

GIAV & SFMCA VIC MEETING

BLACK SEA PRESENTATION

BY

ADM

Black Sea Ports



Figure 27 Ports in the Black Sea

Source: www.mapofukraine.net

Black Sea vs Australia Snapshot

	Population (million people)	Total Land mil HA	Arable Land mil HA	Arable Land used for Cropping mil HA	Grain Production mt - 5yr average production	Wheat Production mt 2017	Wheat Exports mt 2017
Russia	144	1637	120	78	143	72	40
Ukraine	44	58	41	32	66	25	16
Australia	24	769	46	31	37-55	22	14

Land Ownership Structure

Ukraine

- Major structural change post 1991 (Soviet era)
- Move from state owned communal run operations to private ownership and leasing arrangements.
- Approximately 50% of output is by large Agroholdings (>10,000ha) and balance of traditional private land holdings

Russia

- Pre Soviet era – collective farms and state owned farms with rural households having small plots
- Post Soviet era – a shift from state owned and collective farms to corporate farms vertically integrated and in control of approximately a fifth of arable land in Russia.
- Also a steady increase in household plots and small farms (a lot formally workers of state and collective farms).

Australia

- 90% family owned businesses
- 10% large or corporate farms

Location:

Borders Poland, Romania, Slovakia, Hungary and Moldova in the west, with Belarus and Russia to north and east, and via the Black Sea, Bulgaria, Georgia and Turkey to the south

Area:

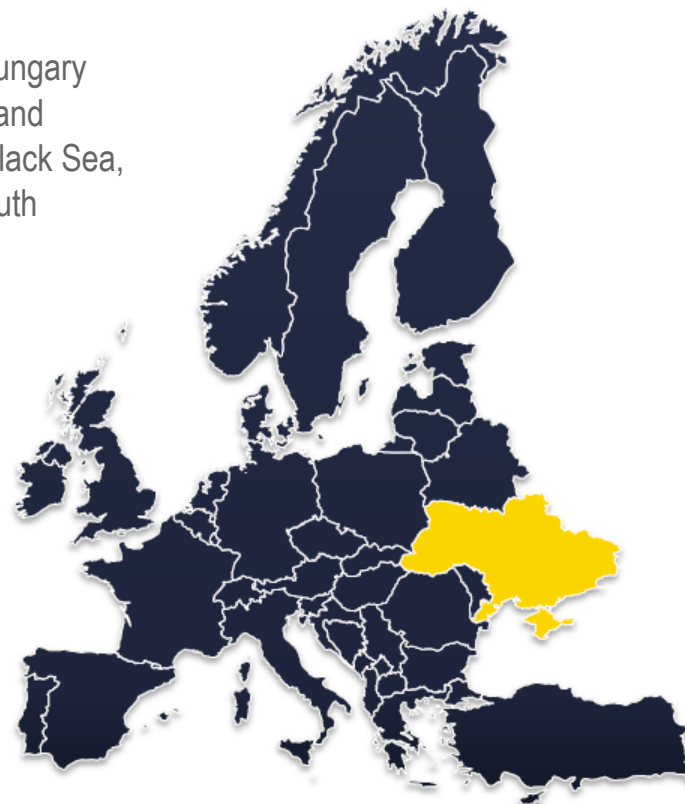
603 500 square kilometers.
Largest country within Europe

Population:

42.6 million people.
70% urban-based

Workforce:

20 million people.
#1 country in the CEE by the number of engineering graduates

**Trade:**

Geographical **center of Europe**, making the country an ideal trade hub to the EU, Middle East and Asia

Free trade agreement (DCFTA) with the EU and member of the WTO

Free trade: EU, CIS, Canada, EFTA, FYROM, Georgia, Montenegro. Ongoing negotiations with Israel, Turkey

GDP (PPP):

\$366 billion in 2017. Top-50 economy globally

Average salary:

\$320 per month.
Most cost-competitive manufacturing platform in Europe

AGRICULTURE SECTOR POTENTIAL

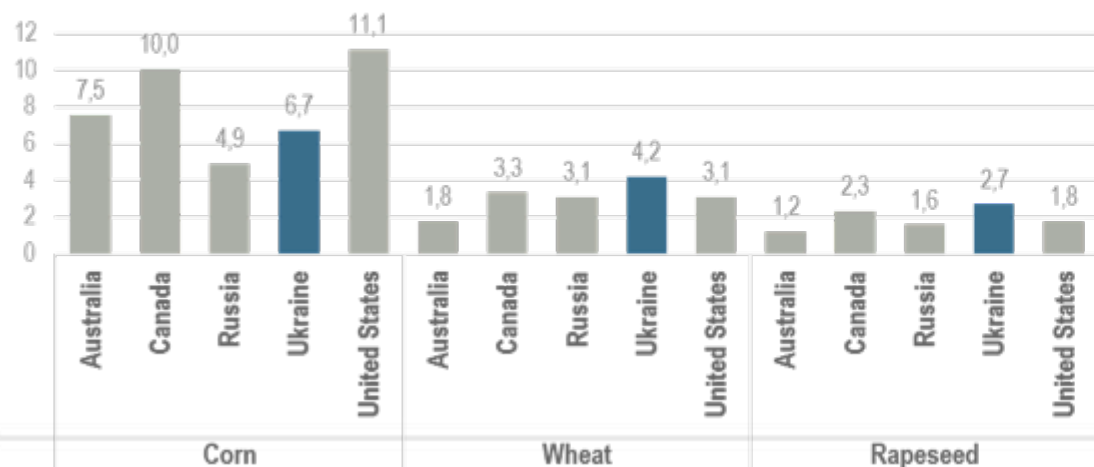
ADM TRADING UKRAINE

According to projections, Ukraine is expected to increase yields further among all the key agriculture products during next years

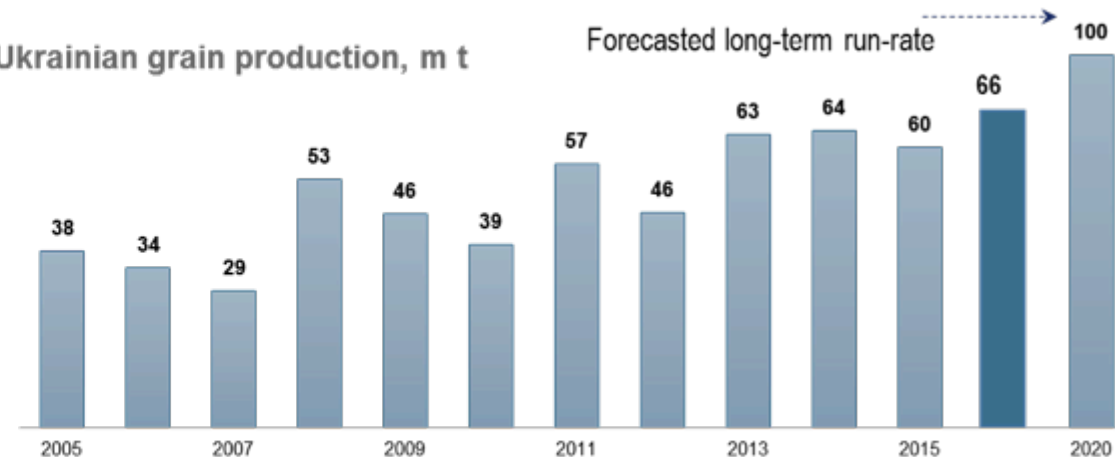
Average yield projections (2015-2025) t/ha



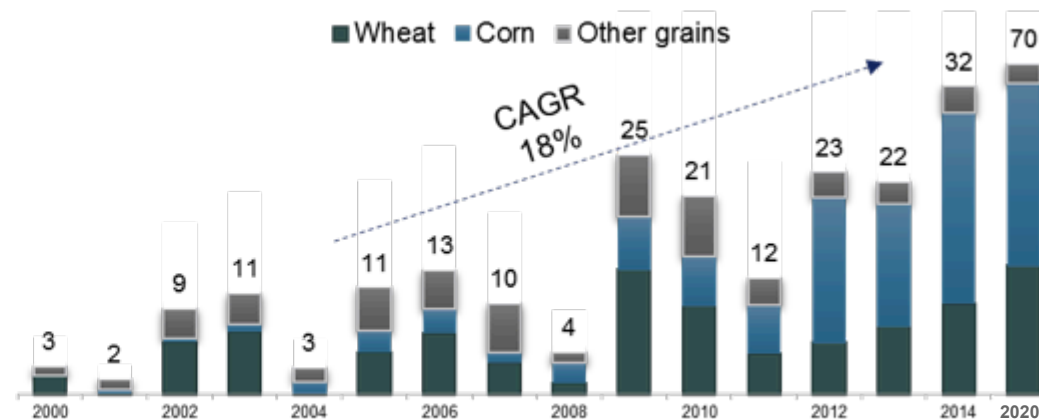
Average yields 2015-2017 (t/ha)



Ukrainian grain production, m t



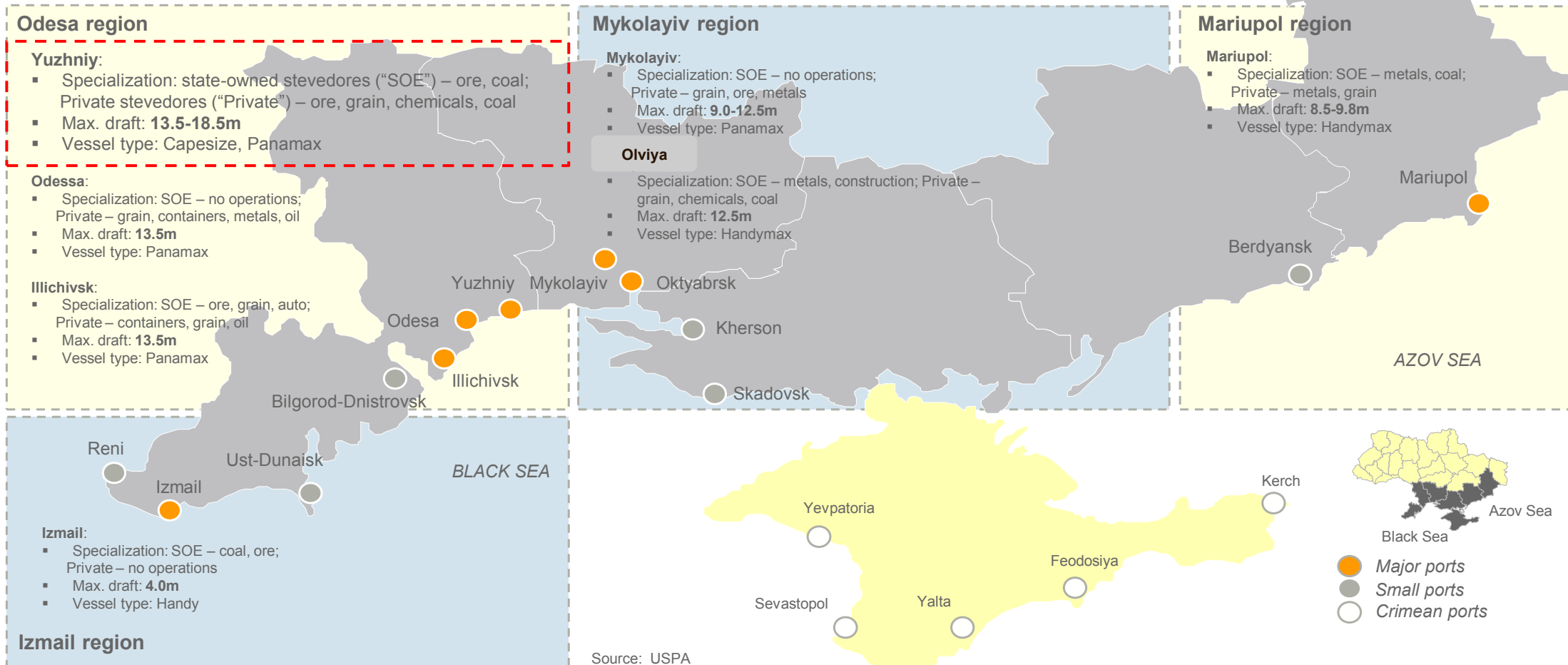
Ukrainian grain export volumes, m t



UKRAINE SEA PORTS INFRASTRUCTURE

ADM TRADING UKRAINE

Ukrainian sea ports



GRAIN HANDLING INFRASTRUCTURE IN UKRAINE

ADM TRADING UKRAINE

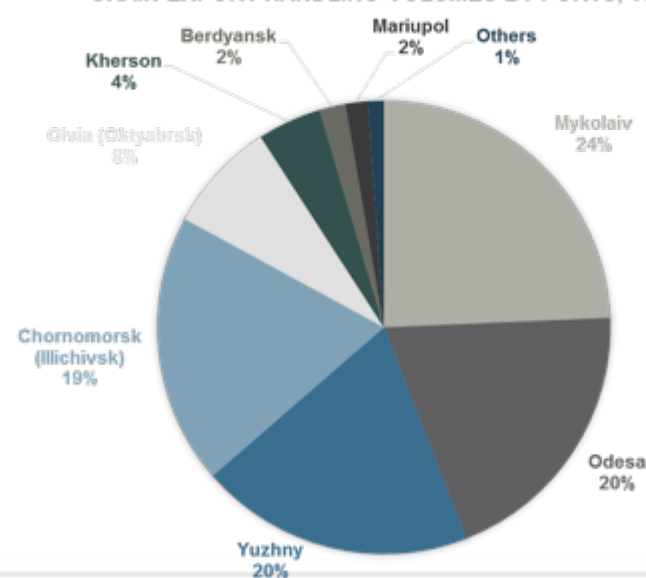
Ukraine. Port's grain handling capacities and export, Mt



13 ports along the Black and Azov Sea coastlines

















- Grain: throughput capacity 43m t, vegetable oil: 11m t
- All ports are state-owned; some terminals leased out to private grain traders under long-term contracts
- Deep-water sea ports near Odesa, Yuzhny and Mykolaiv account for >60% of Ukraine's maritime grain turnover
- On-going investments: Cargill, Bunge (vegetable oil terminal) and Nibulon (grain terminal) in Mykolaiv

GRAIN EXPORT HANDLING VOLUMES BY PORTS, 16/17



COMPETITORS OVERVIEW 16/17 MY

ADM TRADING UKRAINE

Grain Traders	Total exported volume 16/17MY, Mln tons*	Handling capacities in Ukraine, mln tons	Storage capacities (inland&river), mln t	Land bank, ths ha	 Wheat	 Corn	 Barley	 Rapeseed	 Rapeseed Oil	 Rapeseed Meal	 Soybean	 Soybean Oil	 Soybean Meal	 Sunflower Seed	 Sunflower Oil	 Sunflower Meal	 Sorghum
KERNEL	5,76	2,2 (6,5-7**)	2,63	602	✓	✓	✓				✓		✓		✓	✓	
	4,60	2,7	0,42	-	✓	✓	✓	✓			✓				✓	✓	
	4,52	4,7	1,78	83	✓	✓	✓	✓			✓			✓			✓
	4,35	4,5**	0,07	-	✓	✓	✓				✓						
	3,93	5**	0,15	-	✓	✓	✓	✓			✓				✓	✓	
	3,50	2,5	n/a (sold)	70	✓	✓	✓	✓			✓					✓	
	2,82	2,5 (3**)	0,13	-	✓	✓	✓	✓			✓				✓	✓	
	2,56	2,84 (5**)	0,22	-	✓	✓	✓	✓			✓				✓	✓	
	1,69	2,4	3,75	6	✓	✓	✓	✓			✓						
	0,90	-	n/a	-	✓	✓	✓									✓	
	0,83	2,8	n/a	-	✓	✓	✓				✓						
	0,70	-	1,43	370								✓			✓	✓	
	0,60	-	0,36	40	✓	✓	✓	✓	✓	✓		✓	✓		✓	✓	
	0,45	15**	2,66	605	✓	✓		✓									
	0,40	-	n/a	-	✓	✓	✓				✓						

*based on line-up and official numbers

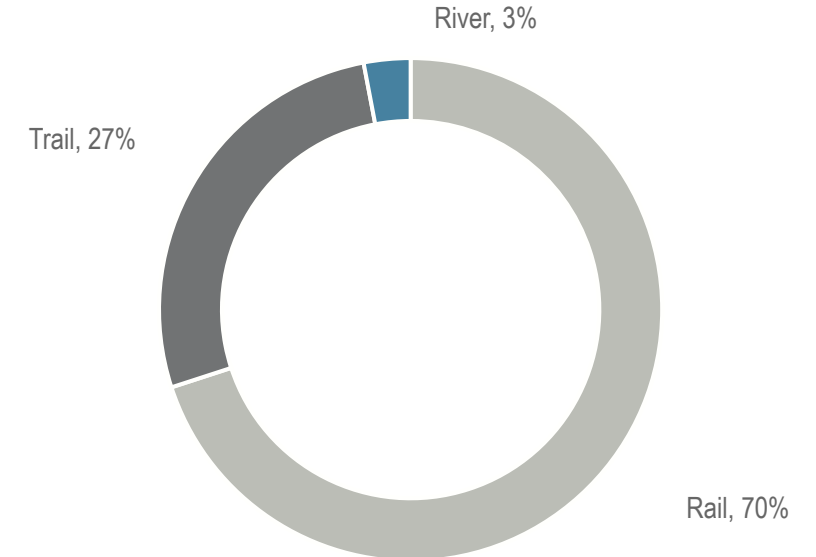
**projected capacities

LOGISTICS IN UKRAINE

General info:

- Main stake of export grain goes via railway to port – 70% (**ADM 75%**). 14 494 rw wagons in Ukraine with average wear 86%. Max wagon's intake – 70MT.
- Second place – Trucks 27% (**ADM 25%**). The most expensive way to deliver grain in Ukraine, but efficient on very short distance. Weight limits were implemented in June 2016 as result rates grew up on 30% and became more expensive than delivery by rail.
- Barges 3% (**ADM <0,5%**). Current trend in Ukraine. ADM has one river terminal (Tavros). At this moment there is lack of barges and small market of suppliers. The most efficient way of barge's logistics is to have whole chain from river silo to top off on road. There is few terminals who able to take cargo from barges.

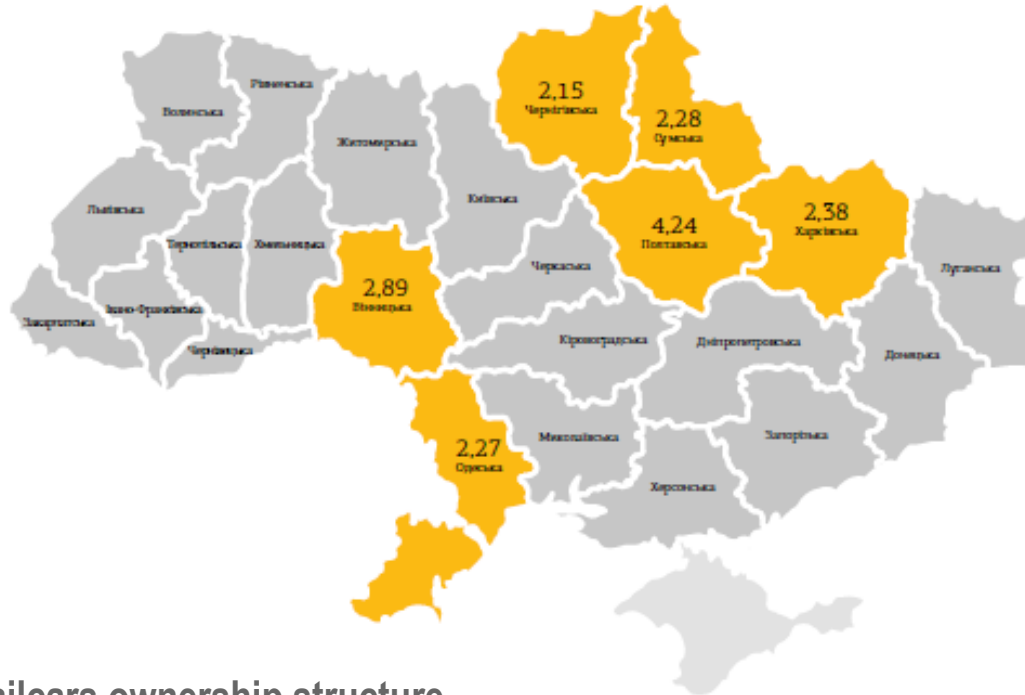
Grain transportation structure to the seaports in Ukraine



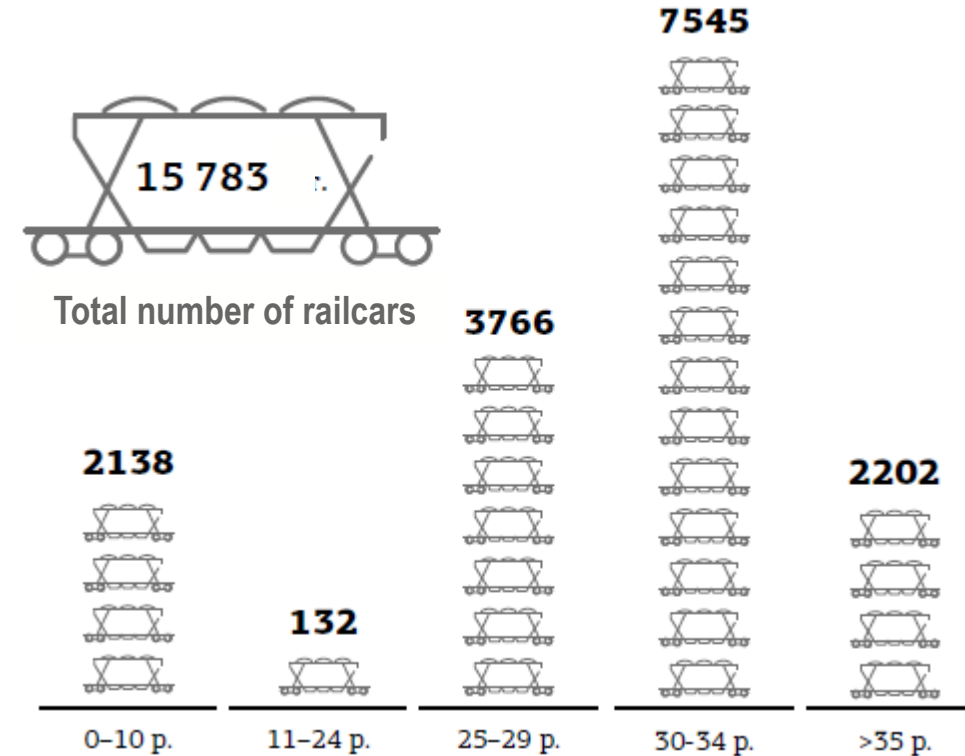
RAILCARS INFRASTRUCTURE IN UKRAINE

ADM TRADING UKRAINE

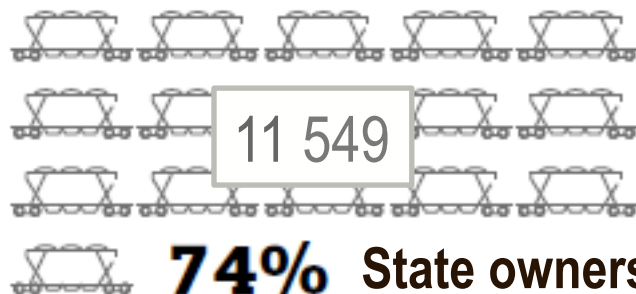
Key regions of grain transportation by railcars, mln t



Age structure of railcars in Ukraine, years



Railcars ownership structure



4234

26% Private ownership

ADM Facility in Odessa



ADM Facility in Odessa



ADM Facility in Odessa



ADM Facility in Odessa



ADM Facility Discharging in Odessa



Costs of Production Comparison

Table 1 Costs of wheat production in Ukraine and Australia*
(AUD/ha)

Cost component (\$/t)	Ukraine	Australia
Wheat yield (t/ha)	3.35	1.82
Seed	42	27
Fertiliser	181	90
Chemicals	74	110
Diesel	54	15
Labour	25	11
Variable operating costs	376	253
Direct salary and tax	10	43
Land	60	80
Total costs (\$/ha)	446	376
Total costs (\$/t)	133	207

* Estimates based on weighted averages across regions and production systems

Source: AEGIC 2016

RUSSIA

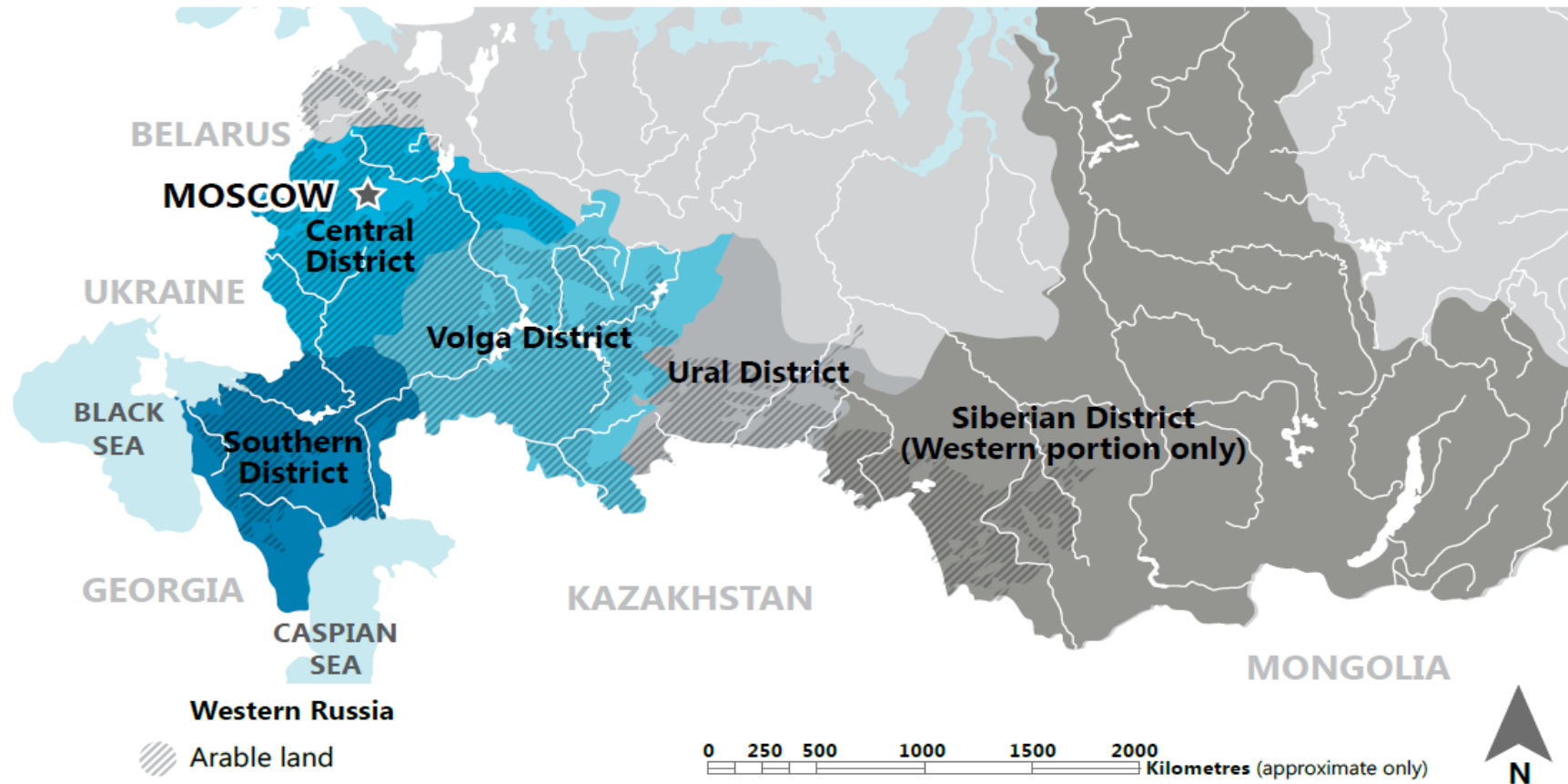


Figure 15 Limits of arable land in Russia

Source: Koroljeva IE, Vilchevskaya EV, Ruhovich DI. 2003. Digital Arable Land Map. Laboratory of Soil Information of the Dokuchaev Soil Institute, Moscow, Russia

Russian Yield

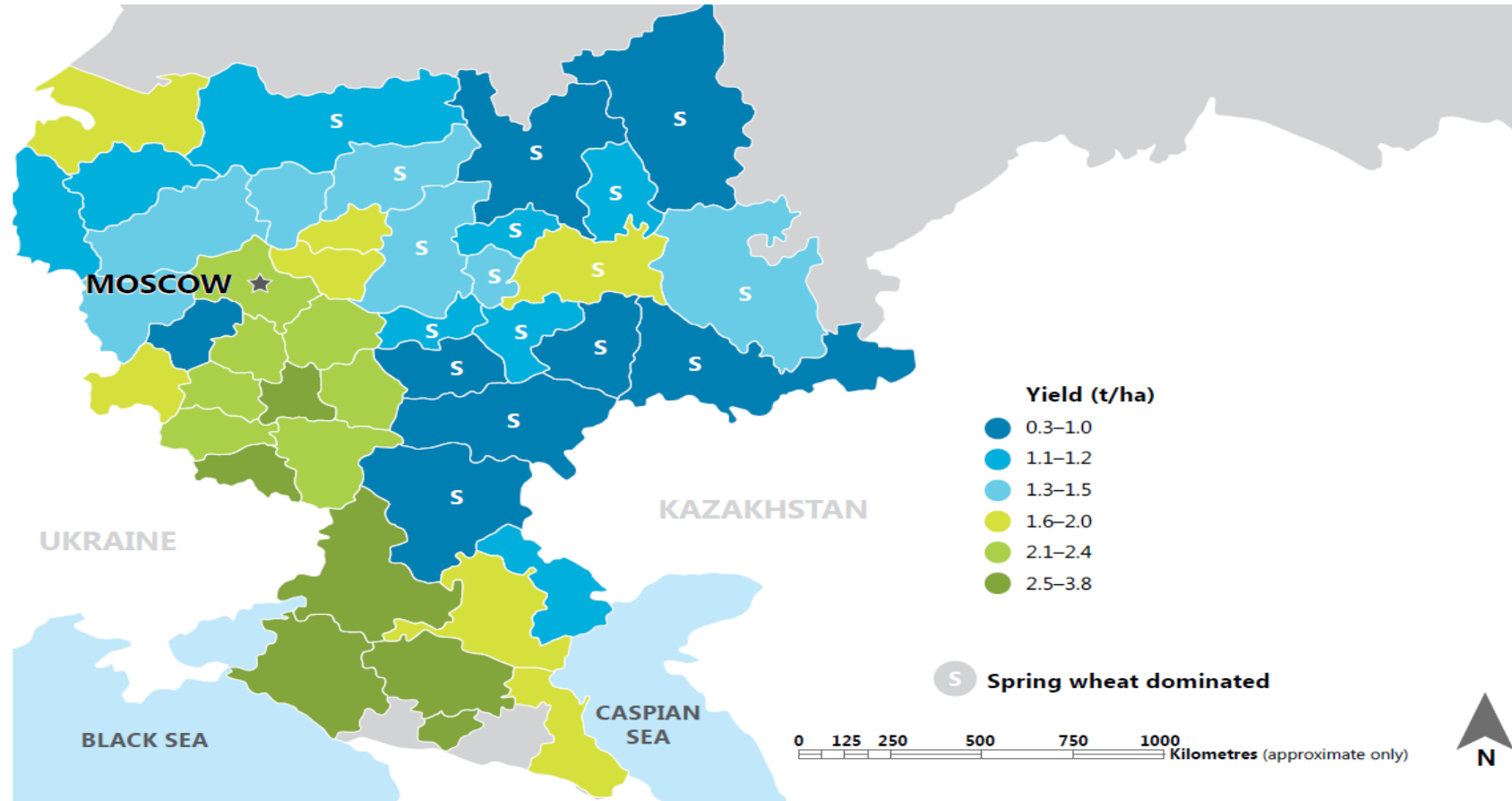


Figure 19 Average wheat yield and location of winter and spring wheat production across the main grain export regions of Russia

Source: Adapted from Schierhorn *et al* 2014; data source Rosstat

Supply Chain Comparison

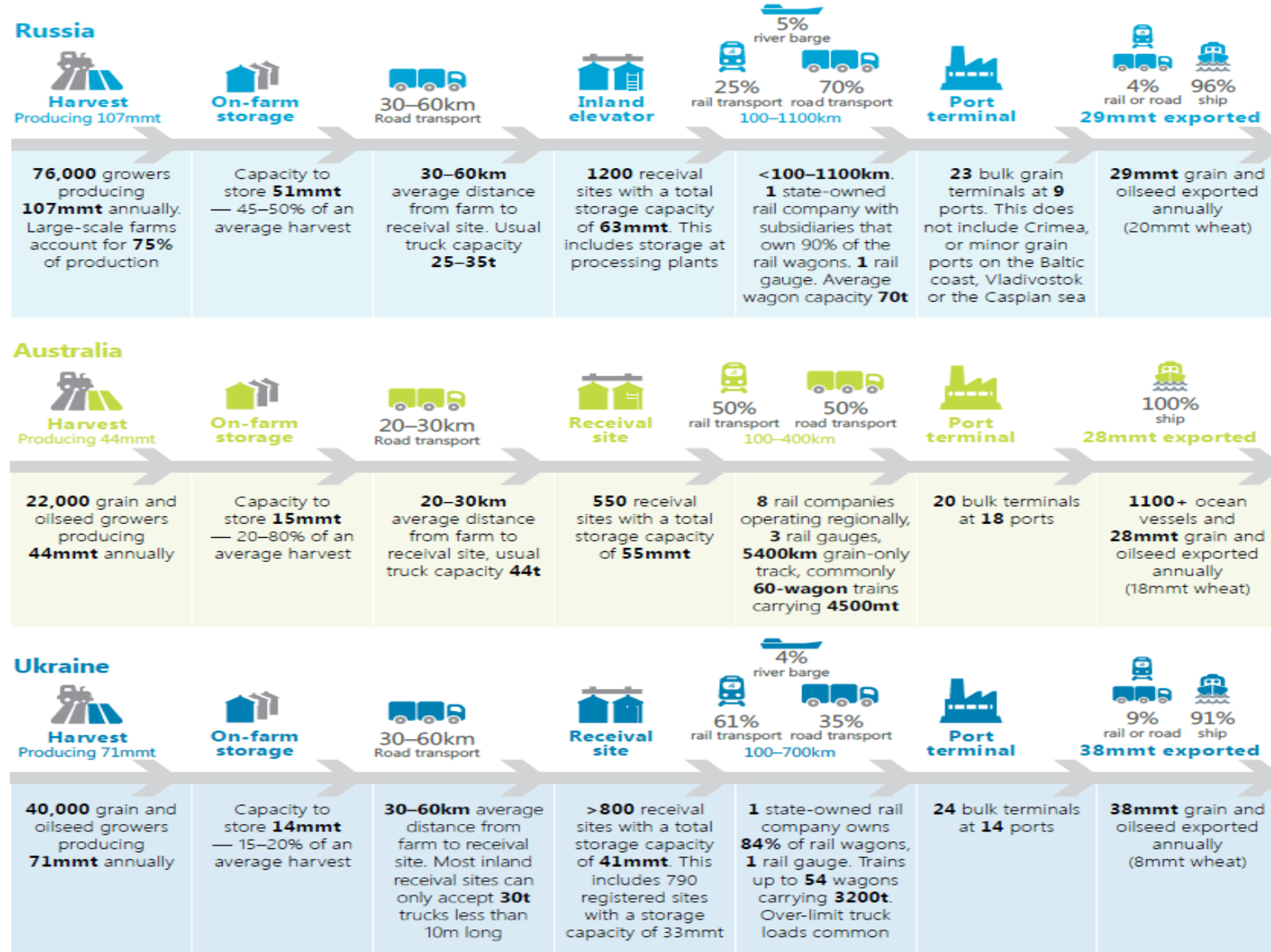


Figure 22 Comparison of the export grain supply chains of Russia, Ukraine and Australia

Source: AEGIC

Supply Chain Comparison

Table 7 Total supply chain costs in Russia and Australia

	Russia		Australia	
	(AU\$/t)	(%)	(AU\$/t)	(%)
Cartage to bin	3.46	6*	7.80	9*
Storage	5.13	9*	9.00	11*
Upcountry handling	9.21	17*	18.40	22*
Transport to port	15.52	28*	26.70	32*
Handling at port	22.19	40*	13.10	15*
Shipping	0.19	0*	6.80	8*
Levies	0.10	0*	2.80	3*
Supply chain cost	55.79	32^	84.60	28^
Production cost (wheat)	121.16	68^	216.15	72^
Total cost (AU\$/t)	176.95		300.75	

* percentage of supply chain cost. ^ percentage of total cost (supply chain + production cost).

Source: AEGIC

TABLE 13 Export grain supply chain costs in 2015/16

	Ukraine		Australia		Canada (2015 est.)	
	Cost (AUD/t)	% supply chain cost	Cost (AUD/t)	% supply chain cost	Cost (AUD/t)	% supply chain cost
Cartage to bin	4.30	8	7.80	9	11.40	13
Storage	2.90	5	9.00	11	17.70	21
Upcountry handling	7.70	15	18.40	22	16.20	19
Transport to port	13.30	18	26.70	32	49.80	59
Handling at port	22.90	43	13.10	15	10.70	13
Shipping	0.88	2	6.80	8	4.00	5
Levies	4.90	9	2.80	3	3.20	4
Supply chain cost	56.90	30	84.60	29	113.00	37
Production cost (wheat)	133.00	70	206.60	71	191.00	63
Total cost (AUD/t)	189.90		291.20		304.00	

Source: Ukraine — Industry Sources, USDA PSD, Australia — GRDC, Planfarm/Bankwest Benchmarks, ABARES, Canada AEGIC 2015. Based on the AUD:UAH exchange rate as at 23/10/2015

ROMANIA

ROMANIA AGRICULTURE

ARABLE LAND

10m ha makes Romania 2nd largest agricultural country in EU after France; 32% cultivated (4th in EU). Grains and oilseeds occupy 80% of cultivated land

ACTIVE POPULATION working in agriculture 1.3m in 2015 - 2nd place in EU after Poland

GDP contribution 4.7% vs 1.3% average EU

Corn 2017 biggest area cultivated
2nd largest EU production

Rapeseed 2017 5th EU production

Sunflower seed 2017 1st production in EU

OBSTACLES/OPPORTUNITIES

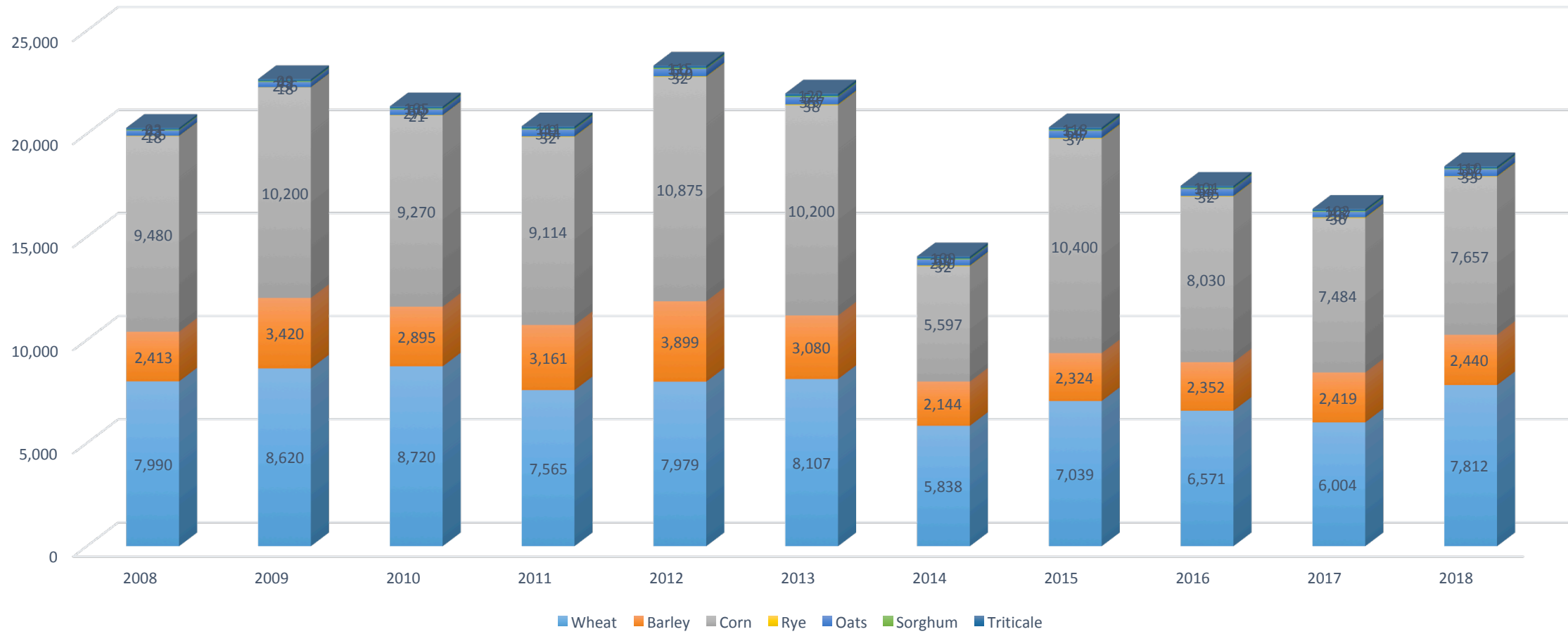
Fragmentation of plots – average 3.37ha
Litigations over the land;
Poor technology: increased weather dependence;

Irrigations left on 0.6m ha, 7% of the areas under grains and oilseeds vs. 40% before 1989

Difficult access to EU funds
Low subsidies 120 EUR/ha
VAT challenges



Romanian Grain Production



[illegible]

ADM



ADM Romanian Receiving Site



ADM Romanian Receival Site (Hopper Discharge)

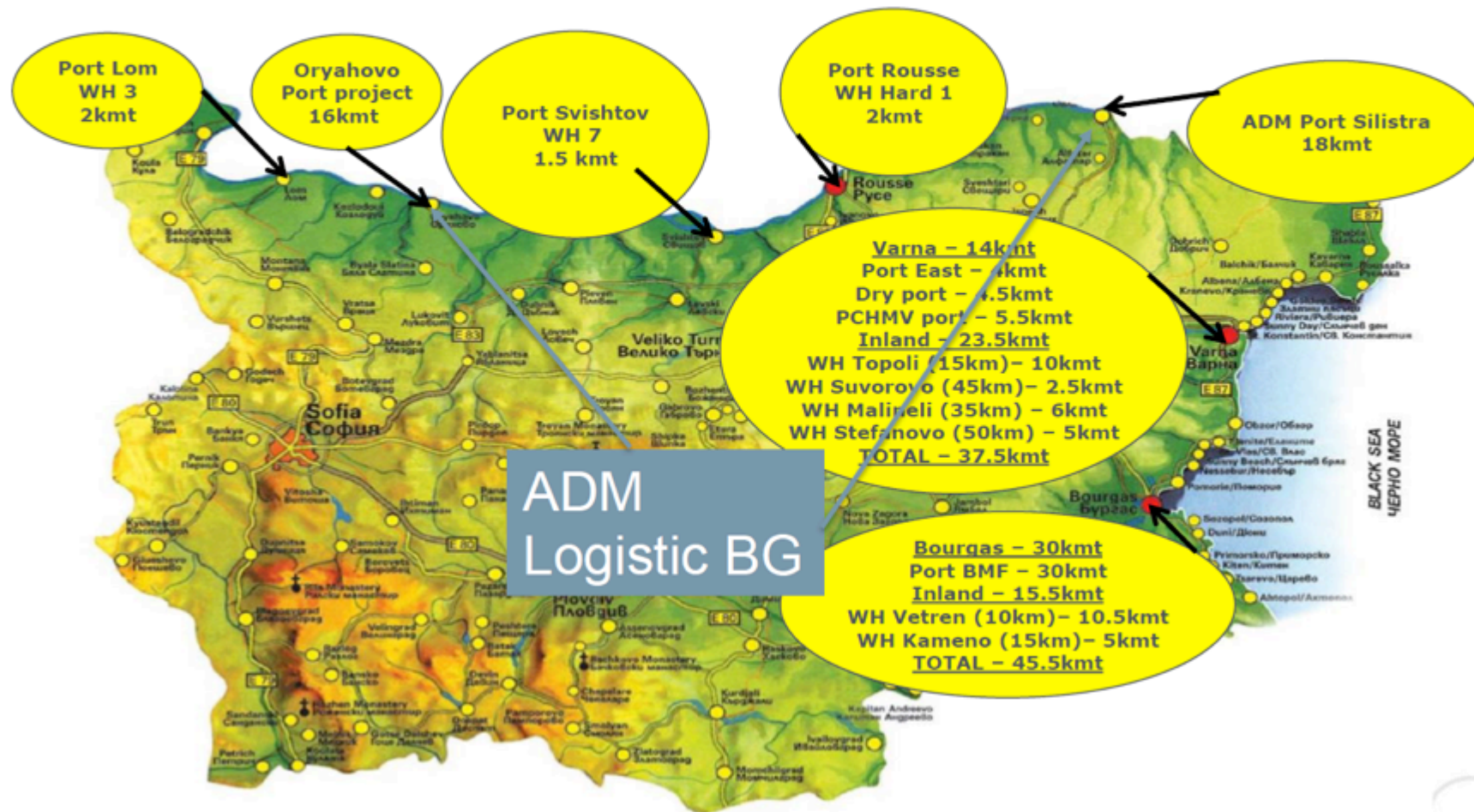


ADM Romanian Receiving Site (Discharge)

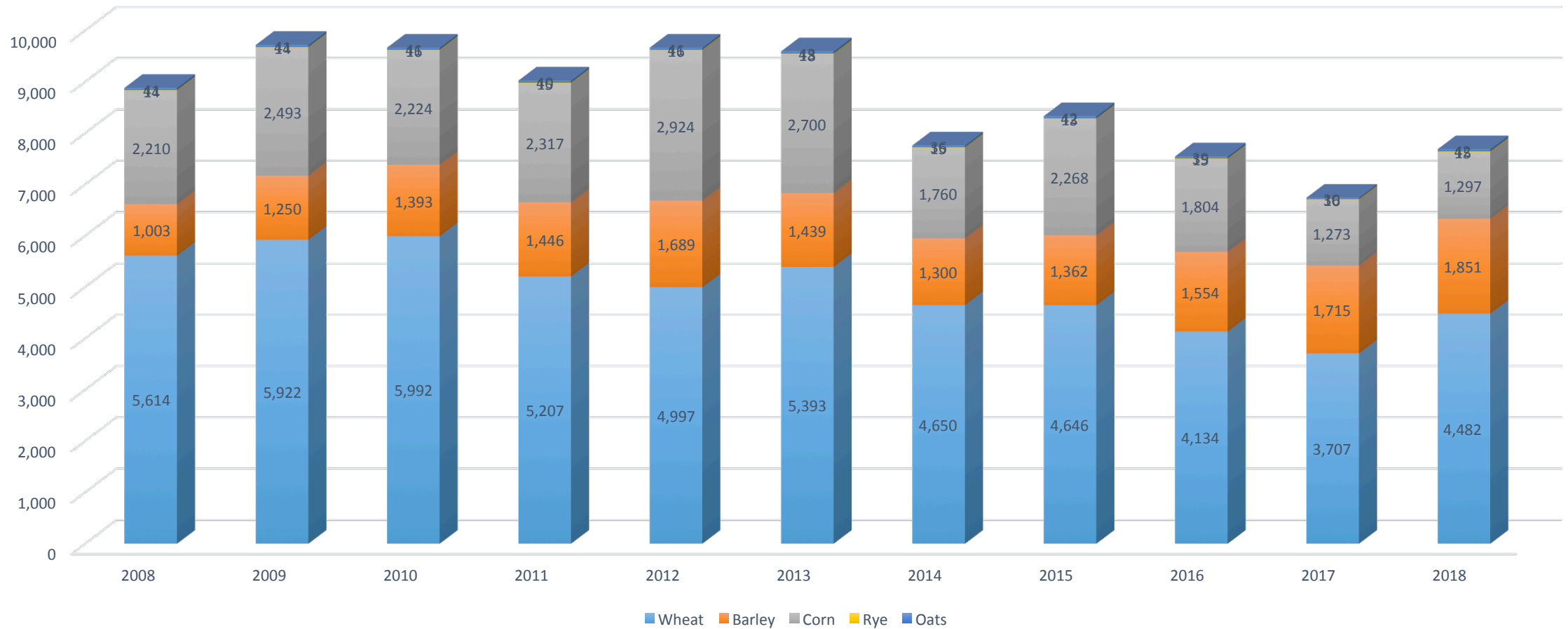


BULGARIA

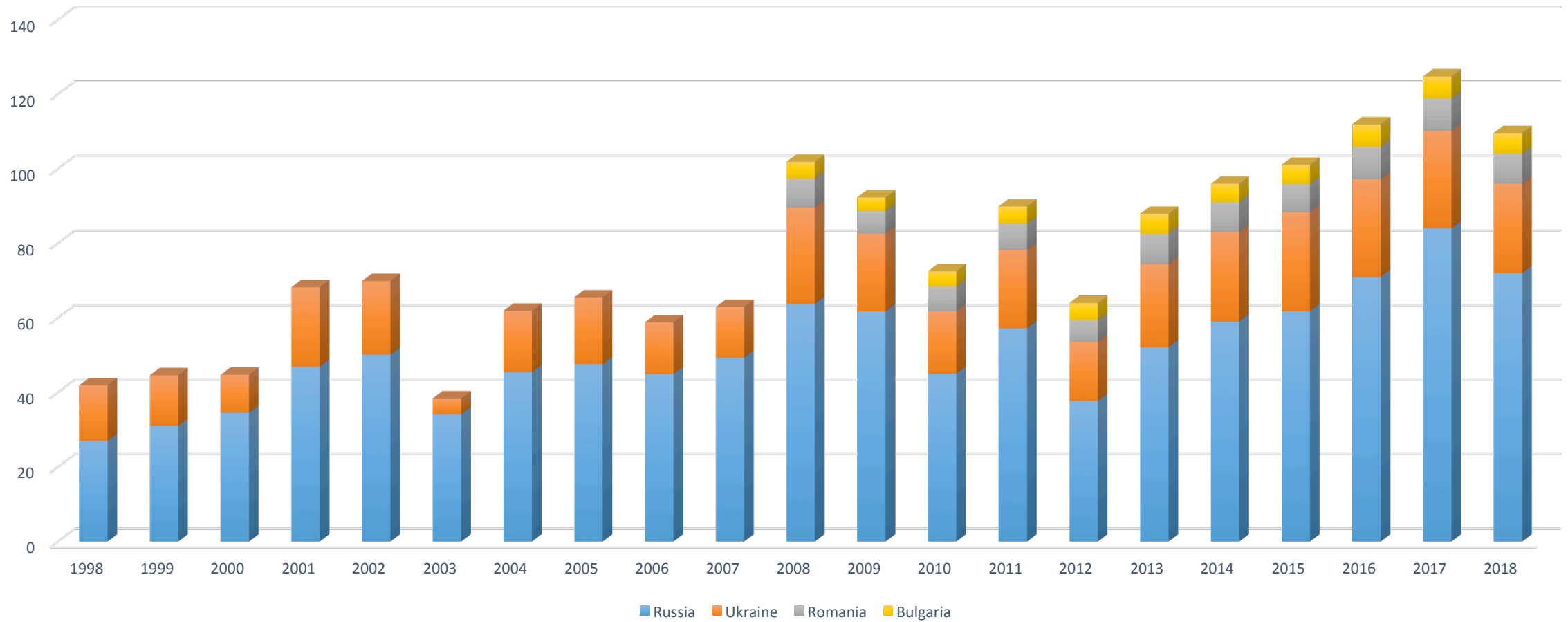
Cargo Flow And Silo Structure



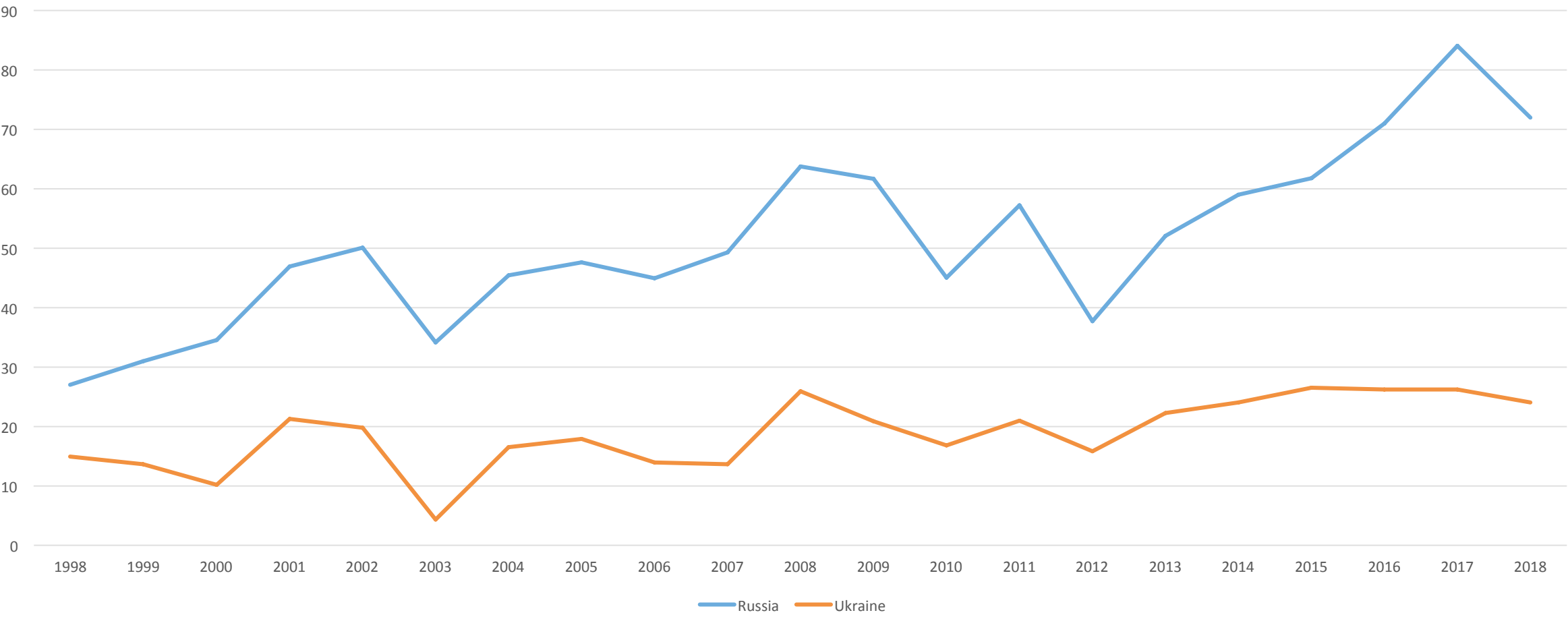
Bulgarian Grain Production



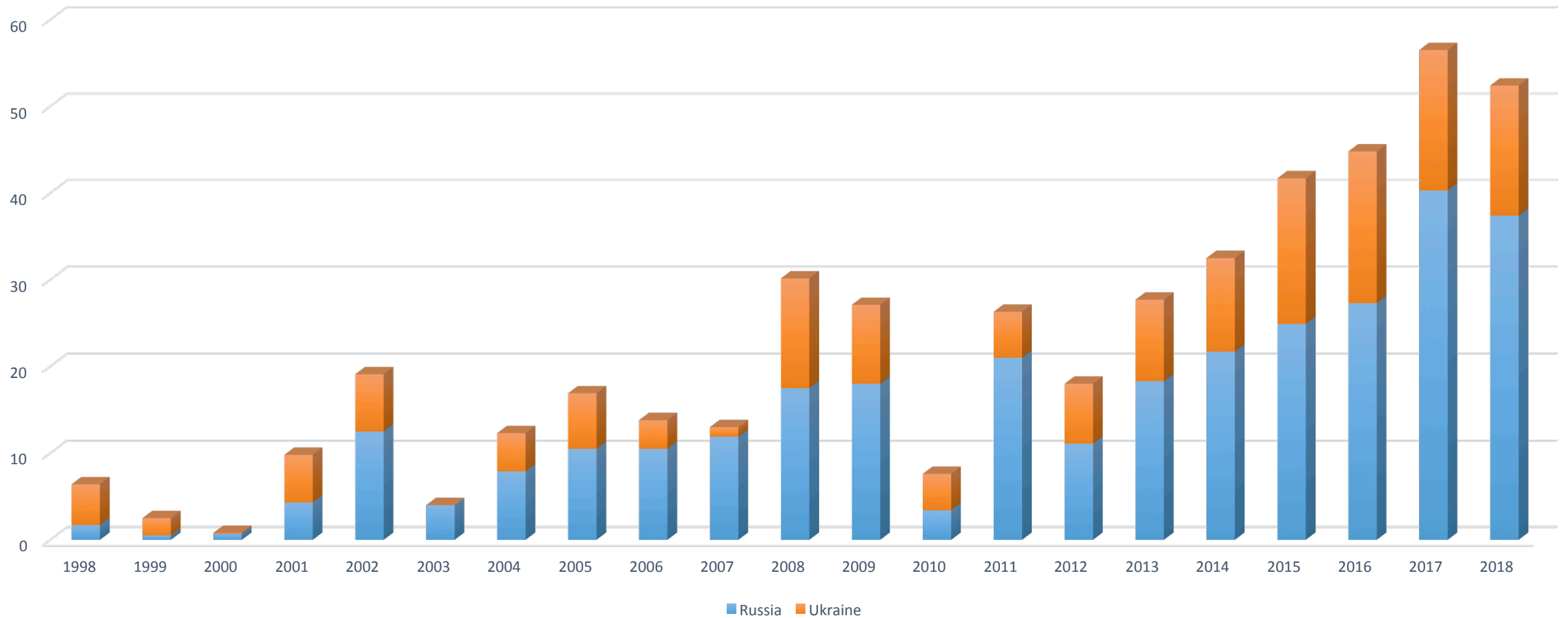
Black Sea Wheat Production



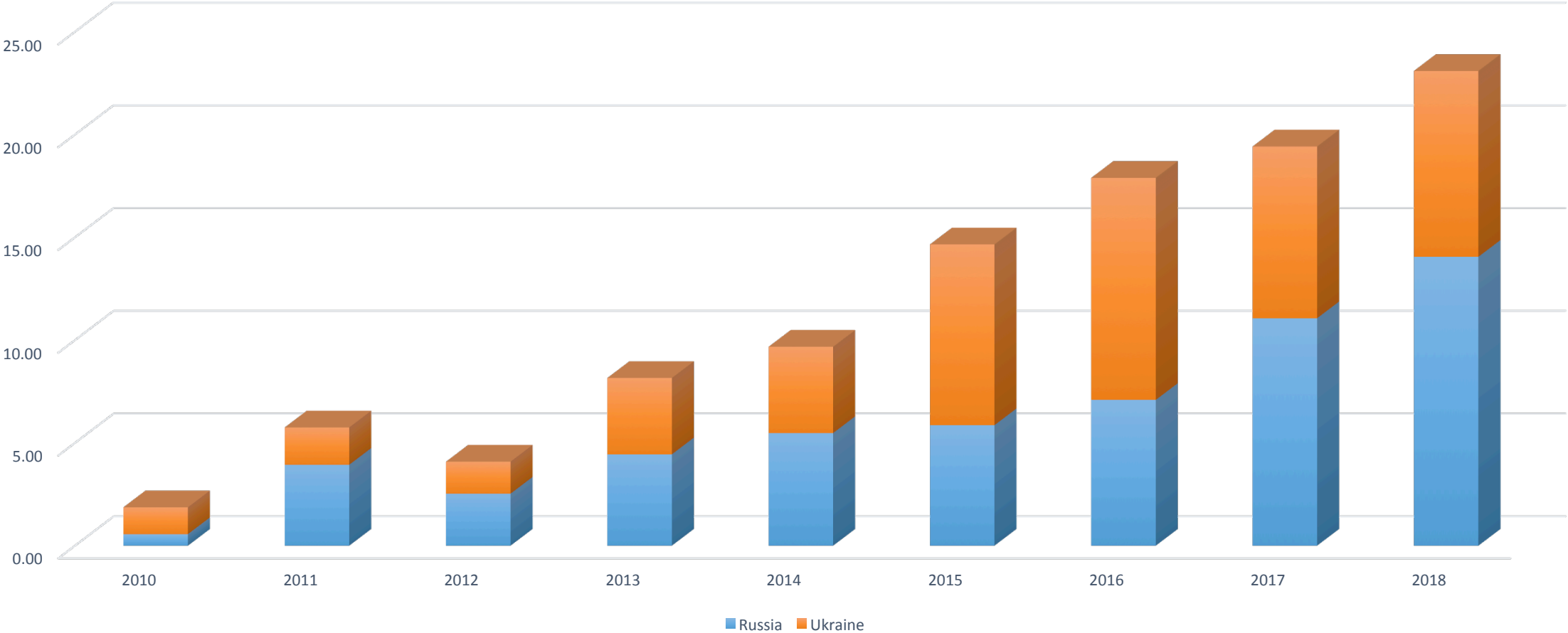
Russian and Ukraine Wheat Production



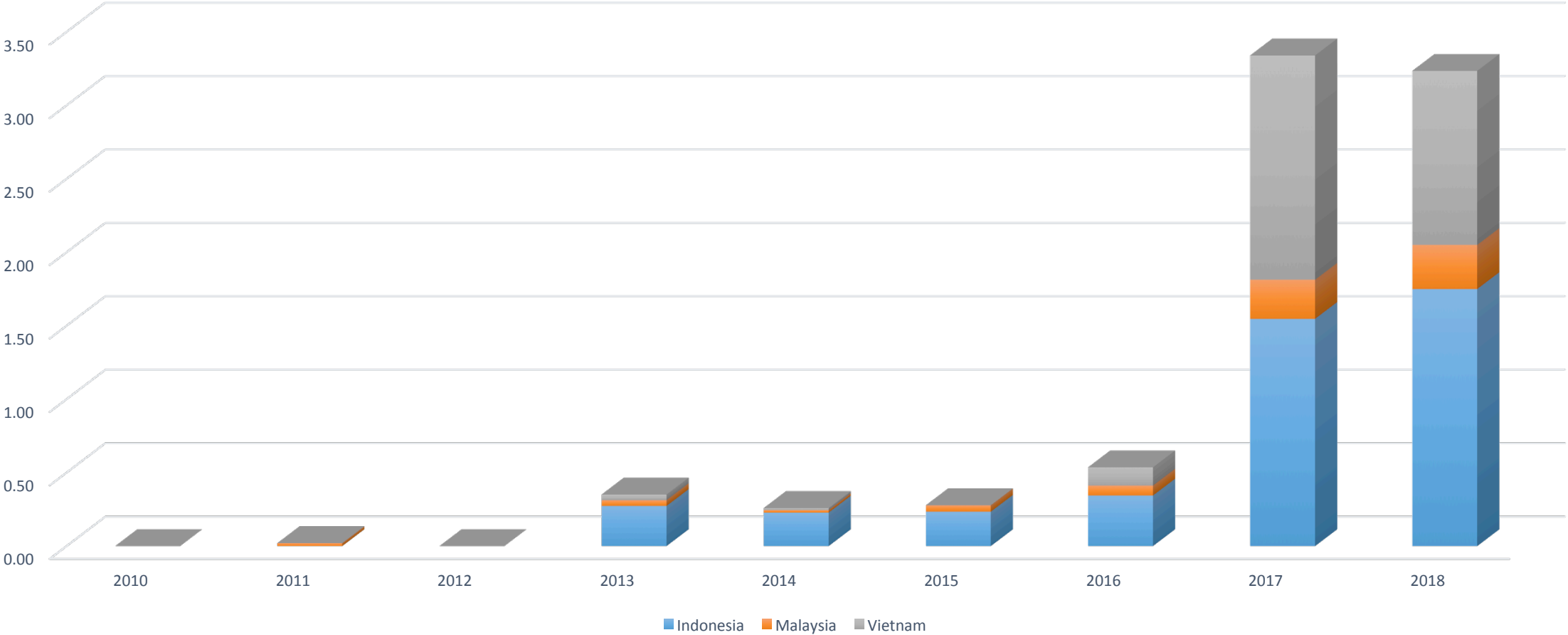
Black Sea Wheat Exports (Russia and Ukraine)





Black Sea Wheat Exports to Asia (Feed and Milling)



Russian Wheat Exports to Asia



Australian Exports to Indonesia

	0910'	1011'	1112'	1213'	1314'	1415'	1516'	1617'	1718 to April 18
Indonesia mmt	3,374,275	3,404,379	4,371,562	3,855,178	3,918,933	4,166,976	3,630,610	5,227,514	1,180,775
Russian Entered Indonesia 0.27 mmt									
Russian into Indonesia 1.55 mmt									

Basic Contract Specification Russian vs Australian

	Russian 11.5% DMB	Russian 12.5% DMB	ASW1	APW1
Test Weight kg/hl min	76	76	76	78
Protein (11% moisture) min	10.24%	11.13%	9.00%	10.50%
Moisture max	14.00%	14.00%	12.00%	12.00%
Falling No min	230	250	300	300
Screenings max	n/a	n/a	5.00%	5.00%
Foreign Material max	2.00%	2.00%	1.00%	1.00%
Bug Damage max	1.50%	1.50%	n/a	n/a
W-Value min	160	180		
Wet Gluten %			23.00%	28.00%
Vomitoxin 2ppm max	2	2	n/a	n/a

What Does Australia Do From Here?

- Need to work at supply chain costs
 - Can we rationalise the central system further
 - Does more on-farm storage assist with central supply chain costs?
 - More port competition in Eastern Australia has pushed down Fobbing costs but does it ensure more road transport to port instead of better utilisation of rail.
- Continued innovation and investment into research and development that promote on-farm efficiency or cheapens unit costs of grain production
- Strategically work with the core Asian consumer base on improving the functionality of the specific products that Asia requires now and in the future (Value Proposition).
- Continued innovation in plant breeding for targeted products that Asia will consume over the next 20-30yrs.
 - breeding for functionality?
 - breeding for yield?
- Coordinated industry market research and product development within Australia and in our export markets e.g. Industry Good Company (WQA, Market Access), AGEIC, GRDC