



Economy-wide impacts of agro- processing development in Uzbekistan

Bekchanov Maksud (PhD)

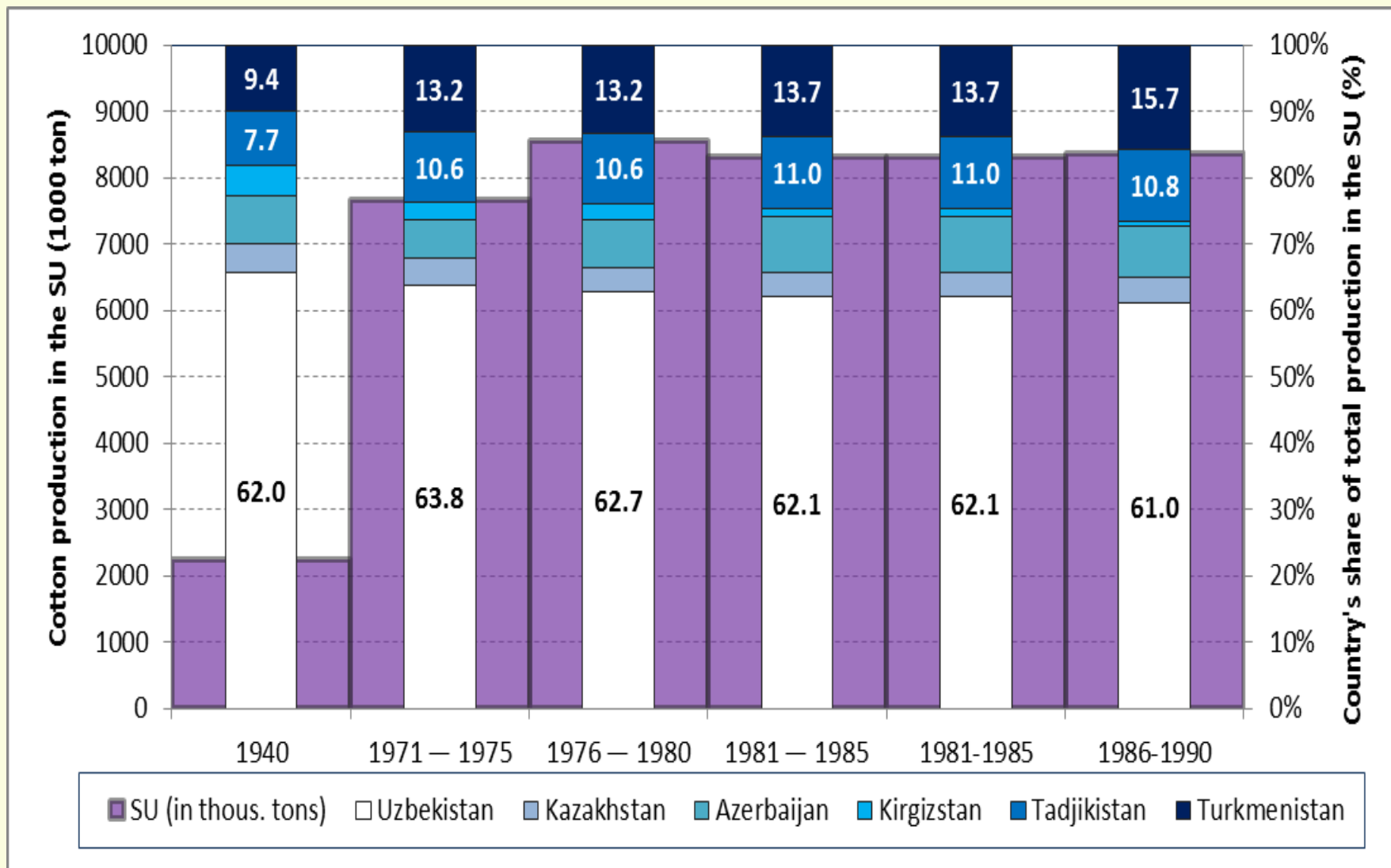
Center for Development Research (ZEF), Bonn University

IAMO Forum 2017, 21-23 June 2017, Halle (Saale)

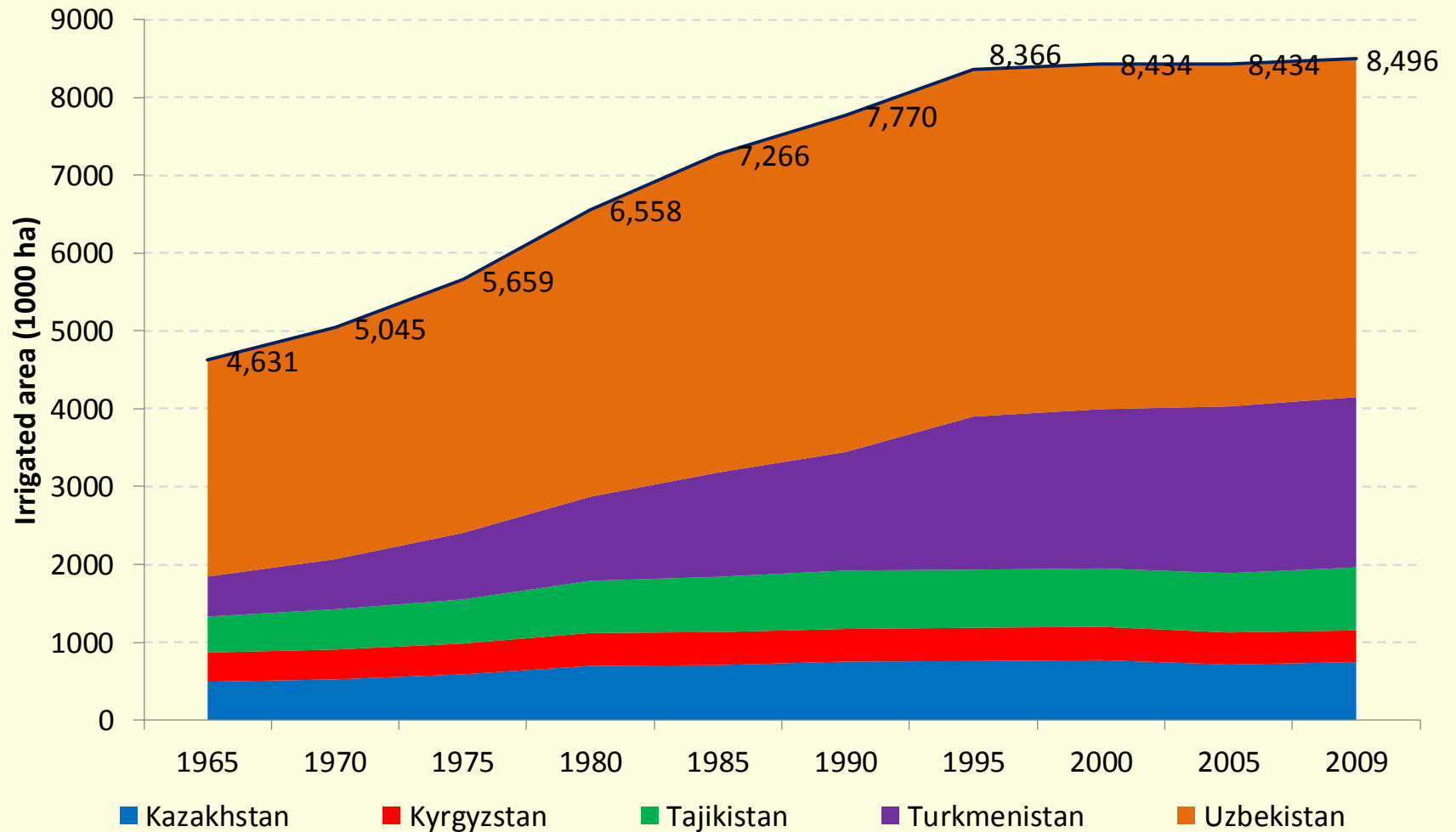
Outline:

- Background: structural and economic dynamics in Uzbekistan
- Review: economic restructuring and economic development
- Hypotheses and methods
- Modeling results related with increased investments in agro-processing expansion
- Conclusion

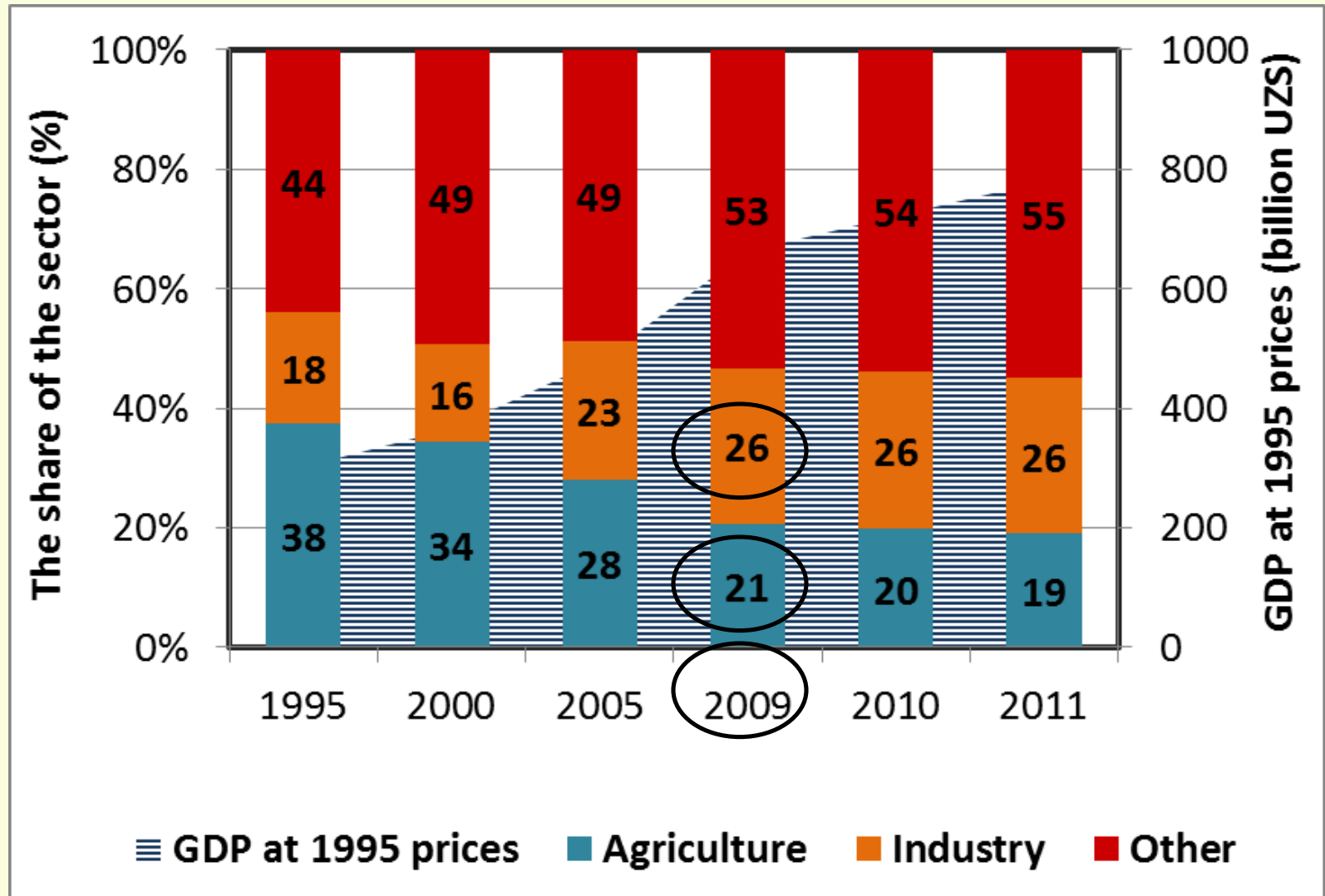
Uzbekistan was the main cotton producer in the SU



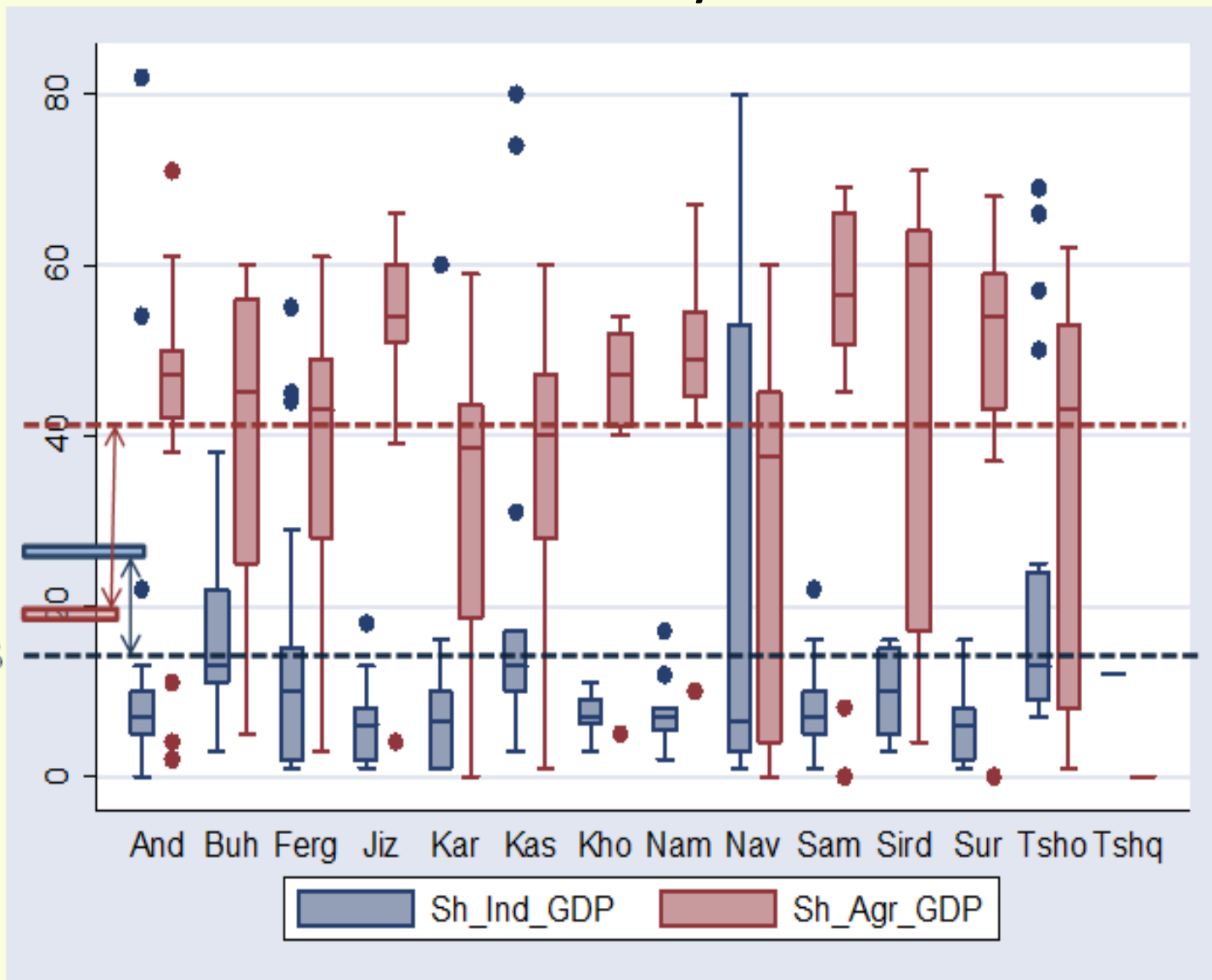
Irrigated area expansion over time in the Aral Sea Basin



Structural and economic dynamics after independence (1991)



Despite the decline in the agricultural share of GDP, the sector remains dominant in most of the districts in the country



Research questions:

- What are the alternatives to heavy reliance on raw cotton production and cotton fiber exports?
- Which sectors boost equitable development across the regions in Uzbekistan?

The role of economic sectors for economic growth: a review

	Arguments on the role of economic restructuring	Source
1	Share of industry and services in GDP increases while the share of agriculture decreases along with economic growth or higher GDP levels	(Rasmussen 1956; Hirschman 1958)
2	Positive correlation between the GDP share of manufacturing and per capital national incomes	(Kuznets, 1966)
3	Growth effects are expected to be higher from industry because of its higher productivity compared to the agricultural sector	(Chenery et al., 1986; Lewis, 1954)
4	Renewed interest in agriculture	(World Bank 2007)
5	The share of agro-processing industries increases in parallel with economic development	(De Janvry et al. 2003)
6	Improved rural employment opportunities due to agro-processing development	(Haggblade et al. 2010)
7	Agro-processing development decreases input (water, fertilizer) and food production losses	(Bekchanov et al. 2016)

Study Hypotheses:

- Cotton fiber exports can be partially replaced by the exports of cotton commodities with higher value added, without compromising on export revenues
- Agro-processing development (e.g. cotton, light, and food processing industries) will improve incomes throughout the country and boosts equitable economic growth

Method

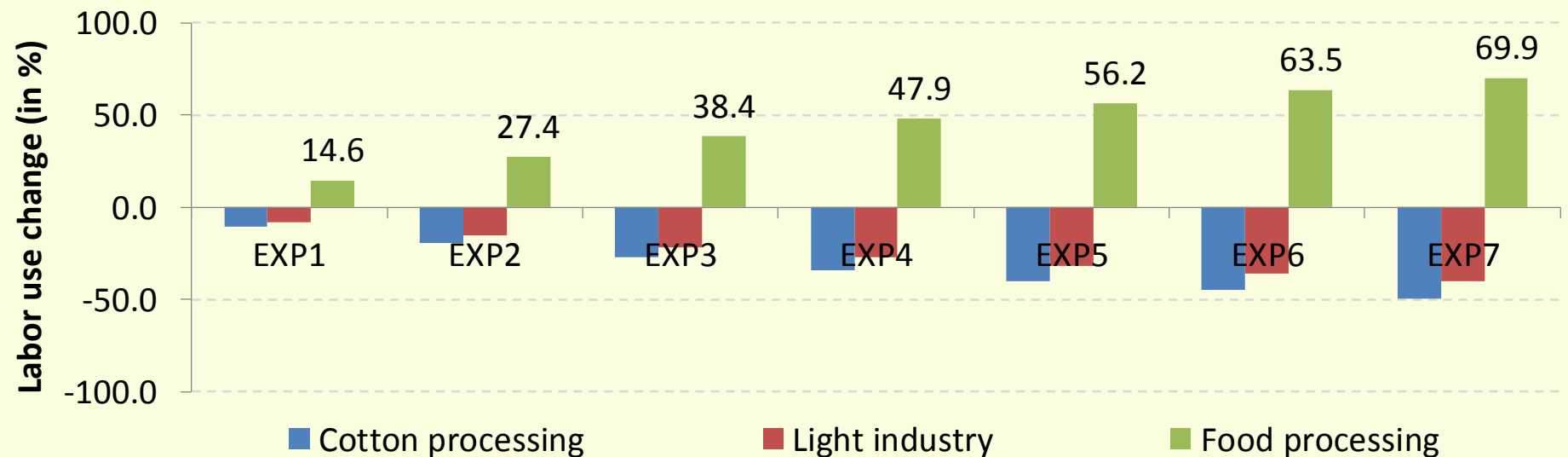
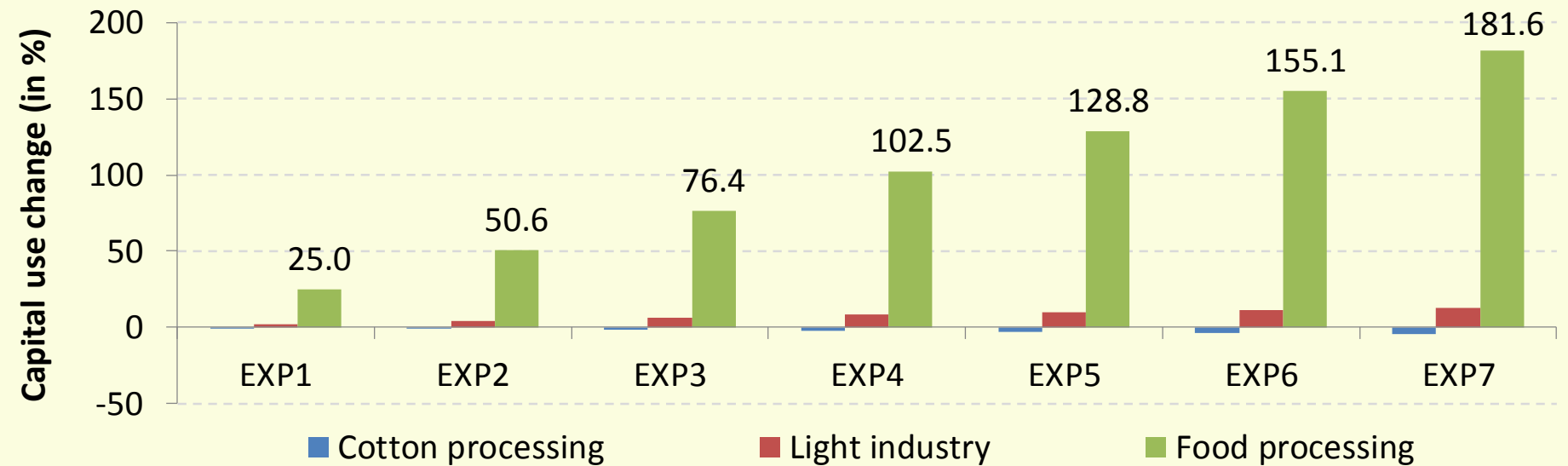
- **Model**: Computable General Equilibrium (CGE)
- **Agriculture sector** (disaggregated into the sub-sectors cotton, wheat, rice, maize, fruits & vegetables, other crops, and livestock).
- **Agro-processing** divided in the sub-sectors - cotton processing, light industry and food processing
- **Database**: IOT, macroeconomic indicators, foreign trade, and crop production cost-benefits stemming from different sources (statistical reports from governmental and international donor agencies)

Model-Scenarios

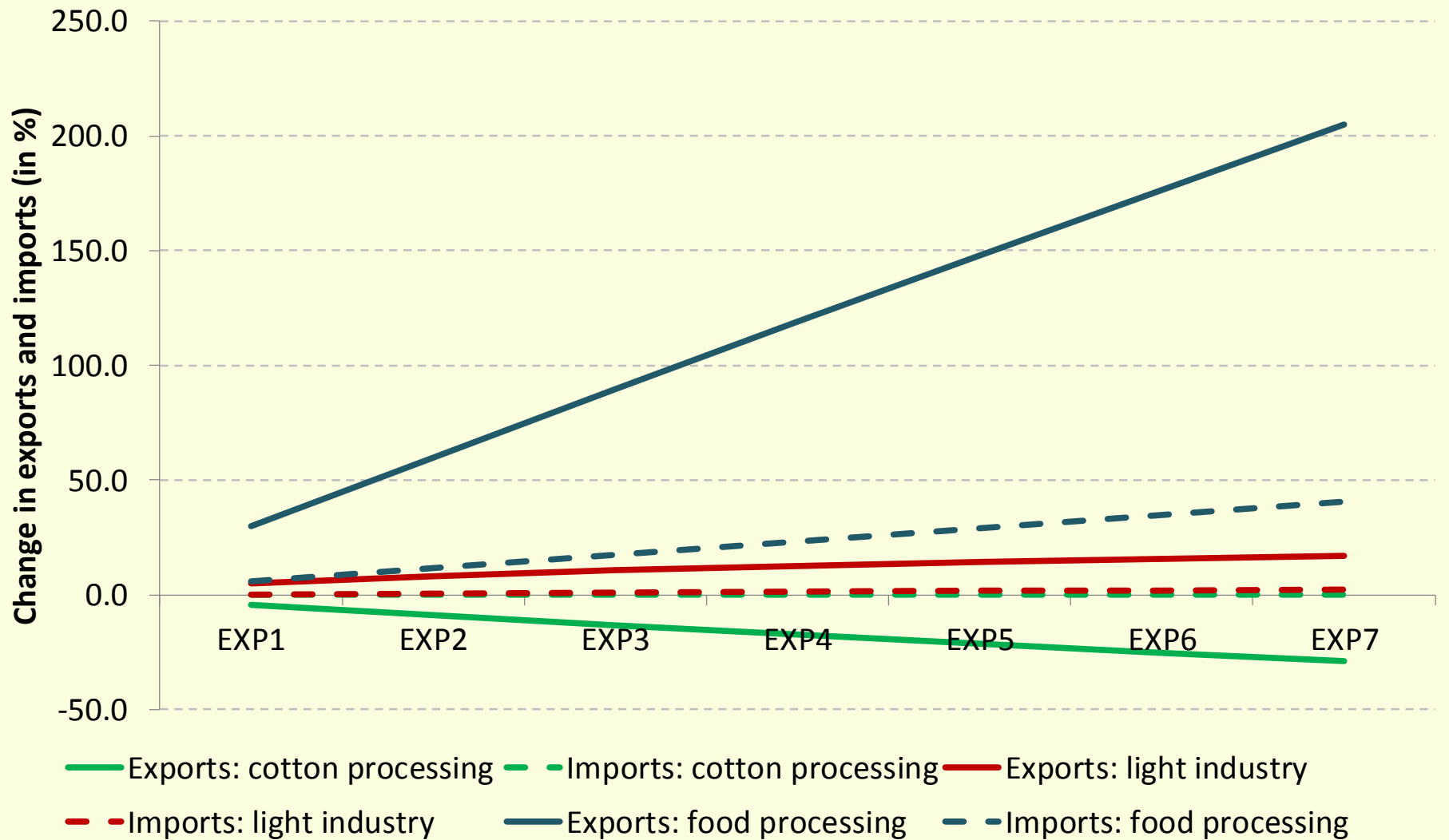
Sequential increase of investments (e.g. different availability of capital stocks) for the expansion of the agro-processing sector:

- The first simulation (**EXP1**) considers **10%** increase of the availability of capital stocks compared to the baseline level
- The remaining six (**EXP2-EXP7**) scenarios consider **10% incremental increase** of capital stocks sequentially (until 70%)

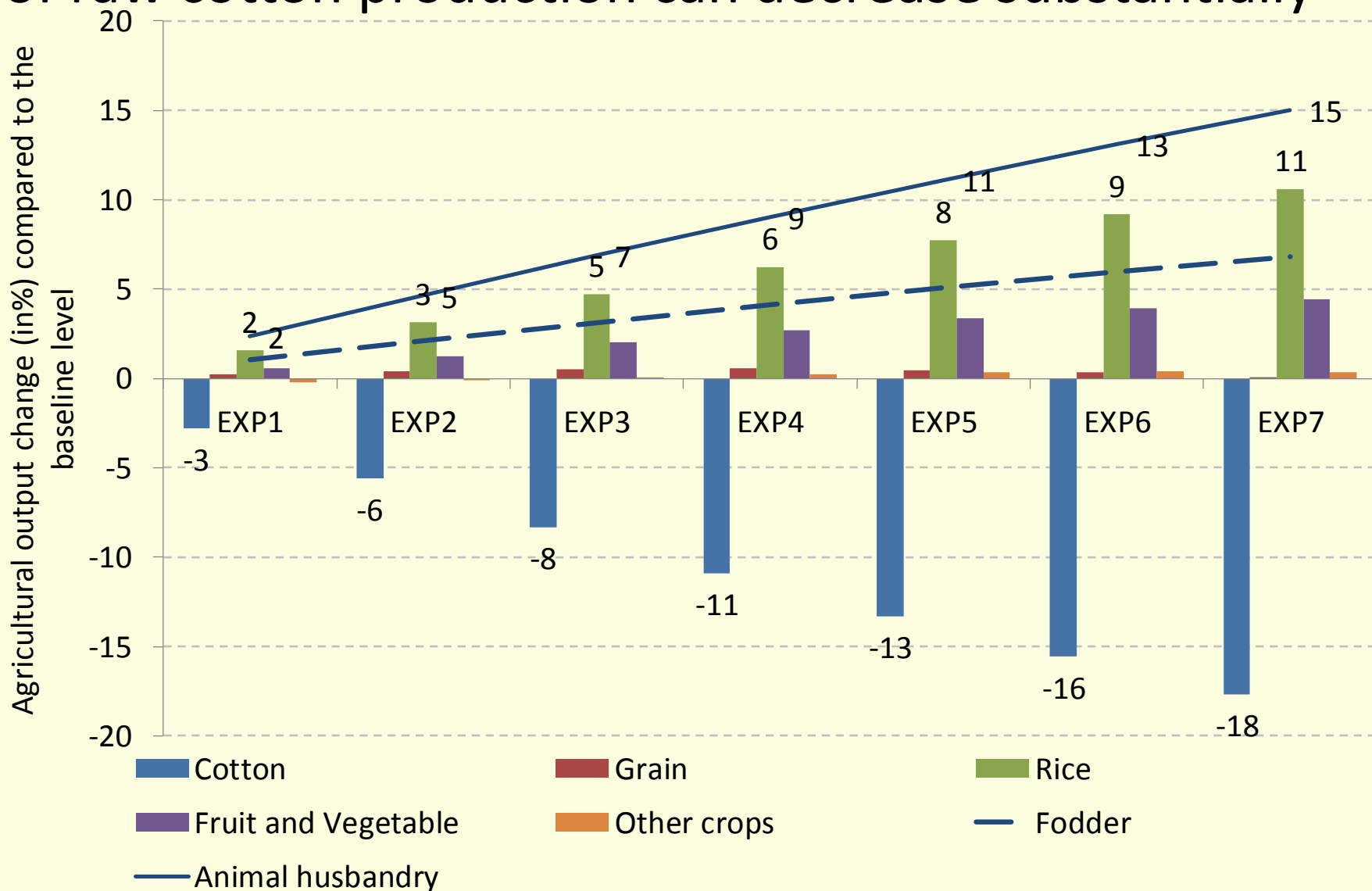
Food-processing sector gains importance and provides additional employment opportunities



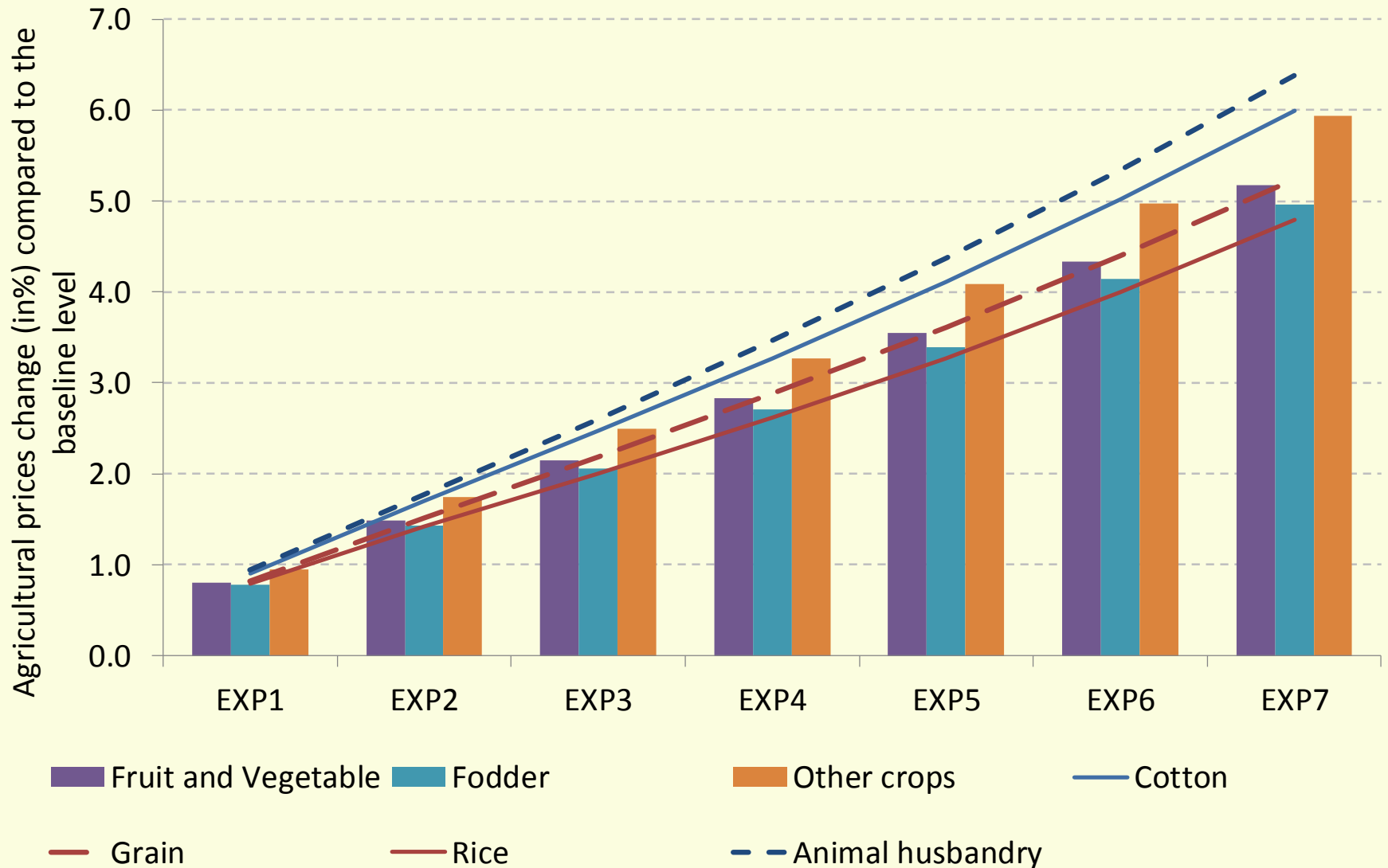
Cotton fiber exports become less attractive. Exports from light industry would considerably increase and the exports of processed food may triple



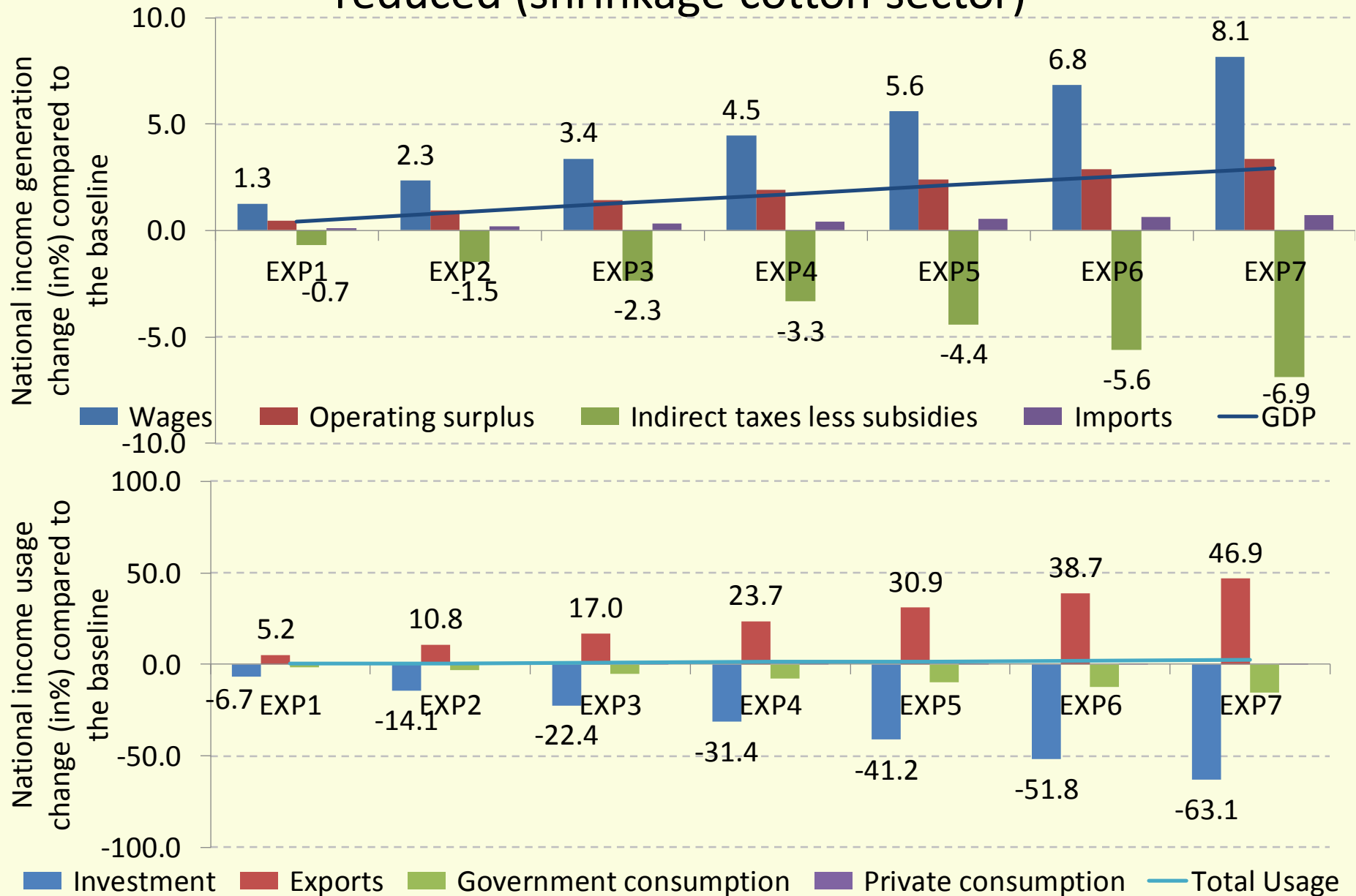
Production of rice, fruits and vegetables, livestock commodities (milk, meat, eggs) increases. Production of raw cotton production can decrease substantially



Increased demand for commodities of agricultural sector will increase their prices



Food processing triggers higher wages, operating surpluses of the enterprises and export revenues. But government revenues will be reduced (shrinkage cotton sector)



Conclusions

- Replacing cotton production and exports by an expansion of the textile industry and the production of ready-made garments, is conducive for sustainable economic growth
- Further development of the domestic food processing industry has substantial potential for improving incomes, export revenues, employment, poverty alleviation, and reducing post-harvest losses.

Related research outputs

- Bekchanov M. and J.P.A. Lamers (under review). The role of agro-processing expansion for economic growth in Uzbekistan
- Bekchanov M, Müller M, Lamers JPA. 2012. A computable general equilibrium analysis of agricultural development reforms: national and regional perspective. In: Martius C, Rudenko I, Lamers JPA, Vlek PLG (eds.): Cotton, water, salts and soums - economic and ecological restructuring in Khorezm, Uzbekistan. Springer: New York. 347-370.
- Rudenko I., M. Bekchanov, U. Djanibekov, J.P.A. Lamers. 2013. The added value of a water footprint approach: Micro-and macroeconomic analysis of cotton production, processing and export in water bound Uzbekistan. *Global and planetary change*, 110: 143-151.
- Bekchanov M., A. Bhaduri, M. Lenzen, and J.P.A. Lamers. 2014. Integrating Input-Output Modeling with Multi-criteria Analysis to Assess Options for Sustainable Economic Transformation: The Case of Uzbekistan. In: Bhaduri, A., J. Bogardi, J. Leentvaar, and S. Marx (eds.): *The Global Water System in the Anthropocene*. Springer Verlag. 229-245.
- Bekchanov M. and J.P.A. Lamers. 2016. Economic costs of reduced irrigation water availability in Uzbekistan (Central Asia). *Regional Environmental Change*, 16 (8): 2369-2387.

Contact: mbekchan@uni-bonn.de