



Economic geography of Russia

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Learning outcomes

Regional geography of Russia

Factors of geographical allocation of economic activities in Russia:

- climate and natural resources;**
- history and policy.**

Population geography of Russia

Allocation of industry across Russia

Geography of Industrial clusters in Russia

Basic geographical facts about Russia

Territorially the world's largest country.

It occupies most of Eastern Europe and North Asia, stretching from the Baltic Sea in the West to the Pacific Ocean in the East, and from the Arctic Ocean in the North to the Black Sea and the Caucasus in the South.

It is bordered by **Norway** and **Finland** in the northwest;
Estonia, Latvia, Belarus, Ukraine, Poland, and **Lithuania** in the West;
Georgia and **Azerbaijan** in the southwest; and
Kazakhstan, Mongolia, China, and **North Korea** along the southern border.

9th country in the World **by population**
(after China, India, USA, Indonesia, Brazil, Pakistan, Nigeria, Bangladesh).



R U S S I A

occupied by the Soviet Union in 1945, administered by Russia, claimed by Japan.

Geographical Labels: Norwegian Sea, Barents Sea, Kara Sea, Laptev Sea, East Siberian Sea, Bering Sea, Sea of Okhotsk, Sea of Japan, Yellow Sea, North Sea, Wrangel Island, Franz Josef Land, NEW SIBERIAN ISLANDS, SEVERNAYA ZEMLYA, NOVAYA ZEMLYA, KURIL ISLANDS, Svalbard (NORWAY), U.S., U.K., DEN., POL., RUS., EST., LAT., LITH., BELA., UKR., GEORGIA, ARMENIA, AZERBAIJAN, TURKMENISTAN, KAZAKHSTAN, UZBEKISTAN, KYRGYZSTAN, TAJIKISTAN, IRAN, MONGOLIA, NORTH KOREA, SOUTH KOREA, JAPAN.

Major Cities: Oslo, Stockholm, Helsinki, Tallinn, Riga, Vilnius, Minsk, Kiev, Kharkiv, Donetsk, Rostov, Volgograd, Saratov, Kazan', Perm', Ufa, Chelyabinsk, Yekaterinburg, Omsk, Krasnoyarsk, Novosibirsk, Irkutsk, Astana, Qaraghandy (Karaganda), Atyrau (Atyrau), Almaty, Ashgabat, Tashkent, Bishkek, Dushanbe, Kashi, Kabul, Ulaanbaatar, Harbin, Changchun, Shenyang, Baotou, Beijing, Tianjin, Jinan, Taiwan, Qingdao, Dalian, Pusan, Seoul, Pyongyang, Vladivostok, Sapporo, Tokyo, Yokohama, Nagoya, Osaka, Fukuoka, Petropavlovsk-Kamchatskiy, Cherskiy, Ahadyr, Provideniya, Tiksi, Noril'sk, Yakutsk, Magadan, Khabarovsk.

Other Labels: Arctic Circle, Lena, Yenisey, Angara, Irtysh, Ob, Yenisey, Lena, Amur, Volga, Kama, Ural, Lake Ladoga, Lake Onega, Lake Balkhash, Caspian Sea, Aral Sea, Demarcation Line, Yellow Sea.

Regional Geography of Russia

Russia is divided into 8 **Federal districts** and 83/85 **Federal subjects**.

The **Federal Districts** are **president's groupings of Federal subjects of Russia**.

Federal districts are not created by the Russian constitution or any law and are not the constituent units of Russia.

Each district includes several Federal subjects (Russian regions) in such a way that every Russian region is included in one of the eight federal districts.

8 Federal districts



8 Federal districts: comparative characteristics, geography

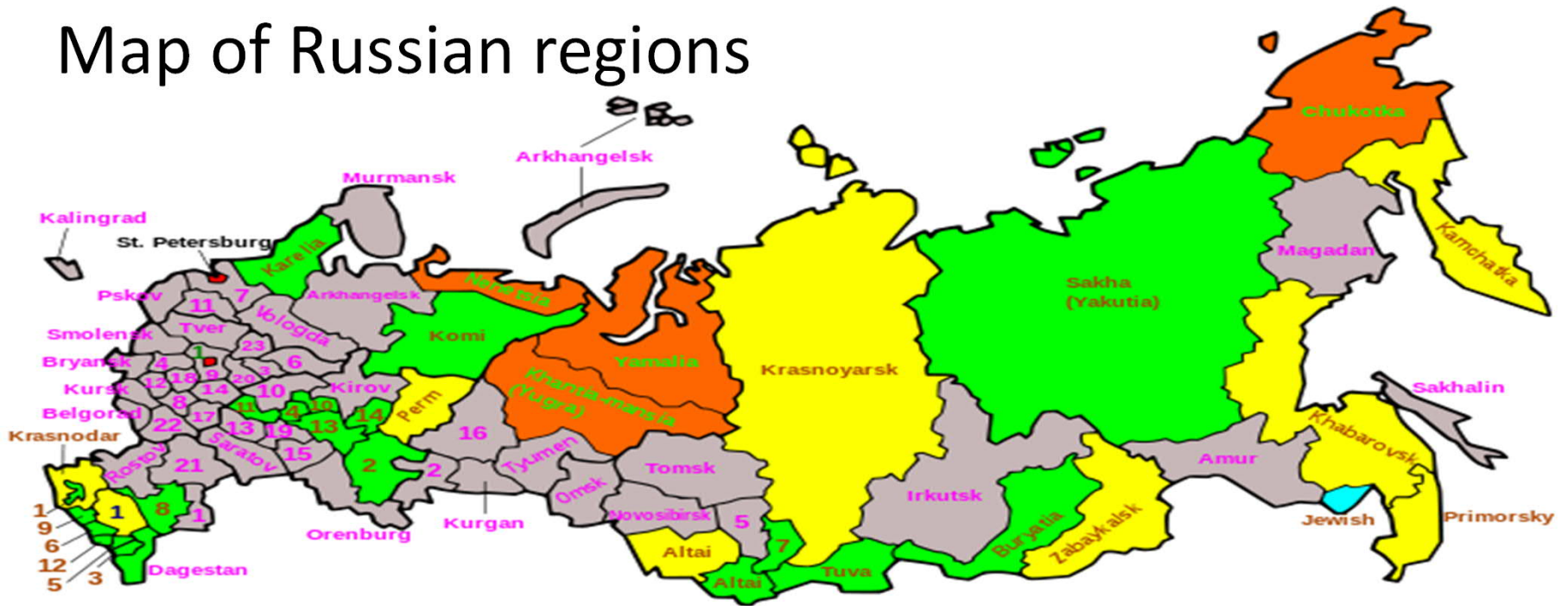
Federal District	Territory, thousands sq. km.	Population, thousands people, 1st Jan 2016	Density (th./per sq.km)	Large cities with population more than 100 000 p. (01.01.2018)	Medium and small cities, pop. Less than 100 000 p. (01.01.2018)
Russia	17 125 (100%)	146 545 (100%)	8,56	171	942
Central FD, Moscow	3,80 %	26,68%	60,16	46 (27%)	257 (27.3%)
North West FD, Saint-Petersburg	9,85%	9,45%	8,21	11 (6.4%)	135 (14.3%)
Southern FD, Rostov-na-Donu	2,46%	9,58%	33,36	21 (12.3%)	75 (8%)
North Caucasus FD, Pyatigorsk	0,99%	6,63%	57,17	14 (8%)	43 (4.6%)
Volga FD, Nizhnij Novgorod	6,06%	20,25%	28,62	32 (19%)	168 (18%)
Ural FD, Ekaterinburg	10,62%	8,40%	6,77	16 (9.4%)	99 (10.5%)
Siberia FD, Novosibirsk	30,04%	13,19%	3,76	21 (12.3%)	109 (11.6%)
Far Eastern FD, Khabarovsk	36,02%	4,23%	1,00	10 (6%)	56 (6%)
Crimean FD, Simferopol	0,16%	1,59%	86,05	Included in Southern district	Included in Southern district

8 Federal districts: comparative characteristics, economy

Federal District	% GDP, 2015	GDP per capita, USD, 2015	Areas of economic specialization
Russia	100 %	9 081	
Central	34,80 %	9297 (2)	Machinery, banking, retail
North West	10,40 %	7832 (4)	Machinery, forestry, fishing
Southern	7,10 %	4490 (7)	Agriculture, recreation
North Caucasus	2,60 %	2810 (8)	Agriculture, metal-intensive machinery, chemical industry
Volga FD	15,20 %	5334 (6)	Oil and gas, machinery, agriculture
Ural	13,80 %	11671 (1)	Oil and Gas, metallurgy, defence
Siberia	10,50 %	5583 (5)	Coal mining, metals, forestry
Far Eastern	5,60 %	9141 (3)	Fishing, defence
Crimean	0,26 % (2014), included in Southern FD	Not found	Machinery, building materials production, mining, chemical, fishing

Modern Map of Russian regions

Map of Russian regions



Oblasts

- 1 - Astrakhan
- 2 - Chelyabinsk
- 3 - Ivanovo
- 4 - Kaluga
- 5 - Kemerovo
- 6 - Kostroma
- 7 - Leningrad
- 8 - Lipetsk
- 9 - Moscow
- 10 - Nizhny Novgorod
- 11 - Novgorod
- 12 - Oryol
- 13 - Penza
- 14 - Ryazan
- 15 - Samara
- 16 - Sverdlovsk
- 17 - Tambov
- 18 - Tula
- 19 - Ulianovsk
- 20 - Vladmi
- 21 - Volgograd
- 22 - Voronezh
- 23 - Yaroslavl

Republics

- 1 - Adygeya
- 2 - Bashkortostan
- 3 - Chechnya
- 4 - Chuvashia
- 5 - Ingushetia
- 6 - Kabardino-Balkaria
- 7 - Khakassia
- 8 - Kalmykia
- 9 - Karachay-Cherkessia
- 10 - Mari El
- 11 - Mordovia
- 12 - North Ossetia-Alania
- 13 - Tartastan
- 14 - Udmurtia

Autonomous Okrugs

Krais

1 - Stavropol

Federal Cities

1 - Moscow

Jewish Autonom. Oblast

Russian regions: Basic information

83/85 (83 + 2 Crimea and Sevastopol) federal subjects (Russian regions) which possess varying levels of autonomy:

14 federal republics – more independence; 15th – Republic of Crimea

2 federal cities – Moscow and Saint-Petersburg; 3rd - Sevastopol

Max population - 11, 503, 501 – Moscow city;

Min population - 42, 090 - Nenets Autonomous Okrug.

Average population – 3, 389, 968.

Max area - 3,103,200 sq. km. – Sakha Yakutia Republic;

Min area – 1,100 sq. km. - Moscow city.

Average area – 84,244 sq. km.

Geographical allocation of economic activity in Russia

(adopted from Markevich and Mihailova lecture, 2011)

= Three standard forces at work:

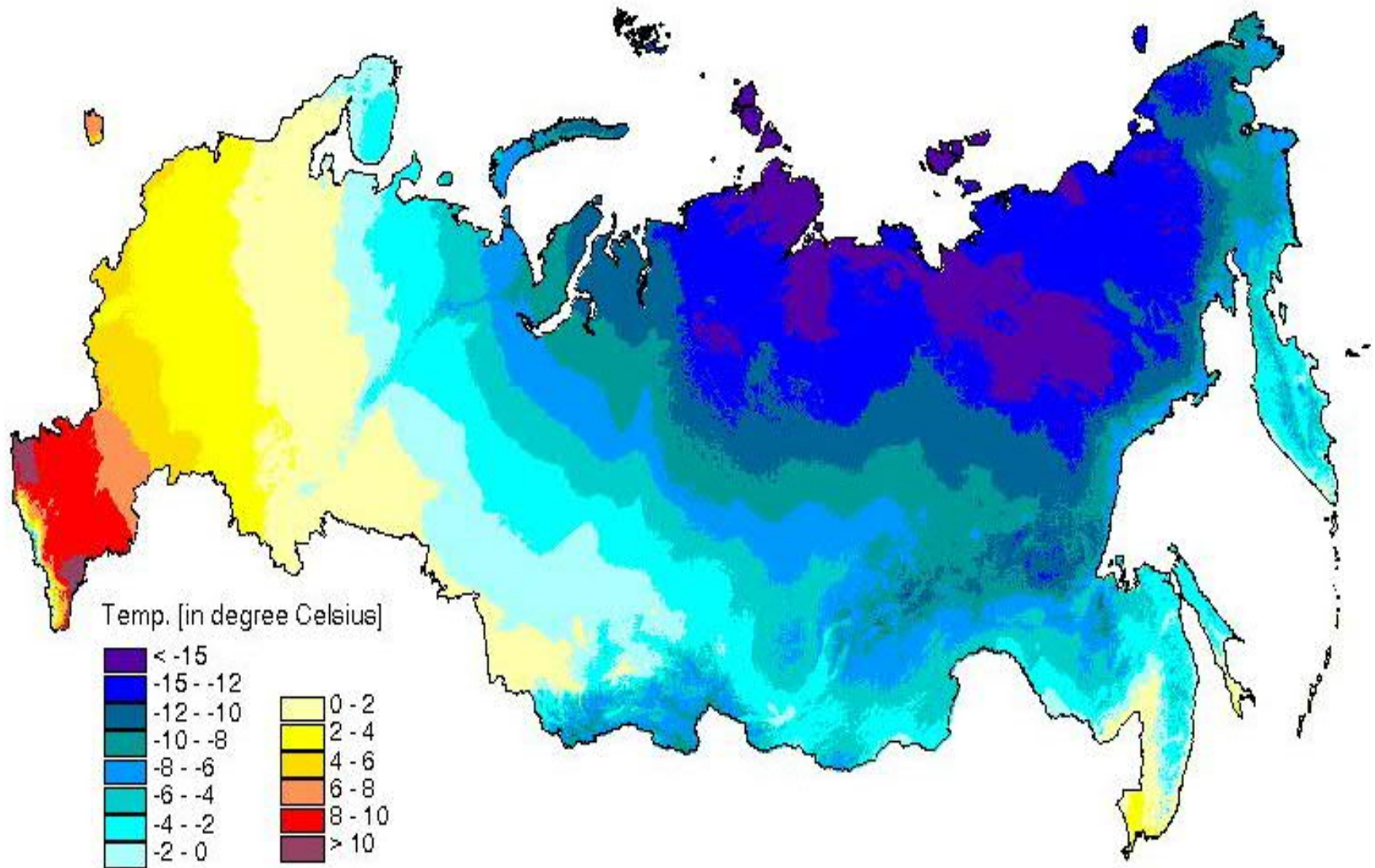
1. First nature of geography (endowment)
 - climate, terrain, natural resources

2. Second nature of geography (man-made infrastructure)
 - History
 - Policy

*These are the main factors explaining current location
of productive resources*

3. Third nature of geography (interaction among economic agents)

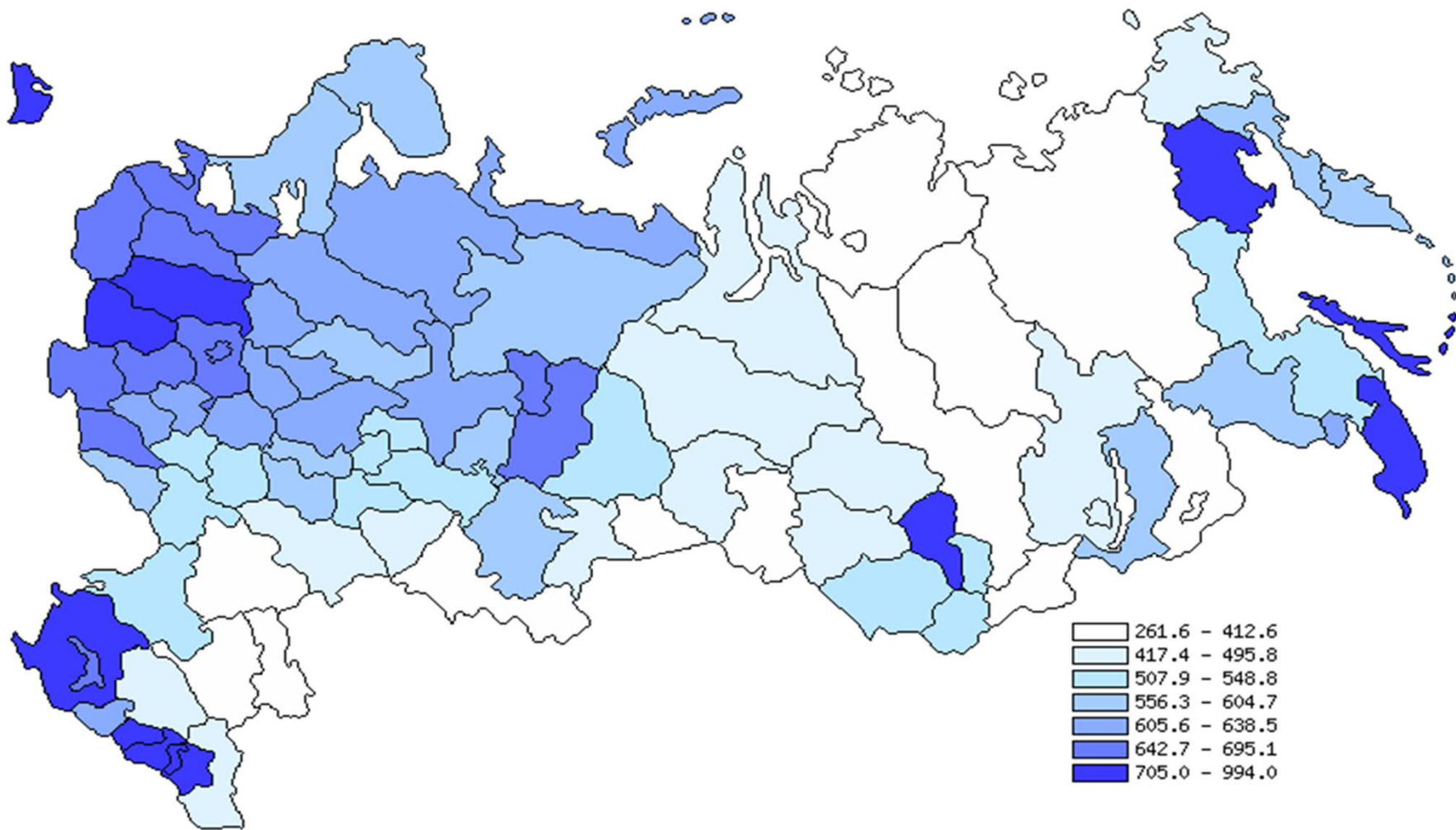
Mean Annual Temperature in Russia



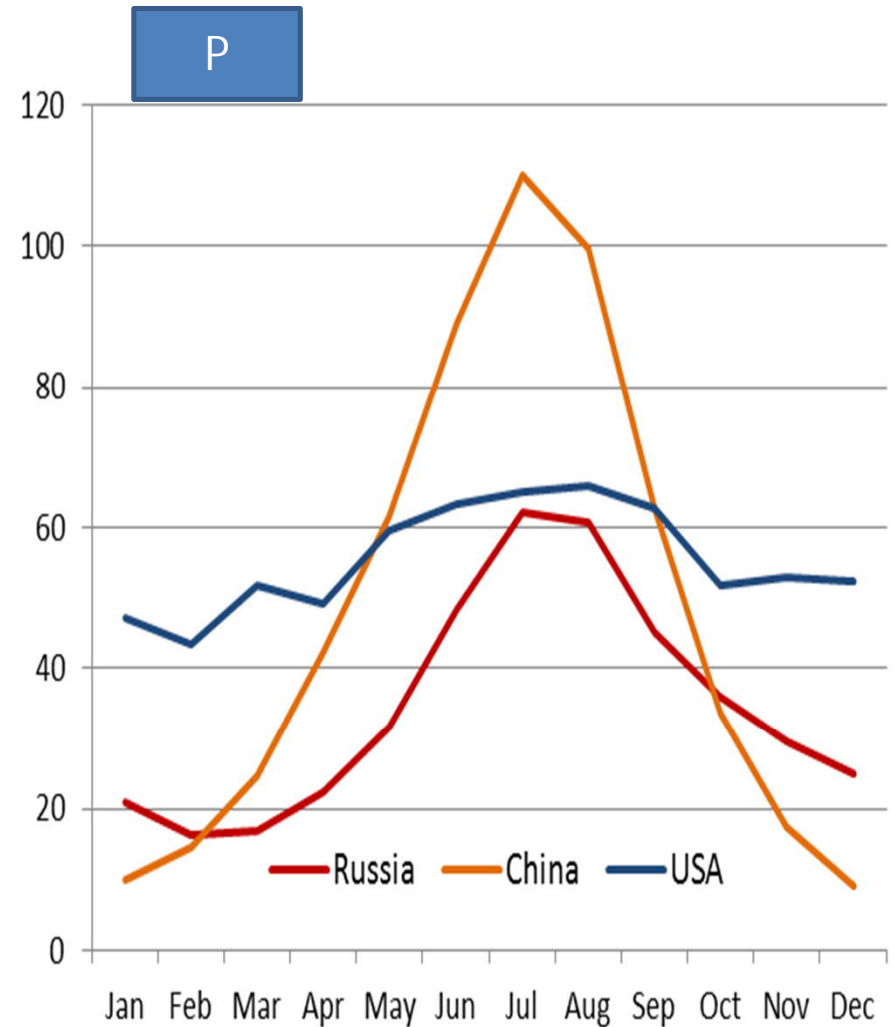
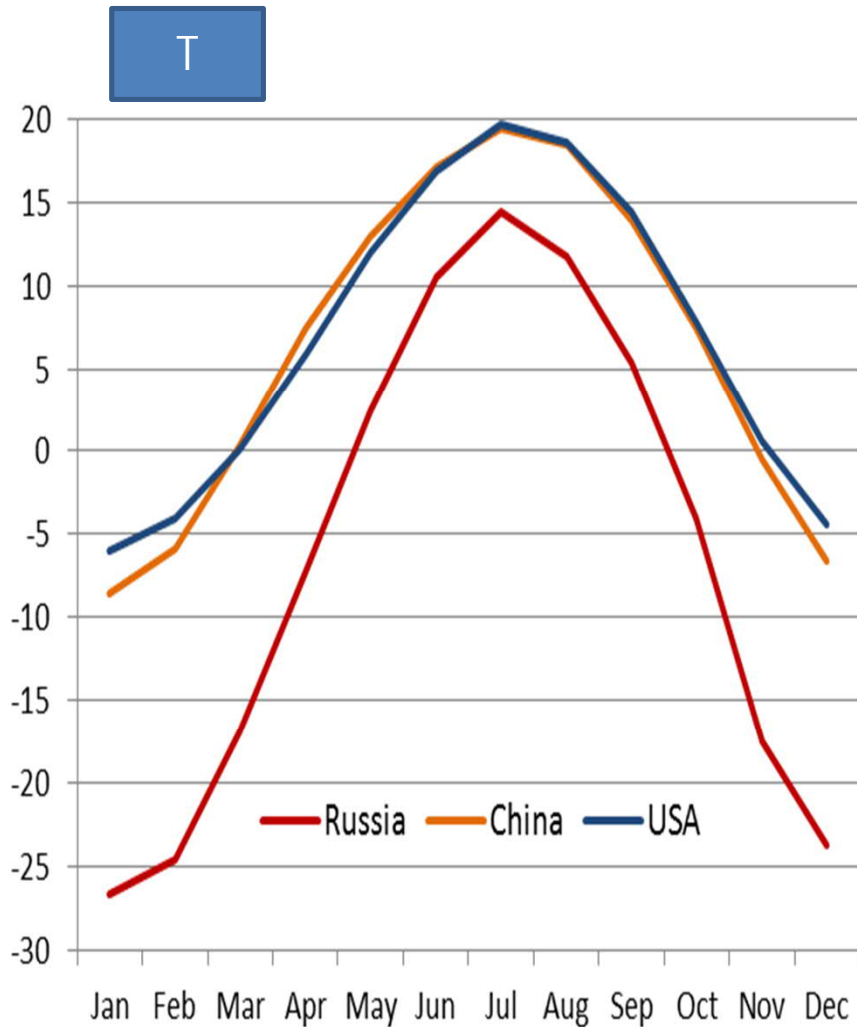
Permafrost Coverage in the Russian Federation



Map of average annual precipitation (1998-2011) in Russia's regions, millimeters



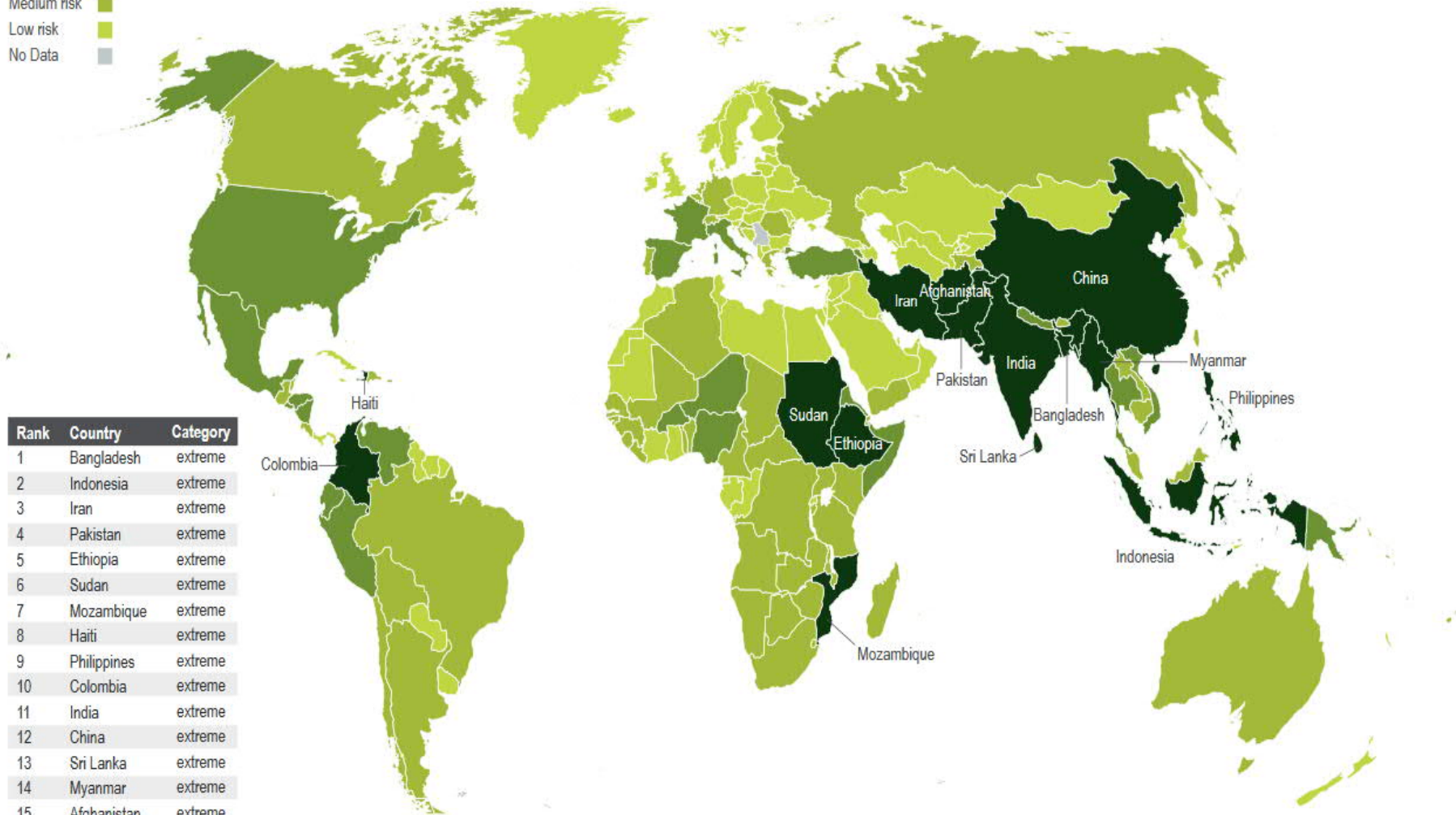
Average monthly temperature (° C, left graph) and precipitation (mm, right graph) in 1960-90



Natural Disasters Risk Index 2010

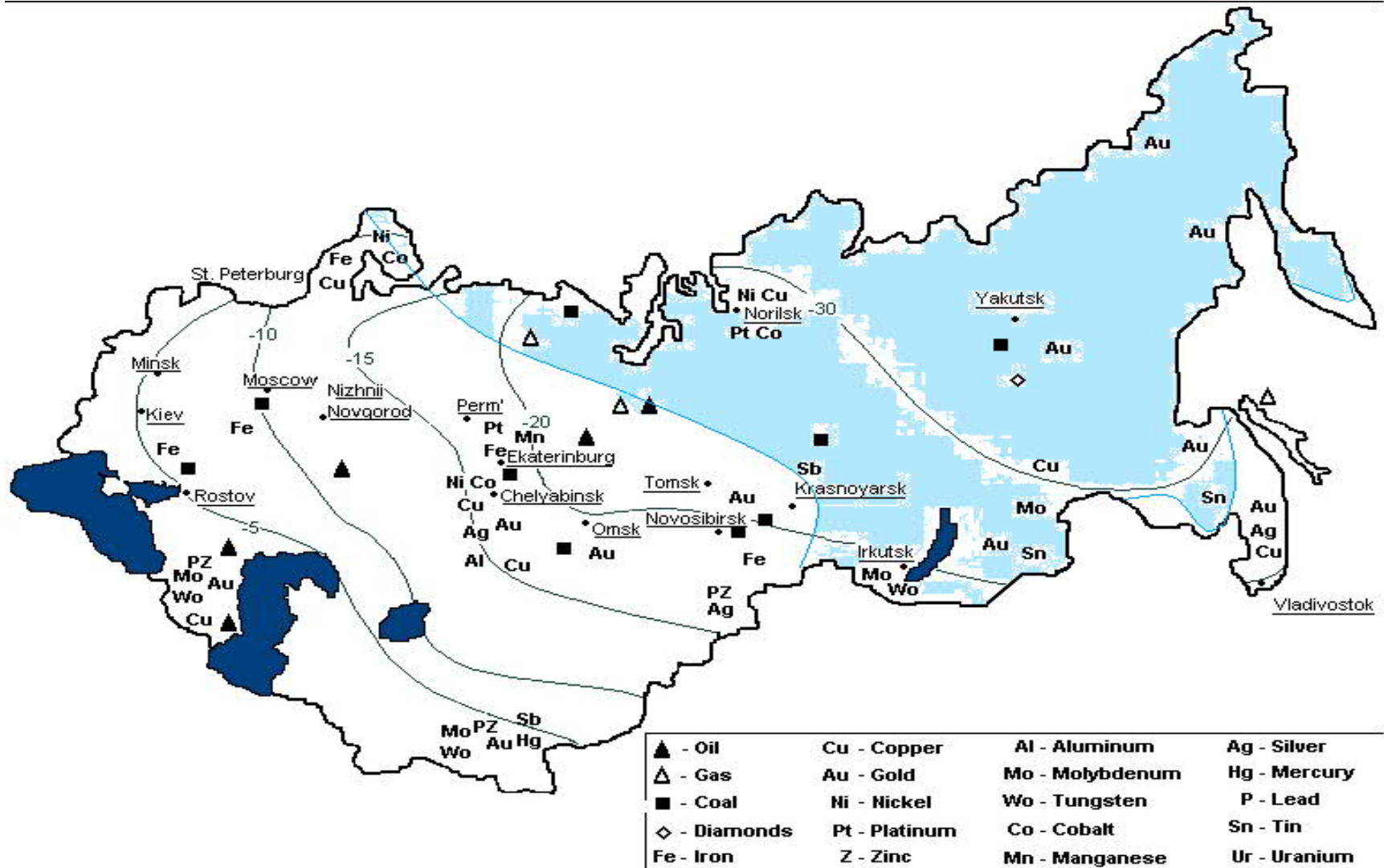


- Extreme risk
- High risk
- Medium risk
- Low risk
- No Data

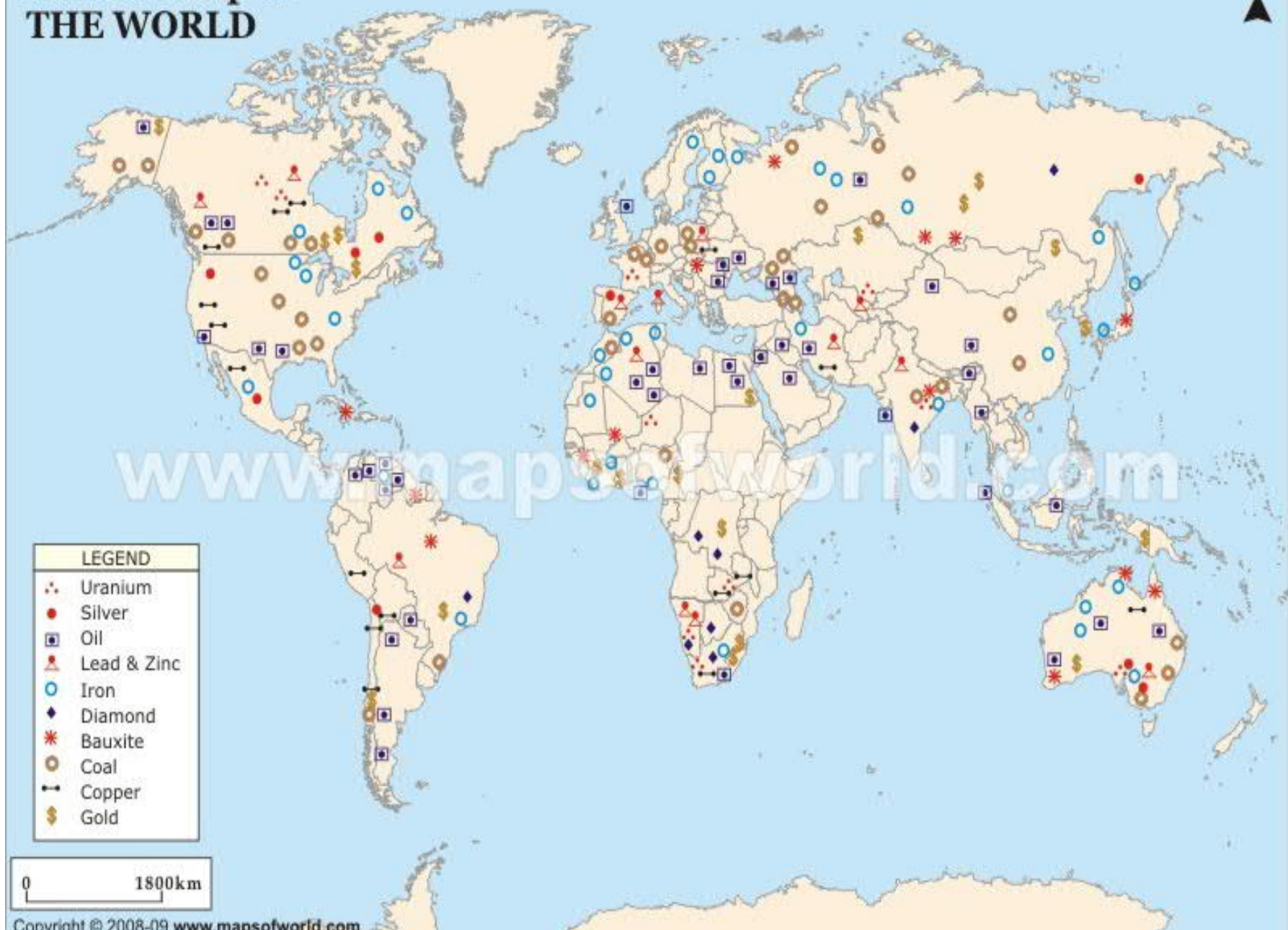


Natural resources in Russia

(Markevich and Mihailova lecture, 2011)



Mineral Map of THE WORLD

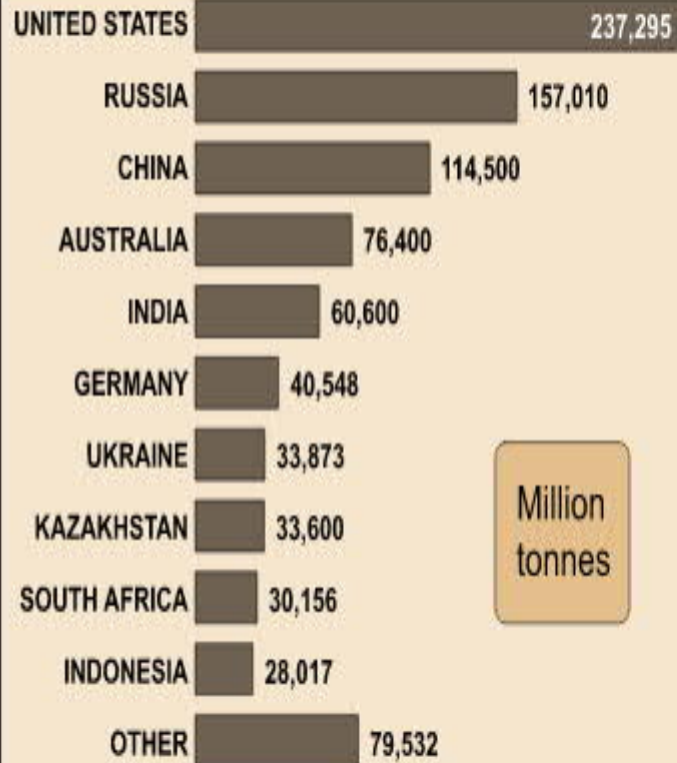


LEGEND	
⋄	Uranium
●	Silver
■	Oil
▲	Lead & Zinc
○	Iron
◆	Diamond
*	Bauxite
●	Coal
↔	Copper
⌘	Gold



PROVEN COAL RESERVES

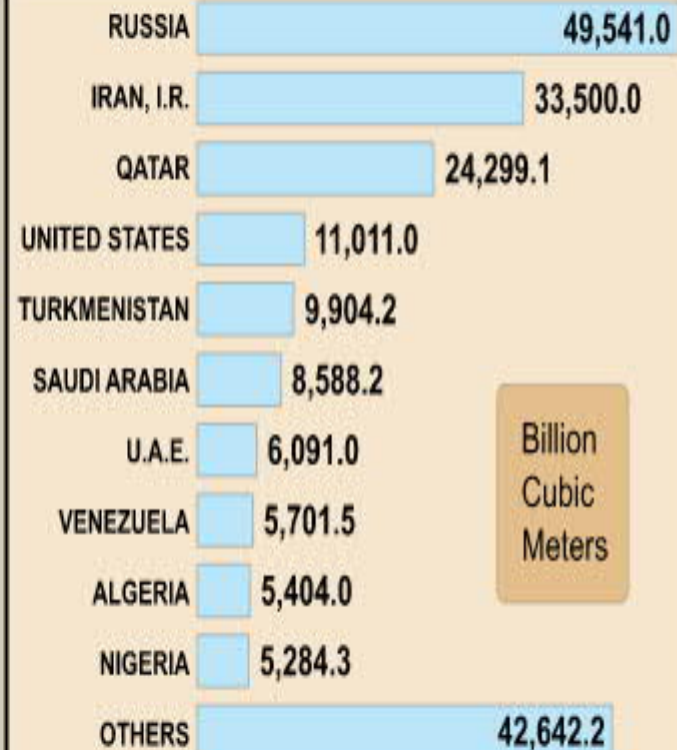
TOP TEN COUNTRIES



Source: BP Statistical review of world energy 2016

PROVEN NATURAL GAS RESERVES

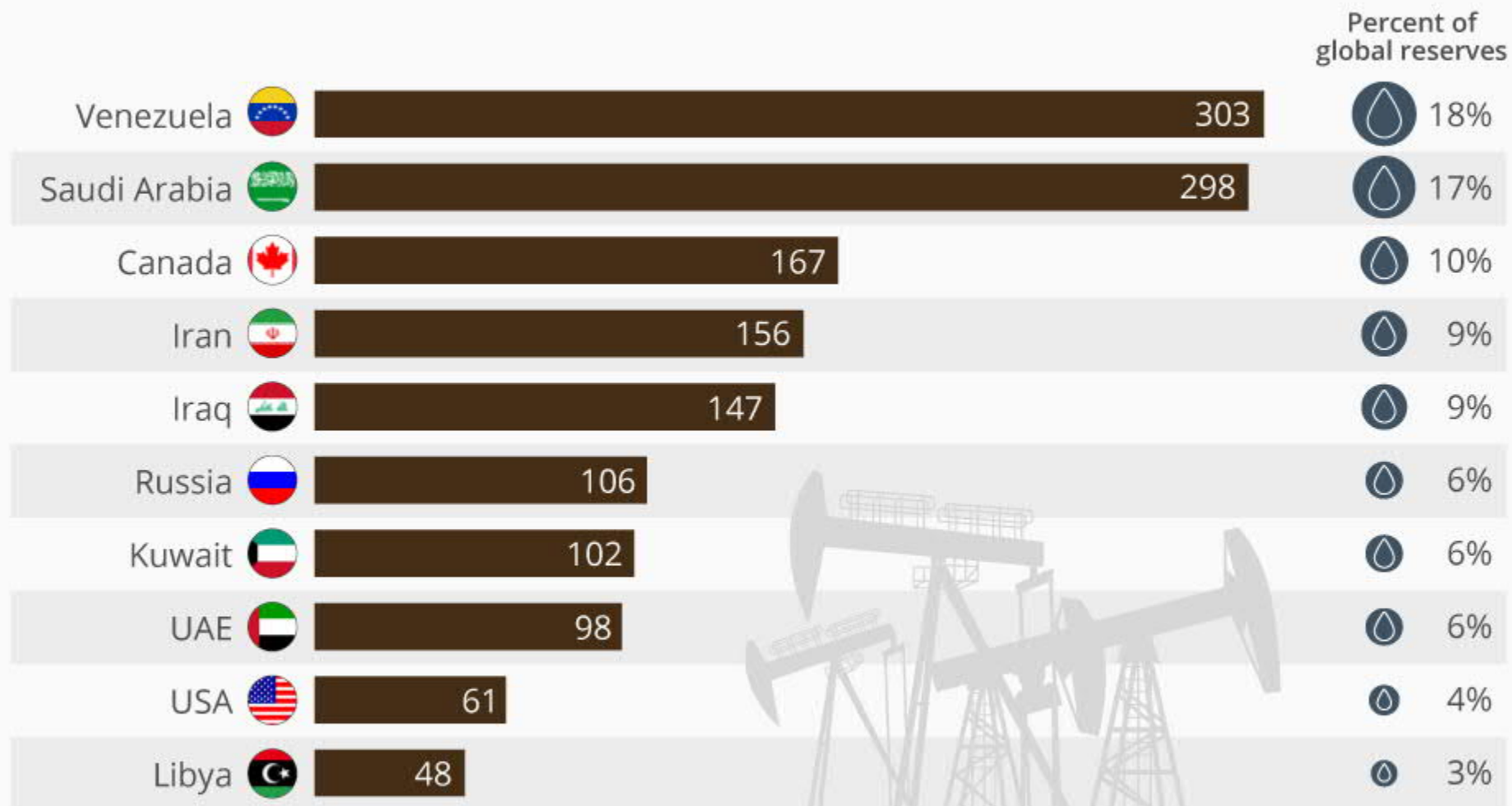
TOP TEN COUNTRIES



Source: 2016 OPEC Annual Statistical Bulletin

The Countries with the Largest Oil Reserves

Countries with the largest proved oil reserves in 2018 (in billion barrels)

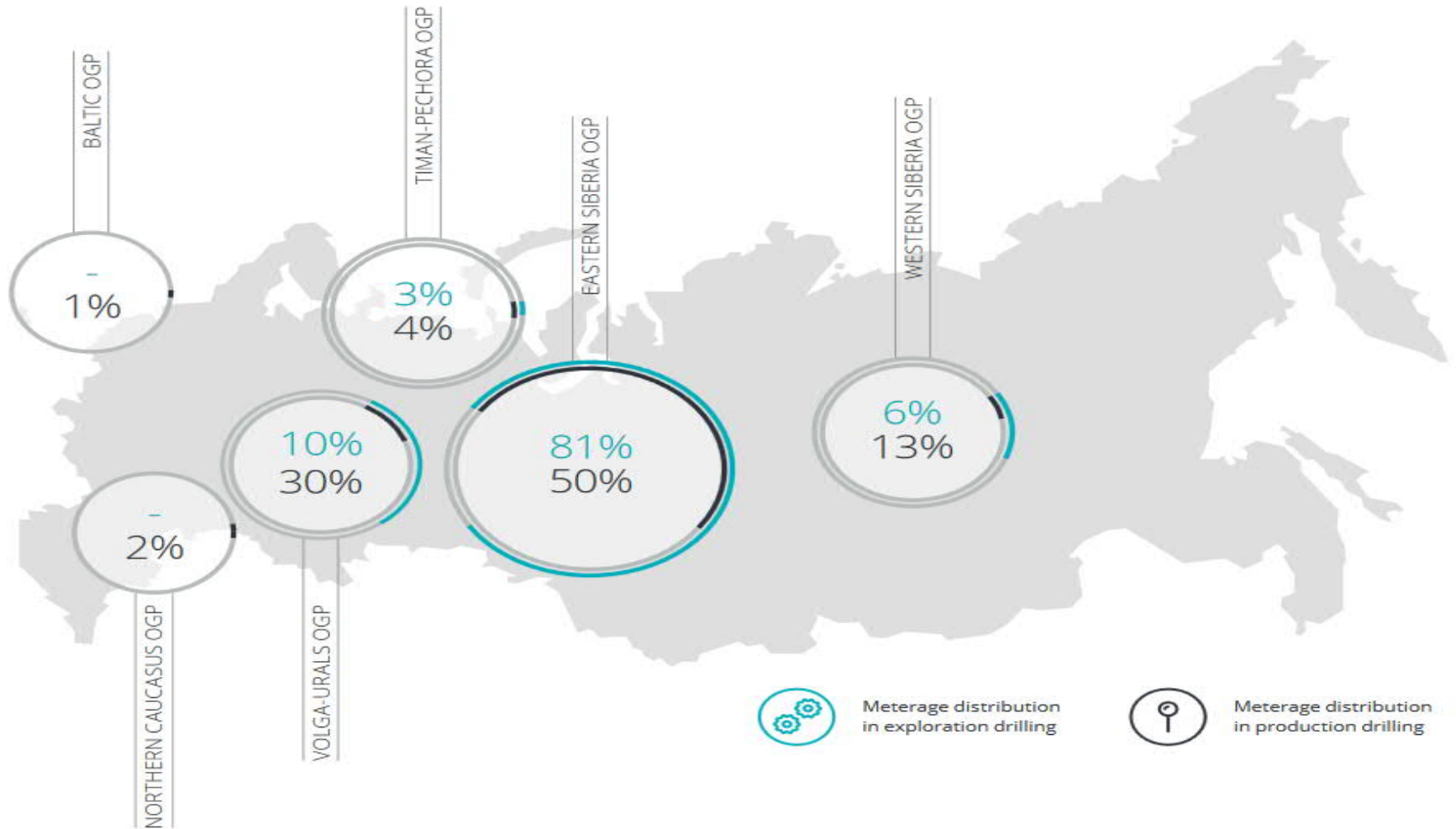


Russia oilfield map, 2017



Russian oil operations in 2017

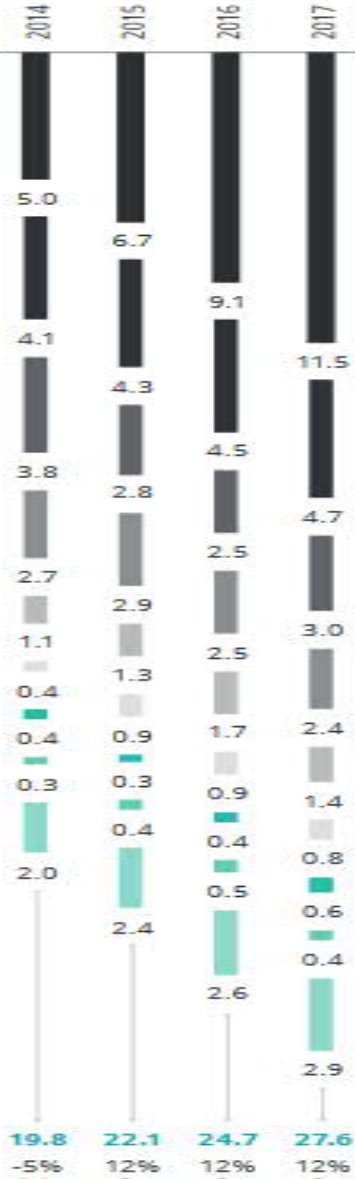
Meterage distribution of exploration and production drilling across the oil and gas provinces (OGP)



Production drilling volumes, million m



- Rosneft
- Surgutneftegas
- Lukoil
- Gazprom Neft
- Slavneft
- Tatneft
- RussNeft
- Bashneft
- Others

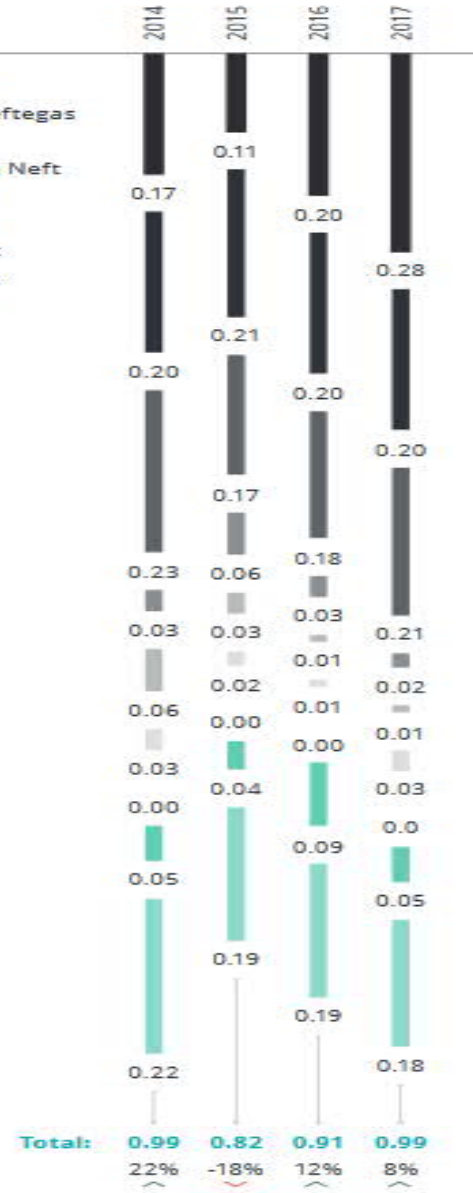


Oil

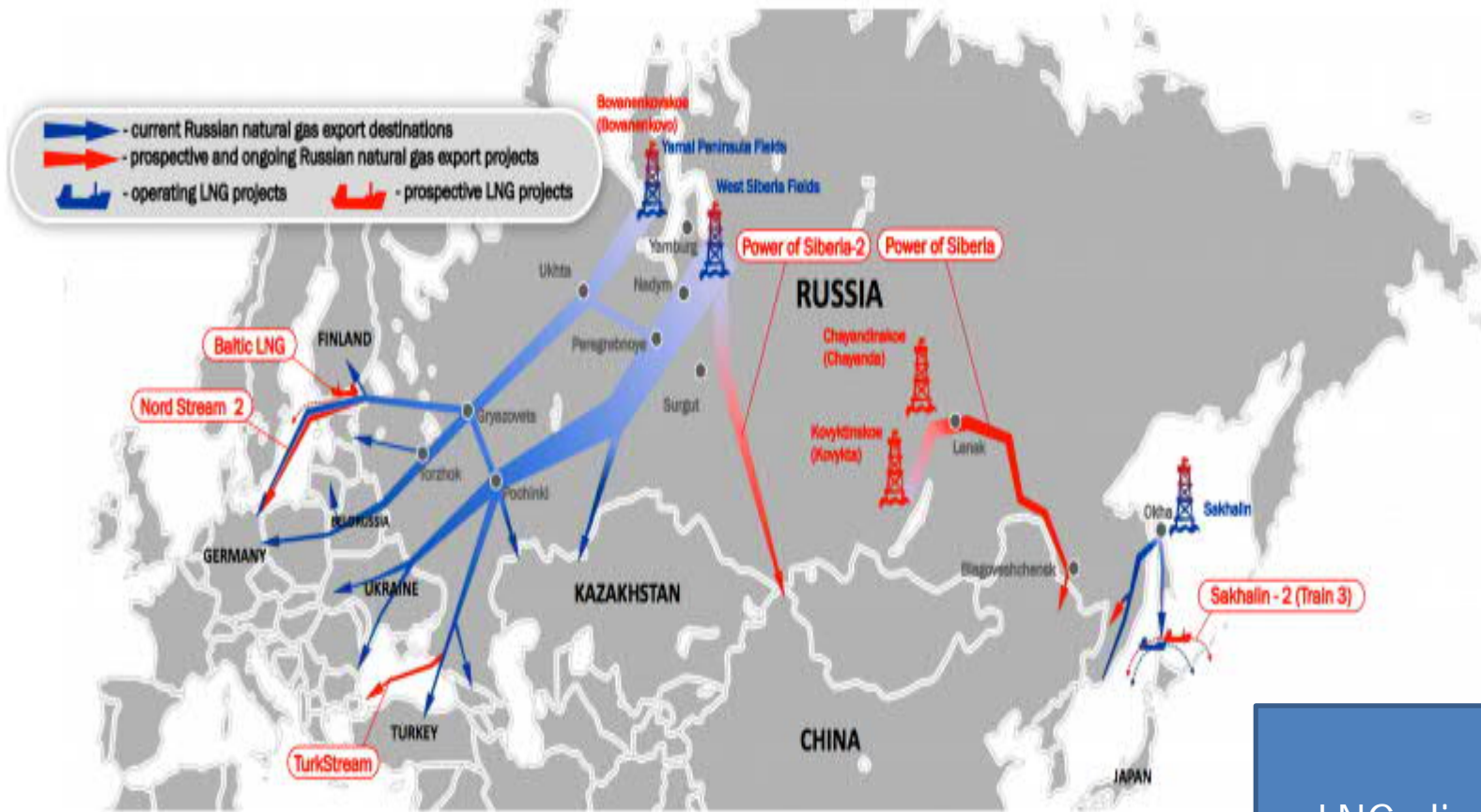
Exploration drilling volumes, million m



- Rosneft
- Surgutneftegas
- Lukoil
- Gazprom Neft
- Slavneft
- Tatneft
- RussNeft
- Bashneft
- Others

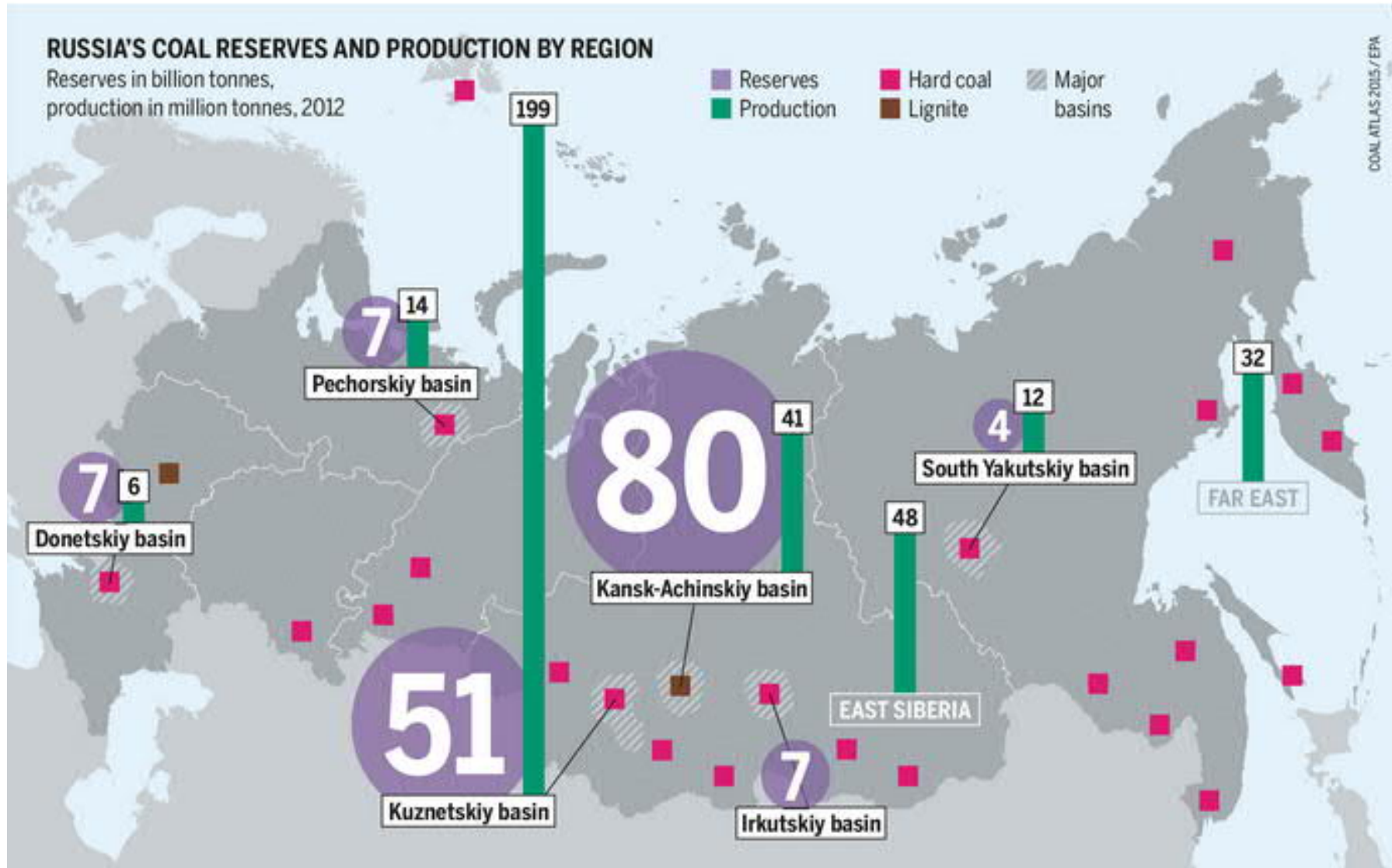


KEY CURRENT AND PROSPECTIVE EXPORT DESTINATIONS



LNG - liquified natural gas project

Russia's coal reserves, 2015

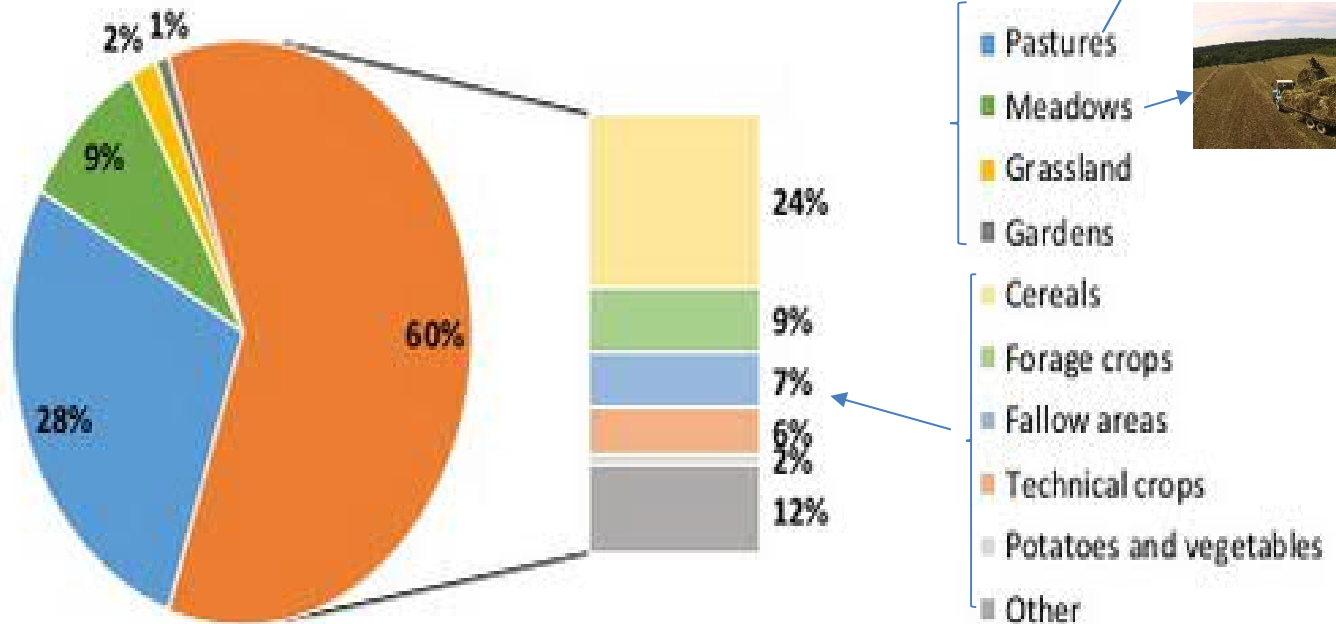


USSR Metallurgy 1974



AGRICULTURE LAND USE IN RUSSIA

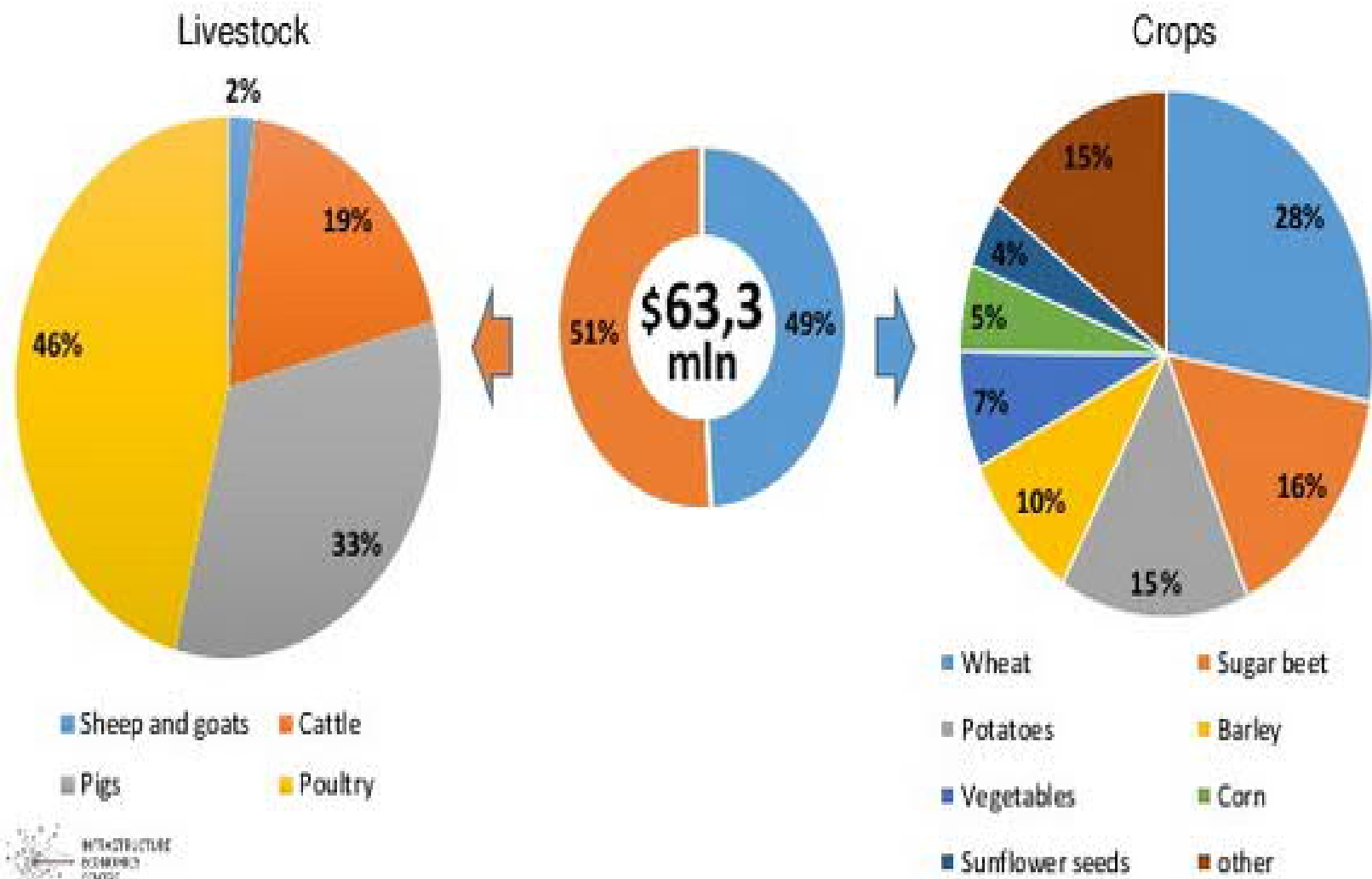
Agricultural lands by category of use, 2014



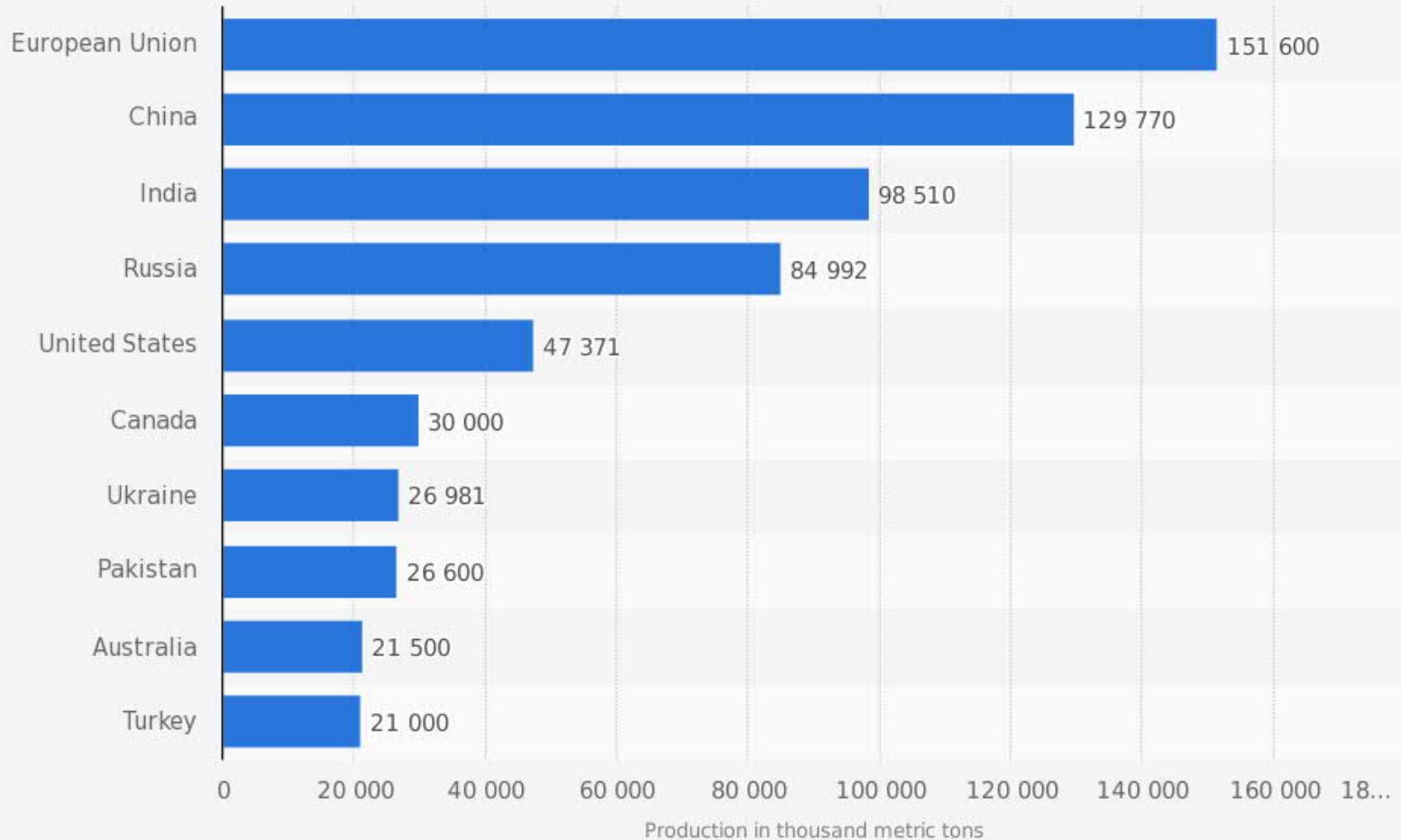
Total area = 1 910 000 ha

SPECIALIZATION OF AGRICULTURE IN RUSSIA

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Leading 10 wheat producers worldwide in 2017/2018 (in 1,000 metric tons)*



Sources

US Department of Agriculture; USDA Foreign Agricultural Service

© Statista 2018

Additional Information:

Worldwide; USDA Foreign Agricultural Service; 2017/2018

Largest global wheat exporter: 2018

1. Russia: US\$8.4 billion (20.5% of total wheat exports)
2. Canada: \$5.7 billion (13.8%)
3. United States: \$5.5 billion (13.2%)
4. France: \$4.1 billion (10%)
5. Australia: \$3.1 billion (7.5%)
6. Ukraine: \$3 billion (7.3%)
7. Argentina: \$2.4 billion (5.9%)
8. Romania: \$1.23 billion (3%)
9. Germany: \$1.16 billion (2.8%)
10. Kazakhstan: \$965.4 million (2.3%)
11. Bulgaria: \$849.7 million (2.1%)
12. Hungary: \$482.1 million (1.2%)
13. Czech Republic: \$406.0 million (0.99%)
14. Poland: \$404.4 million (0.98%)
15. Lithuania: \$376.8 million (0.91%)

RUSSIA: Total Wheat Production



Data Source: Rosstat, Average Crop Production 2011-2015;
IIASA and FAO (2008)

Foreign Agriculture Service
Office of Global Analysis
International Production Assessment Division



BESIDES! Russia is one of the largest global producers of

Barley



Oat



Rye



Sunflower

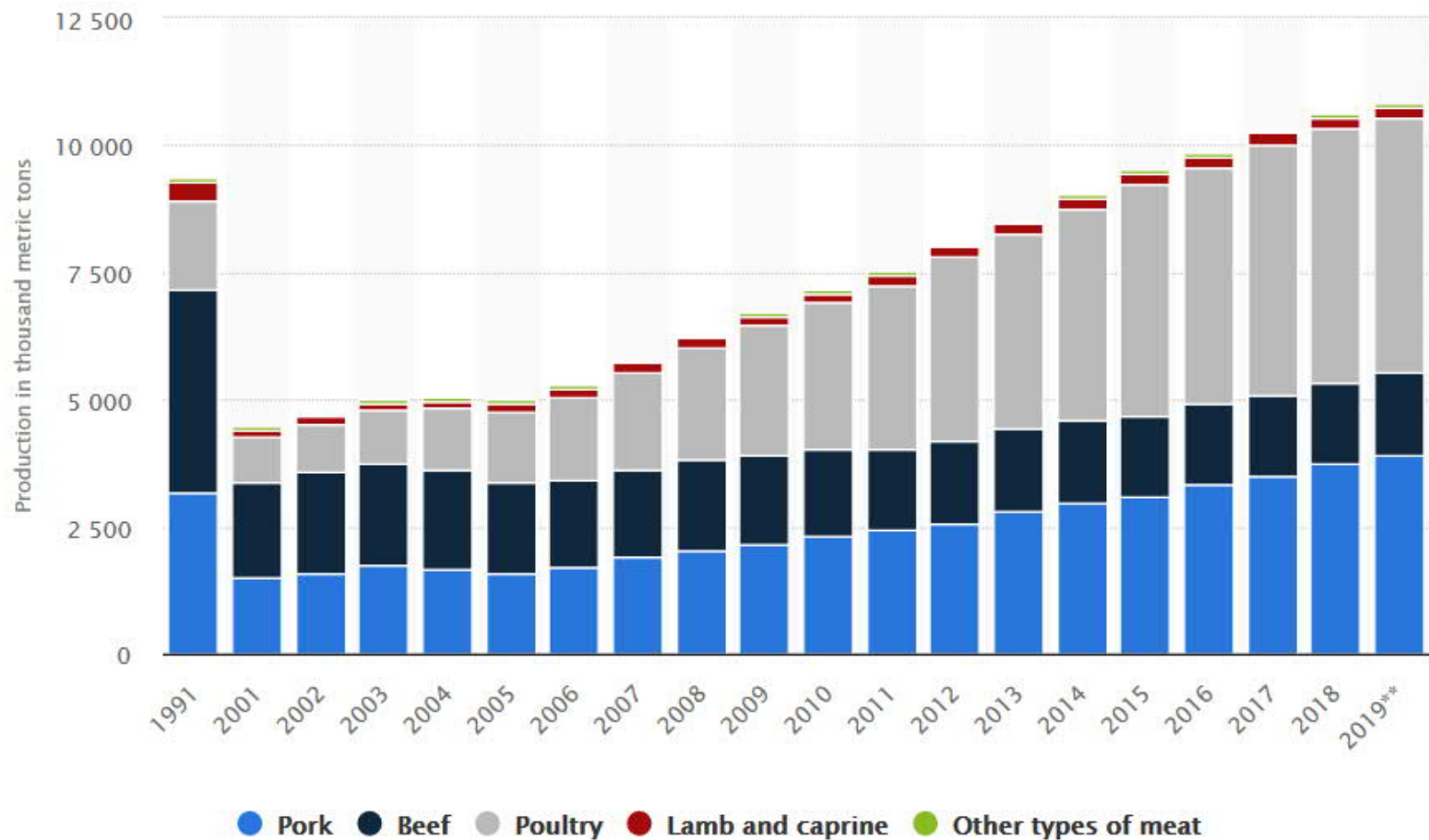


Sugar beet (first largest)



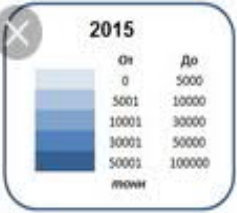
Meat production volume in Russia from 1991 to 2019, by type*

(in 1,000 metric tons)



Details: Russia; AB Centre - Expert Analytical Centre of Agribusiness (Russia); Russian Federal State Statistics Service; 1991 to 2019

Production of meat of cattle; Regional distribution across Russia



Bryansk R

Tatarstan



Krasnodar R

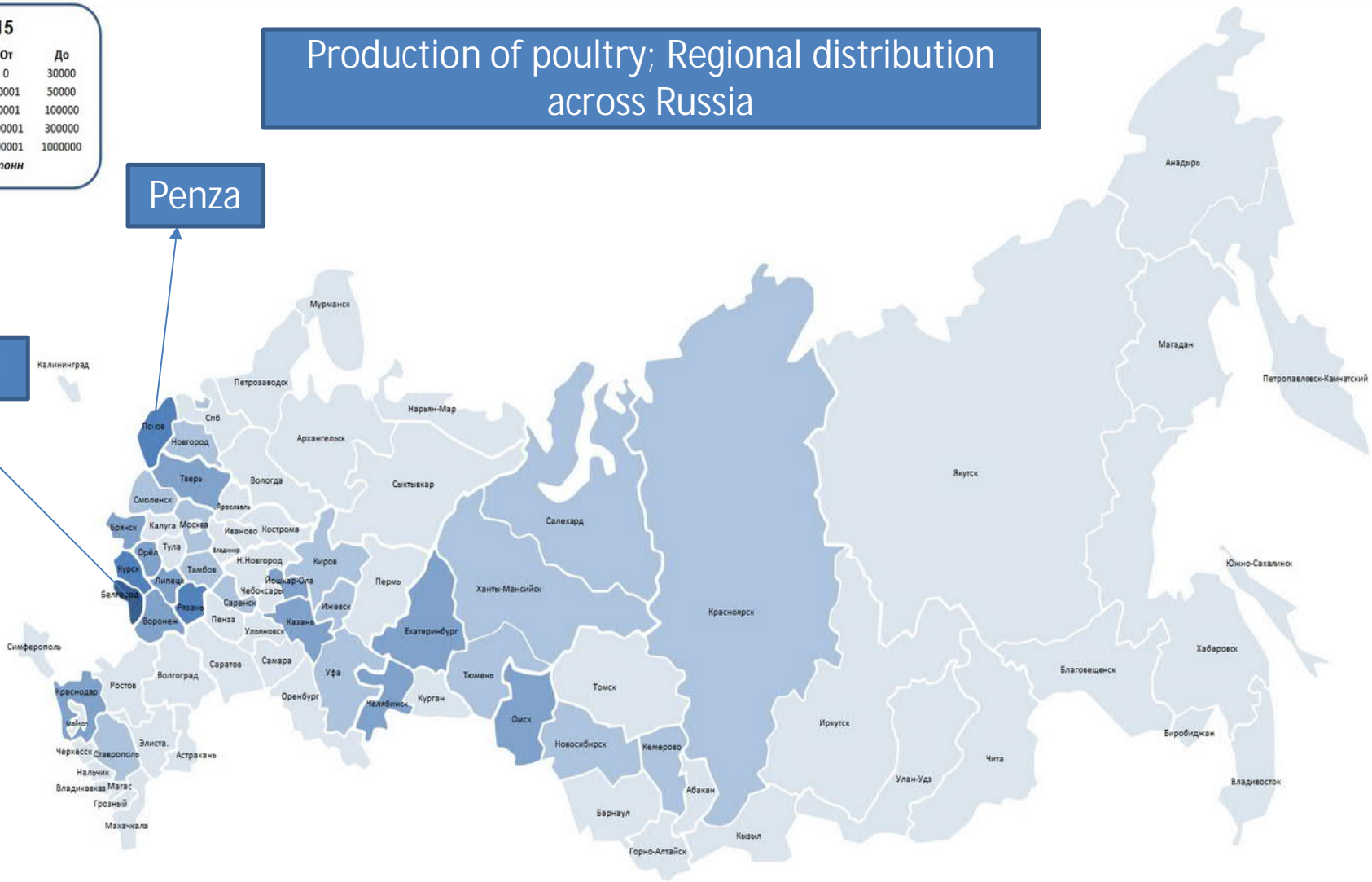
Voronezh R

Production of poultry; Regional distribution across Russia



Penza

Belgorod

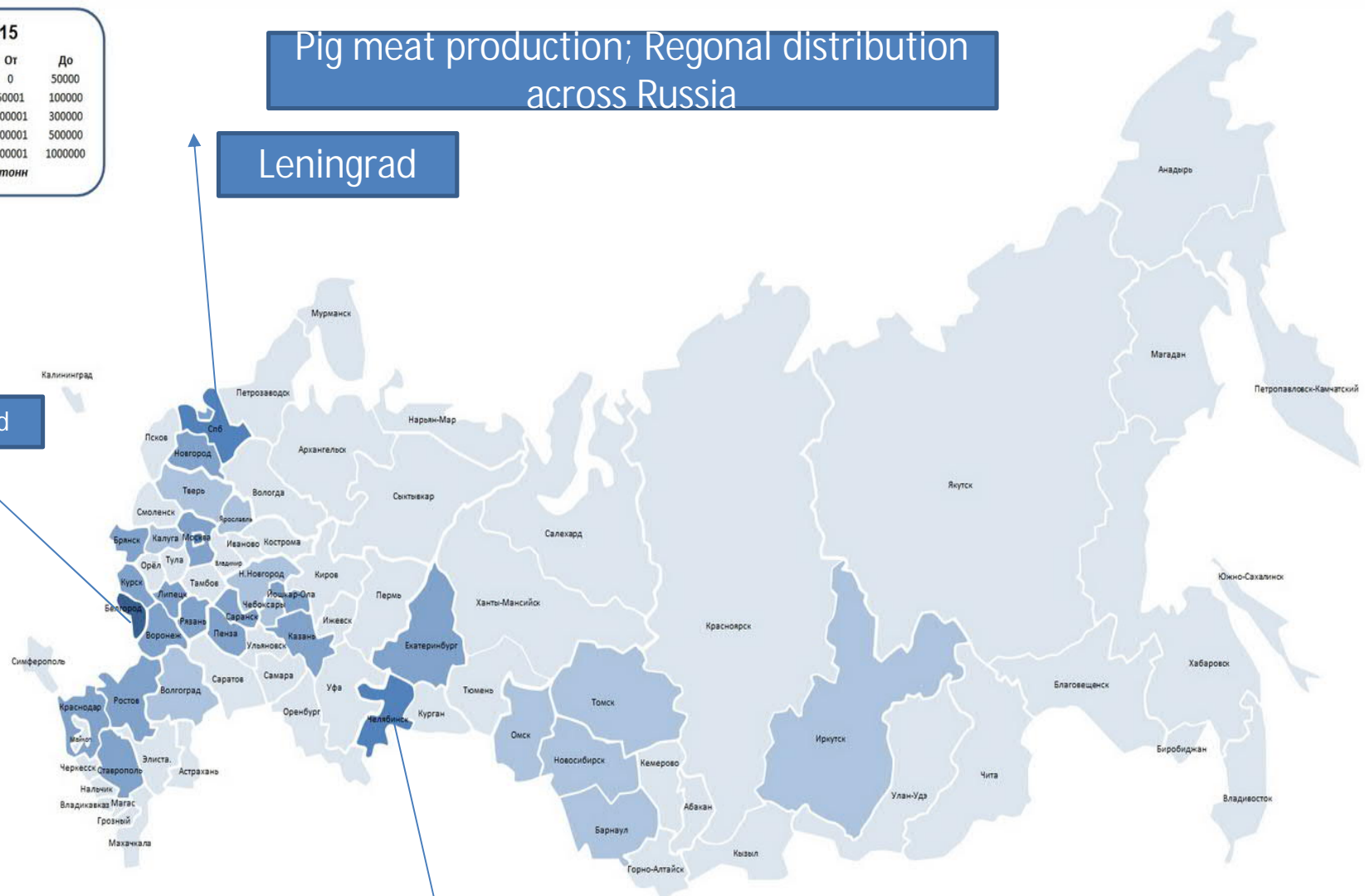


Pig meat production; Regional distribution across Russia



Leningrad

Belgorod



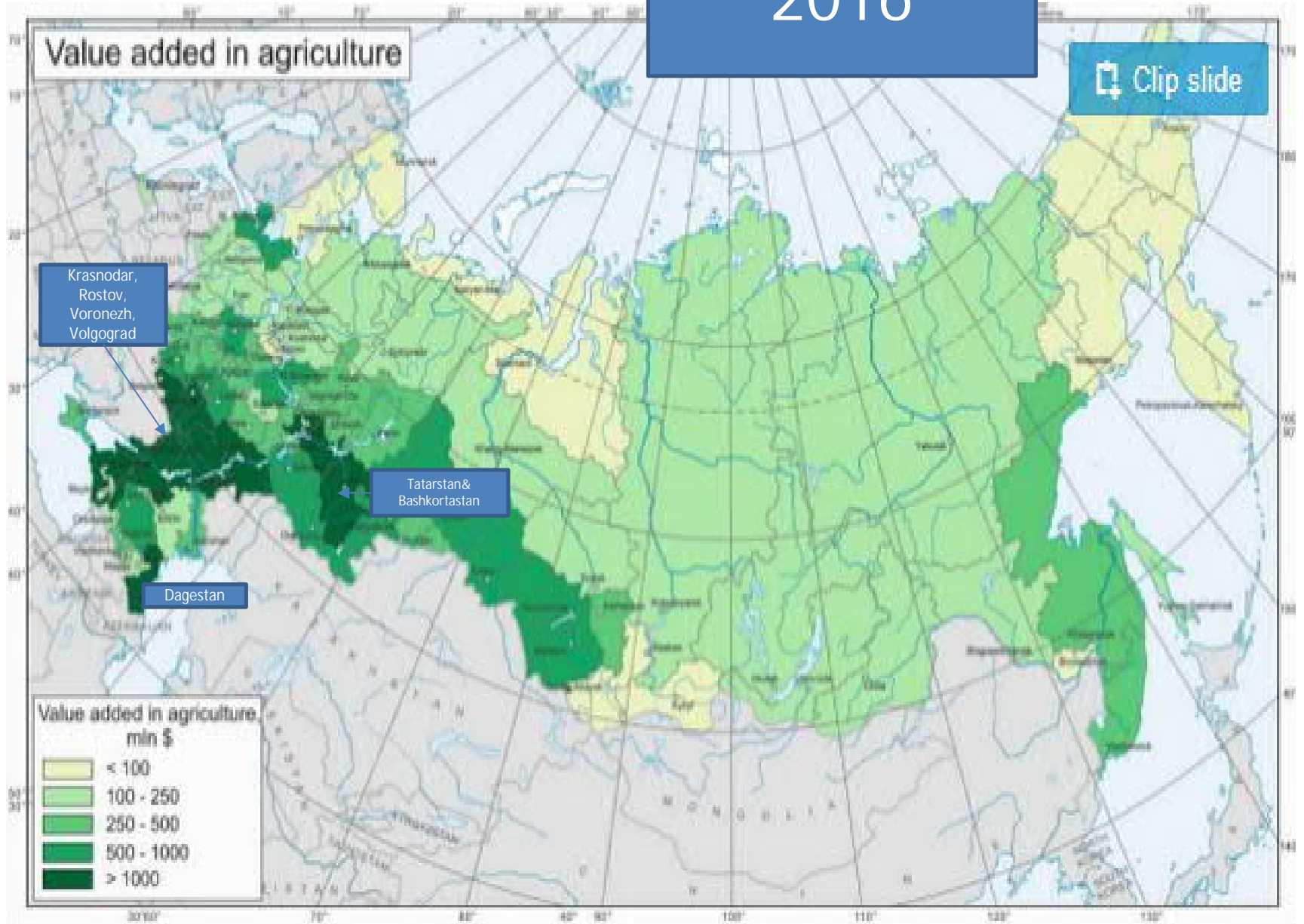
Chelyabinsk

Growth rates of production of embargoed products (in thousands of tons) in Russia between 2013 and 2016

Name of product	Growth rate between 2013 and 2016
Frozen fruit and vegetable products	158%
Pork, fresh, cooled, chilled	158%
Pork, surface-frozen, frozen, deeply freeze and defrost	142%
Cheese and cheesy products	139%
Frozen fish filet	131%
Meat and food sub-products of fowl	123%
Cream	121%
Shell fish non-frozen, oyster, other water invertebrates, alive, fresh or chilled	121%
Seafood	117,5%
Cream butter	111,5%
Fish filet, other fish meat, fish liver, caviar and milt, fresh and chilled	111%
Curd	110%
Fruits, berries and nuts, dried	108,5%

2016

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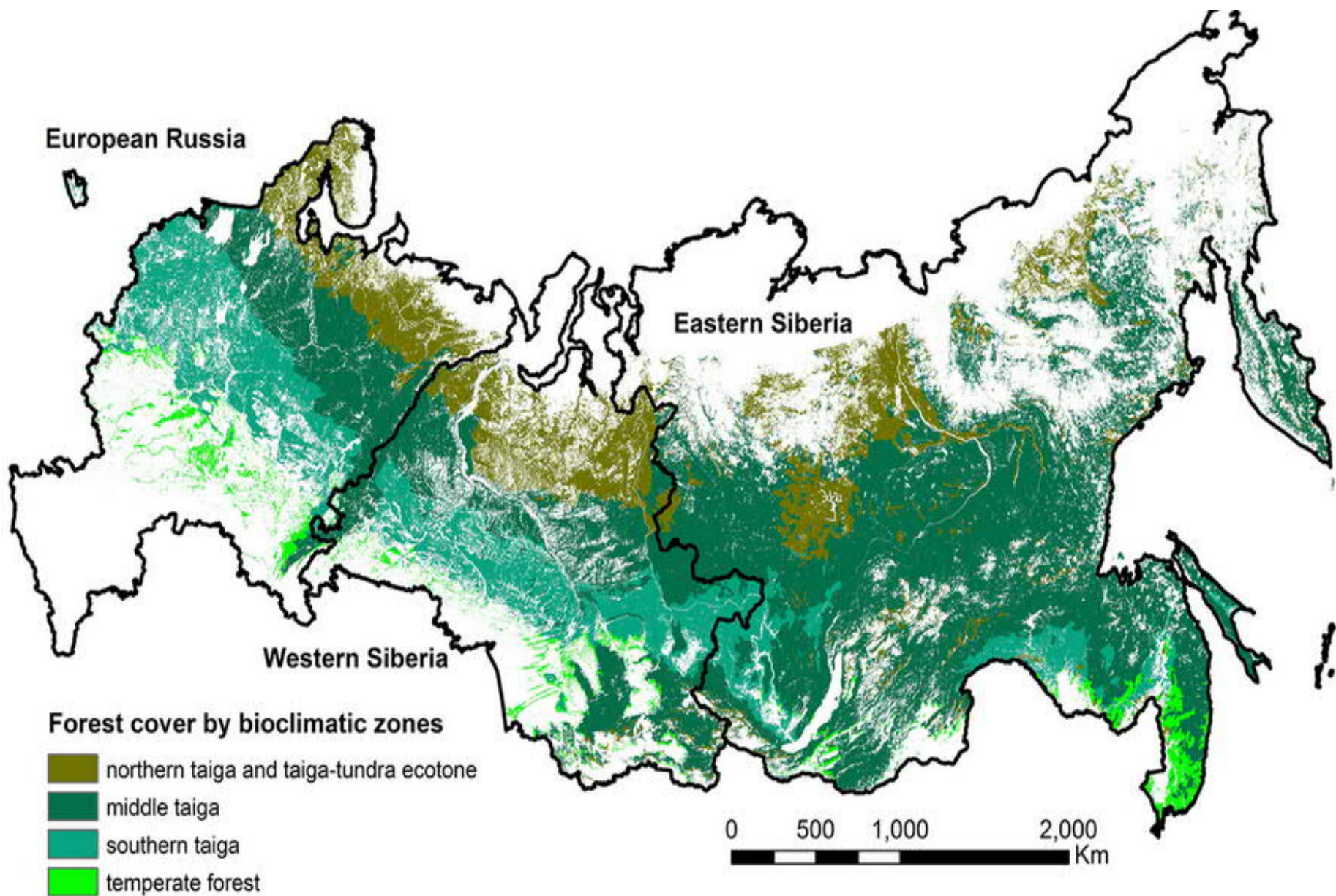


Figure 2. Major geographic regions and distribution of forest cover by four bioclimatic zones across Russia. From Loboda and Chen (2016).

Forest industry: some facts

1. Most important in European North of Russia; Eastern and Western Siberia and Far East.
2. Main product of the industry is industrial wood (75-80% of Russian wood export).
3. In the end of 80s USSR was number 2 after USA in wood export. At present, moved to 6-7 place.

History of population dynamics

(Markevich and Mihailova lecture, 2011)

- History of Russian Empire = territorial expansion
 - Core regions (traditionally Russian): Moscow and North-West
 - The rest of the country was a frontier at some point in history
- ➔ *Spatial population dynamics*
- History of the USSR = regional industrial policy

Population diffusion in Russian Empire

(Markevich and Mihailova lecture, 2011)

- Migration to better lands: shift to the south and eastward
 - Low level of migration: 0.2 percent per year in the 17-19th Cc. (Mironov 1999)
 - State-controlled migration
 - Barriers to migration (elites demand cheap labor in 'old' regions)
 - Domar hypothesis (1970): serfdom introduced because of negative shock to labor to land ratio in the 16th Century
- ➔ Overpopulation in the central and black earth region

Population diffusion in the 20th century

(Markevich and Mihailova lecture, 2011)

- Late 19 – early 20th Cc. - relatively free migration
 - the only period in Russian history!
- ➔ Rapid growth of migration to South Siberia and redistribution of labor onto available land
 - Constraints: transportation costs and poor access to credit.
- Back to state control during the Soviet times
- Eastward (and to the north) shift of population because of industrial policy
 - The World War II shock

Population trends after collapse of Soviet Union

Unfavorable demographic developments:

- Falling fertility. The crude birth rate (births per 1000 population) declined from 12.1 in 1991 to 8.6 in 1997. But increase to 12.5 in 2010 and to 13.3 in 2014.
- Increasing mortality: 1990 – 11.2; 2000 – 15.4; 2010 – 14.2; 2014 -13.1.
- Negative natural increase: From 1992 to 1998, Russia's population declined by approximately 1.4 million.

Three distinct patterns have emerged since the collapse of the Soviet state

- High levels of in-migration to the Russian Federation from other countries (particularly, former Soviet republics);
- Rapid out migration from Russia's northern and eastern regions to its western, southern, and central regions;
- The response of net regional migration rates to increasingly varied regional labor market conditions.

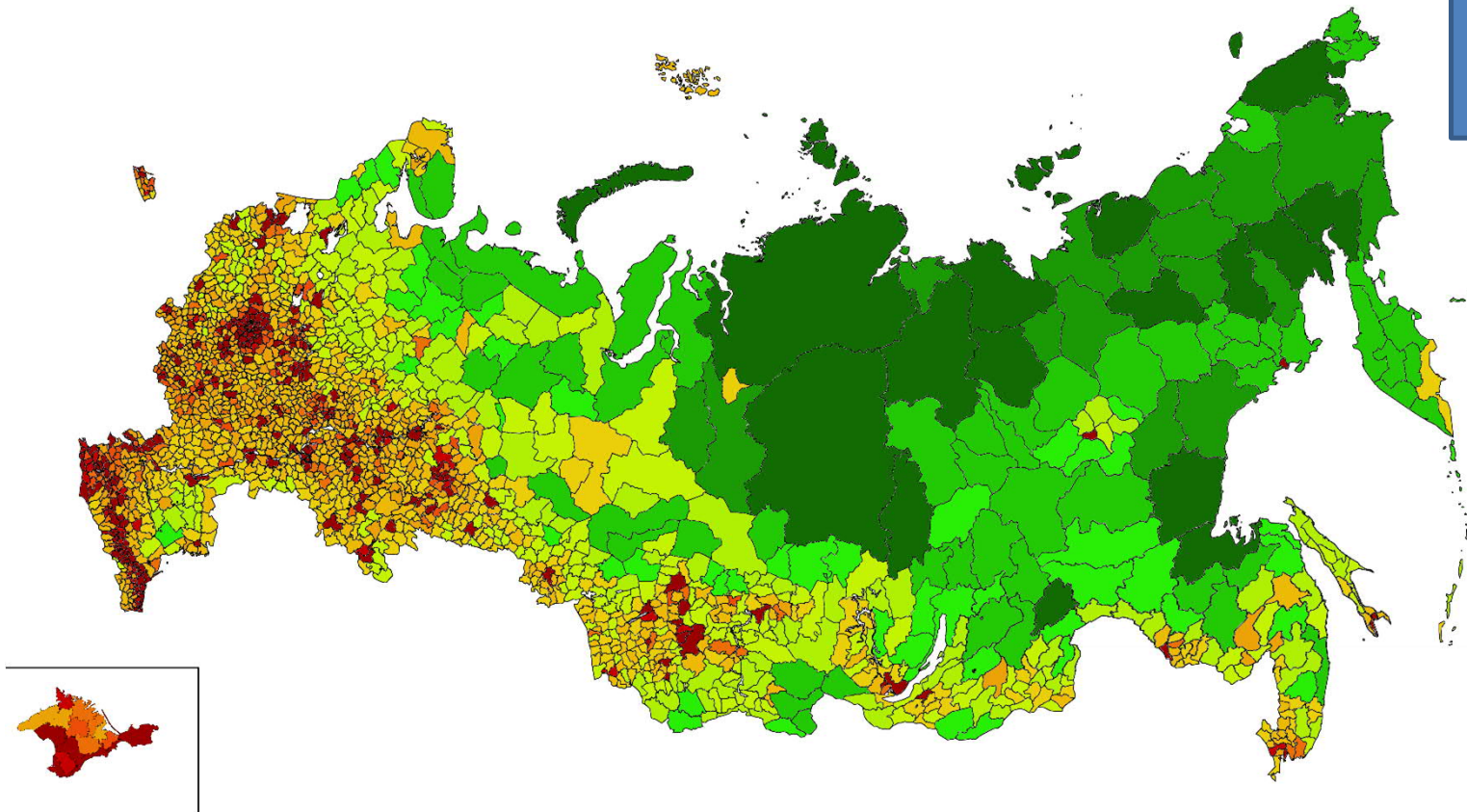
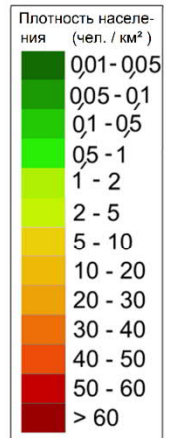
So, how does Russian population geography compare to other countries'?

(Markevich and Mihailova lecture, 2011)

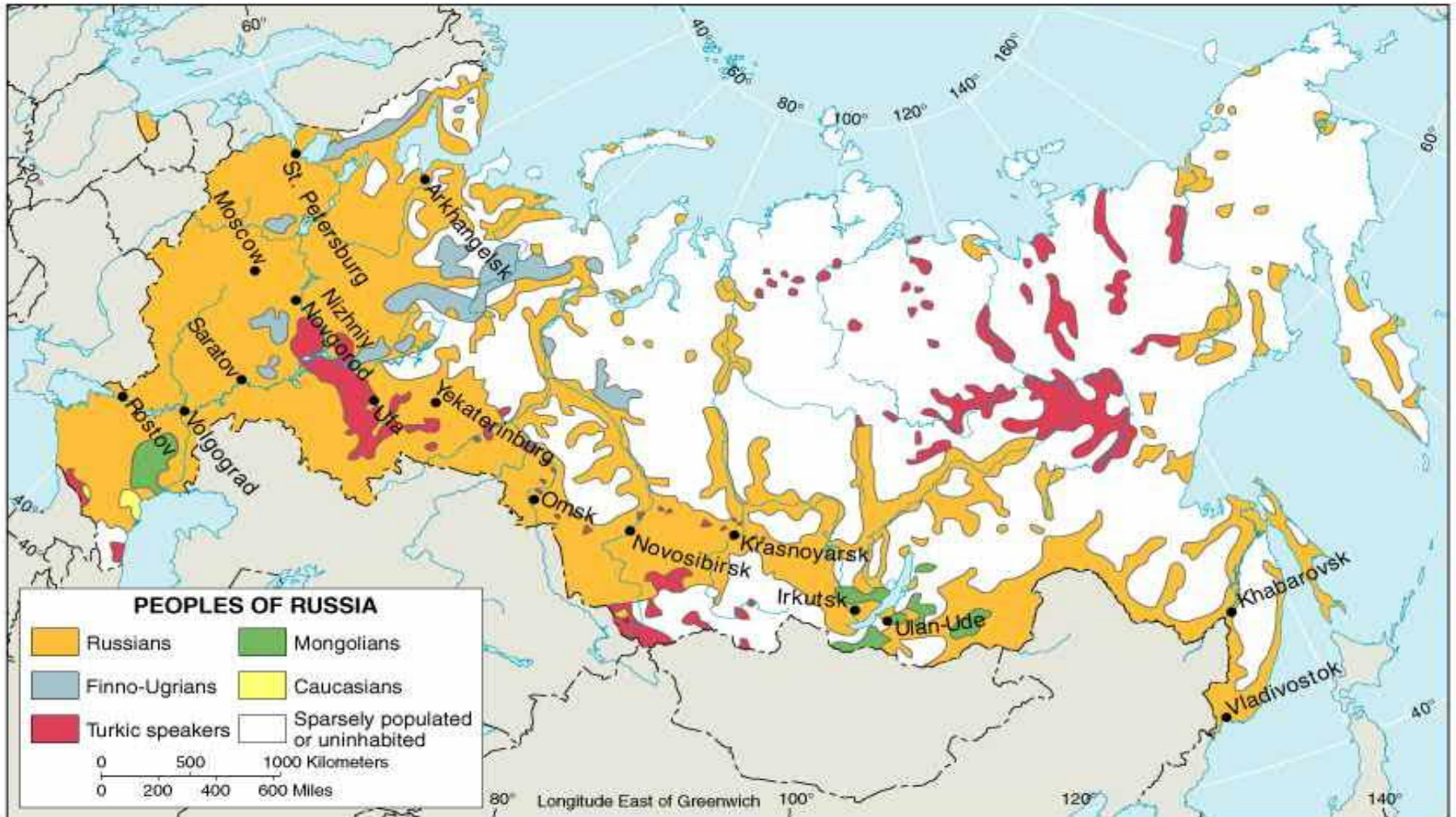
- Large share in cold climates.
- Too spread out
 - Centered population concentration measures are among the lowest cross-country (Campante&Do, 2009).
 - Why? Not only endowment, but also Soviet policy.
- Far from borders, ports, world markets
 - Soviet legacy
- On the other hand, infrastructure, transport, political power are too centralized
 - connections center-periphery dominate
 - (exceptions in Siberia, b/c of linear geographical structure)
 - connections between peripheral regions are weak (L. Dienes: "Archipelago Russia")
 - Why? Legacy of centralized state + territorial expansion

Population density of modern Russia, 2018

Population
density,
persons per
sq.km.



Geography of nationalities in Russia



What do we know about Russian cities?

(Markevich and Mihailova lecture, 2011)

- Too many of them for the population size
 - meaning, they are too small on average
- Too few of them for the territory
 - meaning, they are too far away from each other (Treivish, 2007)
- Mono-cities – one dominant employer.

→ Agglomeration externalities are weak (exceptions are few: Moscow, Saint Petersburg, Ekaterinburg,...):

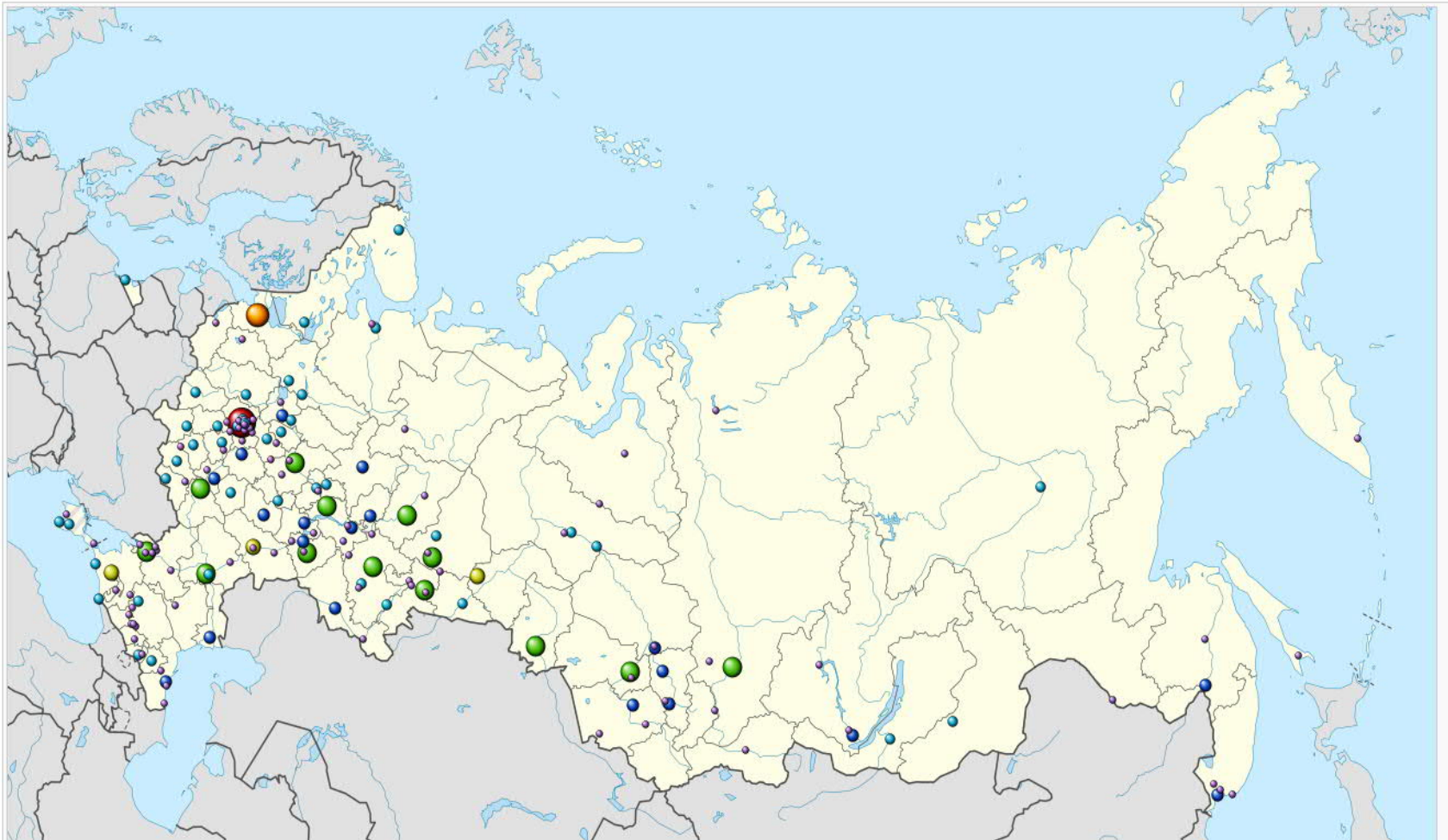
- Agglomeration index: Russia – 65%, OECD – 78%.

Agglomeration index is equal to the share of population that lives within 60 minutes of travel time to the major population center or in a city of at least 50 thousand people and at least as dense as 150 people per square km.

- Many are essentially rural population centers
 - was this way since imperial times

Large cities of Russia

- от 100 000 до 249 999 чел.
- от 250 000 до 499 999 чел.
- от 500 000 до 749 999 чел.
- от 750 000 до 999 999 чел.
- от 1 000 000 до 2 000 000 чел.
- от 5 000 000 до 9 999 999 чел.
- 10 000 000 чел. и более

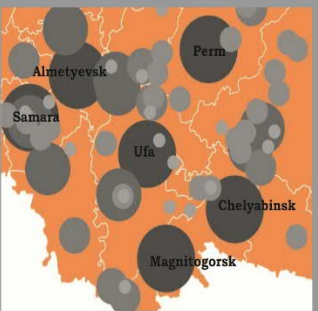
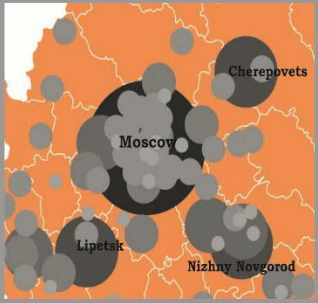


Industrial and regional policy: Transition and present time

(Markevich and Mihailova lecture, 2011)

- Population migration
 - General trend: from North and East to South and West (reversal of Soviet subsidized trend), concentration (Heleniak, 2002, Kim 2007, others)
 - Exceptions: oil regions
- Regional investment
 - Market potential attracts, remoteness dampens investment, concentration (Brown et al, 2008, others)
 - Exceptions: oil regions
- Divergence of regional incomes, productivity, quality of life (Lugovoi et al, 2007)
 - Mitigated partially through transfers
 - Exceptions: neighbors of rich become a bit richer (Kholodilin et al, 2008)

Industrial Centres of Russia, 2010



The 250 Largest Industrial Centers of Russia [Top-250]



Sources: public data, calculations performed by Urbanica Spatial Planning

Top 5 Industrial Centres of Russia, 2010

<i>City</i>	<i>Region</i>	<i>Population, tsd. (2010)</i>	<i>Production volume, billion Euro (2010)</i>	<i>Sectorial and corporate structure of industrial assets (Russia's leading companies)</i>
Moscow	Moscow	11514	46,45	Mechanical engineering; Food, drink, tobacco industry; Oil and gas refinery; R&D; Pharmaceuticals
St.Petersburg	St. Petersburg	4849	31,44	Food, drink, tobacco industry; Mechanical engineering; Ferrous metallurgy; Construction materials; Chemical industry; R&D
Surgut	Khanty–Mansi Autonomous Okrug	307	19,62	Oil and gas extraction; Electric power generation; Oil and gas refinery; Food, drink, tobacco industry; R&D
Nizhnevartovsk	Khanty–Mansi Autonomous Okrug	252	11,80	Oil and gas extraction; Oil and gas refinery
Omsk	Omsk Oblast	1154	8,54	Oil and gas refinery; Chemical industry; Food, drink, tobacco industry; Mechanical engineering

Source: <http://urbanica.spb.ru/?p=1321&lang=en>

Industrial clusters

Cluster definition from Michael Porter:

“Geographic concentrations of interconnected companies, specialized suppliers, service providers, firms in related industries, and associated institutions that compete but also collaborate.”

Orientation around focal points allows for precise targeting of benefits.

Allows for creation of public policy to offset weaknesses in macroeconomic growth:

- Shrinking labor force
- Natural resource shortages
- Weakness in innovation-intensive areas (services sectors)
- Competing in global markets

Spurs multi-factor productivity – a key source of economic growth in most developed countries.

Industrial clusters in Russia

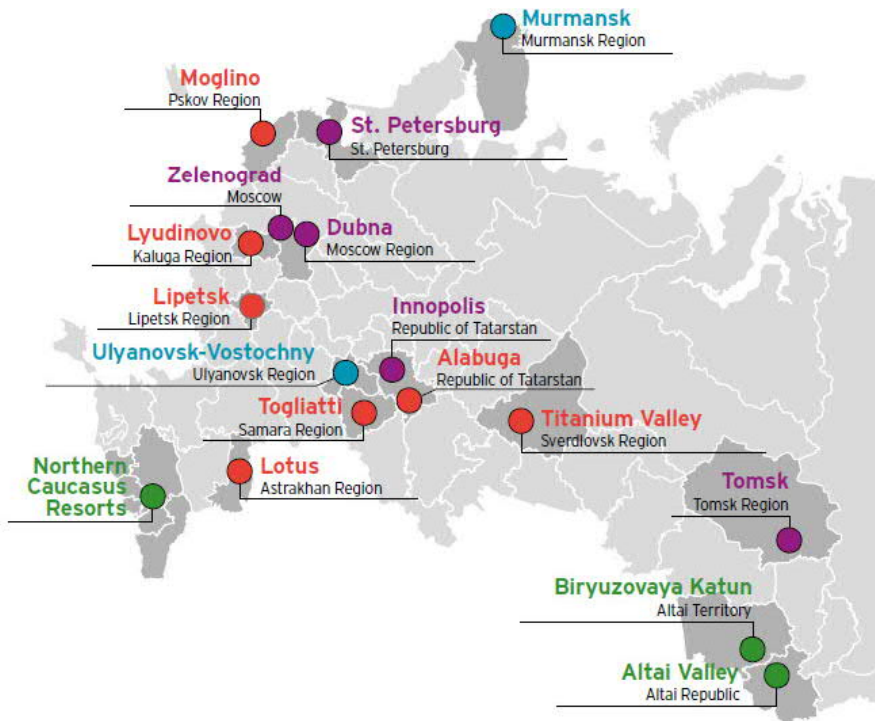
Though the cluster strategy has been taken up only recently, there are success stories in Russia.

A huge cluster in **St Petersburg** for light manufacturing, alcohol, and car manufacturing.

Kaluga – 200 km off Moscow - has been one of the pioneers, attracting car manufacturers to the region.

Mordovia has become a centre of Russia`s light industry.

Geographical location of special economic zones



obrigado

Dank U

Merci

mahalo

Köszí

спасибо

Grazie

Thank
you

mauruuru

Takk

Gracias

Dziękuję

Děkuju

danke

Kiitos

Some additional information

Might be interesting!

Electricity

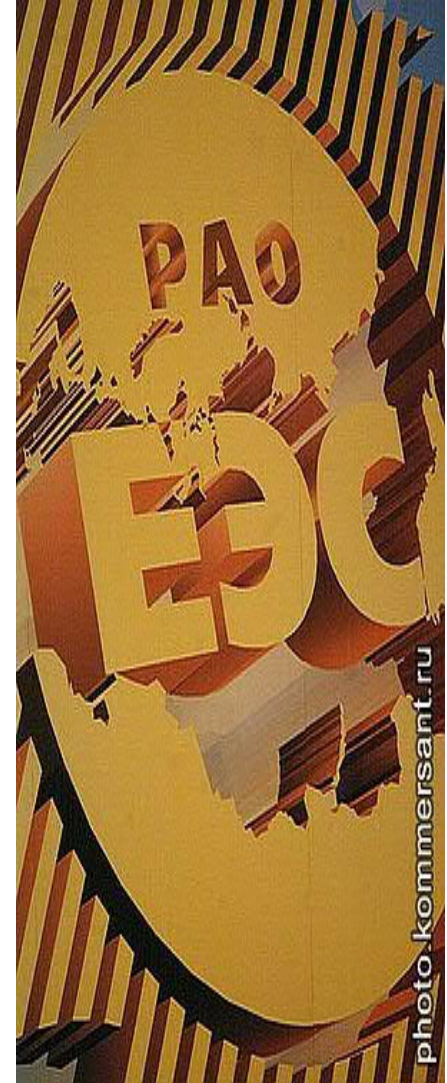
- In Russia regional power systems are integrated into Interregional Power Systems (IPS), with further interconnection of the latter ones (as a rule, by means of long-distance overhead lines).
- Nowadays there are 6 self-balanced IPS operating in parallel which makes transfer of electricity over 6 time zones possible.
- The seventh, IPS of the Far East, operates separately.

Interregional Power Systems



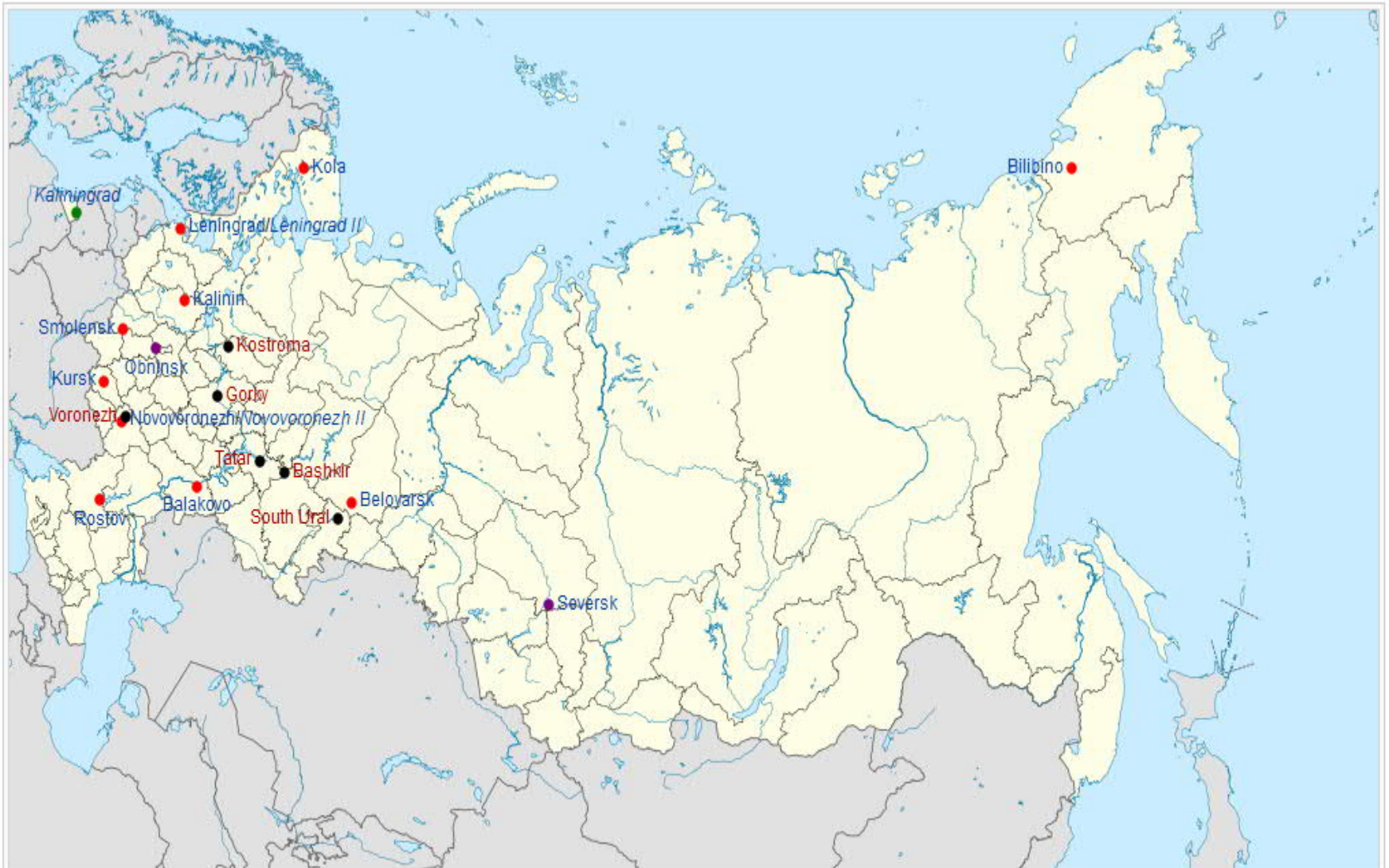
Electricity

- Unified Energy System of Russia- RAO UES forms the backbone of the Russian electricity sector.
- The companies belonging to this group generate approximately 70 % of all the electricity produced in Russia.
- As the corporation uses a great amount of natural gas in its electricity production it is highly dependent on Gazprom's deliveries.
- RAO UES was divided in 2007 into regional electricity generating companies with an official goal to enhance competition in the field.



Electricity

- As of 31 December 2006, the state owned 52.68 % of shares in RAO UES.
- 45% of issued shares are traded on the stock market of the Russian Federation.
- In addition to RAO UES, state owned Rosatom (state nuclear energy corp.) is a major player in electricity production, as it controls the nuclear power stations in Russia.
- At the moment, nuclear energy generates around 20 % of Russia's total electricity production.



Nuclear power plants in Russia (view)

- Active plants
- Closed plants
- Unfinished plants
- Under construction plants

Russian railways

