



# Introduction To Agricultural Sector And Adaption Programs To Climate Change In Kazakhstan

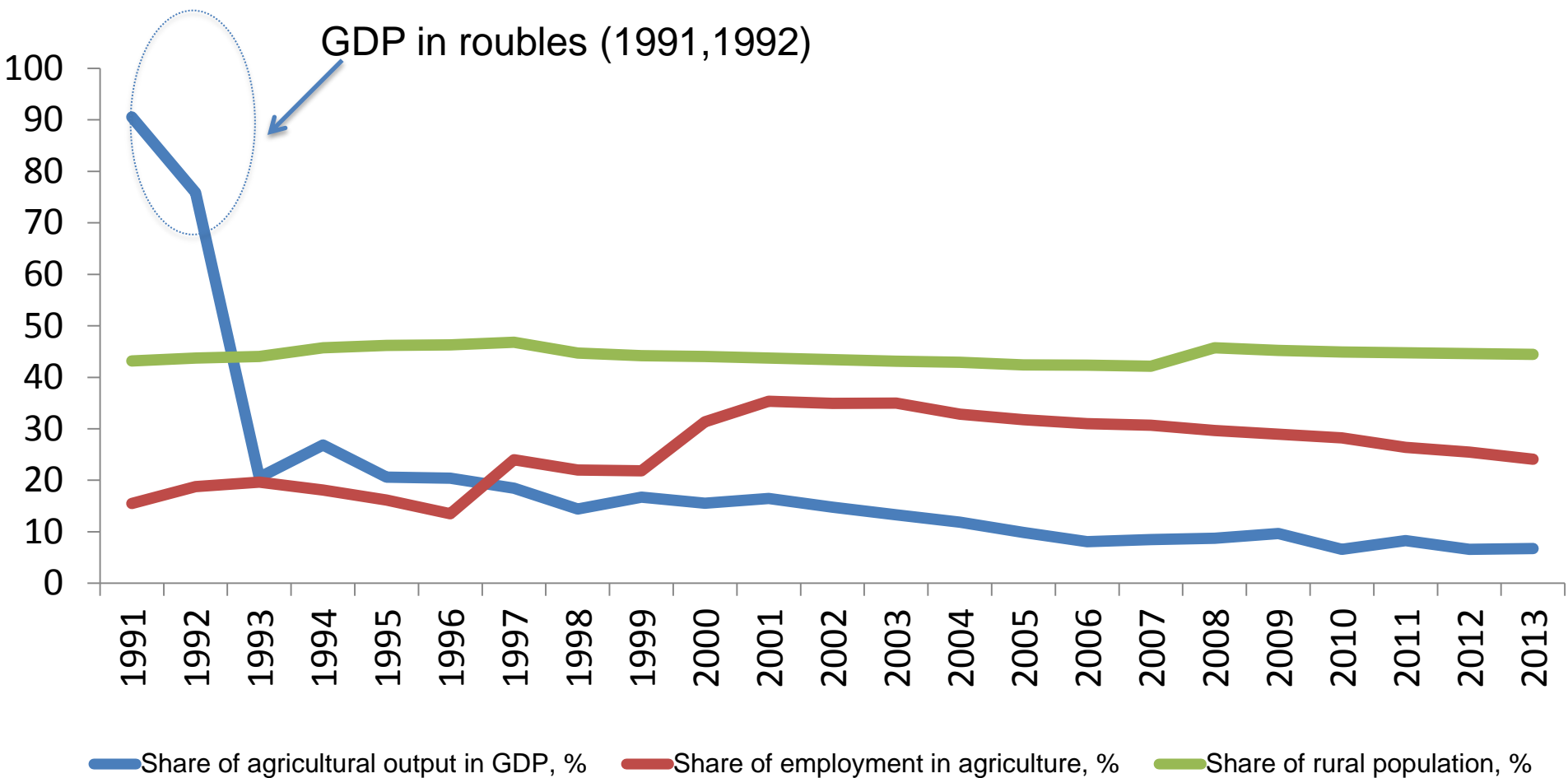
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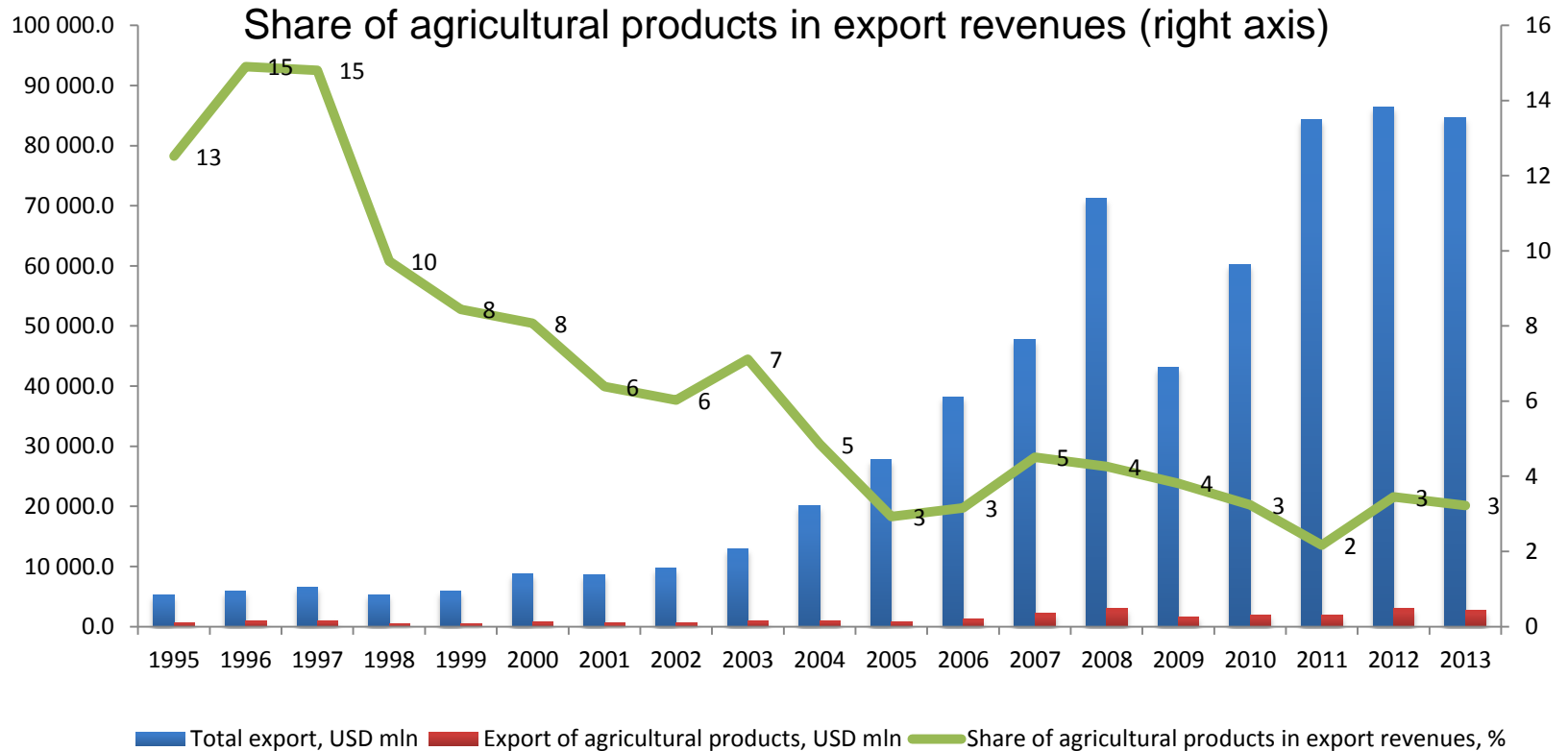


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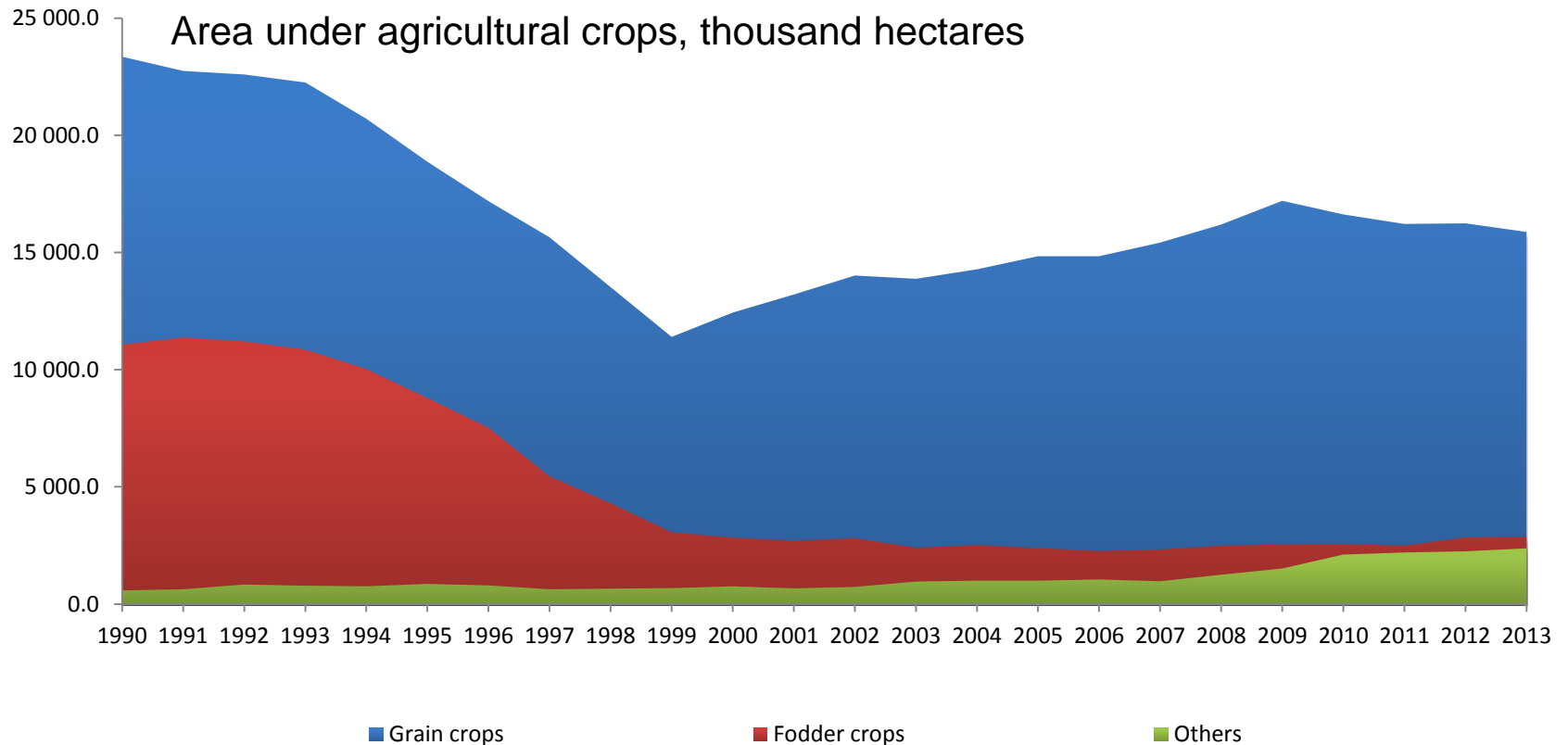
# Despite its small contribution to GDP, agriculture plays an important social role



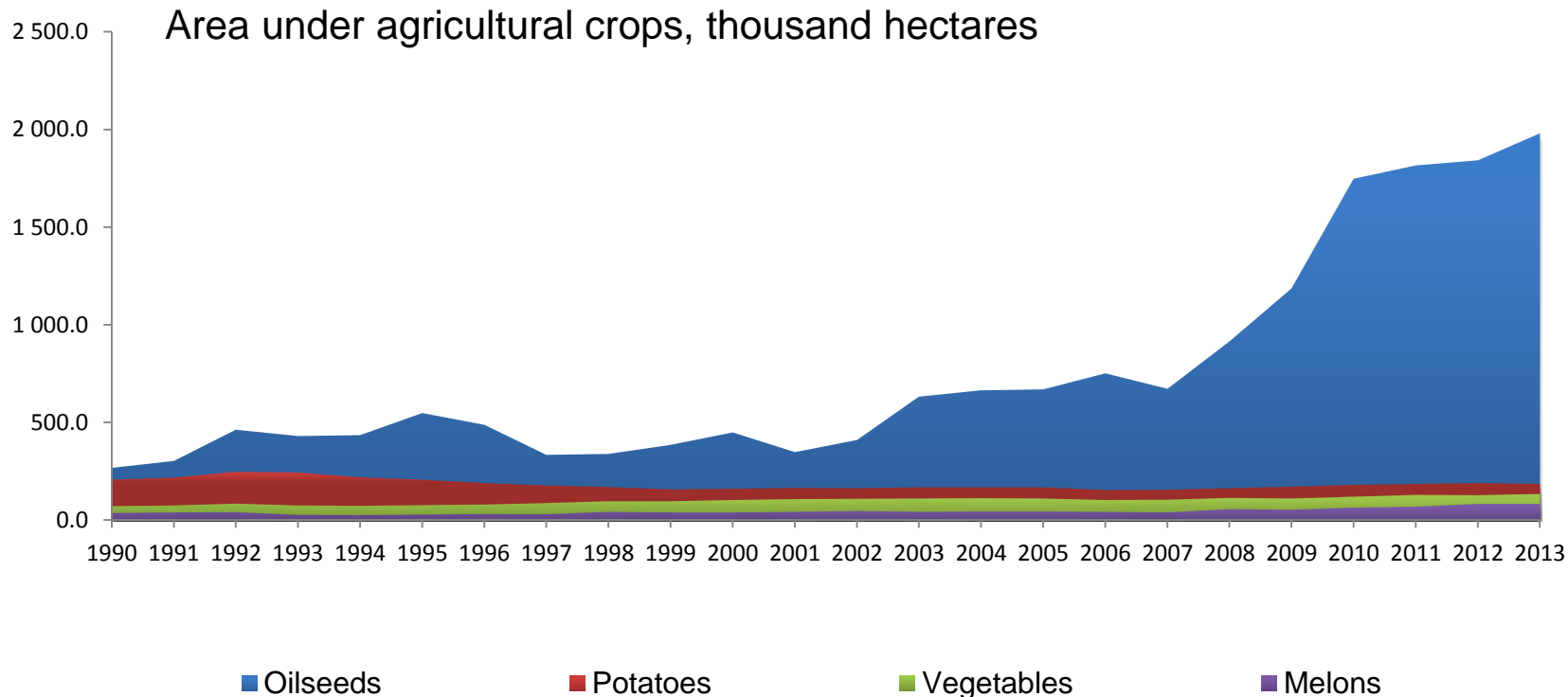
# Agriculture accounts for a relatively small part of the country's export, dominated by energy exports



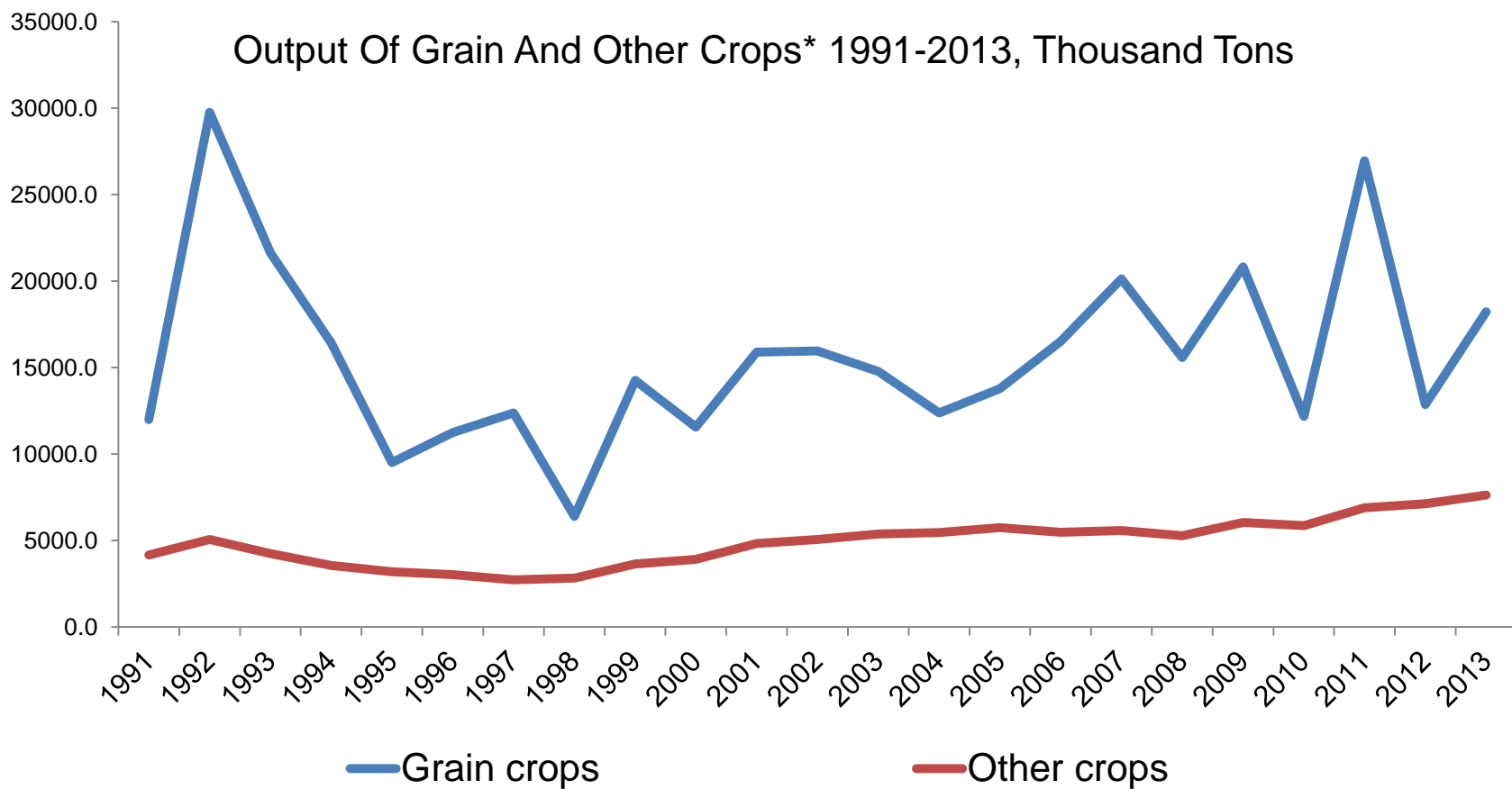
# Shrinking of the area of arable land was caused by decrease in area under fodder crops



# Oilseeds gain popularity due to attractive market prices and government measures aimed at promotion of alternative crops

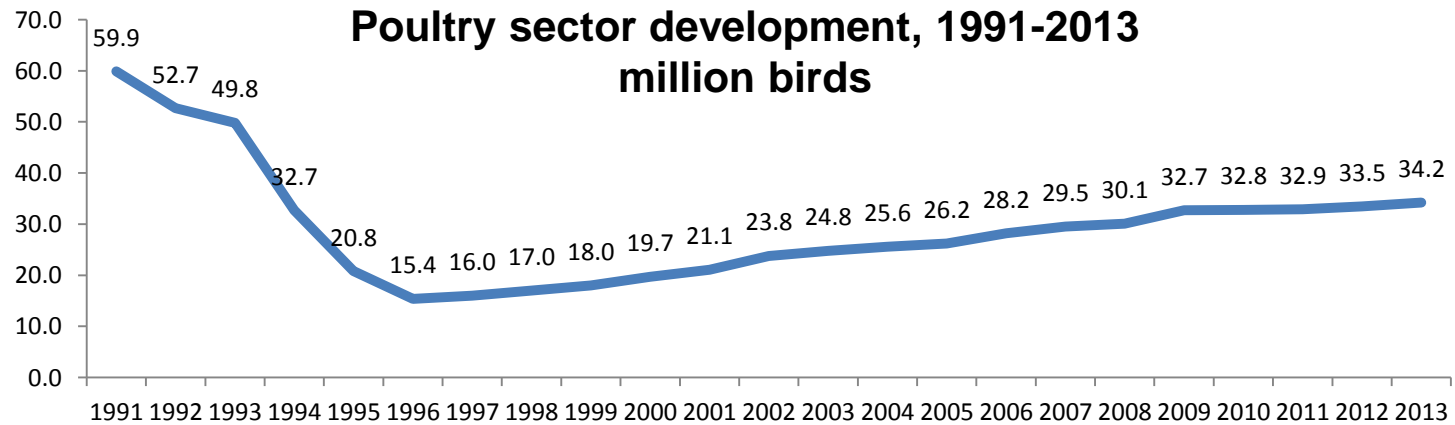
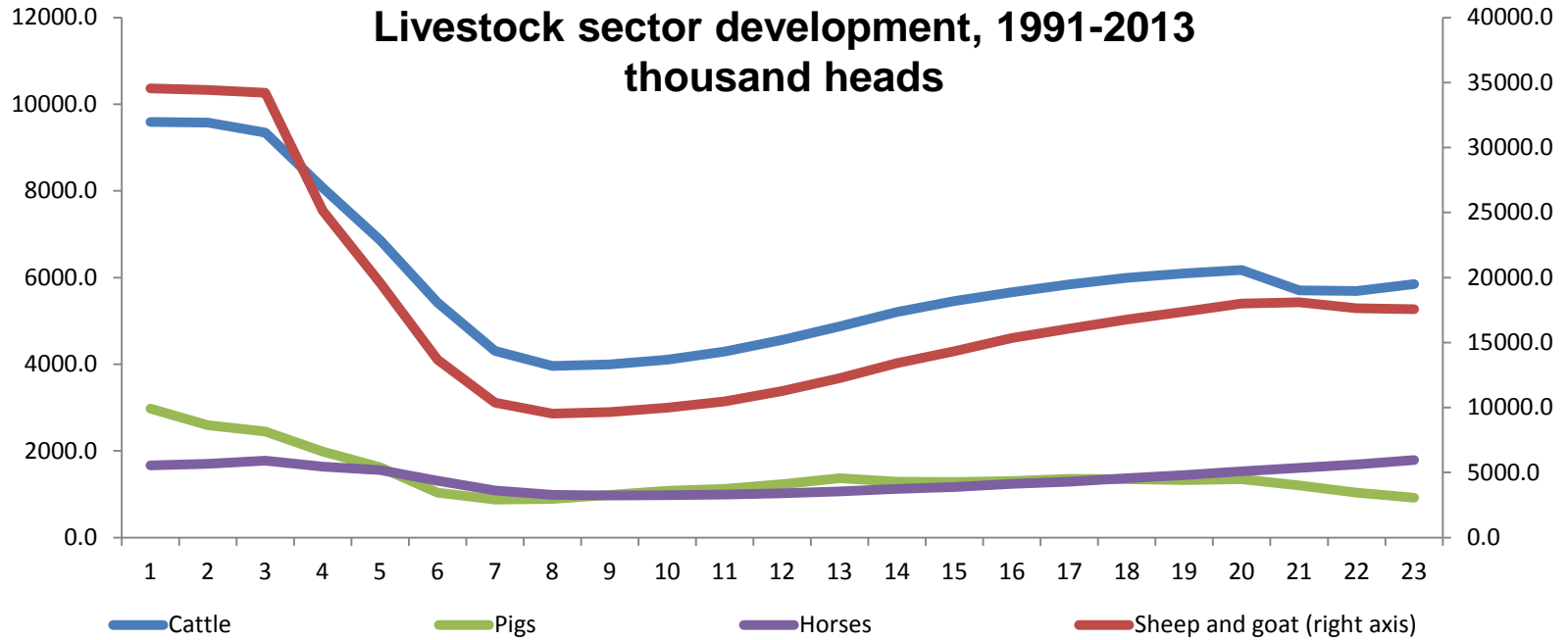


# Grain output is highly volatile, reflecting harsh conditions of unreliable rainfall

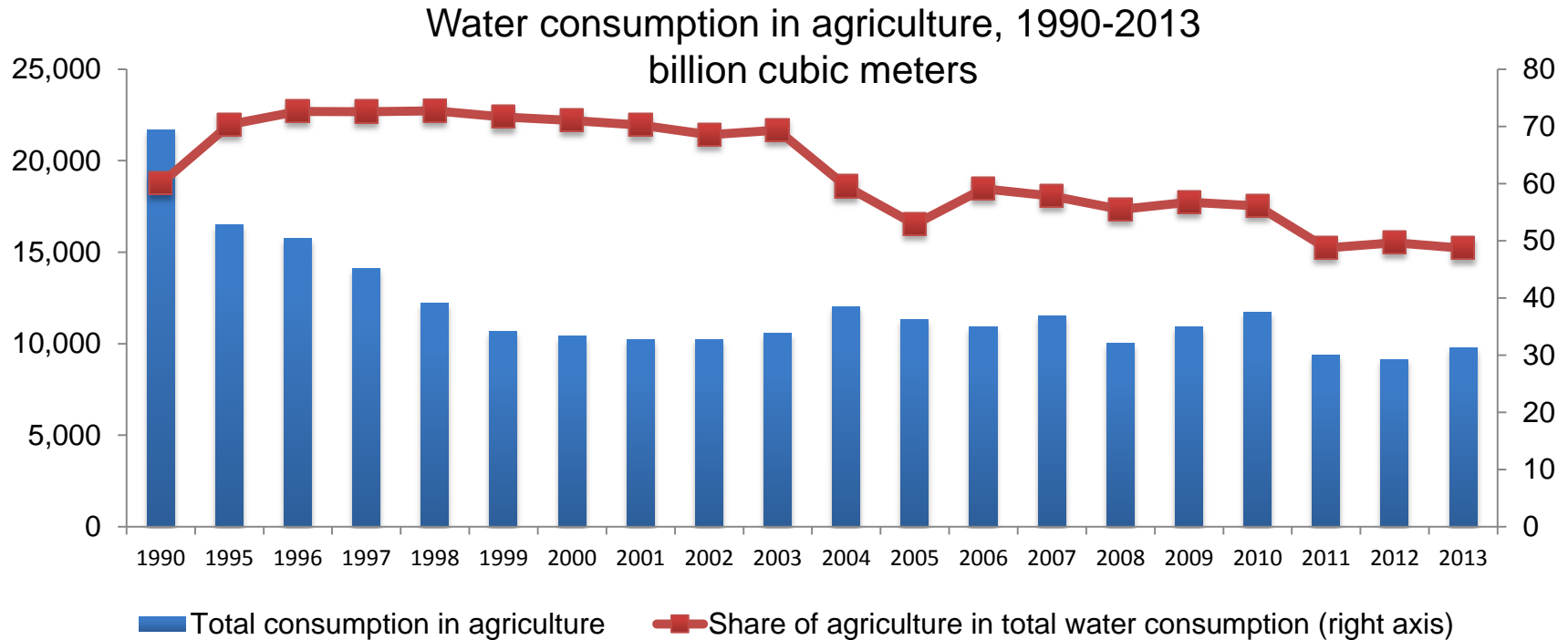


\*Other crops: cotton, sugar beet, tobacco, potatoes, vegetables

# Livestock Sector In Kazakhstan



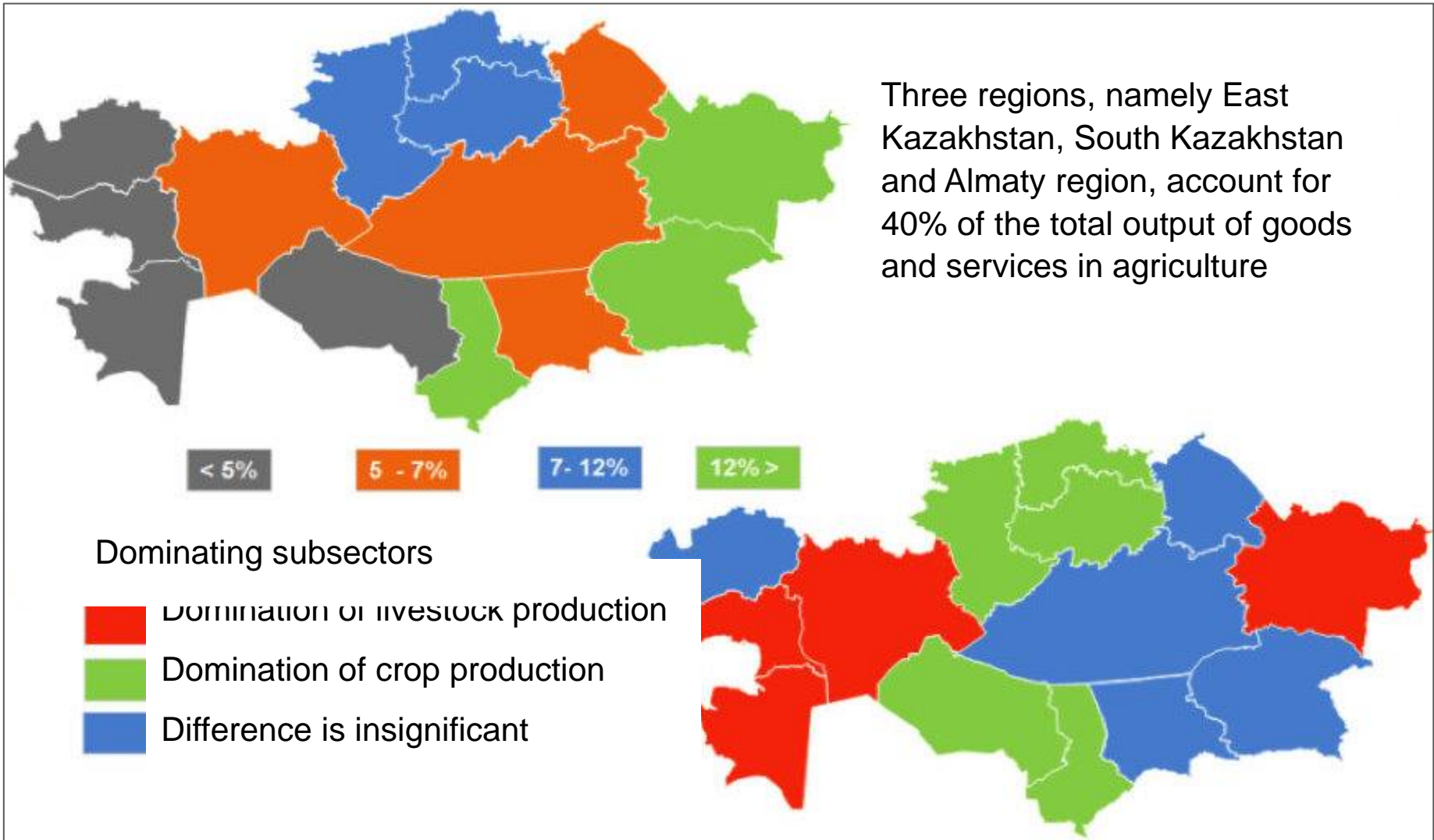
# Agriculture is the largest water consumer



- Kazakhstan has limited water resources, which fluctuates by season and by year and are unevenly distributed across the country.
- Over 90% of water, consumed by agricultural, is used for irrigation.



# The structure of agricultural output has major regional variations



# Small-scale farmers account for largest part of the total agricultural output

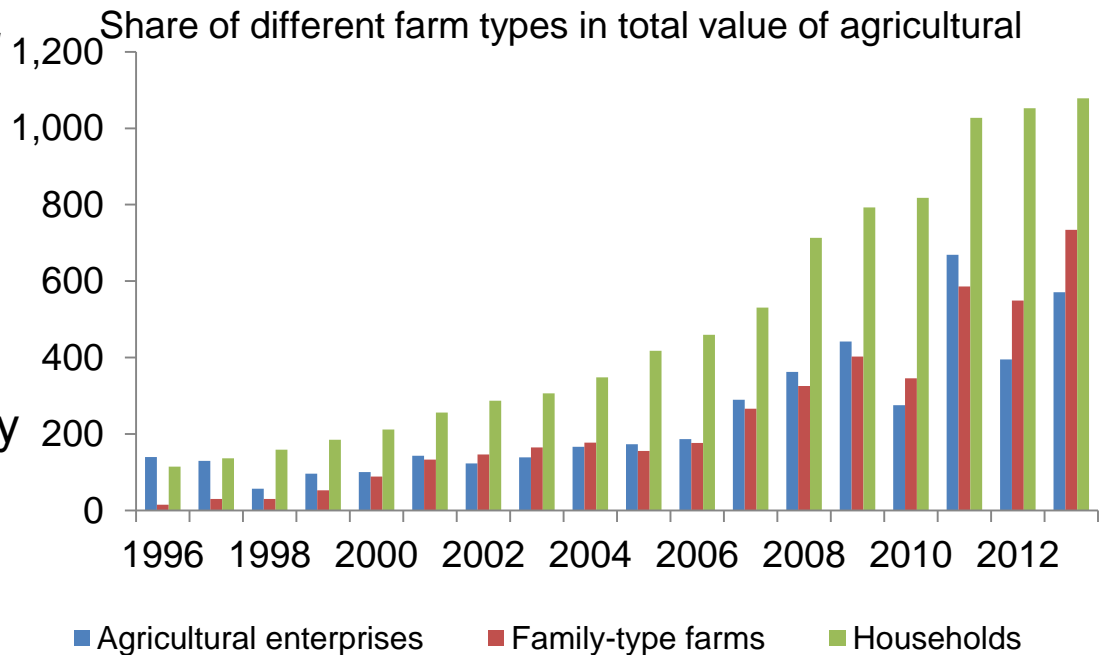
**1) Agricultural enterprises, i.e.** legal entities, whose main activity is agriculture. The average size of agricultural enterprises is 8 000 hectares.

**1) Family-type** (so called “peasant”) farms, where family members work together to produce, process and sell agricultural products. The average size of a family-type farm is 270 hectares.

### **3) Households.**

Their average size is 0.17 hectares. Average number of cattle in the households is 3 cows. Households are mainly focused on ensuring food self-sufficiency.

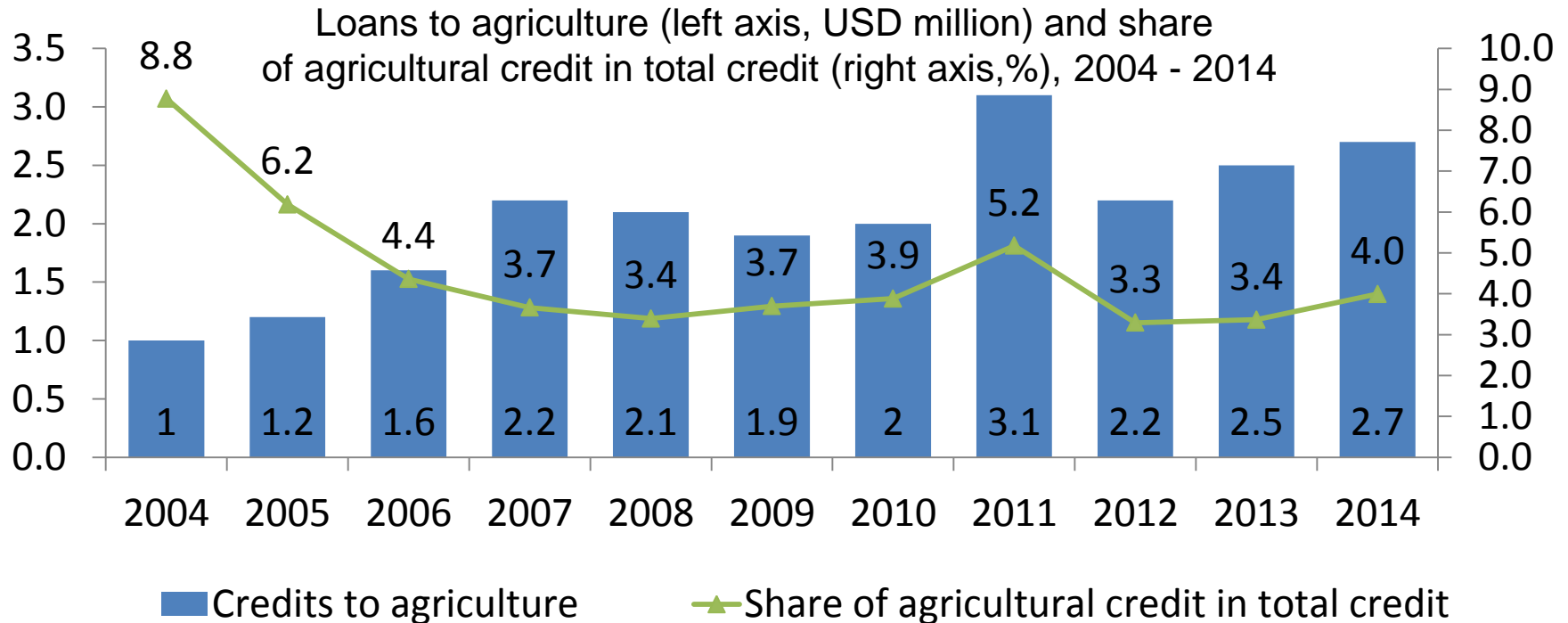
**Share of AE, FF and HH in total agricultural output in 2013 was 24%, 31% and 45% respectively.**



# Definition Of Land Relations

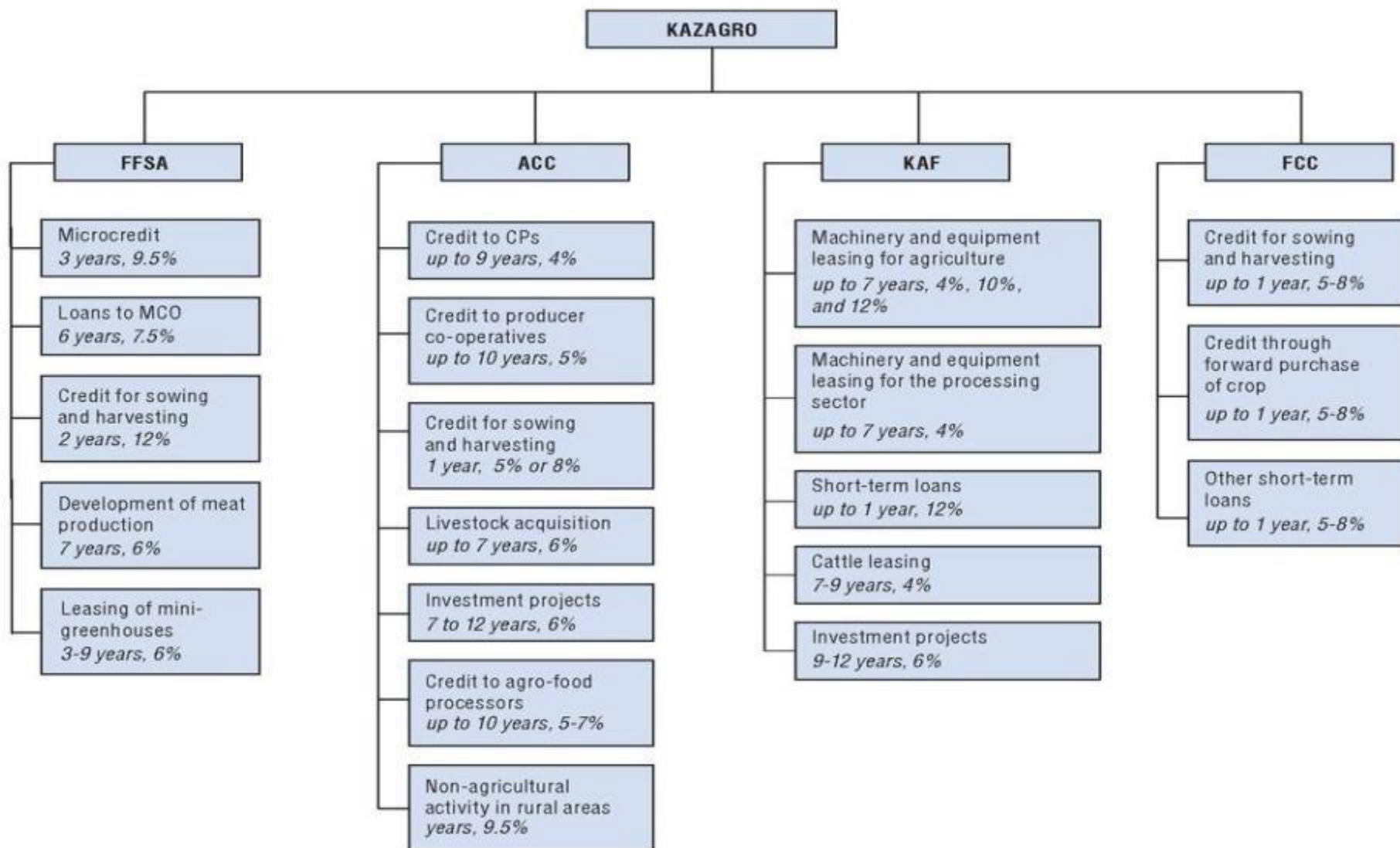
- Land in the Republic of Kazakhstan is state-owned.
- Land plots can also be privately owned.
- Privately-owned land may be land plots for farming, afforestation, horticulture, individual housing, suburban housing, as well as providing for construction, including residential, buildings (constructions) and their complexes, including lands designated for maintenance of buildings (structures) in accordance with their purpose.
- Privately-owned plots are subject to land tax.
- Land, rented from the government is subject to payments for use of land. Payments for use of land are calculated based on cadastral value of land.
- Privately-owned land can be used as collateral.

# Access to finance remains one of the main issues in agriculture



- Commercial banks' loans are available mainly to large farms that possess sufficient collateral.
- Small and medium businesses can benefit from a system of concessional loans.
- State-owned financial institutions are principal providers of concessional loans to agriculture (KazAgro, Fund for Financial Support of Agriculture; KazAgroFinance; Agrarian Credit Corporation; Food Contract Corporation)

# Concessional credit is one of the most important forms of support to agriculture



# Definitions of water use and water payments In water code

- Water use is a use of water resources by individuals and legal entities in accordance with the legislation of the Republic of Kazakhstan, to meet their own needs and (or) the commercial interests.
- Water use is free of charge.
- Services related to water supply, drainage, wastewater management, repair work and other water-related activities are carried out on a fee basis.

# National legislation on water uses groups

- Law on Rural Consumer Cooperative of Water Users N 404 dated April 8, 2003 regulates relations arising in the course of supply and consumption of water between physical and (or) legal entities and government agencies and representatives.
- Rural Consumer Cooperatives of Water Users are voluntary associations of individuals and juridical persons (legal entities).
- Purpose of the cooperatives is a joint management of hydraulic devices and equipment, used for purposes of agricultural production.
- In 2013 total number of cooperatives of water users was about 457.
- They cover total area of more than 715 thousand hectares (33% of total irrigated land).
- Membership in a water users' cooperative is a key precondition for receiving subsidies, reducing the cost of water supply.

# Main forms of producer subsidies

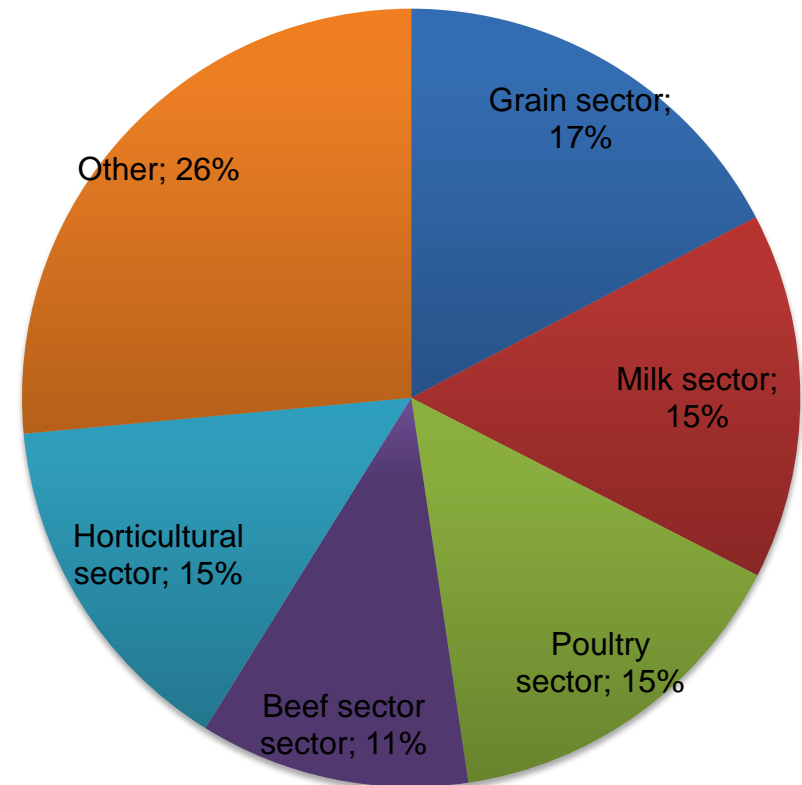
- **Payments for livestock products** are made per unit of output sold on domestic market, with payment rates determined on the basis of the cost of feed. The subsidy rates for beef, milk, poultry and eggs are differentiated by various feeding systems and other technological criteria.
- **Pedigree livestock program** is aimed at reduction of cost of purchased pedigree livestock, semen of pedigree bulls, day-old chicks, pedigree poultry.
- **Partial reimbursement of cost of seeds and perennial fruit plants** supports producers and buyers of seeds and young plants. The program covers a wide range of crops (cereals and pulses, soybeans, sunflower, other oilseeds, potatoes, perennial grasses, annual grasses, sugar beet, cotton, fruits and grapes)
- **Support scheme to reduce prices of mineral fertilizers, chemicals for seed treatment and herbicides** operates with the purpose of increasing productivity of agricultural crops, improve soil fertility and quality of agricultural products.
- **Subsidy for delivery of water for irrigation** compensate for the costs of water delivery. The subsidy rate is defined as a share of delivery of cost per cubic meter of water.
- **Subsidies for mandatory crop insurance** compensate insurers 50% of the value of indemnities paid, as well as the cost of their services.
- **Per hectare payments** are differentiated by the priority crops. Producers applying drop irrigation and in case of grain, complying with scientific requirements, are eligible for higher payment rates.



# Description of public investments and governmental investment programs

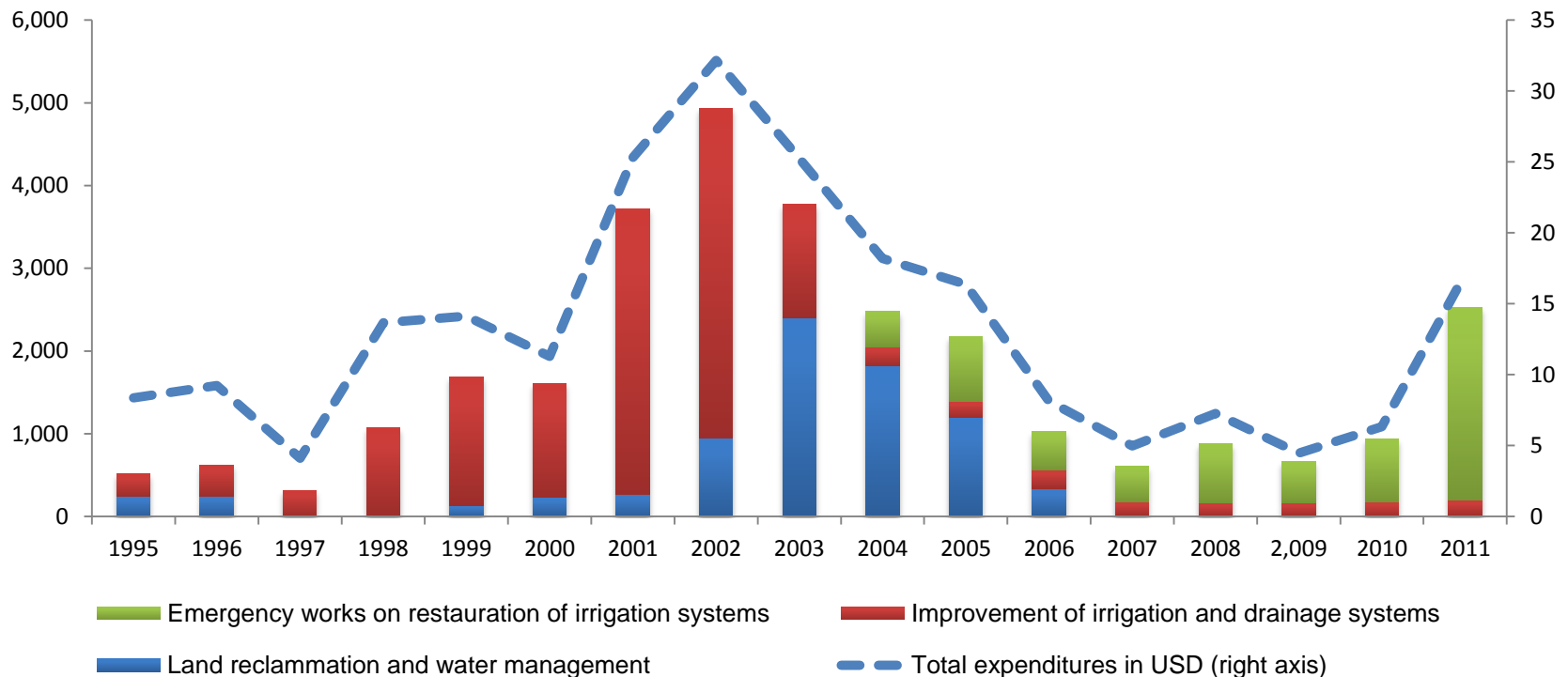
- Ministry of Agriculture has been implementing 205 government-supported investment projects. These investments cover the construction and modernization of facilities in the agricultural sector and downstream industries.
- Five sectors (grain, milk, poultry, beef, horticulture) account for 90% of the total cost of these projects.
- Over three-quarters of total investment comes from loans based on public sources, with the main contribution from the National Fund and the republican budget.
- A small part is provided by local budgets and funds of KazAgro agencies

**Cost structure of publicly supported investment projects, implemented since 2007, by sector**



# In recent years budgetary expenditures on irrigation increased due to emergency works and repair of inter-farm water channels, irrigation and drainage systems

Outlays on irrigation systems, land amelioration and water management, 1995 – 2011 USD million



# Food security policy

Kazakhstan's **Strategy-2050** defines promotion of food security as one of ten global challenges that the country proactively seeks to address.

Measures, taken by Government with the purpose of ensuring food security:

- Maintenance of state grain reserves;
- Subsidies aimed at diversification of crop production;
- Subsidies aimed at increasing output of livestock products;
- subsidizing investment costs for the construction of greenhouses

# Description of agricultural diversification policy

- Share of cereal crops in total crop production is expected to gradually decline.
- One of the reasons for this is implementation of the public policy, which is aimed at prioritizing and subsidizing oilseeds, fodder crops and melons.
- In 2014 total area, planted with wheat, was reduced by 2.4 million hectares compared to 2009, a year of a record grain harvest.

## But

- Crop diversification has been implemented rather slowly.
- The main reason is the reluctance of producers to switch to other crops.
- Another reason is lack of interest of local authorities, which administer crop subsidies, in promoting “unconventional” crops.

# Highlights of UNDP study of possible climate change's impact on agricultural sector of Kazakhstan by 2030

- Rising air temperature;
- Increased aridity and increased frequency of droughts (decrease in precipitation by 1-10%);
- Increased incidence of hail;
- Reduction of snow cover duration;
- Increase in inter-annual variability;
- Increased frequency of abnormally cold winters and hot summers;
- Shift in agro-climatic zones;
- Reduced yield of grain crops by 23-33%;
- Decrease of pastures' productivity by 3-4%;
- Spread of infectious diseases and crop pests.

# Measures on mitigation and adaption to climate change are recent and most are in the form of long-term plans.

Measures, aimed at mitigation and adaption to climate change are indicated in several strategies and government programs. Kazakhstan does not have a single national action on mitigation and adaptation to climate change

1. Strategy-2050, Strategic plan of development – 2020.
2. State programs (program on industrial and innovative development)
3. Sectorial programs (Agrobusiness-2020, Zhasyl Damu)
4. Strategic plans:
  - Strategic plan of the Ministry of Energy (establishment of the market of quota for greenhouse gases; establishment of the “green economy”; implementation of green technologies);
  - Strategic plan of the Ministry of Agriculture (efficient use of land, water, forestry, fishery);
  - Strategic plan of the Ministry of Investments and Development (industrial and innovative development, renewable energy investments)

# Description of adaptation policies in agricultural sector

- Per hectare payments are differentiated according to the cultivation technology.
- Grain producers applying reduced-tillage are eligible for increased rates of subsidies.
- Producers of sugar beet and vegetables and melons with drip irrigation benefit from considerably higher per hectare payments.
- Drip irrigation has beneficial environmental outcomes (water saving, prevention of soils salinization, swamp formation and erosion of the irrigated lands).

# Possible measures to tackle food security and climate change issues

1. To design National Action Plan on adaptation and mitigation to climate change;
2. To introduce incentives for farmers performing responsible use and protection of the natural environments through conservation and sustainable practices (eg. UK environmental stewardship);
3. To provide trainings on sustainable practices via existing extension system;
4. To address the issue of physical availability of food by developing infrastructure (construction of processing, storage, transportation facilities);



# Open research questions

1. To identify optimal size of grain producing companies in the northern part of Kazakhstan (avoiding mismanagement, leading to over-indebtedness).
2. To assess government support programs within Eurasian Economic Union, aimed at increasing access to finance, and identify average interest rate and terms and conditions of concessional credit.
3. To assess existing legislation on agricultural cooperatives and draft recommendations.
4. To assess the mandatory insurance scheme in crop production in Kazakhstan.
5. To evaluate the Total Factor Productivity in agriculture in Kazakhstan.
6. To model the impact of a one-time privatization of agricultural land in Kazakhstan.

THANK YOU!

