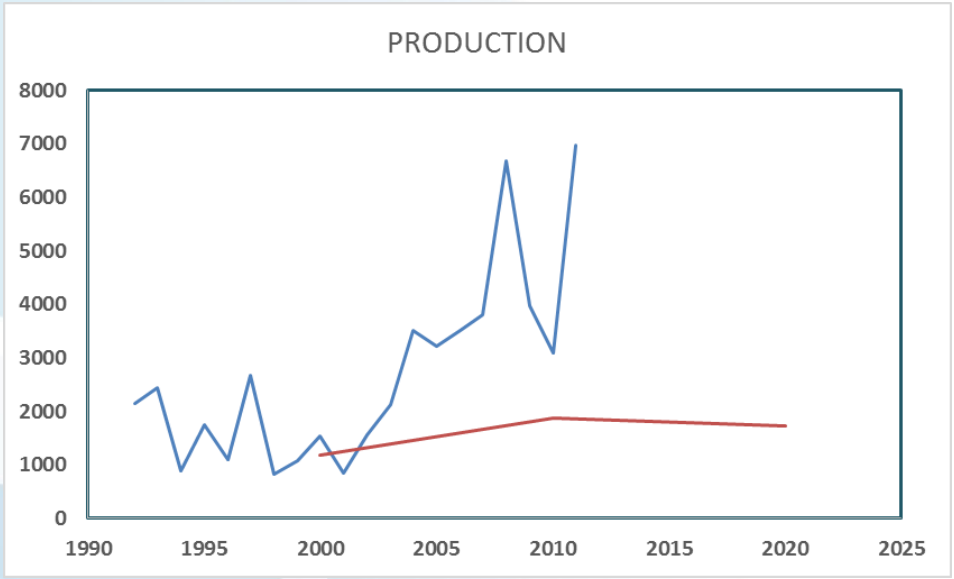
Baseline adjustment

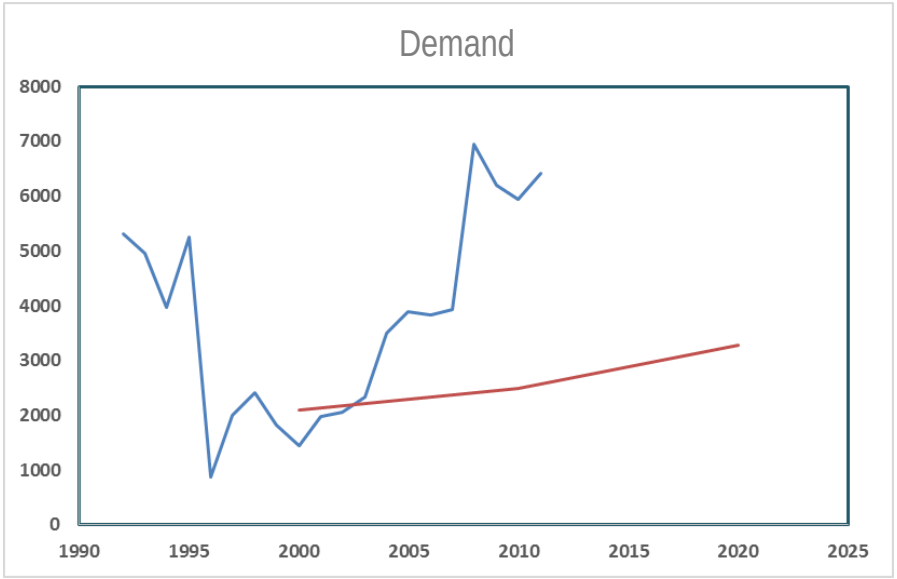
What if model doesn't agree with historical data

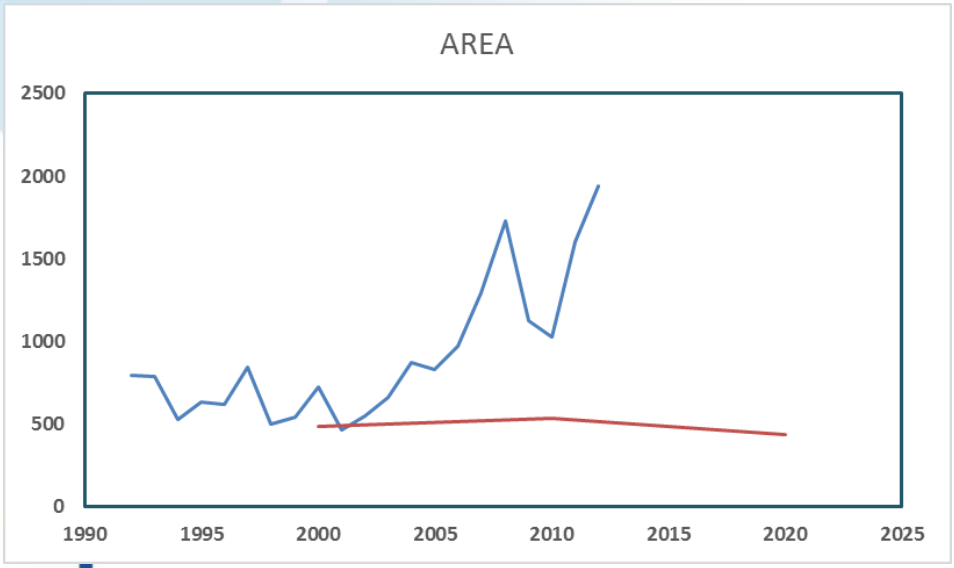


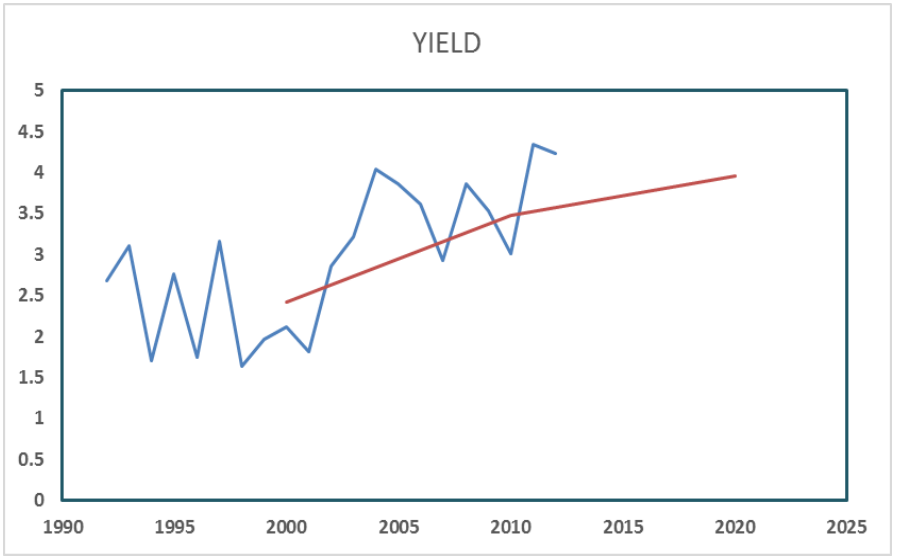
Baseline adjustment

Get the full picture!!









Baseline adjustment

CHANGES FOR CALIBRATION:

1) MAXCROP_COEF('RussianFed',"CORN") = 5;

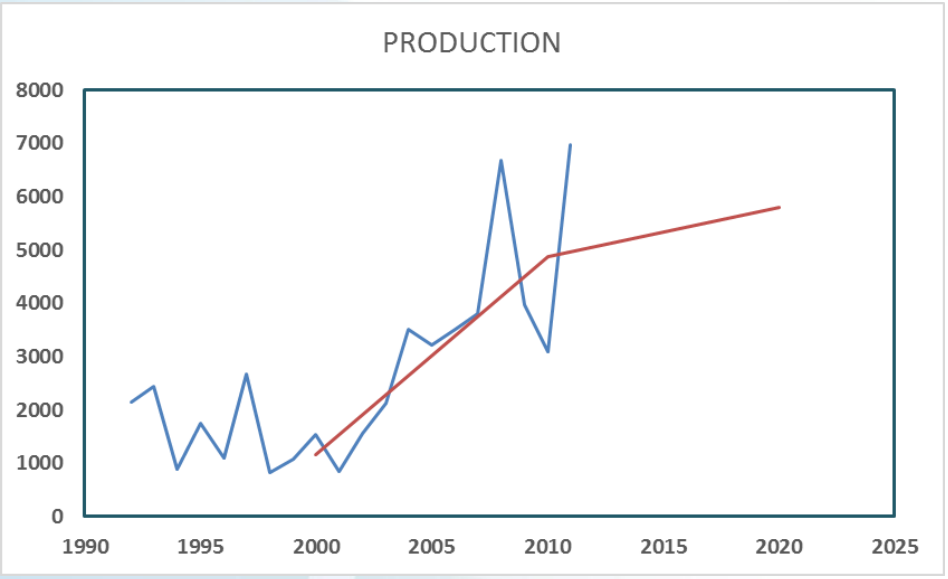
2) Increase demand

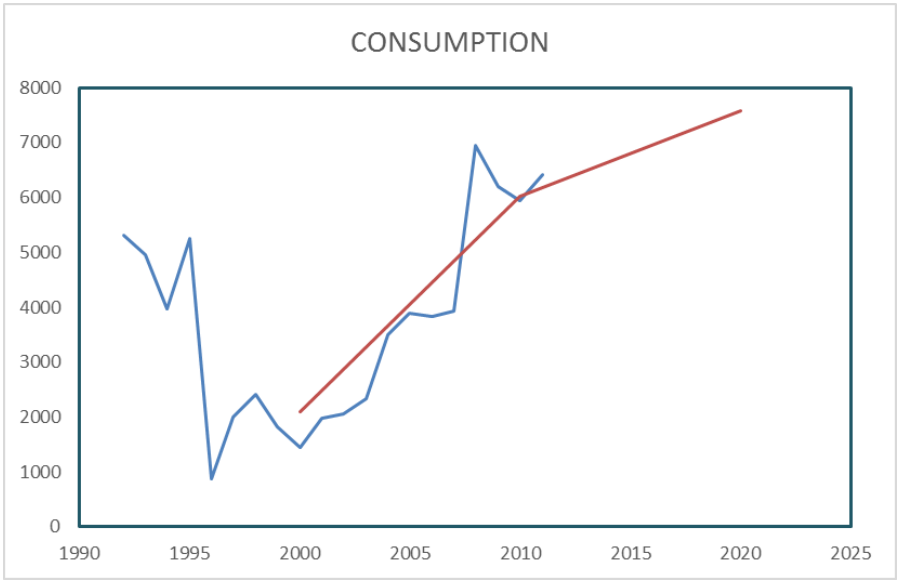
   a) → Feed demand identified as too low → Increase Poultry production (increase productivity) + Increase Corn in Feed rations

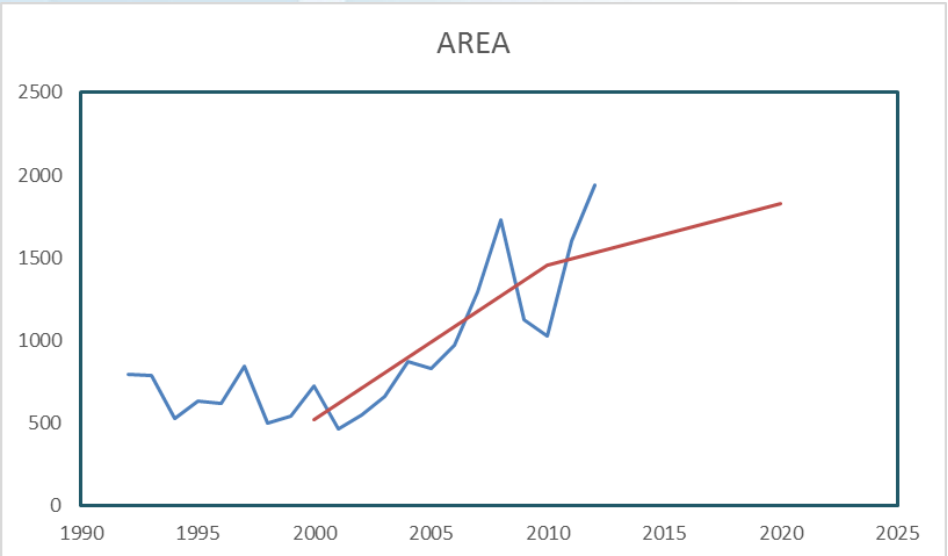
   b) Increase slightly Food Demand

3) Reduce Tradecost Elasticities (→ reduce Imports)

After Adjustment







Links for adjustments

- MaxCrop (default ~1.3) / MaxLivestock

- DEMAND
  - Food (POP,GDP), Feed (Link to livestock!), Other (e.g. Biofuels)
- YIELD

- Production Cost (Productivity Changes)
- Trade (Quantity, Elasticity, Competitiveness of other regions)

For Livestock:

- Feed rations (Feed productivity, Composition)

Key point

- Get the full picture ("understand the problem")
- Interlinkages between products
  - Better start from livestock markets
- Run model until 2010/2020 to save time
- Several Iterations needed
- High learning curves (model behavior, market structure)
- Once baseline is established, scenario runs are straightforward

Thanks!