

# Ukrainian Agricultural Potential and Food Security

The Bleyzer Foundation

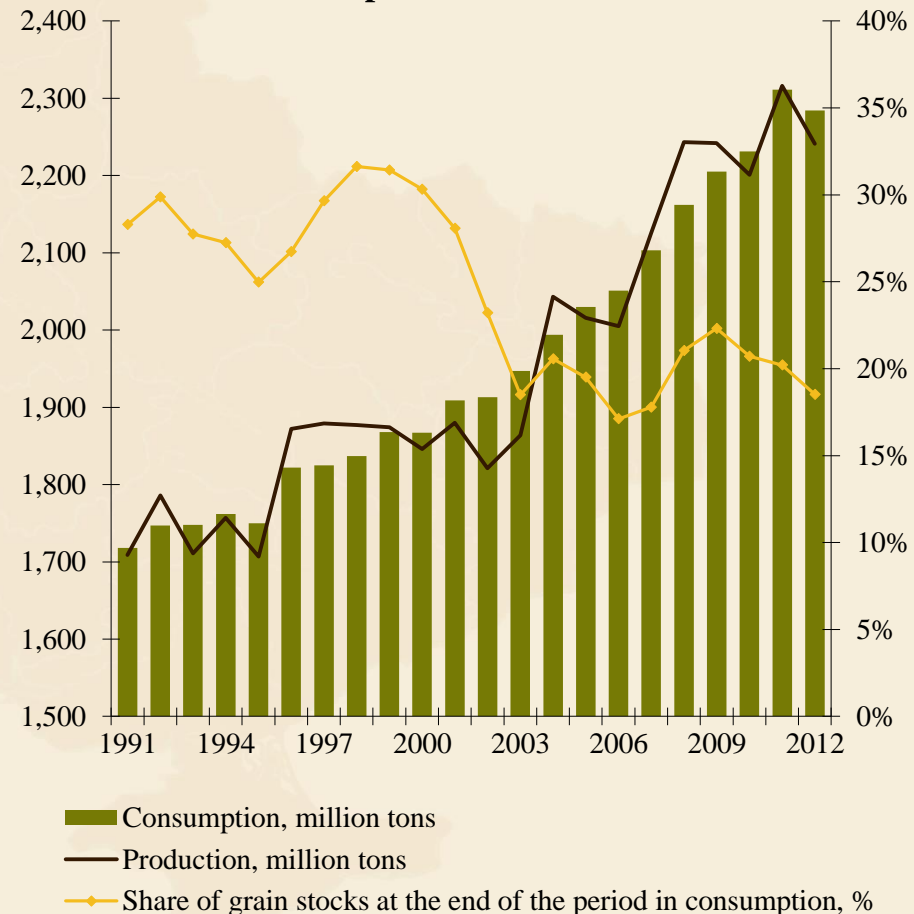
2012

# Agricultural Demand Increasing Worldwide

## Global agricultural demand – a unique opportunity for Ukraine

- ✦ Ukraine – known a century ago as the breadbasket of Europe – today has the potential to become the breadbasket of the world, and to position itself as a major player in global food security
- ✦ Over the next 20 years, global agricultural **demand** will expand rapidly by about 50%, due to four major trends:
  1. Rapid population growth, principally in emerging markets
  2. Rapid pace of urbanization
  3. Increases in per capita income
  4. Higher global demand for biofuels

20-Year Dynamics of World Grain Consumption and Production



Source: USDA

# Global Agricultural Demand

## 1. Rapid Population Growth

- The expected increase in the world population by 2050 is equivalent to adding **six** countries the size of the USA to the current number of Earth's inhabitants

## 2. Rapid Pace of Urbanization

- The world's urban population is to increase by 20% over the next decade, which will boost per capita consumption of foods. Meanwhile, a diversion of water and land to urban use is challenging the sustainability of traditional farming methods

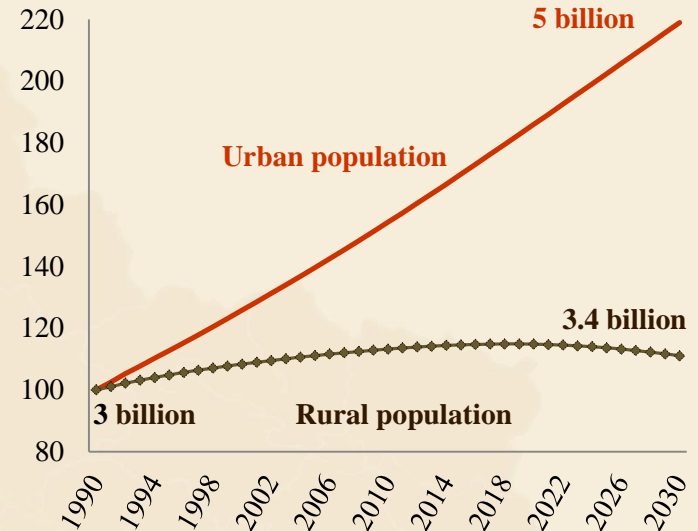
## 3. Increases in Per Capita Income

- Growing per capita incomes in emerging economies will cause a dietary shift to foods such as meat, whose production requires a more intensive use of land, energy and water

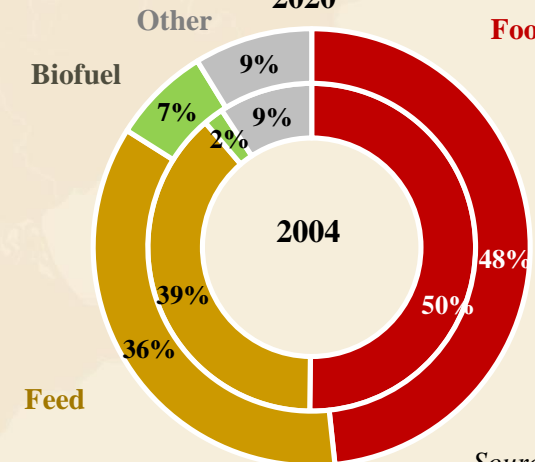
## 4. Higher Demand for Biofuels

- As demand for biodiesel and bioethanol expands, more land will be diverted to non-food crops, leading to tighter supply and higher food prices in the coming years and decades

World Population, 1990=100



Main Uses of the World Cereal Production 2020



Source: FAO 3

# Global Agricultural Supply

## **Agricultural production is being constrained by:**

### 1. Global shortage of suitable land

- According to FAO estimates, the global availability of per-capita arable land declined from about 0.4 ha in 1962 to about 0.2 ha currently
- Future agricultural supply will have to come from productivity increases

### 2. Slowing agricultural productivity growth

- Global yield growth for wheat slowed from almost 3% per annum in 1961-1990 to 0.5% p.a. in 1990-2007
- Corn, rice and soy also experienced declines in global yield growth

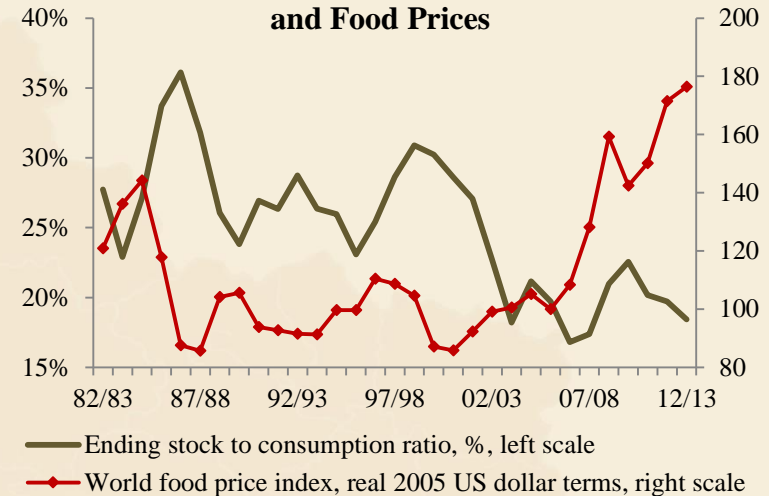
### 3. Environmental degradation

- Pollution and soil erosion are already limiting the upside potential for further yield gains in agriculture

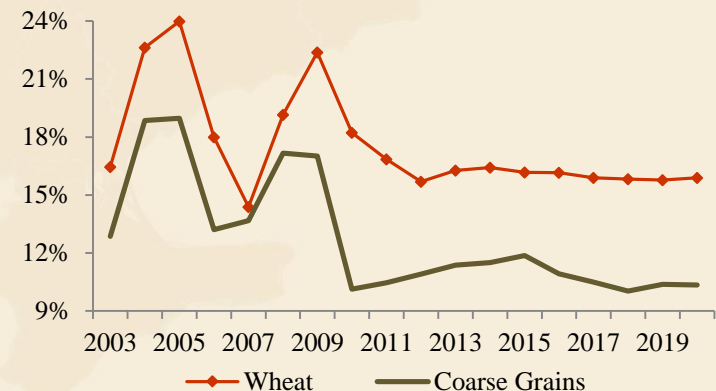
# Food Stocks and Agricultural Prices

- World grain stocks are likely to remain at the current low levels, indicating that world food prices will continue to rise in the future
  - Over the past decade, the average price growth for cereal was already above 7% p.a. Prices for vegetable oils are expected to grow by more than 40% over the next 10 years
- To enable the world to feed itself and meet future food requirements, significant investment in productivity enhancement technologies is needed
  - Modern agricultural machinery, plant protection, improved seeds, fertilizers, storage, transportation, and other on-farm facilities
- Investments in the agro business will deliver above average returns in the foreseeable future, **particularly in countries that possess large stocks of fertile land, such as Ukraine**

**Global Wheat and Coarse Grains Stocks and Food Prices**



**Stock to Use Ratios of Major Exporters  
US, EU, Canada, Australia and Argentina**

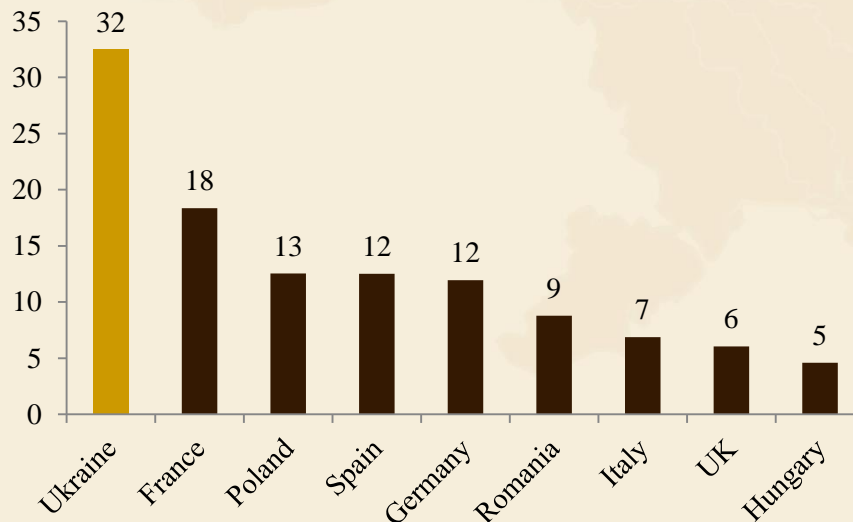


Source: The World Bank, USDA

# Fertile Land - Ukraine's Key Advantage in Food Supply

- Ukraine's arable land is some of the most fertile in the world. The country is endowed with one of the world's largest deposits of "**black-earth**" soil, known as *Chernozem* (over 30%), which is rich in agricultural nutrients and has superior capacity to hold water
- Ukraine has more arable land than any other country in Europe with 32.5 million hectares
- Ukraine has large and even fields average 100-150 ha (compared to 5-10 ha in Europe)
- Land prices are affordable at \$88/ha vs \$314/ha in the UK
- Ukraine receives between 500-1,000 mm of annual rainfall, which allows for productive farming without irrigation

Arable Land Comparison, million ha



Average Field Sizes Across the Globe

Part of the World	Country	Average Field Size, ha
Asia	India	1.0
	Thailand	3.4
America	Canada	63.4
	Brazil	65.0
Europe	Ireland	3.9
	France	7.1
	Hungary	9.0
	England	12.0
	<b>Ukraine</b>	<b>100 - 150</b>
	<b>Europe</b>	<b>5 - 10</b>

Sources: FAO, earthobservations.org, ceryc.eu, eea.europa.eu

## Ukraine's Other Advantages: Labor Force, Infrastructure, and Location

- Ukraine has well-trained and relatively inexpensive workforce, who can be employed at one of the lowest wages in Europe
- Small and inefficient farm holdings and the current use of outdated machinery and farming methods present huge opportunities to boost labor productivity in agriculture through farm consolidation and capital investments
- Ukraine has reliable infrastructure to support agricultural exports, on par with the EU, US and Australia
  - The total transport network includes 21.7 thousand km of railroads, 165.8 thousand km of roads, 2.2 thousand km of operational river shipping routes with access to the Azov and Black seas
  - Ukraine has 18 merchant seaports
  - Ukraine has the highest port potential among all countries in the Black Sea region
- Ukraine is strategically located in the middle of a large and growing global trade zone, at the crossroads of Europe and Asia
- It has access to the Black Sea and has a good rail network to ports and shipping
- Given its location, Ukraine has a comparative advantage for exports to major markets, like the Middle East, North Africa and the European Union

# Potential for Superior Returns

- Based on Ukraine's resources, Ukraine's **export of grains could grow 5-6x:**
  - In 2012/13, Ukraine exported 23M tons of these grains, or about 9% of the world's total export of 255M tons
- Ukraine consumes significantly less than what it produces (unlike other large grain producing countries, such as China, India, Brazil, Turkey and Mexico, where domestic production is mostly used to supply local markets)
- Ukraine will increase yields, while developed countries are constrained by yield growth:
  - Ukraine's three-year average crop yield of 3.2 tons/ha for wheat and coarse grains was about **54% lower than in the US and about 40% lower than in the EU-27 and China**
- Adopting Western agronomic techniques (agricultural machinery, fertilizers, seeds, and management practices) and bringing uncultivated land back into production, Ukraine could potentially boost its grain production to **130-150M tons** of wheat and coarse grains per annum **or 3x current production levels.**
- These numbers are still below the genetic agricultural potential of Ukraine which is over 200 million tones of grains.