

Episodes of an American Agronomist in Ukraine

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Abstract:

After nine (now ten trips as of October 2017) trips to Ukraine to teach agronomists corn and soybean production practices, I am still learning what questions to ask. Seems unless you ask the essential critical question you may not get the correct answer.

- Are they doing it right? Yes, sort of.
- Ways of doing things are still held over from Soviet days.
- Farm size is huge - with 97% of production agriculture in the hands of large, even international, corporations that may range in size from 6,000 to 150,000 hectares.
- Labor is cheap and plentiful - but many are drivers, not operators.
- The best description of the issues comes from my Ukrainian translator and driver, who says "the wheels in Ukraine are not always round".

Objective of trips:

- It's Ukraine. In undergraduate soils classes, the professors talked about the wonderful soils of Ukraine. So I had to see them.
- I was invited by folks from Ukraine I had visited with here while working in Champaign County, Ohio. Many visitors came for visits and talked with local growers. This was just one more group I led through the county.
 - They challenged my way of thinking.
 - They told the USAID contractors in Ukraine on their return that to really get the most out of the visit, "bring Harold to Ukraine".
- Contacted by USAID contractor CNFA in January 2012, the invitation was official.
- Participation in the Farmer-To-Farmer program. It seems we run a friendly nation program in which the U.S. sends experts to other countries to encourage improvement.

Logistics:

- In the past six years now I have travelled to Ukraine ten times. Doing the same work I do in Ohio, as an Extension agronomist.
- Funders have changed over the years as budget cuts and priorities have changed.
 - Ukraine had a revolution in 2014, and threw out the head of the government that was pro-Russian, now leaning western again some funding came back.
- USAID is the lead agency –
 - Contractors do the leg work:
 - Bridges Farmer2Farmer program <http://www.bridges.com.ua/en/>
 - A Ukrainian group, very well organized.
 - They provide the local support, a driver and translator.
 - CNFA, a US company and contractor to USAID. They provide paperwork processing, plus travel money and support to the Ukrainian side.
 - ACDI/VOCA, another contractor. Same duties.
 - Pennsylvania State University – had funds and worked well with Bridges so covered my December 2016 travel.
 - Ukrainian production companies – paid for a return trip. Based on past experience of the value.

Figure 1. Map of my visits in Ukraine and general location of the sites.



An American agronomist's concerns for Ukraine agriculture:

- Short term thinking – profit in 3 years or less
 - No land ownership
 - Burning of crop residue
 - Excessive tillage leading to compaction
 - They till up to seven passes before planting
 - Loss of crop residue, Loss of soil structure
 - Shallow root systems and reduced water holding capacity
 - Genetic selection – poorly adapted varieties and hybrids
 - Yield, disease protection, adaptation to growing area
 - Lack of reliable soil testing laboratories
 - Weed management and resistance development
 - Weeds – Chenopodium, Amброзия, Amaranthus, Conyza
 - No IPM – leading to unintended consequences
 - Grain storage & drying capacity
- Central planning mentality – *Soviet mindset*
 - *No one takes responsibility*

My Ohio producers ask, "why go to Ukraine?"

- Because they ask questions you don't ask, but should.
 - This has led to research work in Ohio on nitrogen management, inoculants, pH, and soil nutrient management, soil testing, genetic selections, and more.

Amusing questions Ukrainian producers ask:

- What is your technology?
- Can I get seed from the US?
- What fertilizers do you use? Planter? Seeding rate?
- What is the secret? – "come on Harold you can tell us, its just us here."

Ukraine:

- Land area: 233,000 sq. miles – 5x size of Ohio
 - Second largest European republic after Russia, similar in size to Texas
 - Roughly 100 million acres of agricultural lands
- Capital: Kiev
- Currency: UAH Hryvnia (pronounced grivna),
 - exchange rate as of October 2017 - 26 UAH per US dollar.
 - In 2012 the exchange was 8 UAH per US dollar
- Ethnic groups:
 - Ukrainian 78%, Russian, 17%, Belarusian, Moldovan, Crimean Tartar, Bulgarian, Hungarian, Romanian, Polish, Jewish, others
- Languages
 - Ukrainian 67%, Russian 24%, and are taught English
- Government: Republic, voted independence in 1991

Figure 4. Ukraine population trends since 1950. They are negative. At present 56% of the population is female, 44% male. The oldest Ukrainians are least likely to leave. Suicides are commonplace.

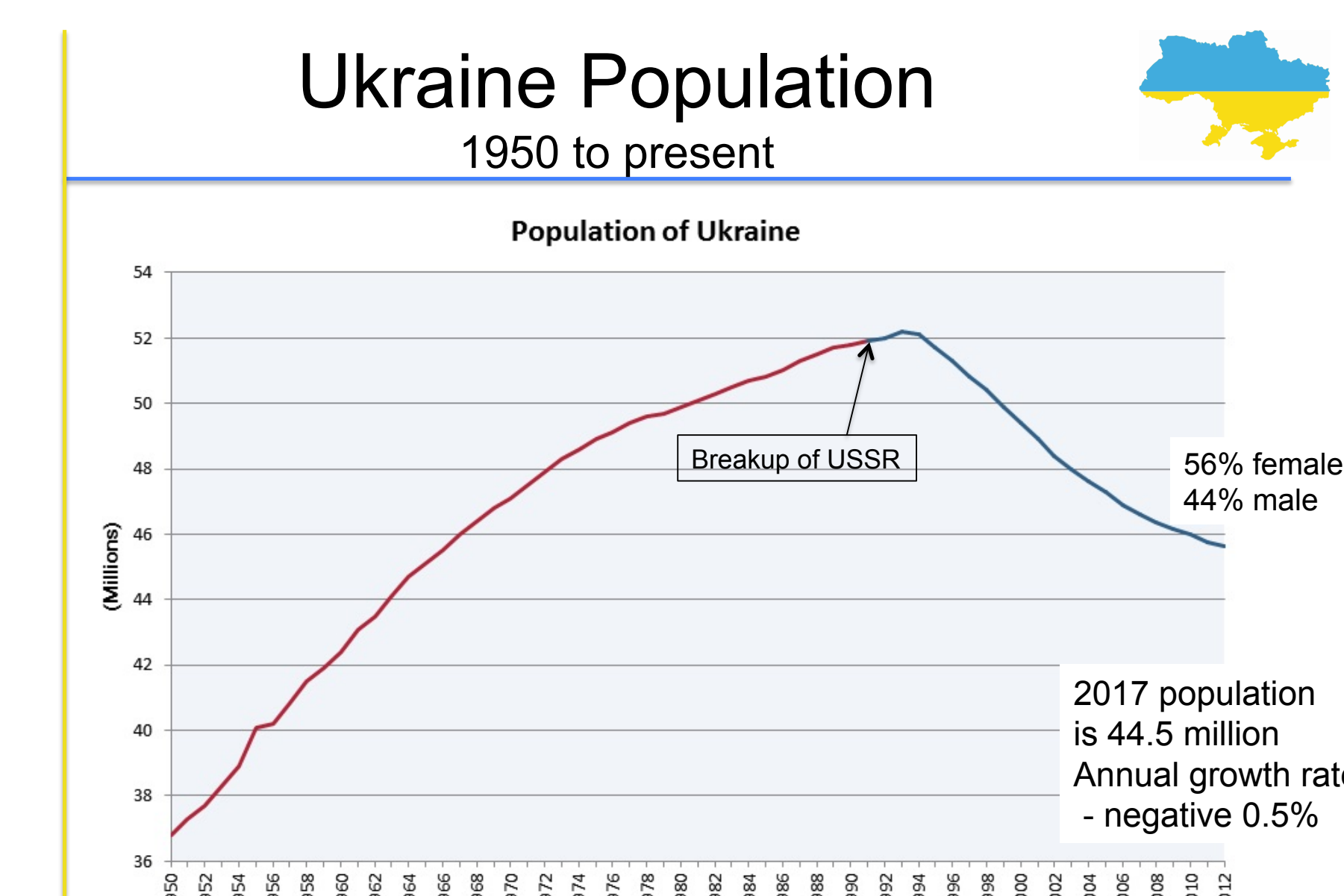


Figure 2. General precipitation distribution map of Ukraine, with the "Black soils" region indicated.

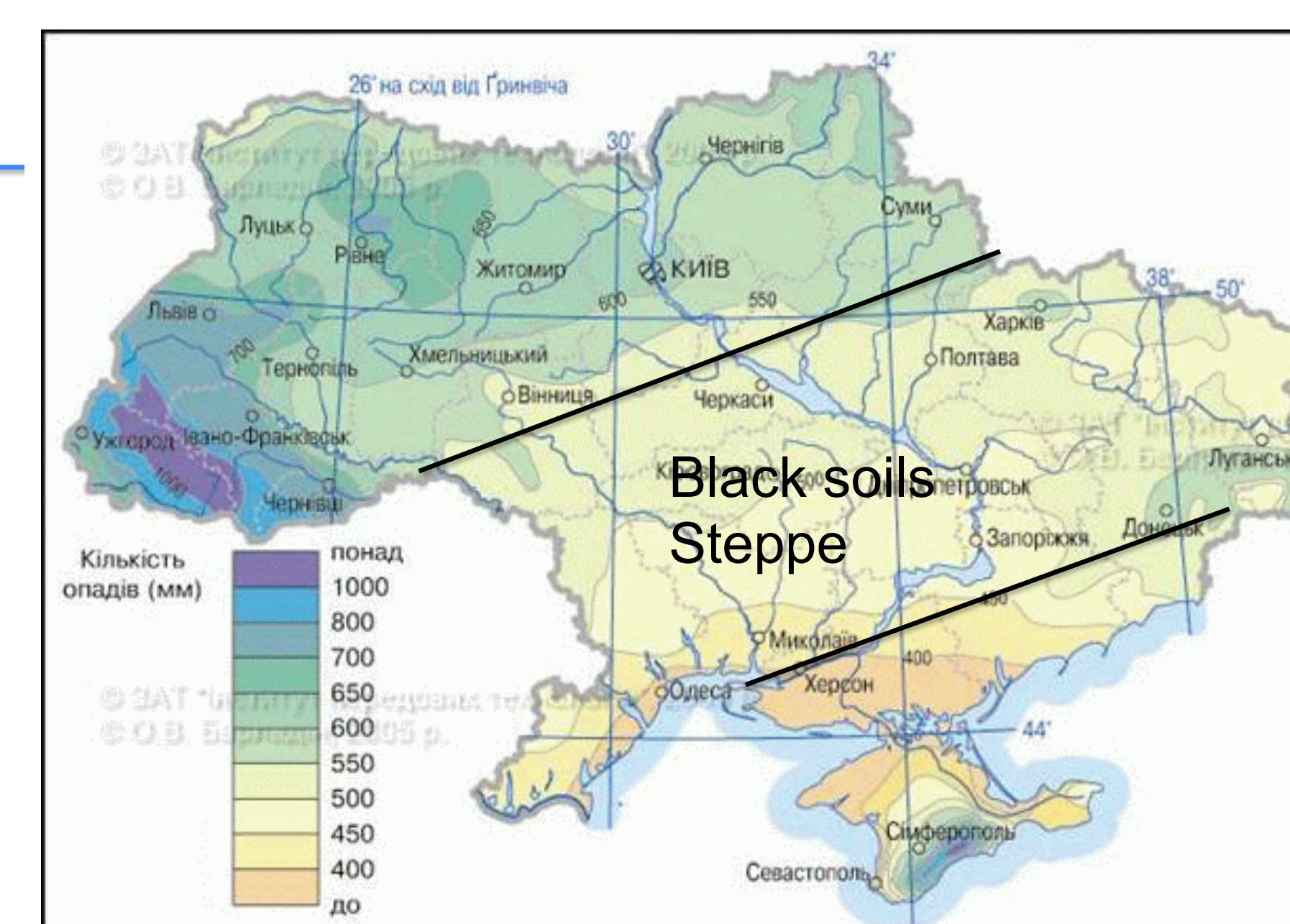
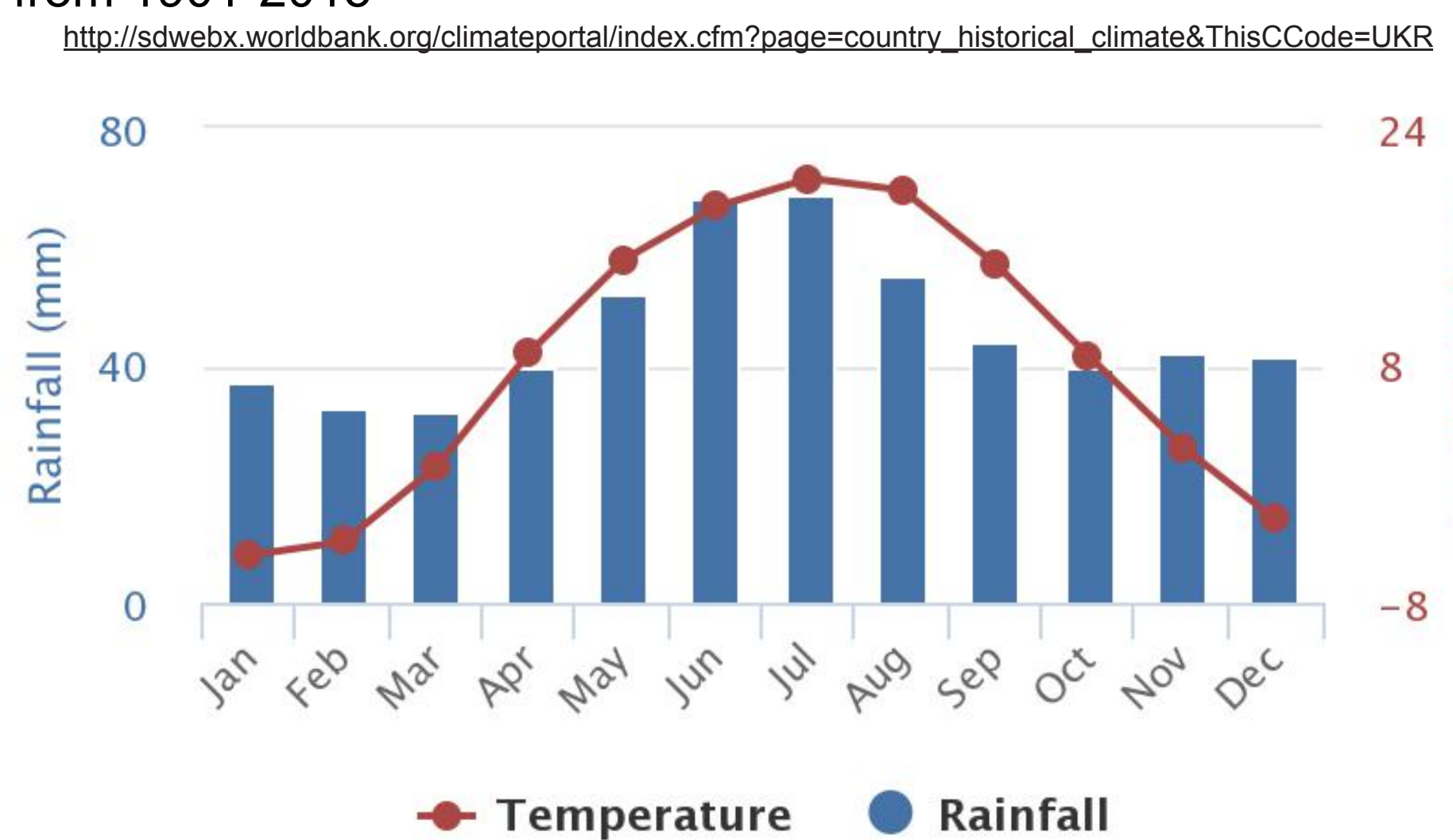


Fig. Distribution of precipitation

<http://ukrmap.su/en-g8/873.html>

Figure 3. Average Monthly Temperature and Rainfall for Ukraine from 1901-2015



Ukraine Resources:

- Formerly "Breadbasket of the Soviet Union"
 - Infrastructure built to produce food
- Agriculture – grains, sugar beet, sunflower, vegetables, beef, milk
- Natural resources – Iron ore, coal, manganese, natural gas, oil, salt, sulfur, graphite, titanium, magnesium.
- Industry – coal, hydro-electric power, ferrous & non-ferrous metals, machinery & transport equipment
- Export Markets – **formerly Russia 21%**, Turkey 7%, Italy 6%, US 4%
- Imports – **formerly Russia 28%**, Germany 12%, Poland 8%, China 7%, Turkmenistan 6%

Crops: multiple, up to nine in the rotation

- Wheat – central & south central
 - somewhat government controlled
 - 15% winter kills each year
 - 80% is milling quality hard red
- Barley, 90% spring
 - Eastern part of country – dry area, falling acreage
- Corn is 3rd most important grain – western & southern areas
 - 25 mmt, 10 million acres - about 100 bu/A average
 - And growing, large portion for silage
- Sunflower – south & eastern areas
 - Ukraine is the biggest exporter of sunflower oil in the world, with a market share of 60%
- Sugar beet – central & western
 - <http://wdc.org.ua/en/node/29>