



УНИВЕРСИТЕТ ЦЕНТРАЛЬНОЙ АЗИИ
ВЫСШАЯ ШКОЛА РАЗВИТИЯ
Институт государственного управления и политики

Innovations in the Development of a Sustainable Agri-food System in the Kyrgyz Republic

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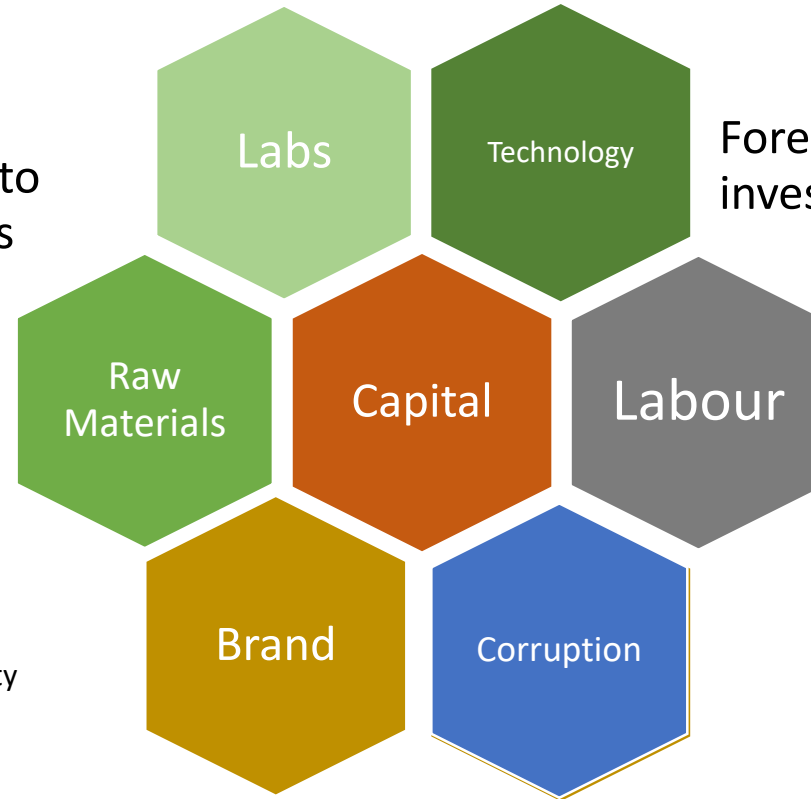
The SDG^{nexus} Network is supported by the DAAD with funds
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About the problems

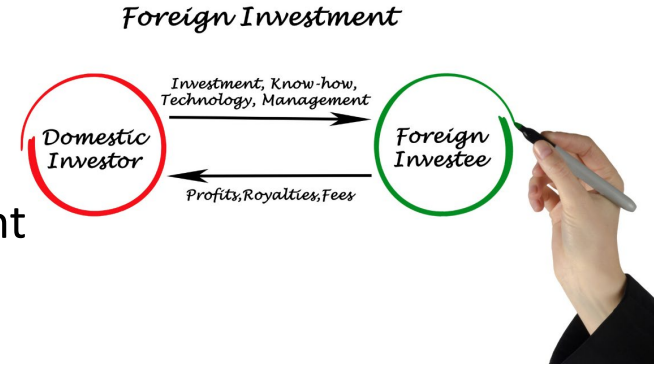


Access to markets



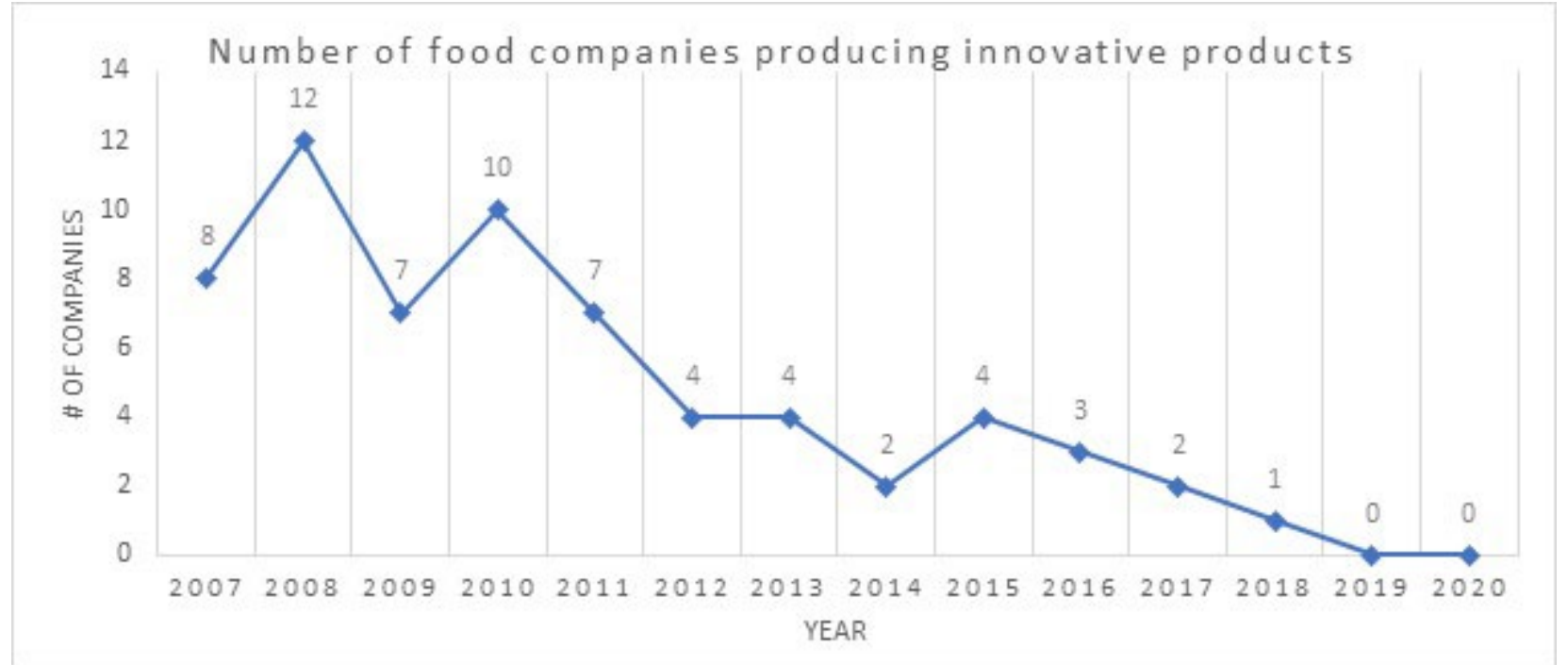
Political instability

Foreign investment



The level of innovative activity of food companies

In 2020, six companies purchased machinery and equipment related to technological innovations worth KGS 54.9 million, and three purchased software worth KGS 283.6 thousand (December 2021, the exchange rate is KGS 82.4 / USD 1) (National Statistical Committee of the Kyrgyz Republic, 2021).



Sub-industries of the food industry



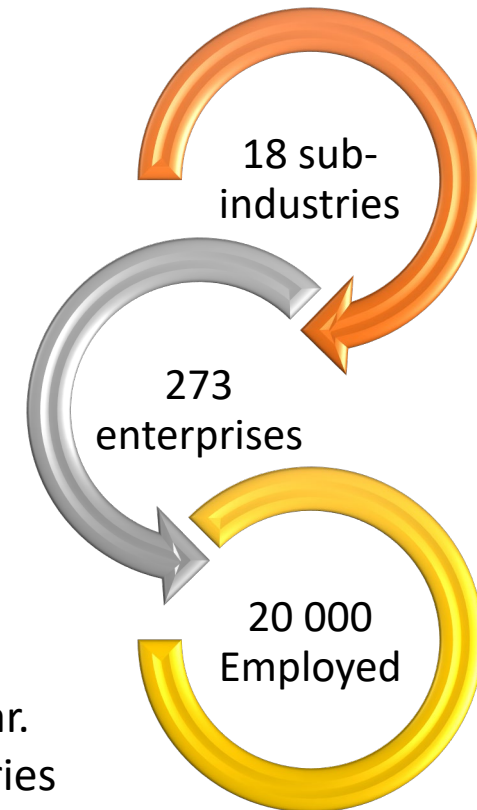
It is important to note that 98% of milk is produced in households where they do not provide sufficient fat content (they dilute milk with water), low bacterial contamination (animals get sick and are treated with antibiotics) and low protein content.



Kyrgyzstan does not self-sustain in meat production; it imports three times more meat than it exports. There are 26 companies and over 287 individual entrepreneurs operating in the industry.



Processed fruits and vegetables make up just over 2% of the total production volume, but the export of dried fruits is growing every year. Currently, there are 27 industrial enterprises and over 110 mini-factories in operation.



TECHNOLOGY AND KNOWLEDGE	High-technology industries		Knowledge-intensive services	
		Office, accounting and computing machinery	30	Post and telecommunications
	Radio, TV and communications equipment	32	Finance and insurance	71 to
	Medical, precision and optical instruments	33	Business activities (not including real estate)	Education
			Health	
	Medium-high-technology industries			
	Chemicals*	24		
	Machinery and equipment, n.e.c.	29		
	Electrical machinery and apparatus, n.e.c.	31		
	Motor vehicles, trailers and semi-trailers	34		
	Transport equipment**	35		
	Medium-low-technology industries		Knowledge non-intensive services	
	Coke, refined petroleum products, nuclear fuel	23	Repair and repair	50 to
	Rubber and plastics products	25	Hotels and restaurants	
	Other non-metallic mineral products	26	Transport, storage and communications	61 to
	Basic metals	27	Real state	
	Fabricated metal products	28	Administration, defence and social sec.	
			Other services	90 to
	Low-technology industries			
	Food products, beverages and tobacco	15+16		
	Textiles, textile products, leather, footwear	17 to19		
	Wood and products of wood and cork	20		
	Pulp, paper, paper products	21		
	Printing and publishing	22		
	Manufacturing, n.e.c.	36		
	Recycling	37		

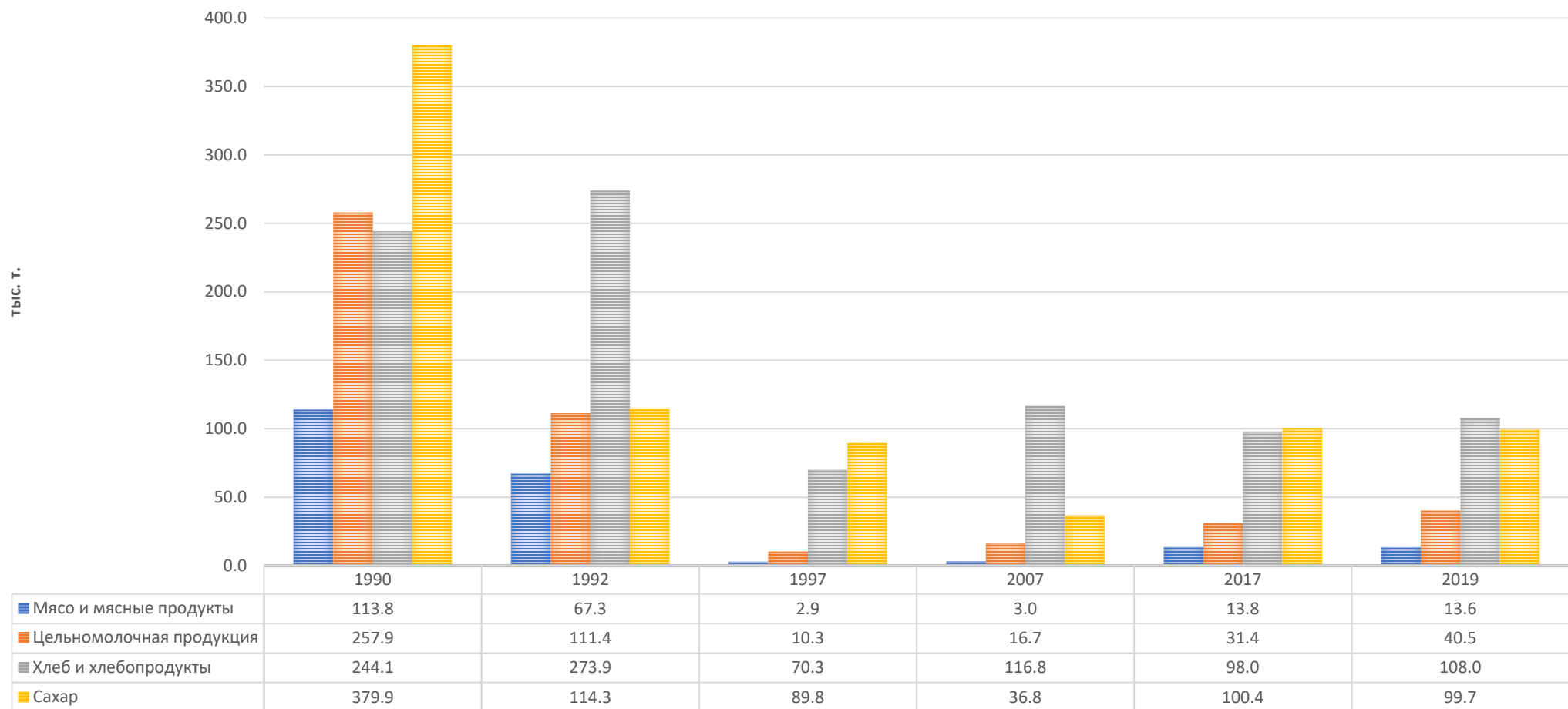
Source: OECD (2001)

* Includes (2423) Pharmaceuticals, originally in High-tech. manufactures

** Includes (353) Aircraft and spacecraft, originally in High-tech. manufactures

Approaches to the development of industries

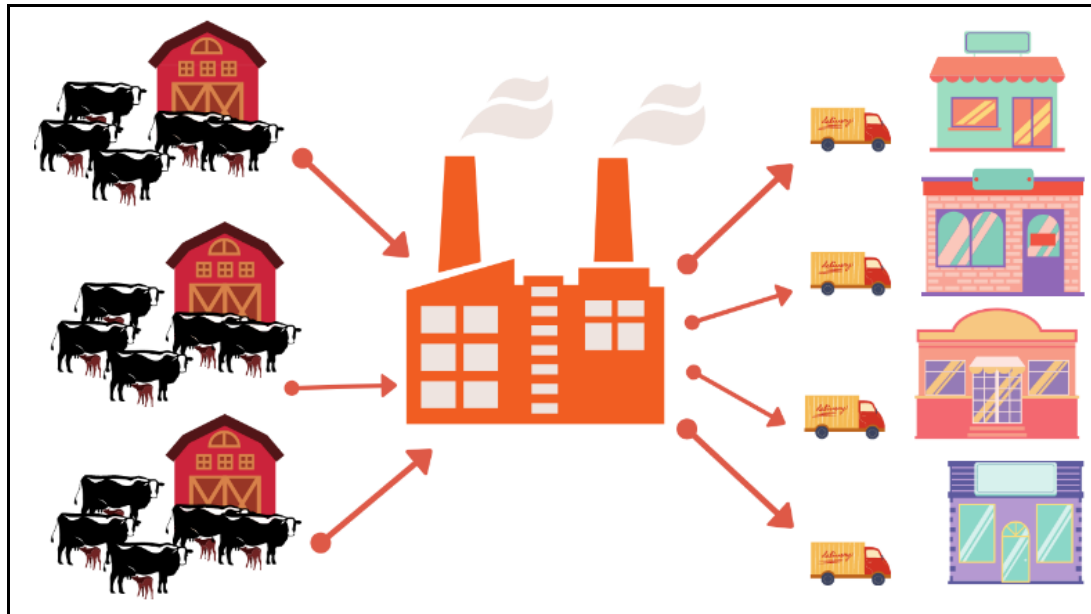
ПРОИЗВОДСТВО ОСНОВНЫХ ВИДОВ ПРОДУКЦИИ



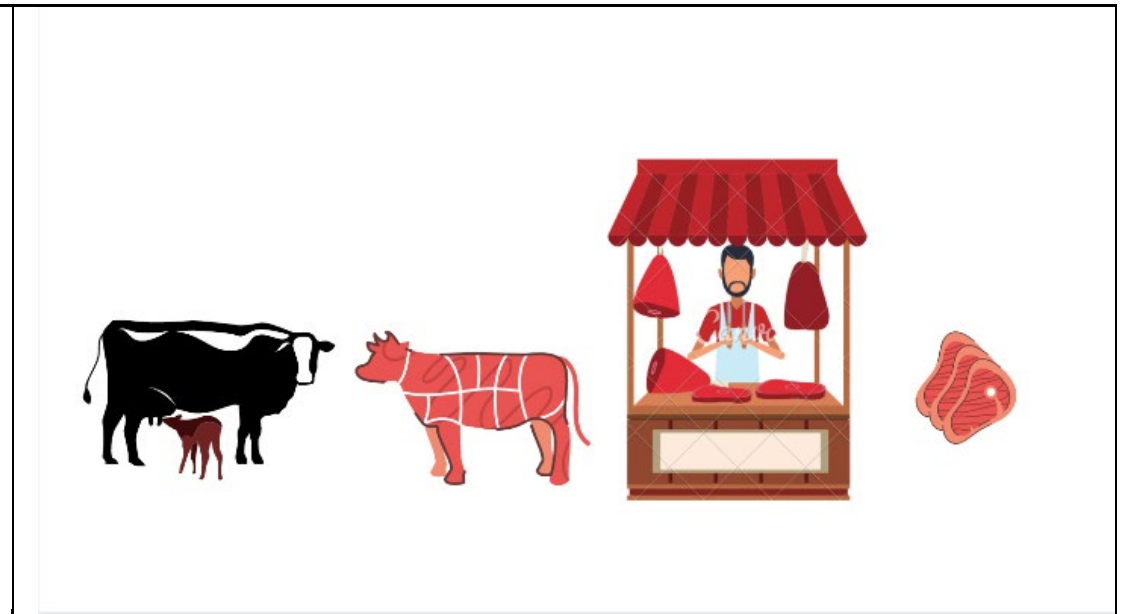
Data: National Statistical Committee of the Kyrgyz Republic www.stat.kg

Deindustrialization

- Before



After



«Breeding farms were on the verge of bankruptcy, animal husbandry reduced quality from year to year. Only recently, farmers were able to buy pedigree cattle».

Research questions

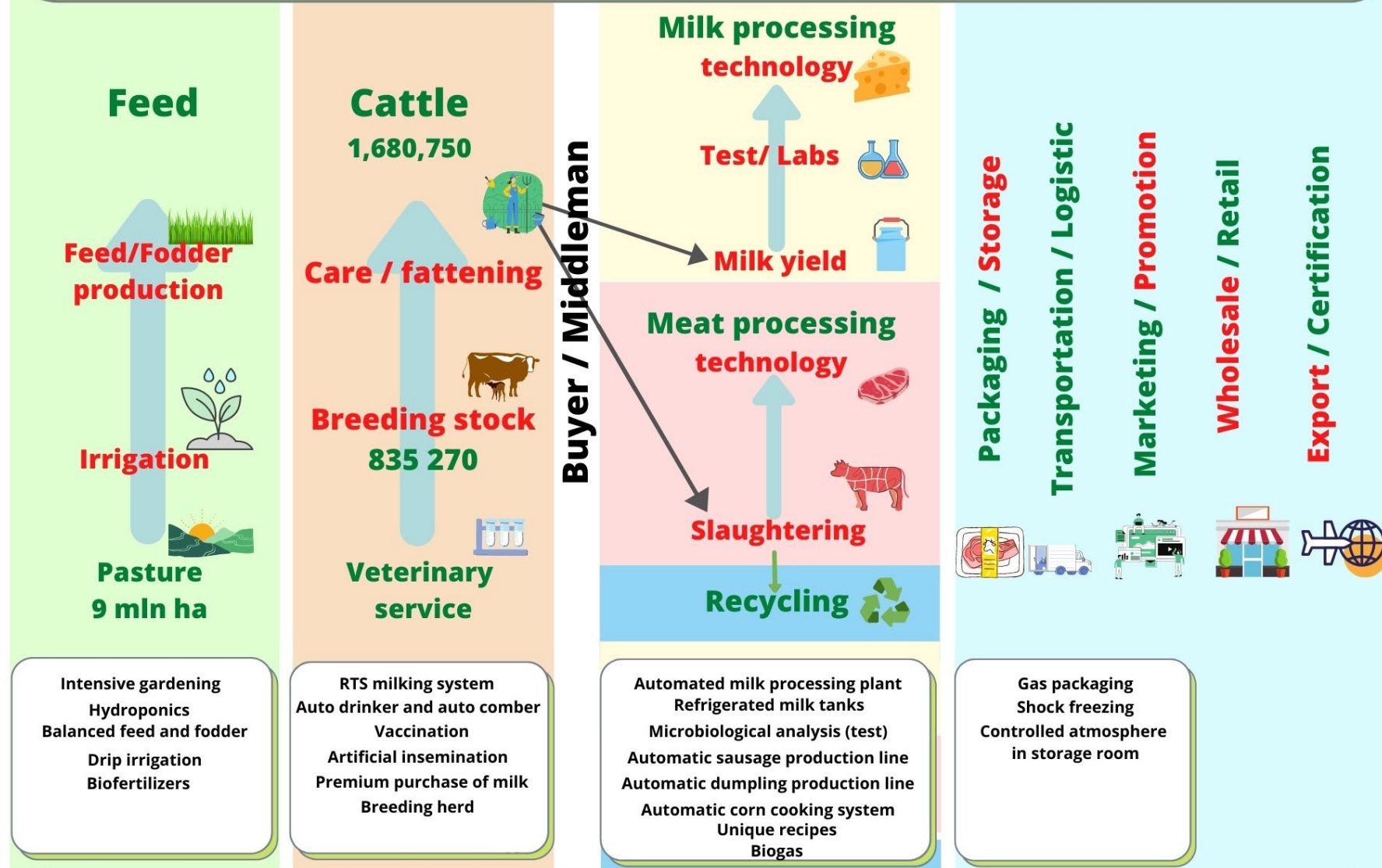
Hypothesis: Adopting innovations and modern technologies in food processing companies will lead to the development of an entire agri-food value chain.

- What is the level of innovative activities among food companies in the Kyrgyz Republic?
- What is the factor intensity in the production process (particularly in dairy, meat, fruit and vegetable processing)?
- What challenges in adopting innovation and modern technologies affect enterprises and agri-food value chains?

Design

- 20 food company owners participated in semi-structured in-depth interviews (November 2020 - March 2021). The snowball method was used to select participants for interviews.
- The focus group took place in March 2021 with seven participants, including technologists and representatives of industrial equipment suppliers.
- After conducting the primary survey, we ran a post-test with representatives of state bodies (May 2021).

Agri-Food Value Chain



Agricultural
Production

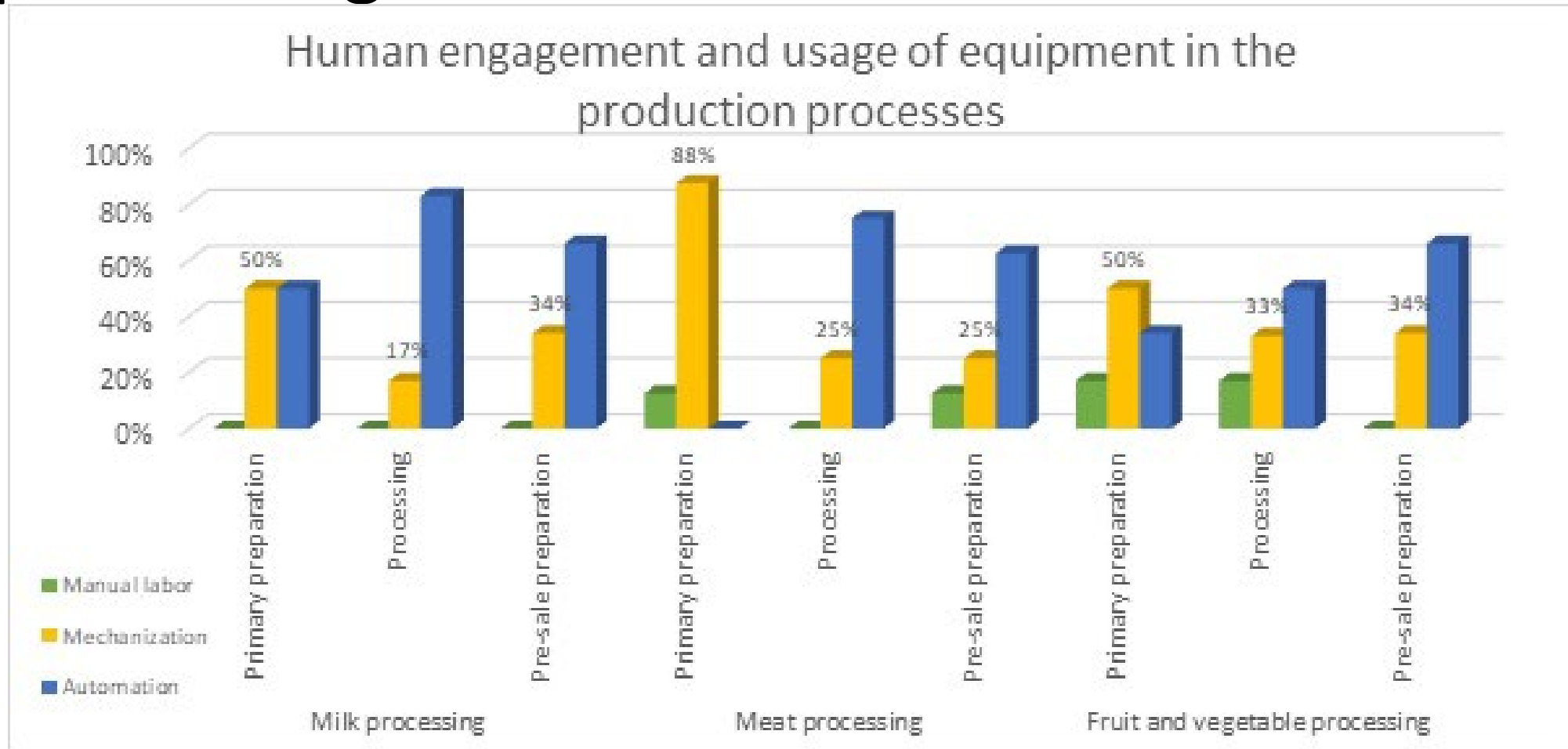


Manufacturing
Processing

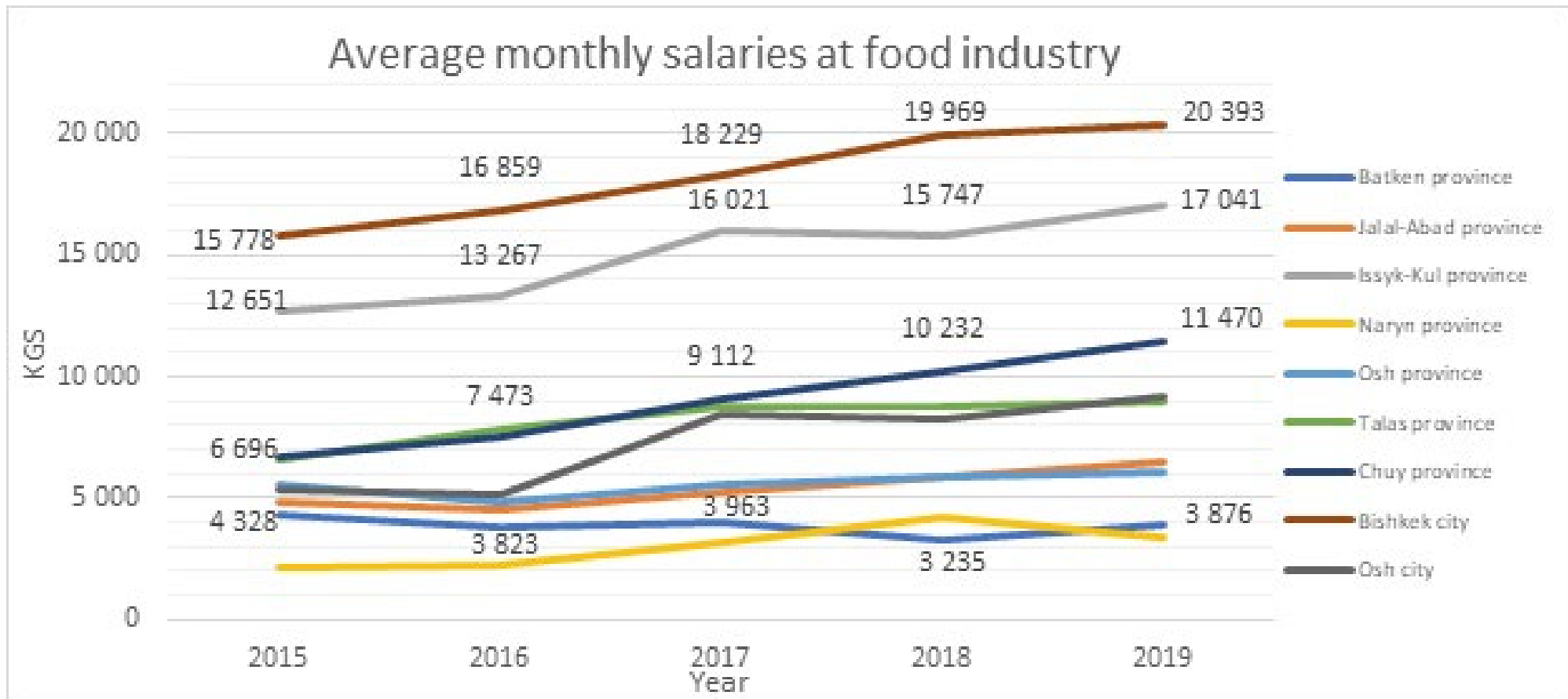


Distribution,
Marketing and Retail

The labour-capital intensity of food processing



Average monthly salary at food companies



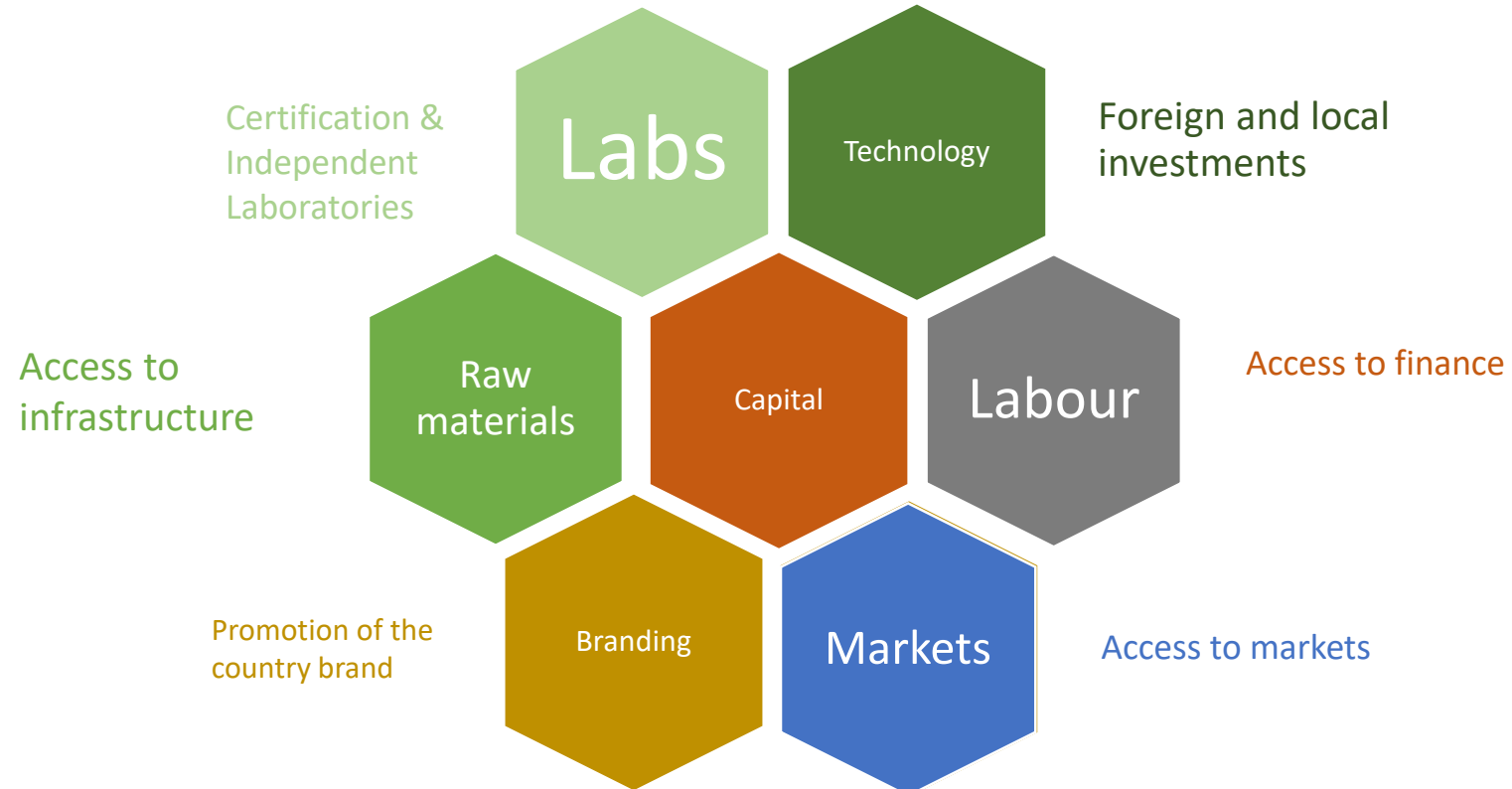
Challenges to adopting technology and innovation in the agri-food value chain

- Lack of quality raw materials and volume
 - Low level of veterinary services
- Lack of infrastructure
- Seasonality
 - Staff shortage
- Challenges in accessing information
- Financing
- Export and retail chains

Discussion

- Innovativeness: a discrepancy between the official data and the results of this study.
- Relationship between the introduction of innovation and the geographical location of food industry companies.
- Cluster vs vertically integration. Limiting factors for the cluster approach are as follows:
 - a) Lack of desire to cooperate between numerous suppliers;
 - b) Supplier fragmentation and remoteness;
 - c) Local varieties and livestock breeds;
 - d) Lack of long-term financing and investment;
 - e) Poor promotion of local products.

Conclusion and recommendations





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Thank you for your attention



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