

SUNFLOWER IN THE GLOBAL VEGETABLE OIL SYSTEM: SITUATION, SPECIFICITIES AND PERSPECTIVES

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- ✓ Sunflower seeds production
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- ✓ War in Ukraine
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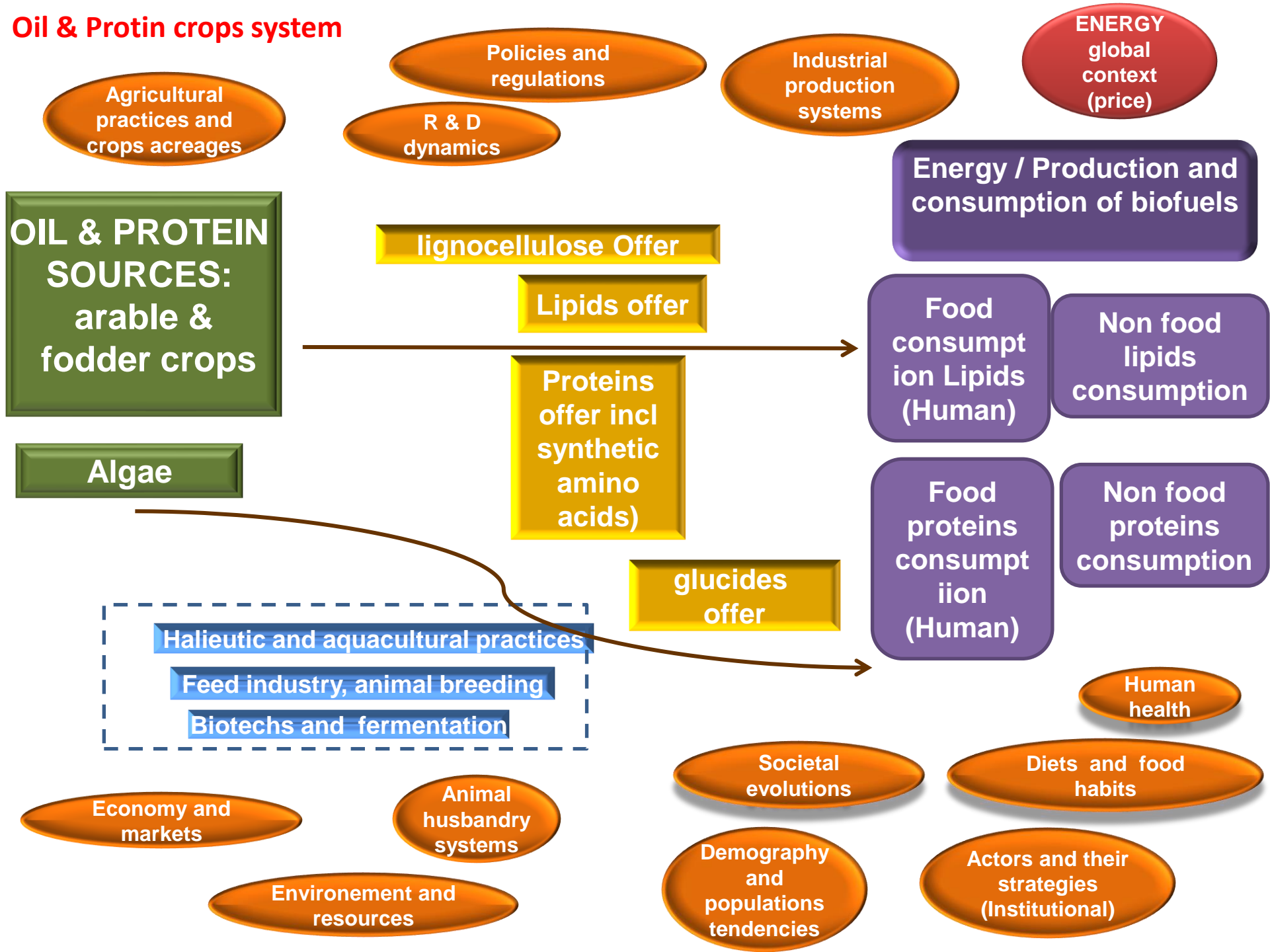


Reminder of the obvious

- ✓ Sunflower gives both vegetable oil and proteins
- ✓ Oil market is led by palm oil and then soybean oil
- ✓ Protein (for feed) market led by soybean
- ✓ Non food uses of crops products are developing as mass products (biodiesel) or Biorefinery
- ✓ Sunflower production is only an element in the global agriculture and food system

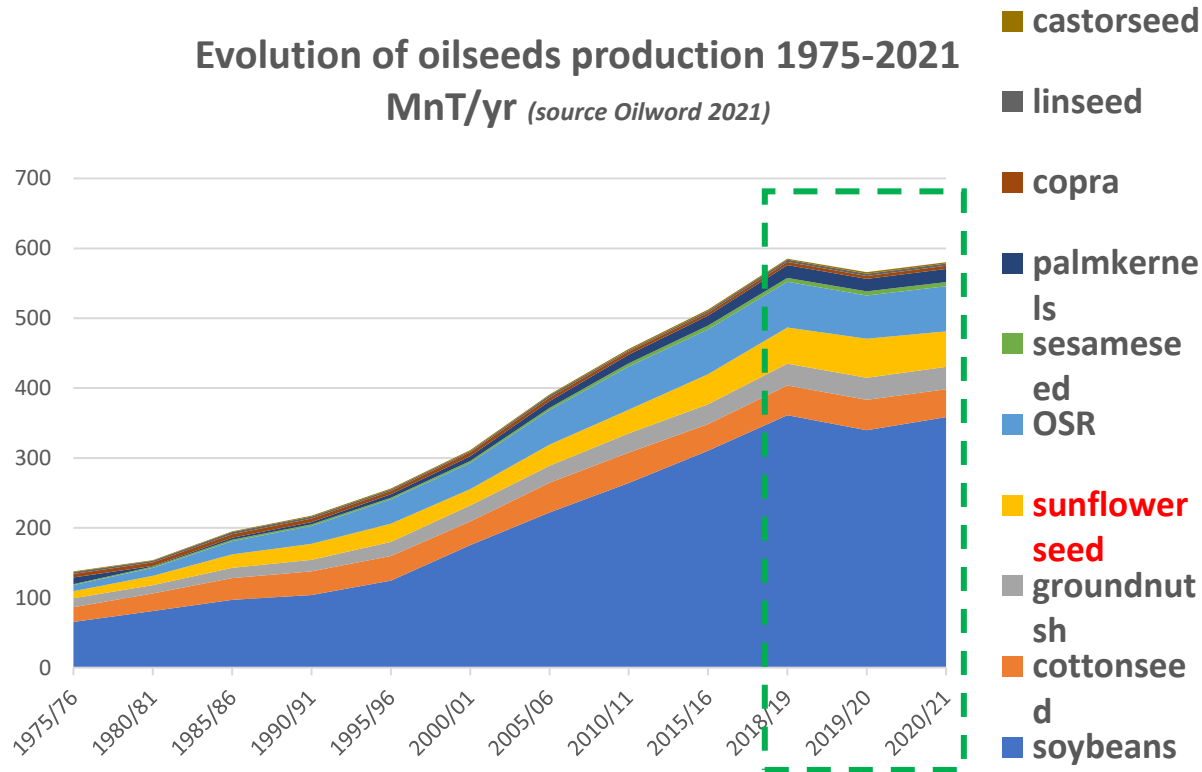


Oil & Protein crops system



Sunflower maintained its market share in oilseeds at world level

Evolution of oilseeds production 1975-2021
MnT/yr (source Oilworld 2021)



Evolution of the relative share of 10 oilseeds in global production (1975-2021) (source Oilworld 2021)



Sunflower seeds reached 10% of all oilseeds between 1985 and 1995 and stabilized around 9%
 Increase of Soybeans (>60% now)
 Relative decrease of cotton seed

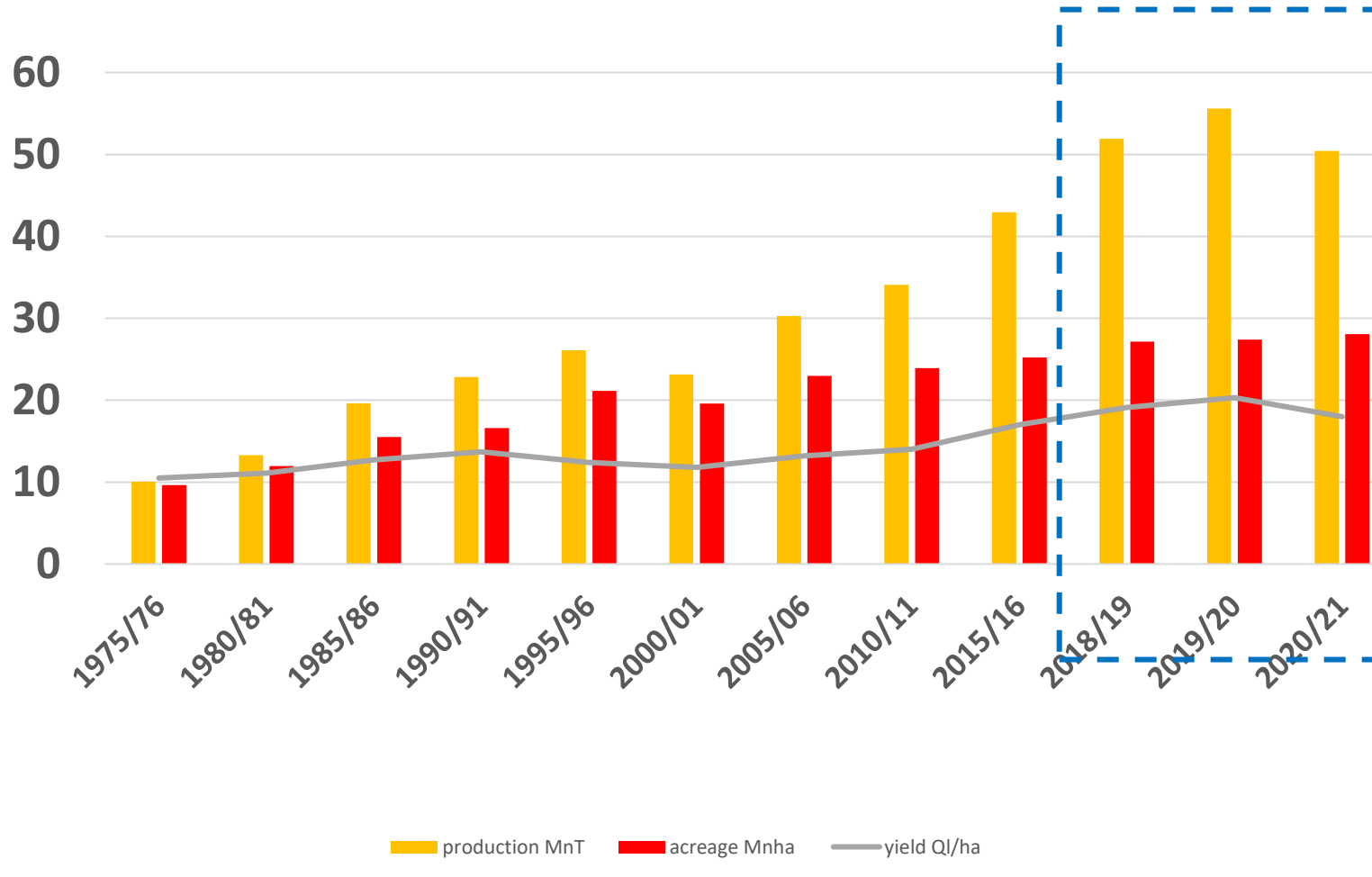


A remarkable growth of the seeds production



Evolution of world sunflower World acreage (Mha),
production (MT) and yield (dT/ha)

1976-2021 (source OilWorld 2021)



**50MT
on 26 Mha**

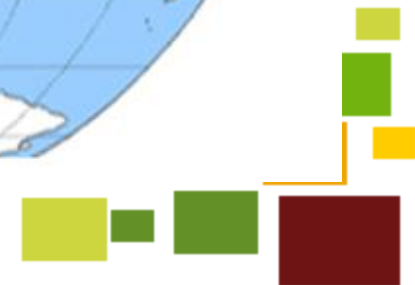
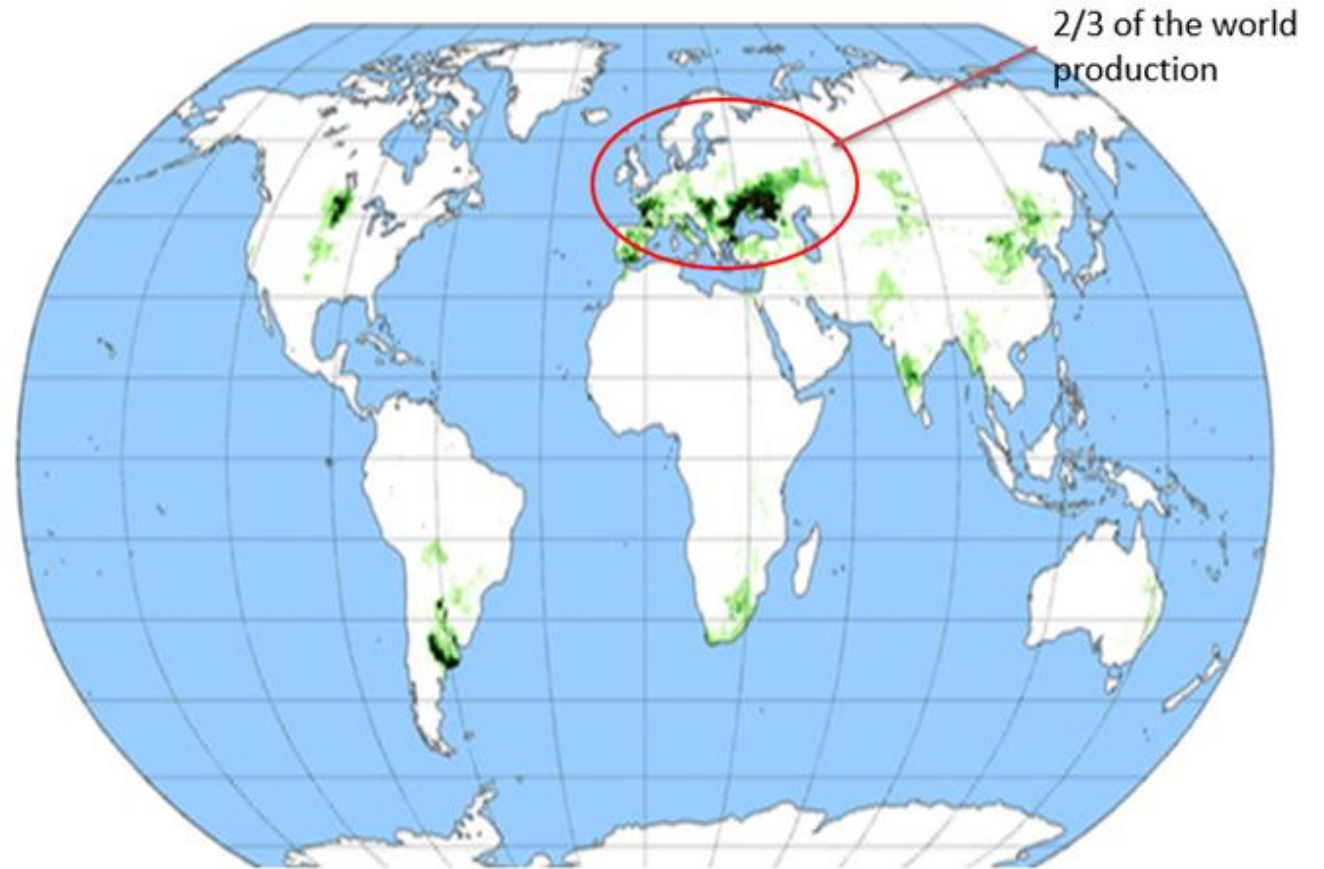
**Since 2000:
Production X 2,3
Acreage x 1,41
Yield x 1,62**



Sunflower : a relatively spatially concentrated crop

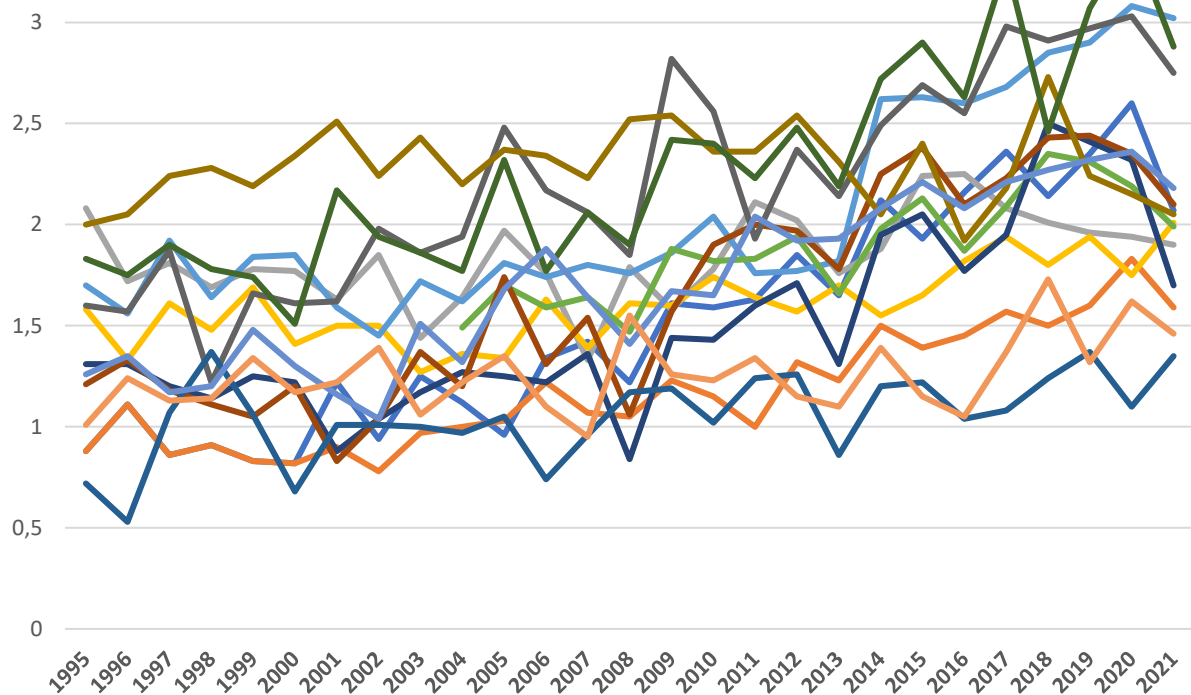
- ✓ Sunflower is grown significantly in 63 countries. 80% in 10 countries, and 2/3 in Europe

Acreeage and Proc source: Oil World	average 2016/2020		% increase: 2011/15 (production)
	1000ha	1000T	
WORLD	26693	49875	27%
Ukraine	6230	14470	53%
Russia	7565	12087	42%
Argentina	1571	3192	2%
China	933	2623	11%
Romania	1096	2364	39%
Bulgaria	819	1892	14%
Hungary	623	1798	33%
Turkey	689	1550	22%
France	580	1299	-20%
USA	578	1068	0%
<i>Top 10</i>	<i>20684</i>	<i>42343</i>	<i>32%</i>
<i>Top 10%</i>	<i>77%</i>	<i>85%</i>	
(European Union	4282	8913	15%
(Serbia)	209	616	40%
source oilworld 2021			



What about yields?

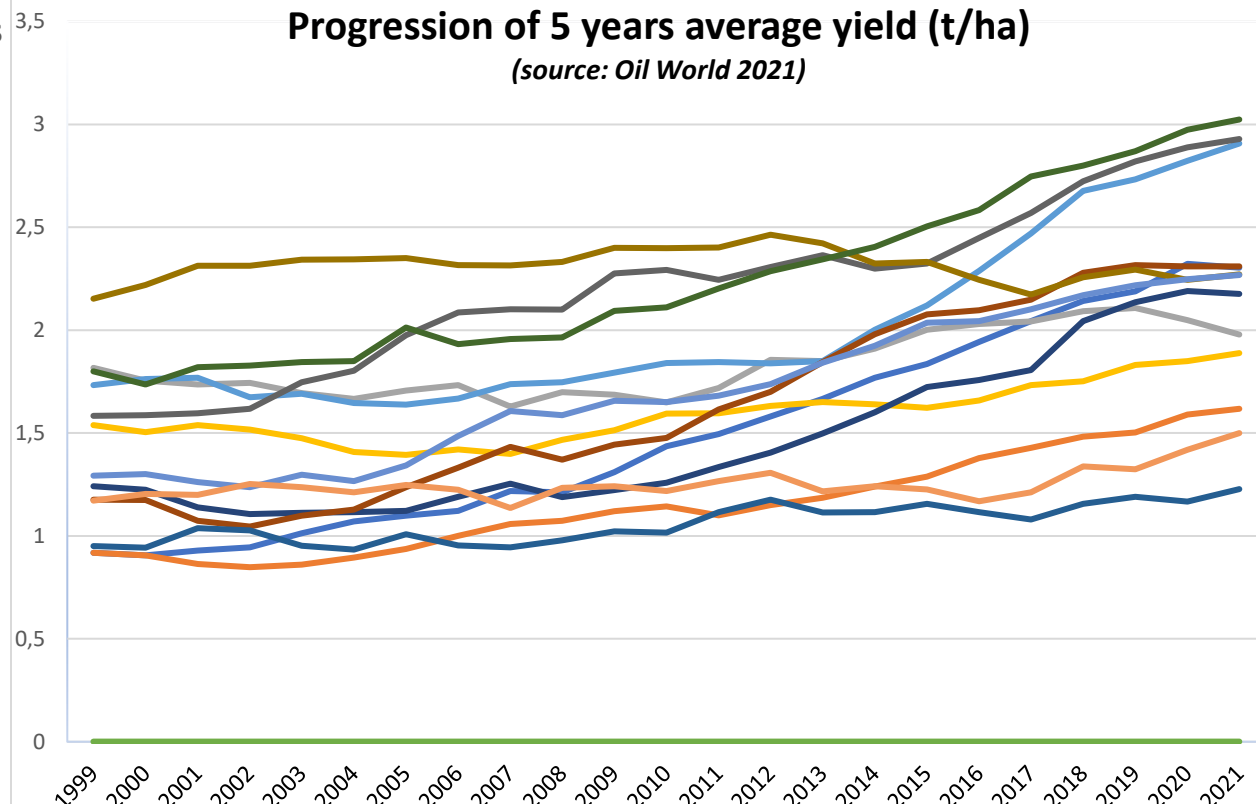
Evolutions of sunflower yields (t/ha) in the main producing countries
1995-2019 (source OilWorld 2021)



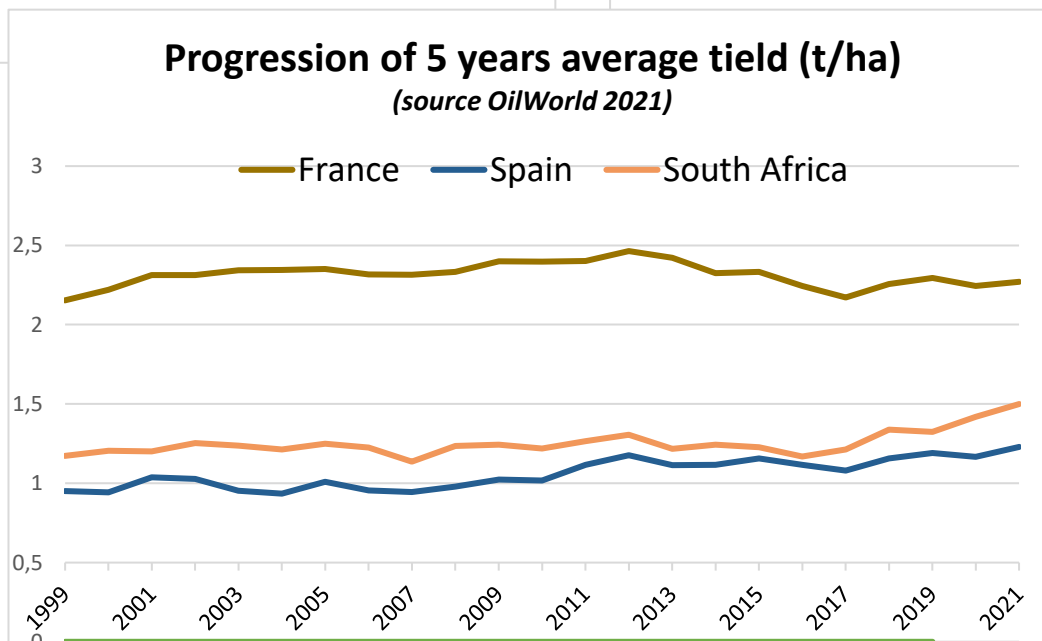
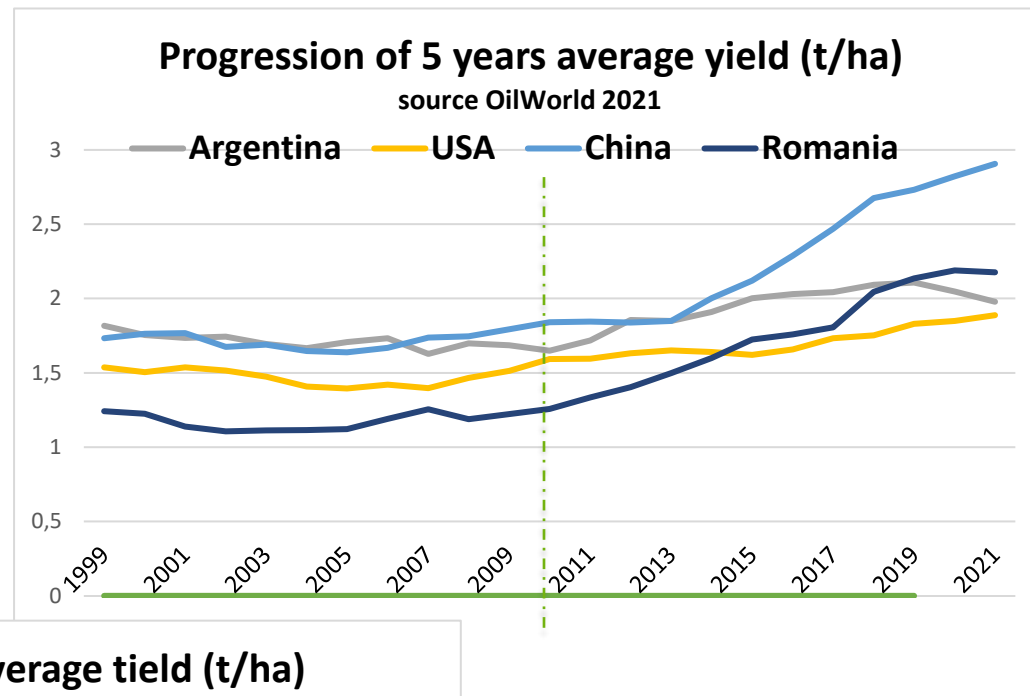
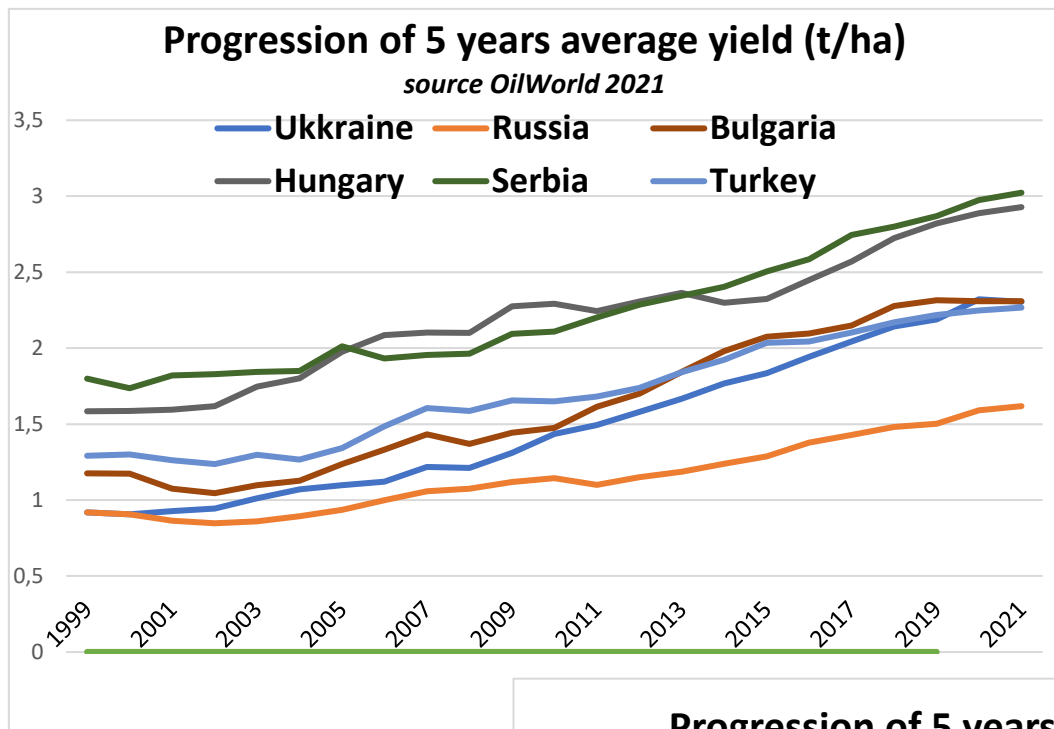
- Ukraine
- Russia
- Argentina
- USA
- China
- EU
- Romania
- Bulgaria
- Hungary
- France
- Spain
- Serbia
- Turkey
- South Africa

Progression of 5 years average yield (t/ha)

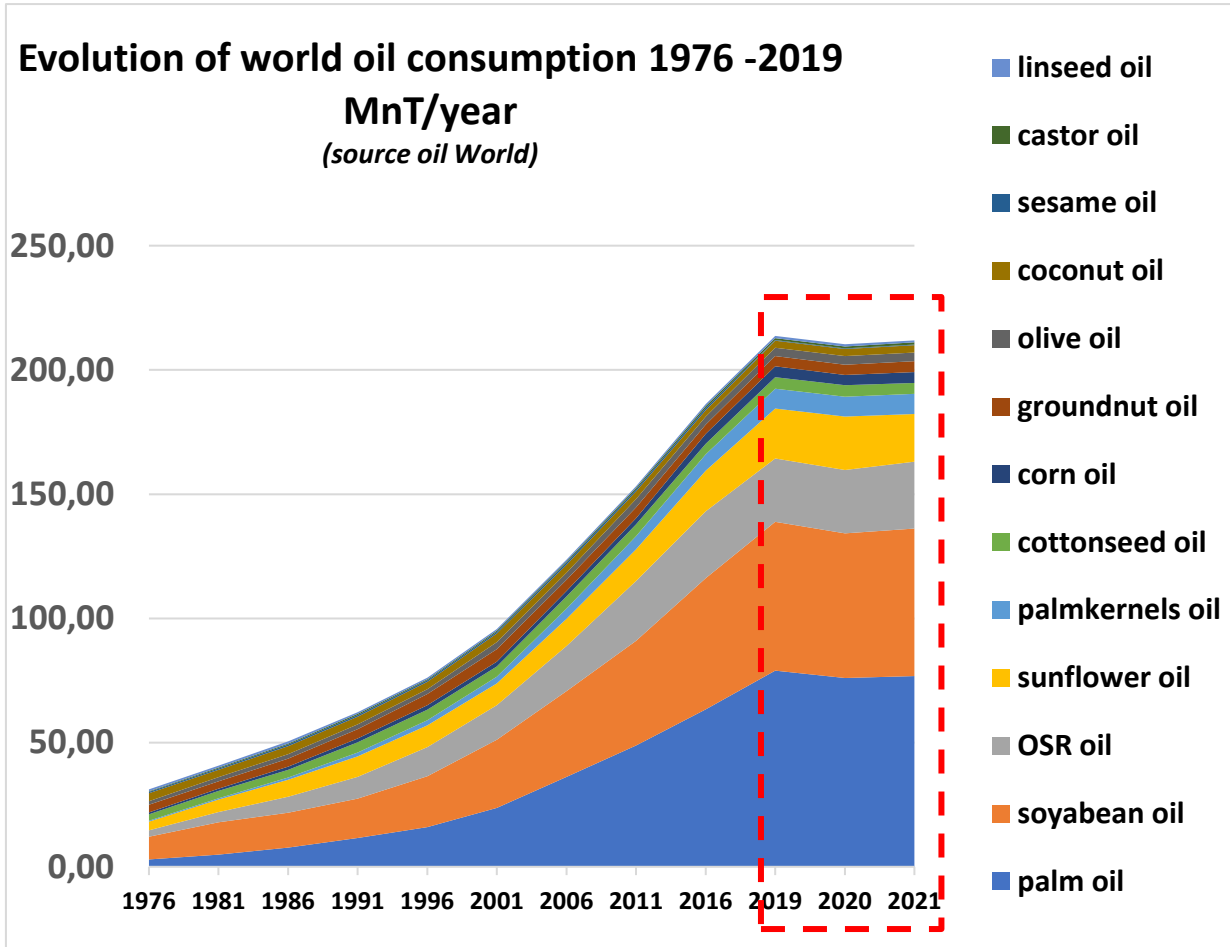
(source: Oil World 2021)



Yields: 3 different dynamics accross top 10 countries



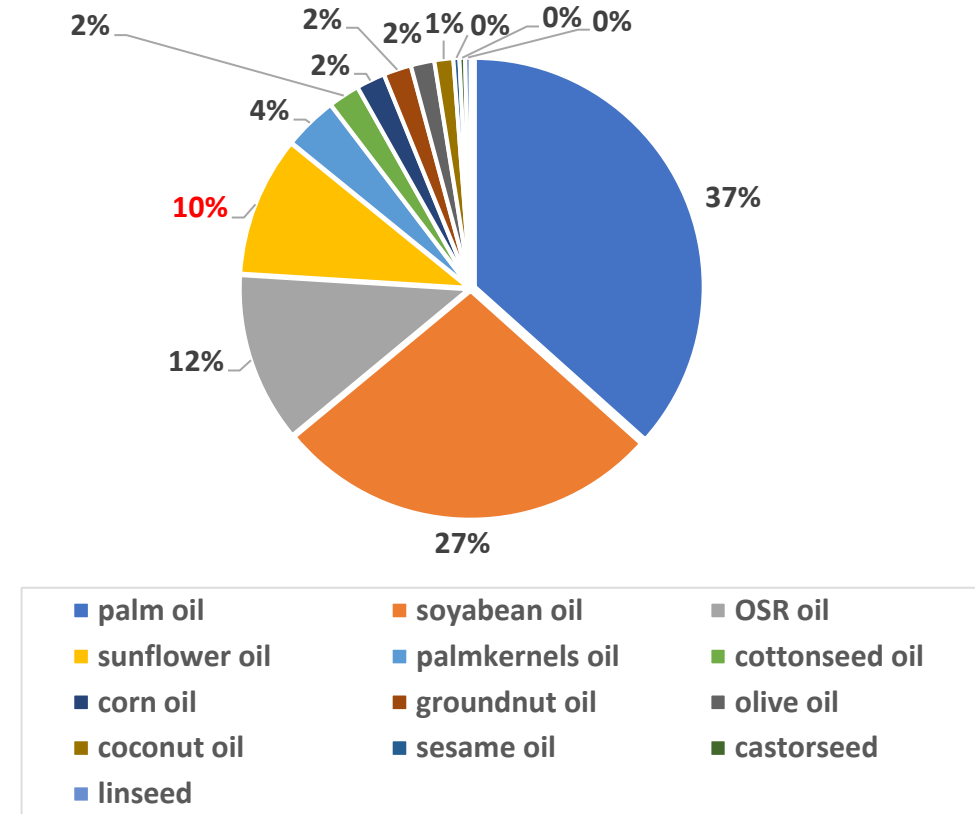
Sunflower oil consumption



Share of sunflower in global oil consumption

%moy Avg 2019-2020

Source OilWorld 2021



✓ Vegetable oils & fats: 243,8MT in 21/22

✓ Vegetable oils = 80%



Where is sunflower oil used?

✓ Almost everywhere...T



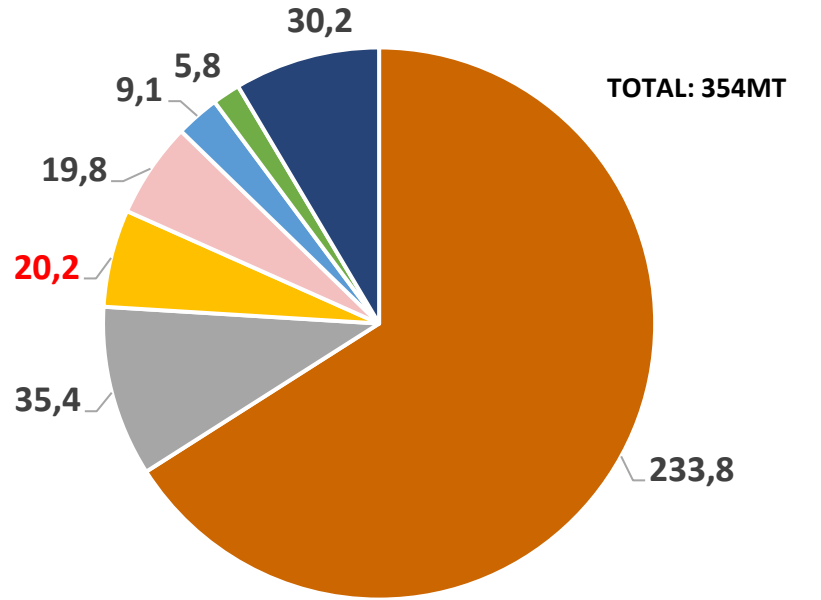
Sunflower seed Oil Domestic Consumption by Country in 1000 MnT in 2019.

Source Index mundi/ USDA



Sunflower meals

Global Average Oilseed Meals production
2016-2020 (source OilWorld 2021)

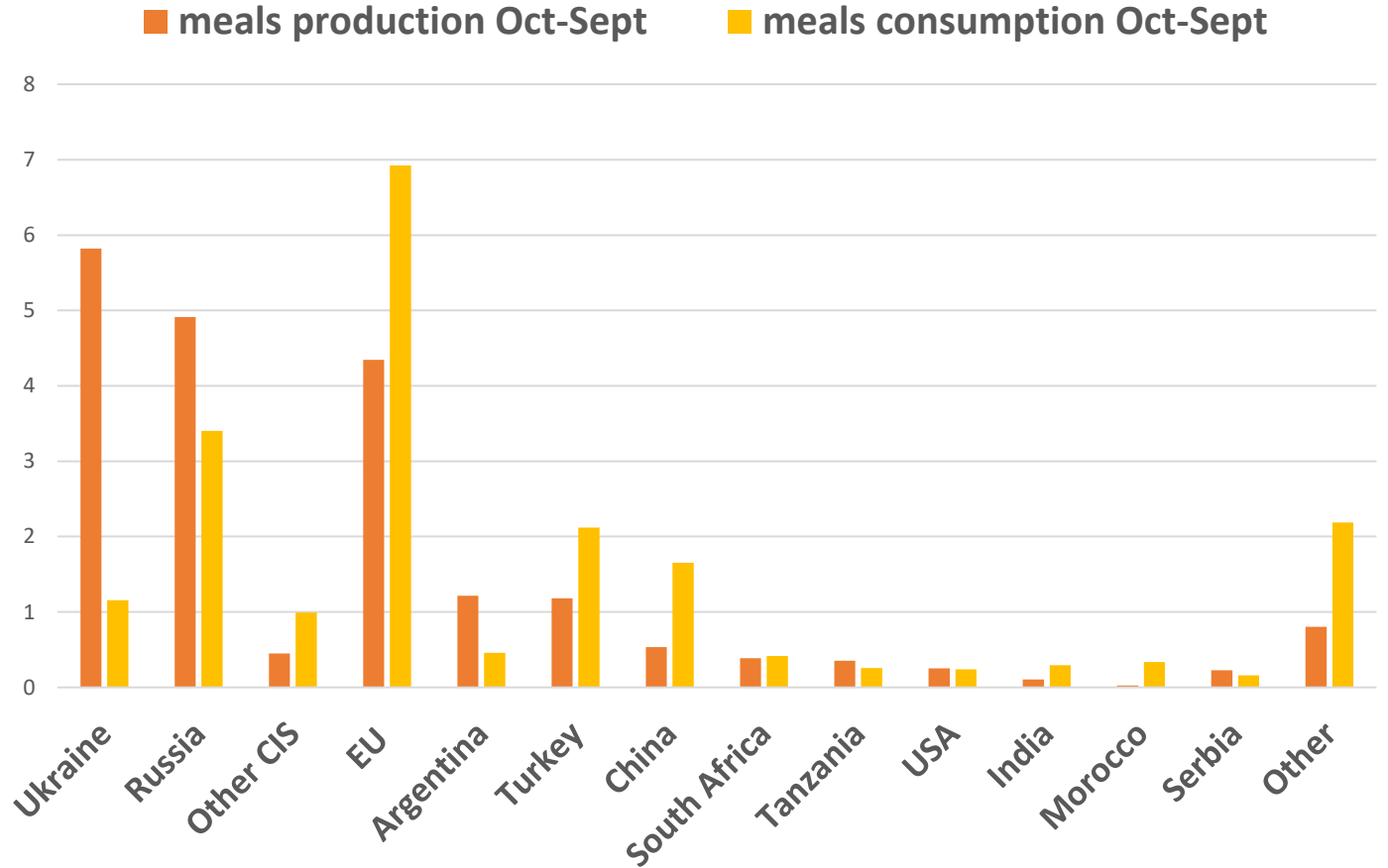


- Soybean
- OSR
- Sunflower
- Cotton
- Palmkernel
- Groundnut
- Other

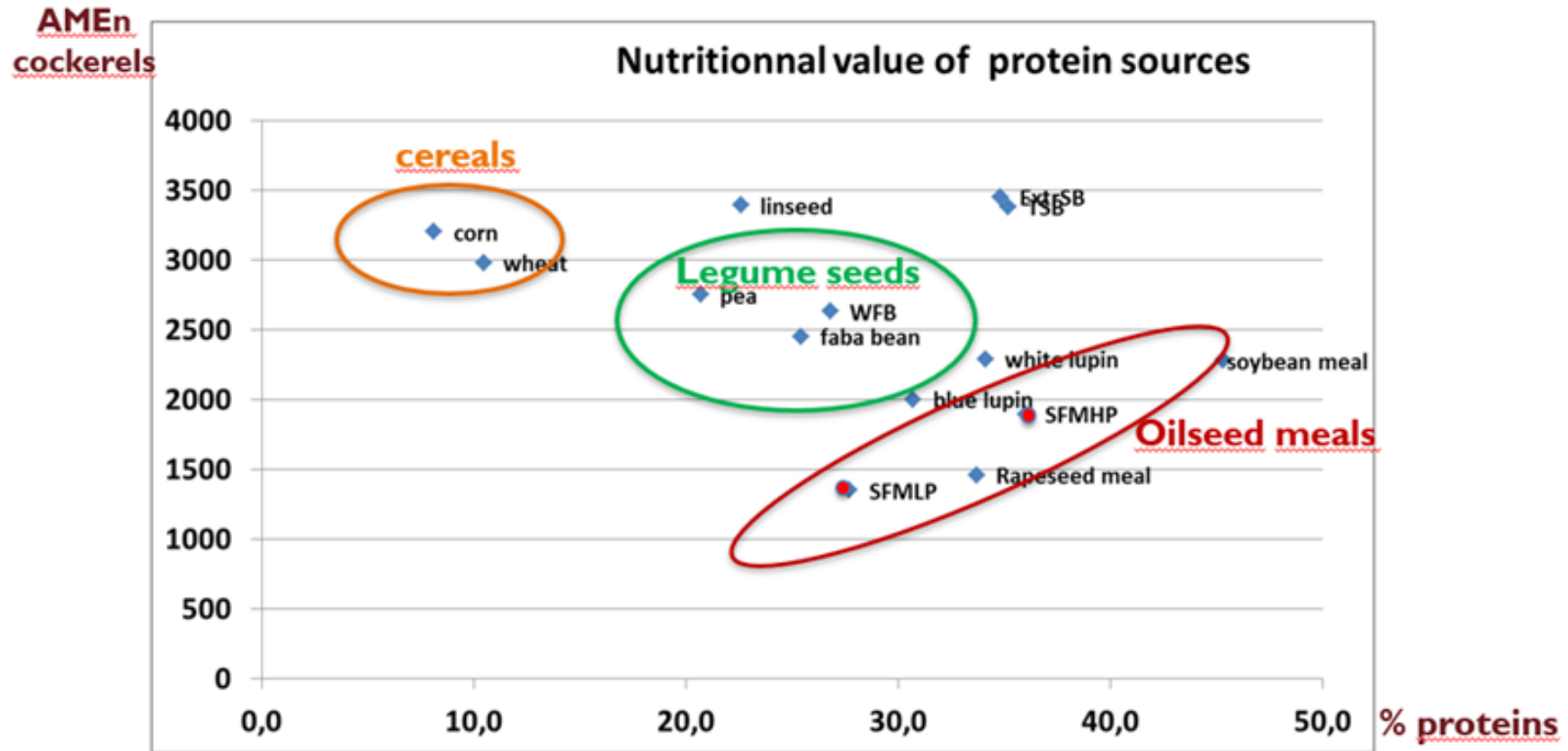
✓ Sunflower meal is at 3rd or 4th rank in production with cotton meal = 20MT

Main importers: EU, Turkey, China, other CIS

Average sunflower meal production and consumption
2017-2021 MT/year



Feed protein sources: high pro sunflower meals among the best



From INRA, FEEDIPEDIA

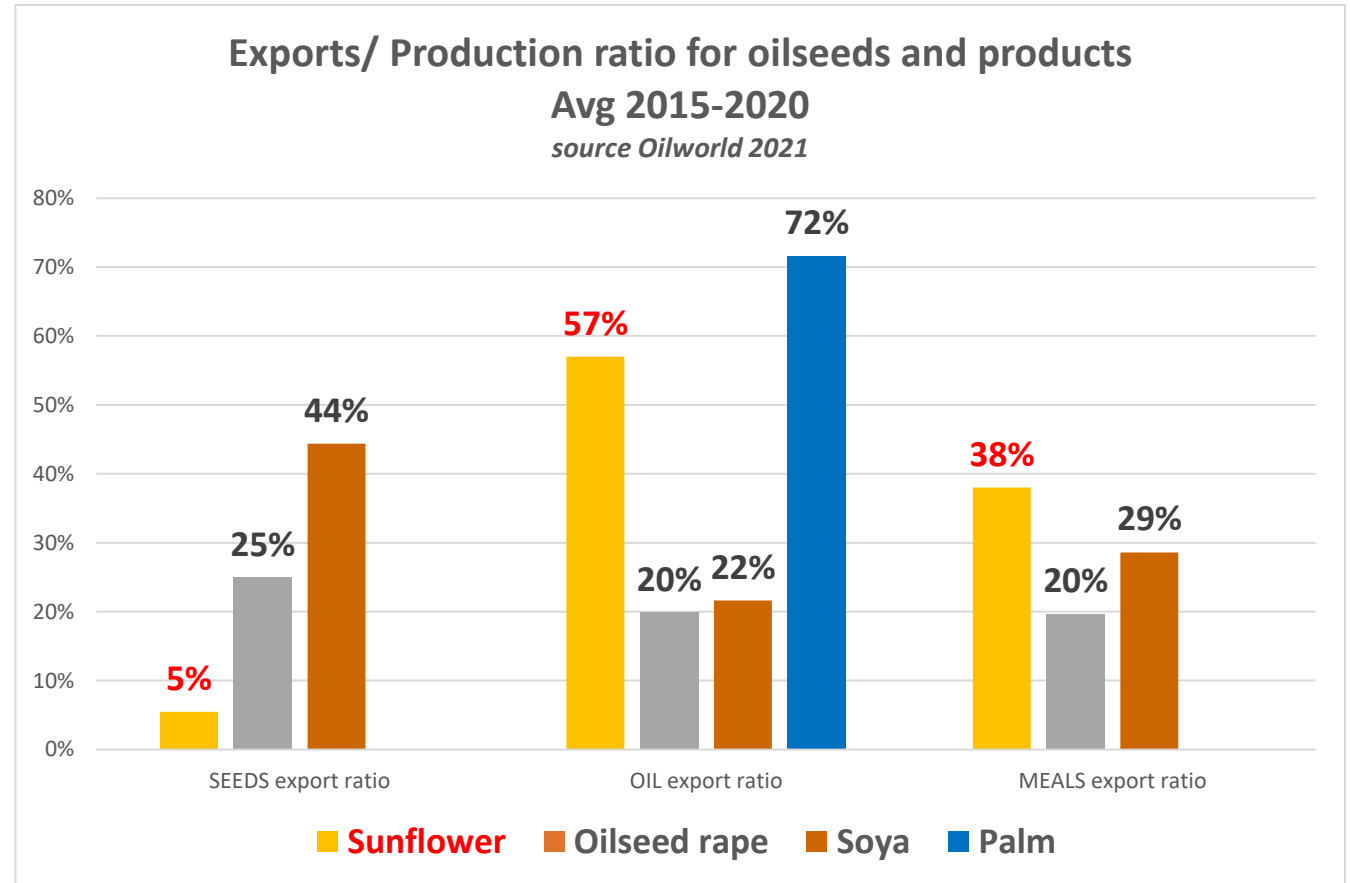
(AMEn : Apparent Metabolizable Energy for cockerels, nitrogen corrected)

SFMHP: Sunflower Meal high Pro ; SFMLP: Sunflower Meal Low Pro.
(source: Terres Univia)

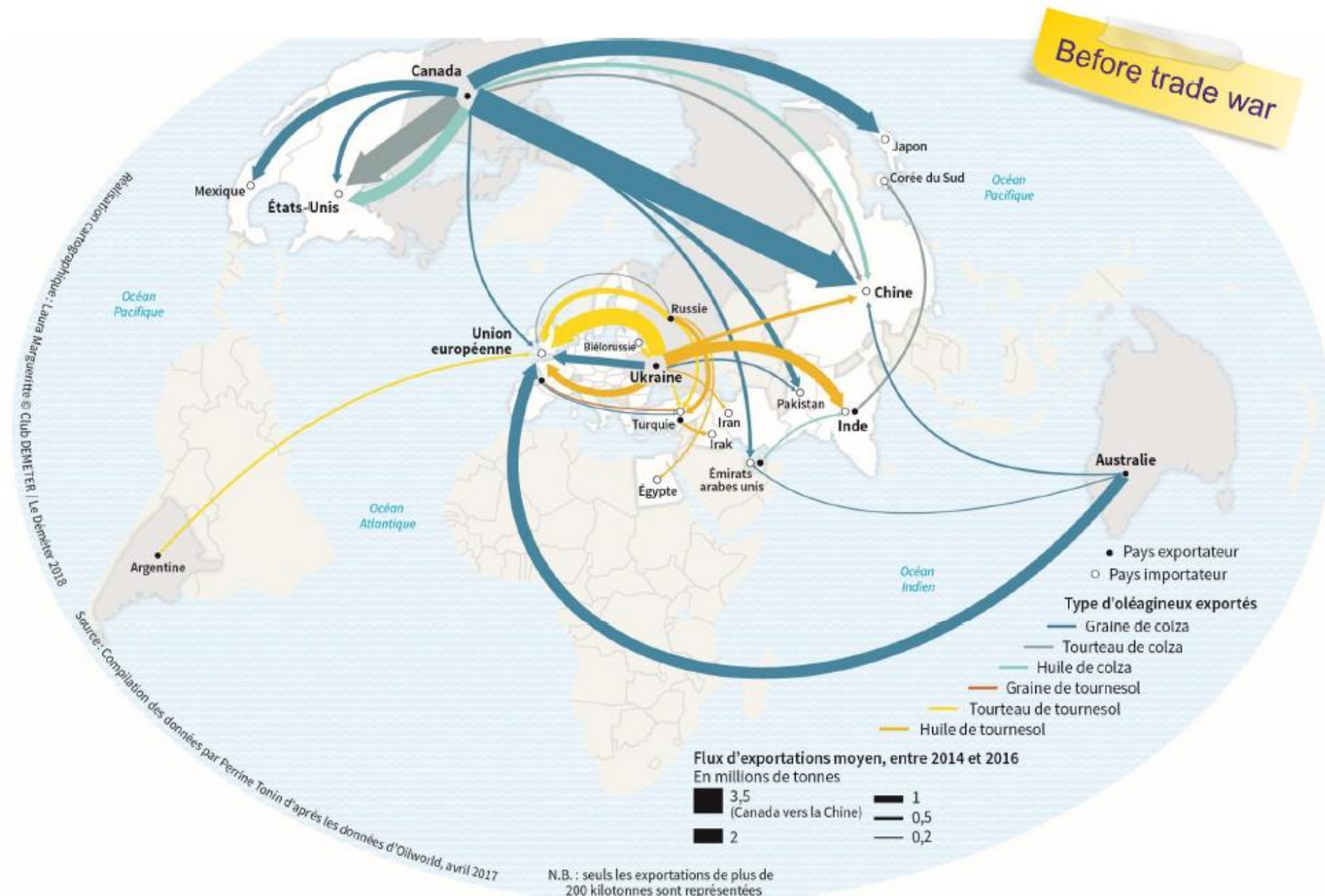


Trade

- ✓ Oilseed products are highly traded commodities, around 28% of total production, more than most grain commodities
- ✓ Sunflower is traded mainly after processing: only 5% of seeds are exported out of the production countries
- ✓ Industrial development has accompanied the sunflower seeds production



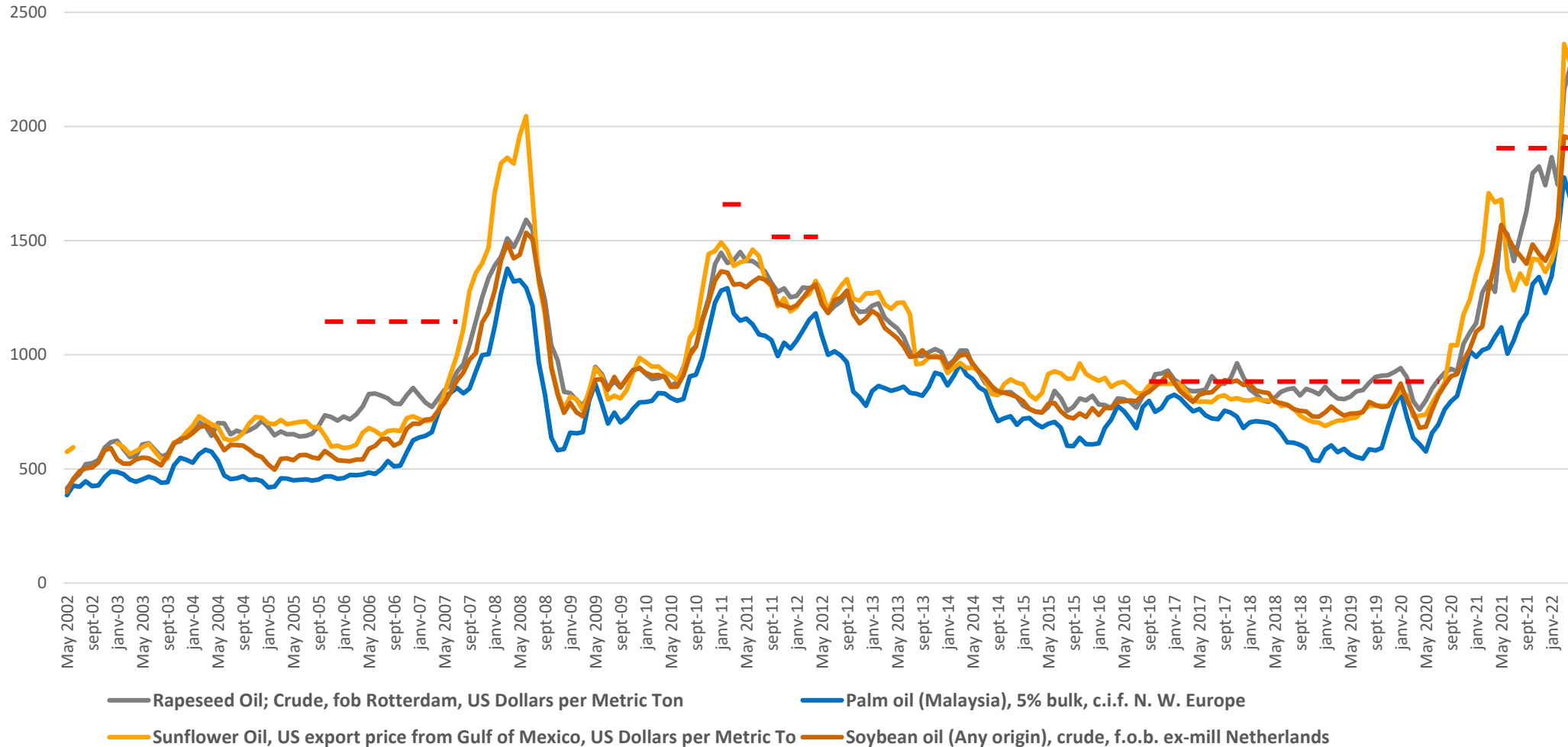
RAPESEED & SUNFLOWER COMPLEX MAIN TRADE FLOWS



Oils Prices

Evolution of vegetable oil prices May 2001-Apr 2022

Source Index mundi



Last 5 years: Sunflower oil premium about +19US\$ versus SBO (-186 to +423)

+178 US\$ versus Palm Oil (-23 to + 678)

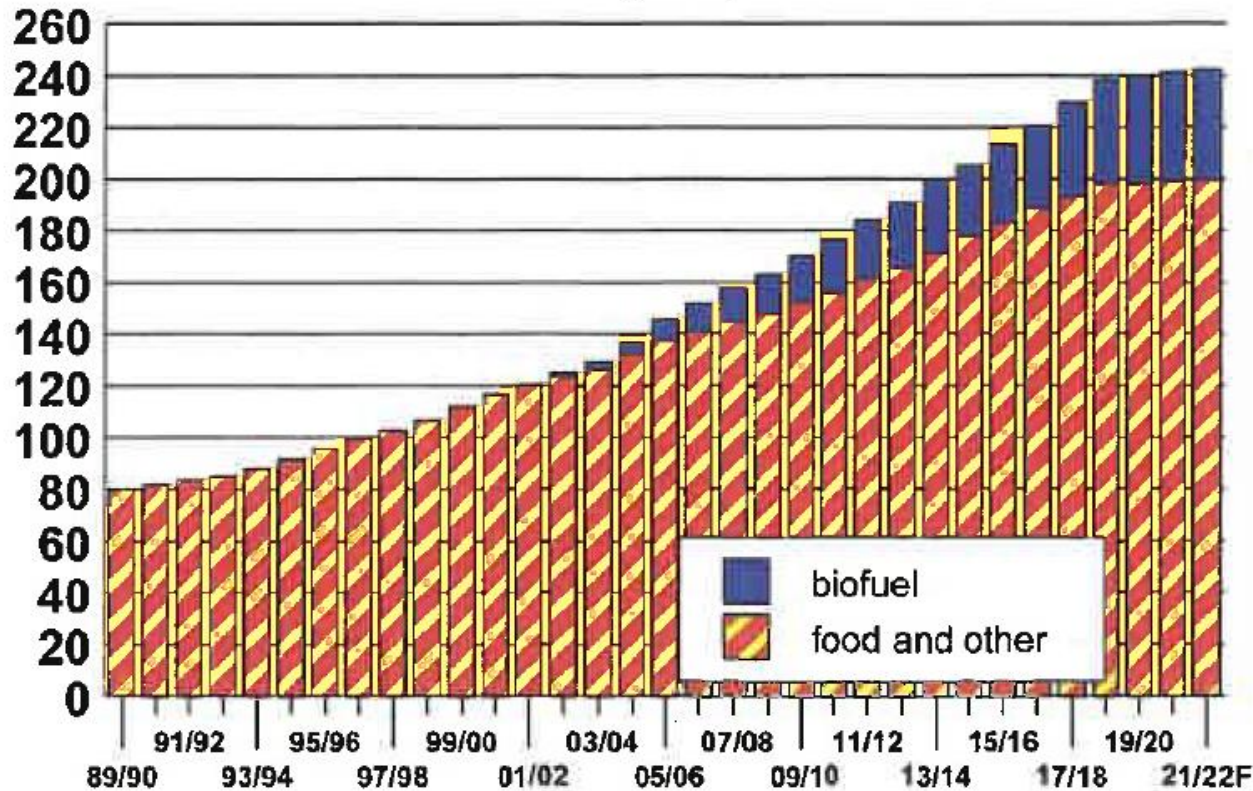
- 67US\$ versus OSR Oil (-454 to + 392)



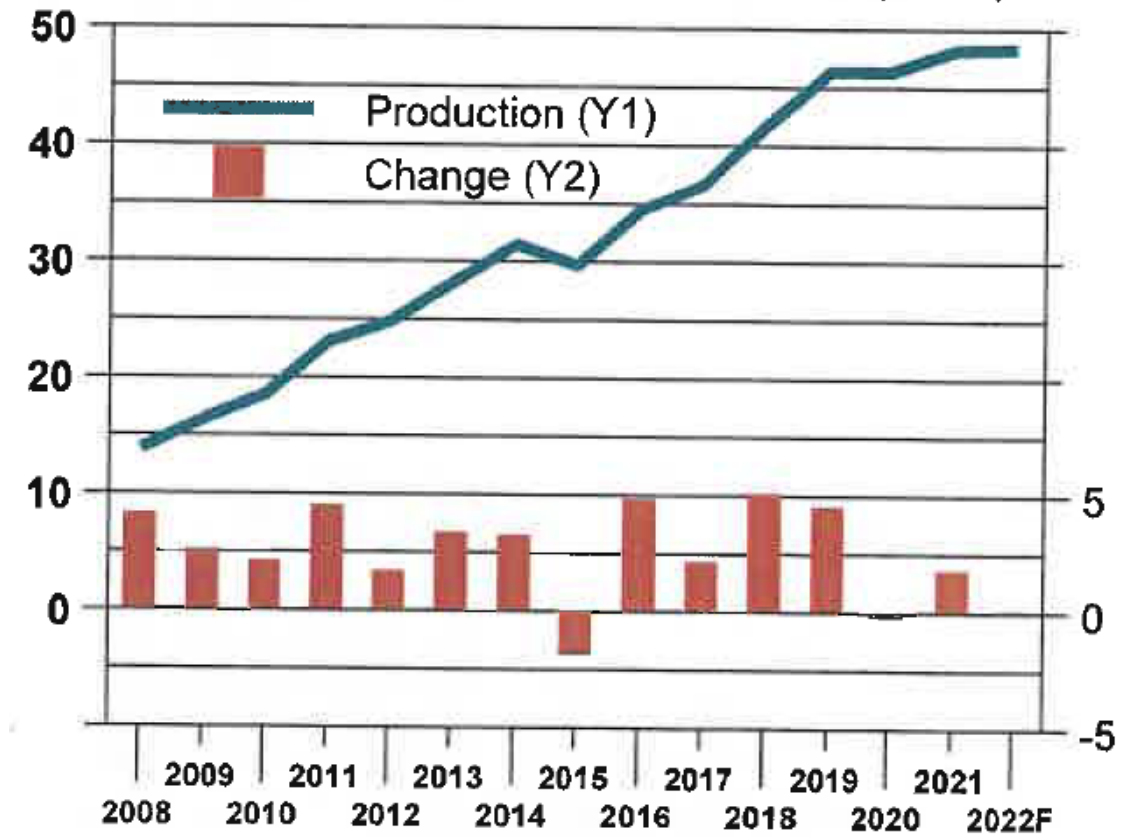
Sunflower and Biodiesel

- ✓ With 48 MT, of which 40 are based on first use vegetable oils, Biodiesel absorbs 20,5% of the global vegetable oils production (193MT)
- ✓ High prices since May 2020

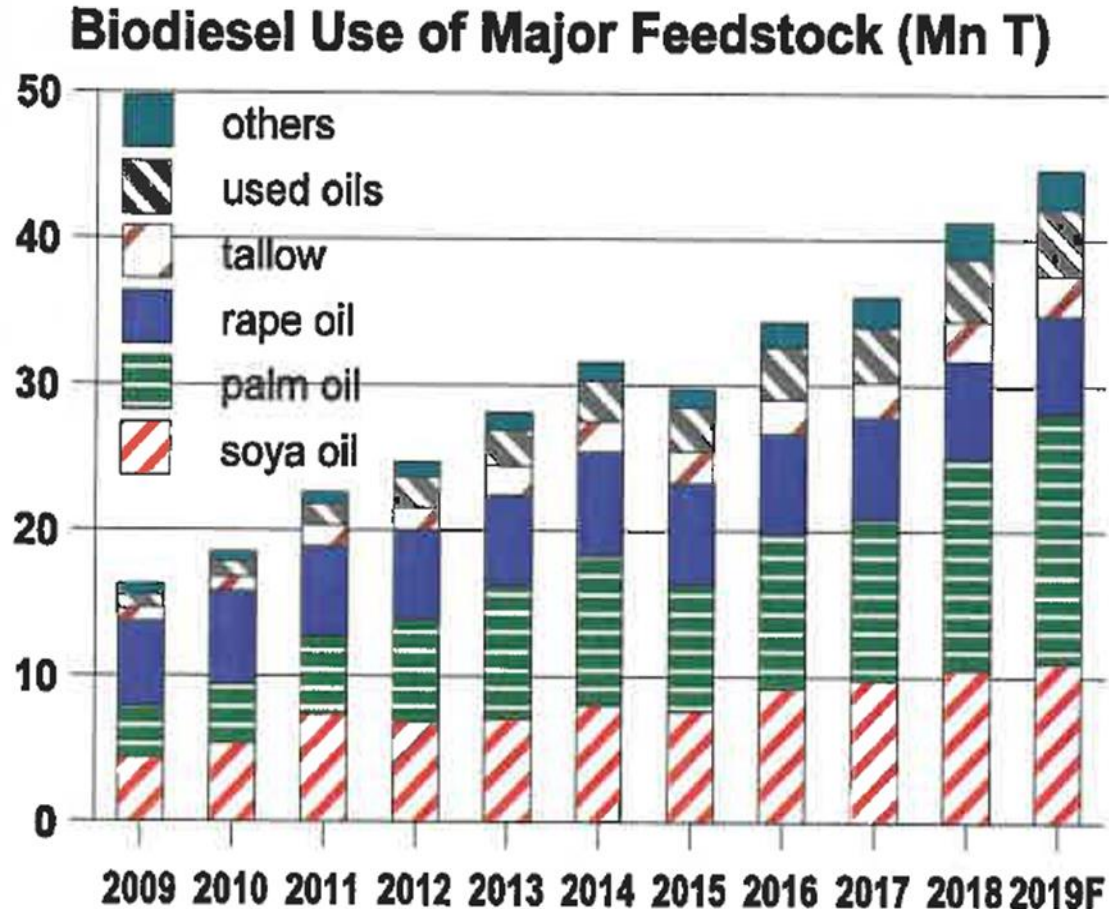
17 Oils & Fats : World Consumption
Total Usage in Mn T



World Production of Biodiesel (Mn T)



Sunflower and Biodiesel



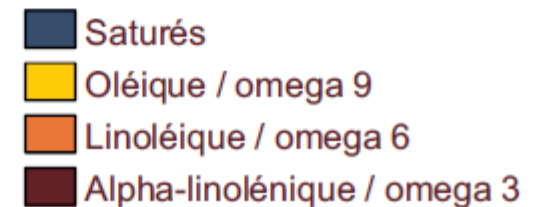
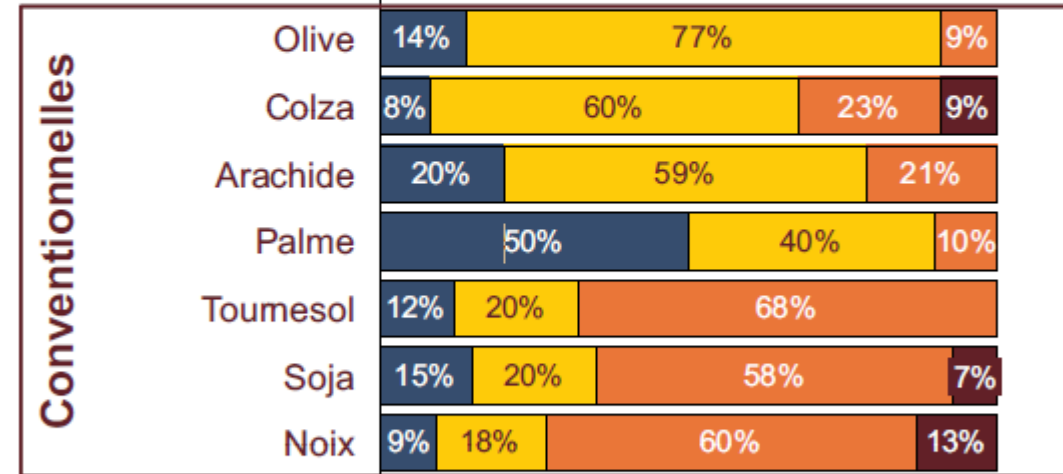
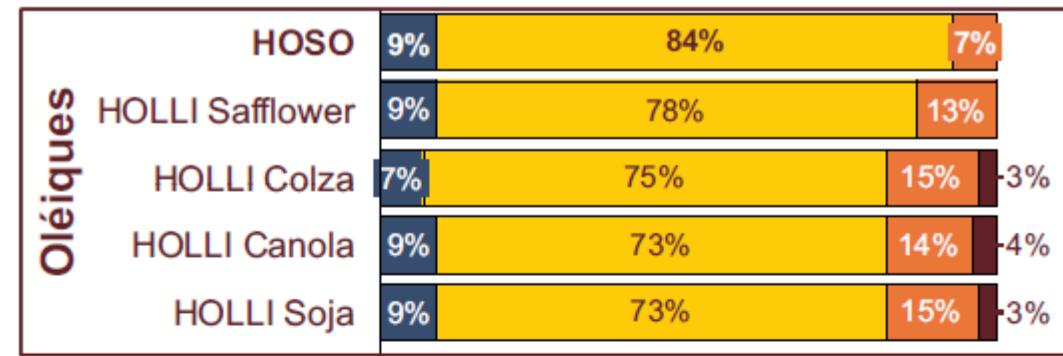
Source: OilWorld 2019

- Sunflower oil not strongly involved in Biodiesel (<0,6MT in EU)
- Limited by its technical characteristics
- But concerned through the price effects on the vegetable oils complex



Oleic sunflower

- ✓ High Oleic Sunflower oil HOSO is the richest in oleic a.
- ✓ About 20% of the sunflower oil consumed in Europe
- ✓ Demand of food industries (snacks, biscuits, bakery...) and catering (frying)
- ✓ Rapid development in France (2000-16) and then in Ukraine and Russia
- ✓ Today in France , oleic sunflower premium ranges by 30€/t compared to classical sunflower
- ✓ Food industries also developed the use of blends, optimizing technical interest and costs.

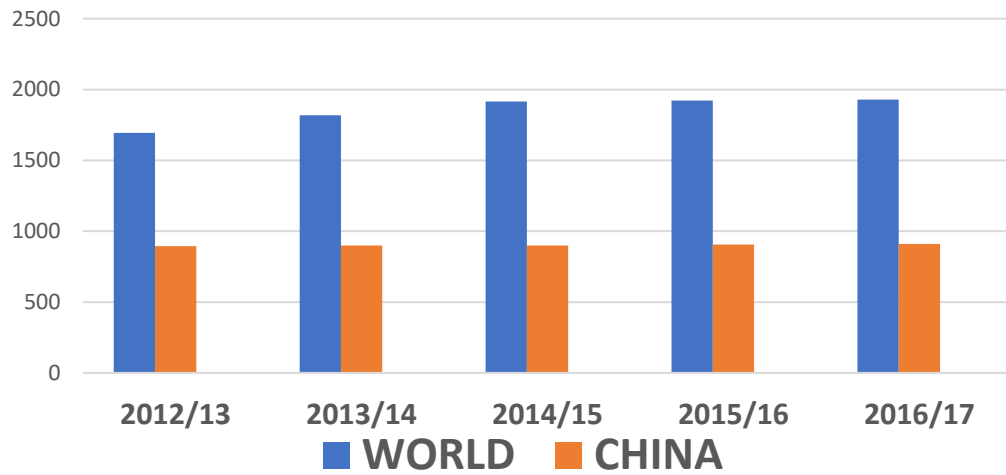


Source Tonin P, 2018



Confectionery Sunflower: a developing market

Confectionery sunflower seeds consumption
2013/2017/ Source Qiaqia Food Cy 2018



- ✓ Assuming that confectionery sunflower represent 40% of « other uses », it would reach 2,2 MT/year
- ✓ What about bakery?
- ✓ Still a niche market, corresponding to national food habits
- ✓ Should lead to a higher interest in protein content (→ breeding)

Sunflower World supply and demand MT (source Oilworld 2019 & 2022)								
Sunflower seed MT	14/15	15/16	16/17	17/18	18/19	19/20	20/21	21/22*
Opening stocks	2,9	3,1	3,3	3,6	3,3	3,3	3,4	2,6
Production	41,4	42,9	49,7	49,0	51,9	55,7	50,5	57,9
Total supplies	44,3	46,0	53,0	52,6	55,2	59,0	53,9	60,5
Crushing	36,7	38,0	44,6	44,4	46,9	50,5	45,9	46,4
Other uses	4,5	4,7	4,7	4,9	4,9	5,2	5,3	5,5
Ending stocks	3,1	3,3	3,7	3,3	3,3	3,4	2,6	8,5
Stocks/ usage	7,4%	7,8%	7,4%	6,7%	6,4%	6,0%	5,1%	16,4%
% other uses / total uses	10,9%	11,1%	9,6%	10,0%	9,5%	9,4%	10,4%	10,6%
confectionery (Qiaqia Cy)	1,9	1,9	1,9			2,1	2,2	2,2
confectionery as % of other uses	42,6%	40,7%	40,7%					
confectionery as % of total uses	4,3%	4,2%	3,6%					



Focus: effects of the war in Ukraine?

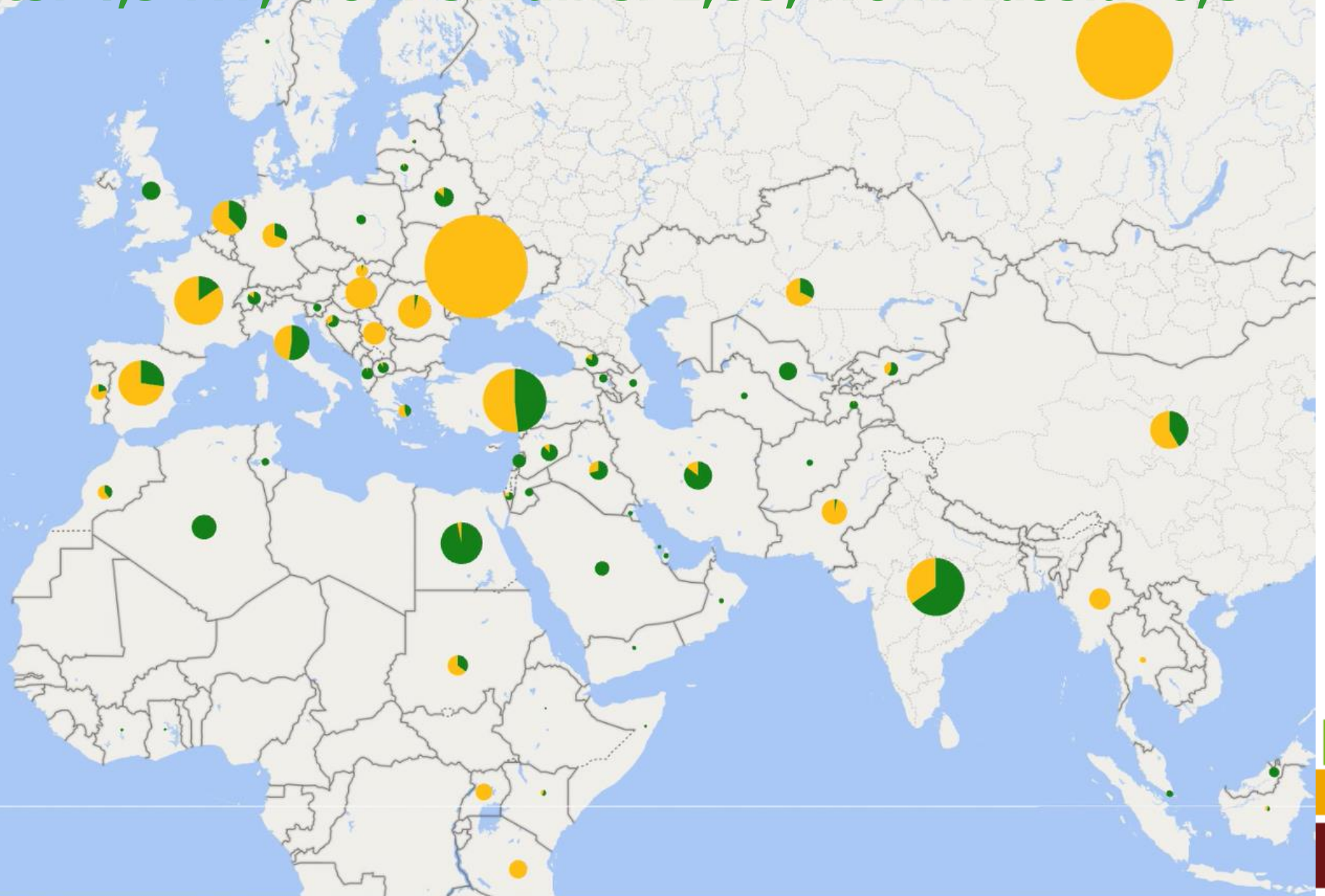
- ✓ Together, Ukraine and Russia represent 80% of sunflower oil and meals exports

2019/20 Oil World statistics July 2021 ed	PRODUCTION			EXPORTS		
	seeds	oil	meal	seeds	oil	meal
1000 T						
Ukraine	16500	7168	6440	76	6763	5164
Russia	15379	5978	5577	1278	3706	1998
Romania	2900	554	634	115	87	160
Bulgaria	1914	600	618	313	271	206
Moldova	840	171	156	379	143	112
Turquie	1470	1170	1349	48	629	5
Georgie	3	3,9	4,3	0,1	0,4	1,1
Black Sea Region	39006	15645	14778	2209	11599	7646
World	55632	21534	21978	3616	13698	8996
% from Black Sea main producers	70%	73%	67%	61%	85%	85%
% from Ukraine	30%	33%	29%	2%	49%	57%
% from Russia	28%	28%	25%	35%	27%	22%



Sun Oil production: 12,6 MT ; Ukraine : 3 / Russia: 2,7 / EU: 2,4
Sun Oil Imports: 4,9 MT; from Ukraine: 2,55; from Russia: 0,5

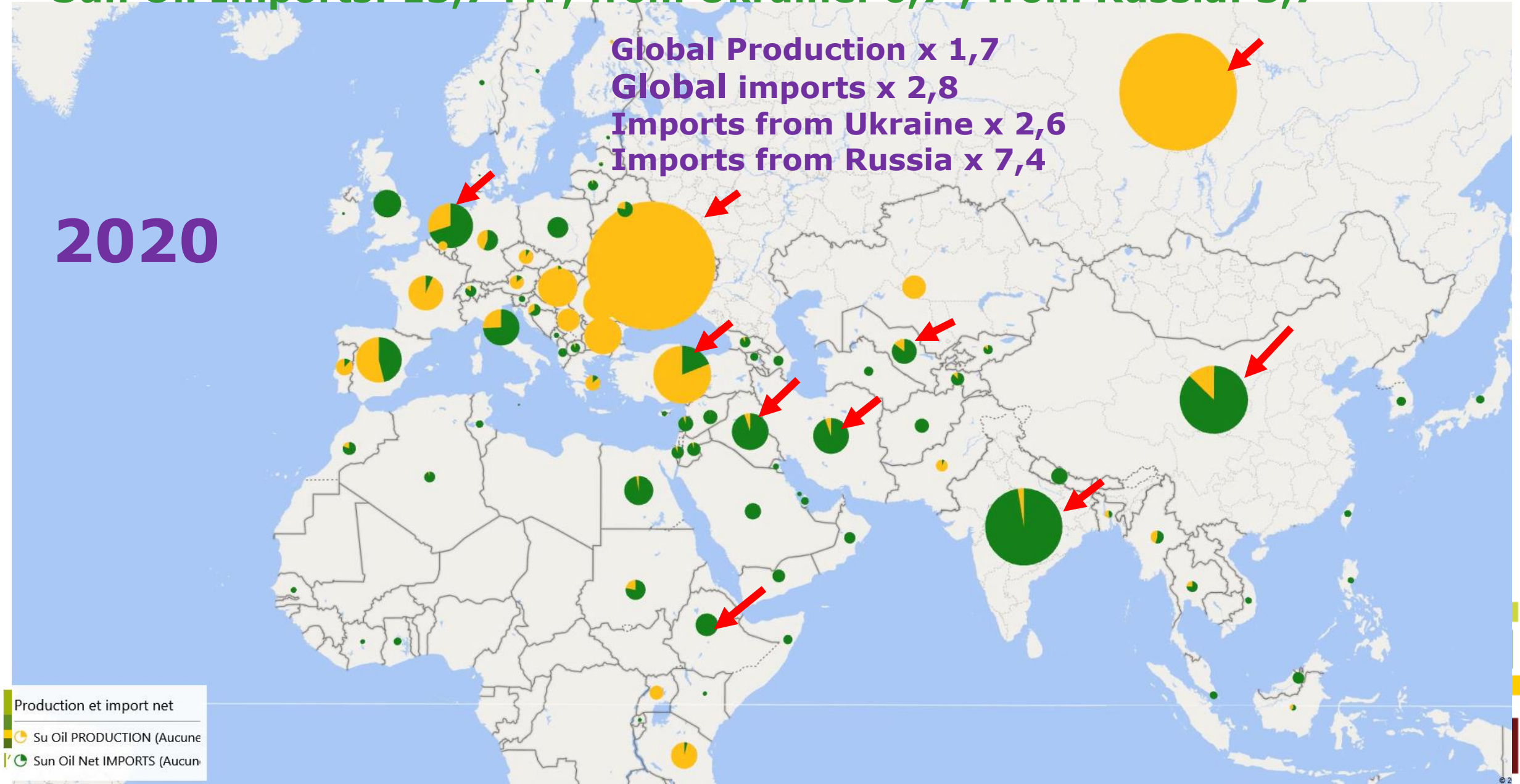
2010



Sun Oil production: 21,5 MT ; Ukraine : 7,2 / Russia: 5,9 / EU: 3,7
Sun Oil Imports: 13,7 MT; from Ukraine: 6,7 ; from Russia: 3,7

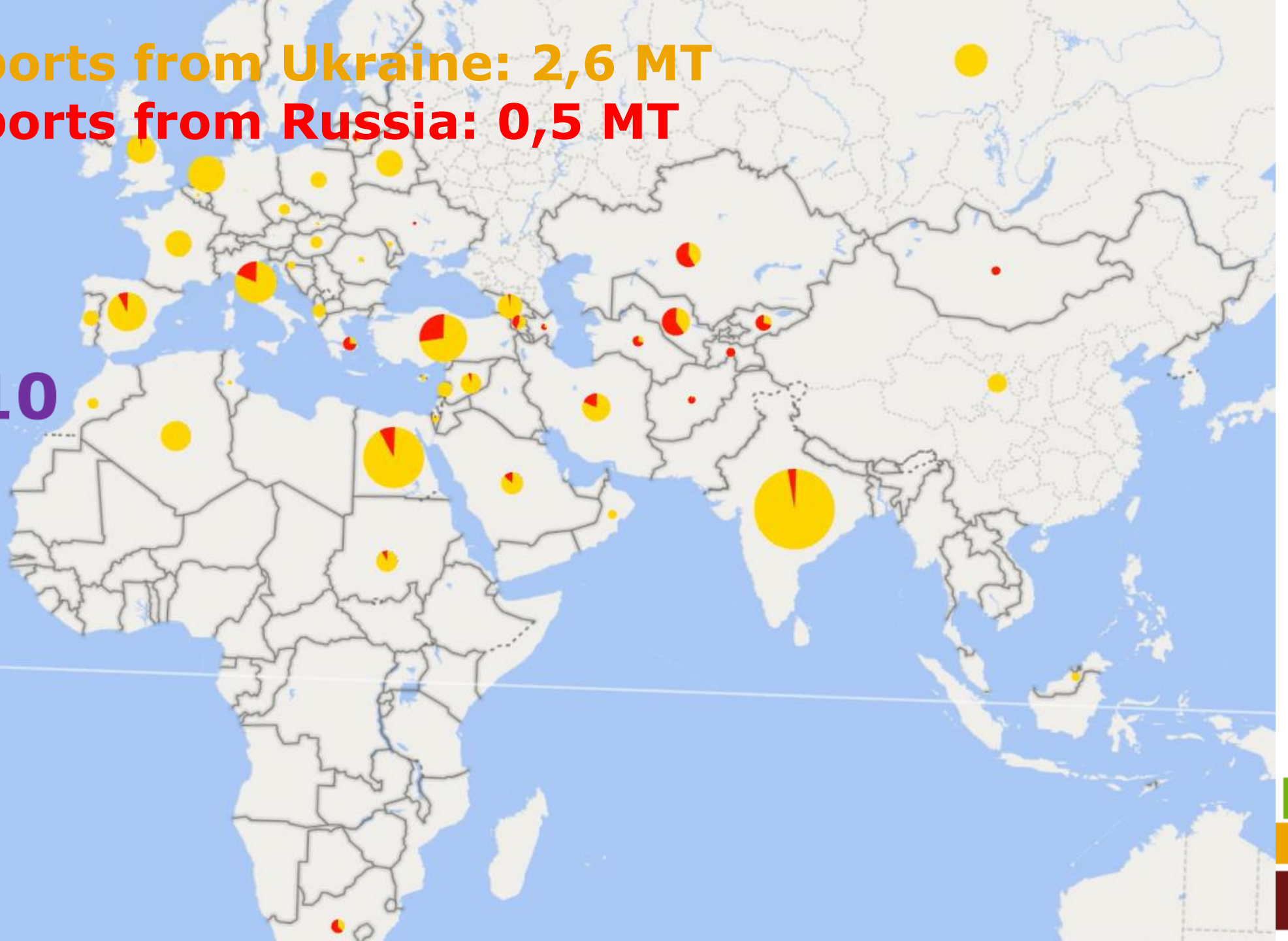
2020

Global Production x 1,7
Global imports x 2,8
Imports from Ukraine x 2,6
Imports from Russia x 7,4



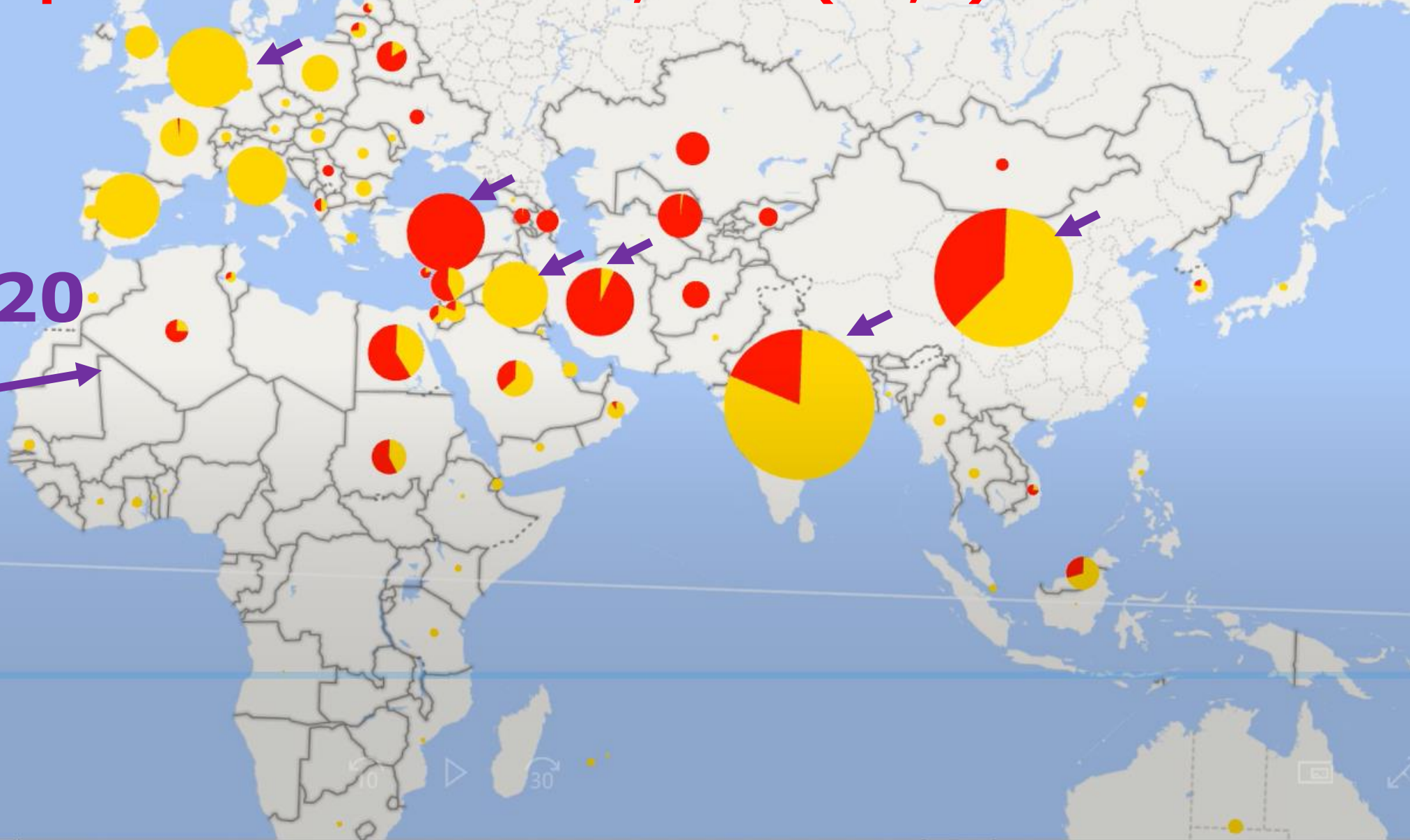
Imports from Ukraine: 2,6 MT
Imports from Russia: 0,5 MT

2010



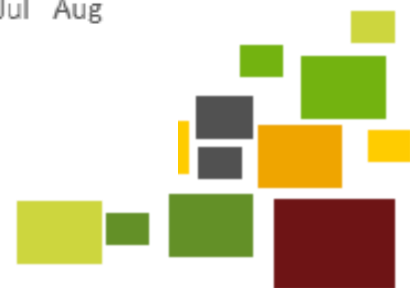
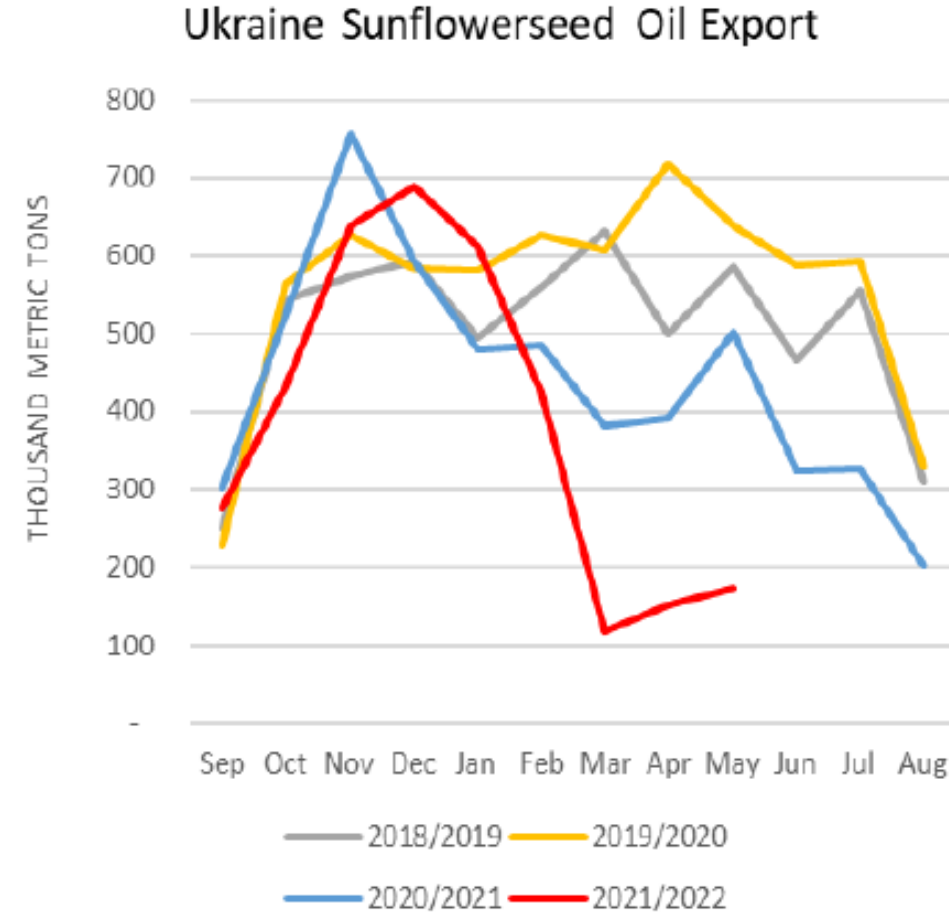
Imports from Ukraine: 6,7 MT (x2,6)
Imports from Russia: 3,7 MT (x7,4)

2020



effects of the war in Ukraine?

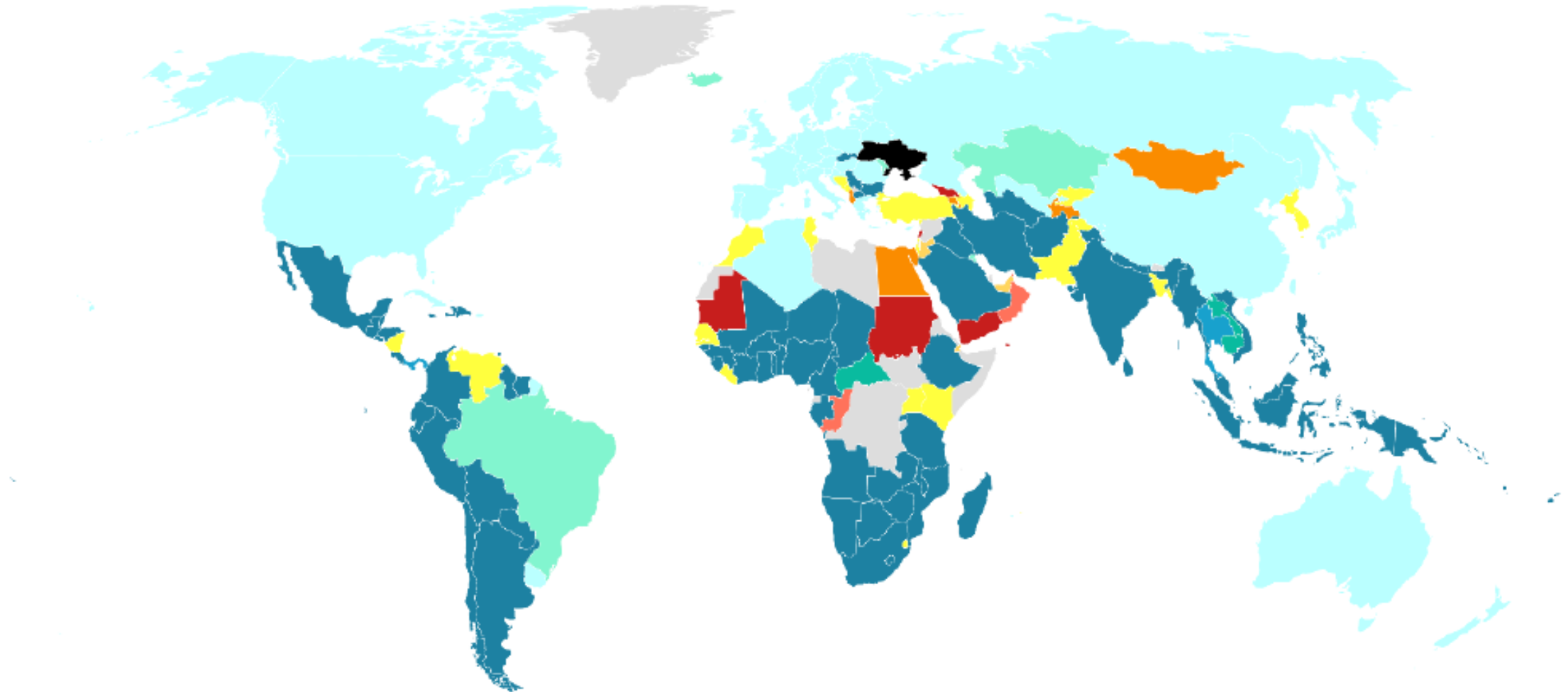
✓ « Russia's Invasion of Ukraine Severely Disrupts the Sunflowerseed Market »



IFPRI MENA working papers 39 May 2022

Vulnerability Map

1 - Extremely High - Food consumption directly exposed to conflict and low stocks 2 - Extremely High - Food consumption directly exposed to export restrictions and low stocks 3 - Very High - Food consumption directly exposed to conflict 4 - Very High - Food consumption directly exposed to export restrictions 5 - High - Food consumption exposed to export restrictions or conflicts 6 - High - Large Increase in Food Cost compared to GDP expected 7 - High - High Risk of Food Price increase due to last month changes 8 - Moderate - High Risk of Food Price increased driven by the last 12 month changes 9 - Moderate - No immediate risks but Fertilizer supply compromised Ukraine x - Minor Risk



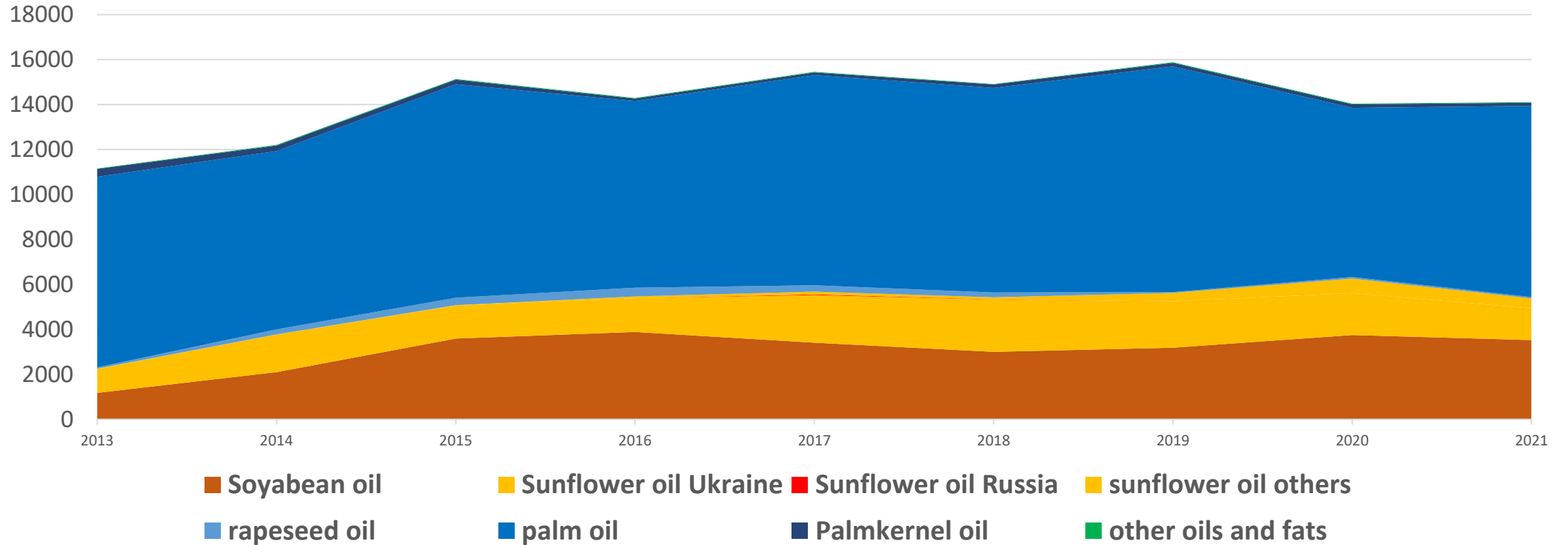
effects of the war in Ukraine?

- Immediate surge in the global food and fertilizer prices
- Consumption decisions are affected (higher price or low availability)
- Inappropriate policy responses could exacerbate the situation → export restrictions? Biodiesel mandates?
- This war may spark a global food security crisis (FAO)



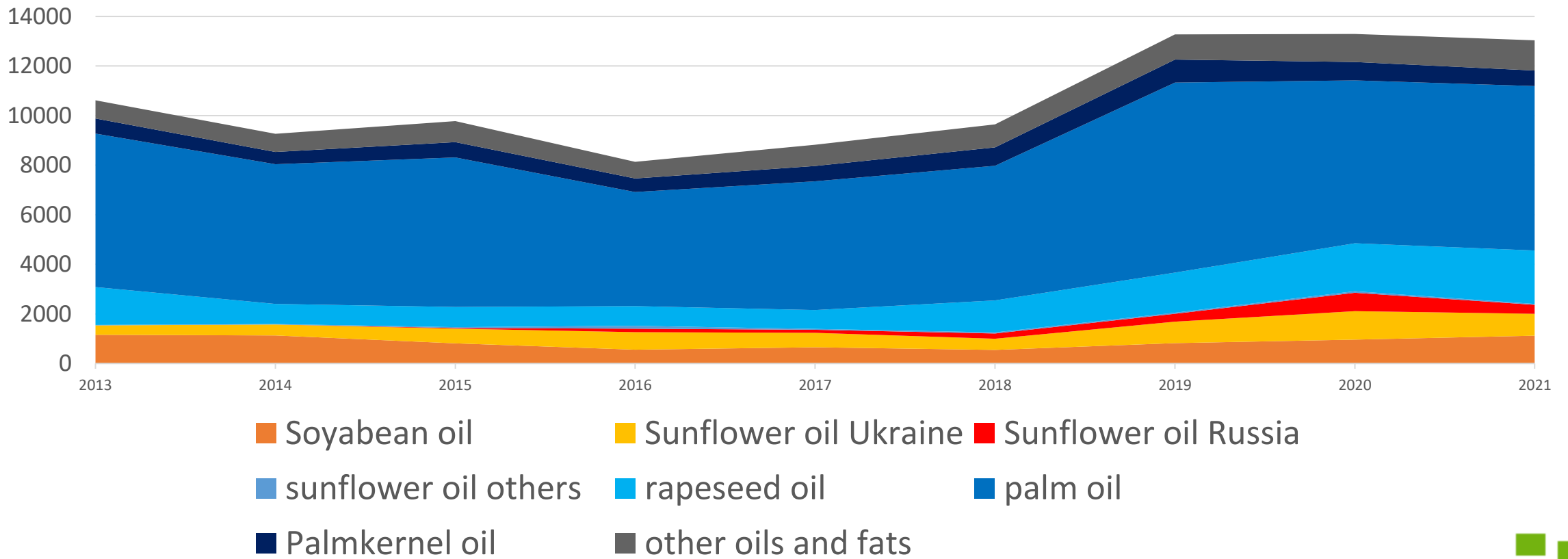
India

India Oils imports 2013-2021 (1000 T/year)



China

China oil imports 2013-21 1000T/year

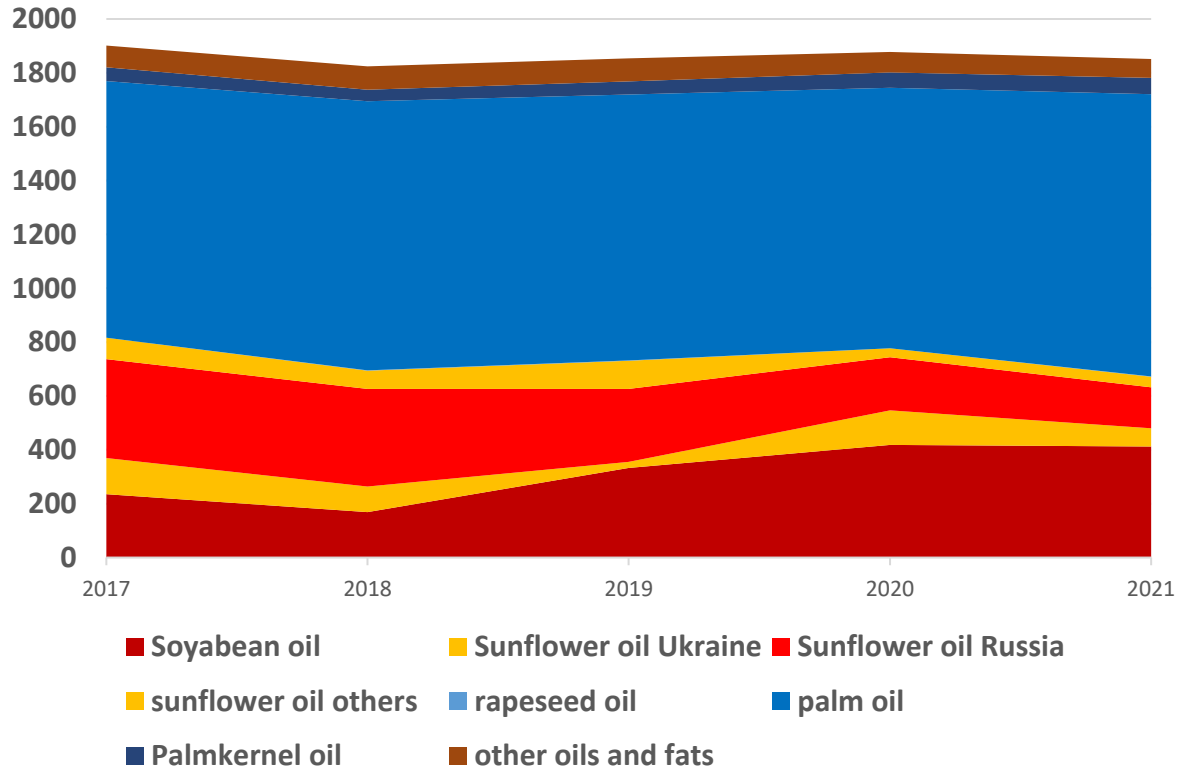


- Soyabean oil
- Sunflower oil Ukraine
- Sunflower oil Russia
- sunflower oil others
- rapeseed oil
- palm oil
- Palmkernel oil
- other oils and fats

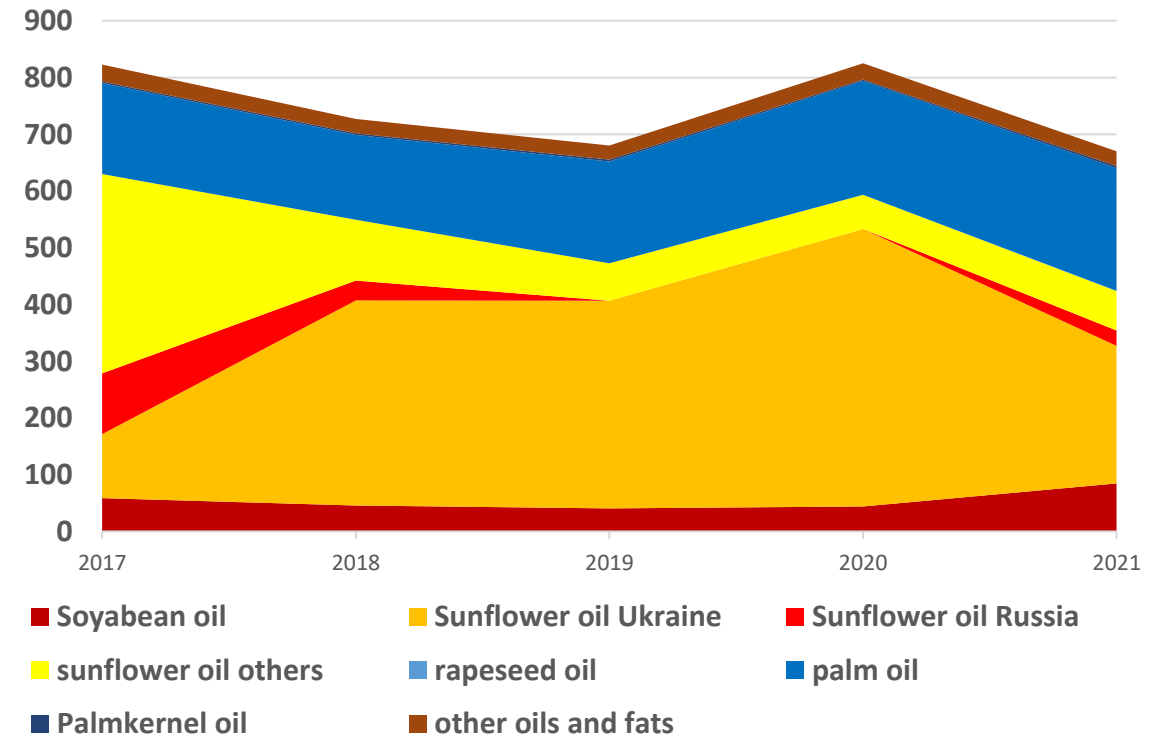


Egypt and Iraq

EGYPT Oil imports 2017-2021



IRAQ Oil Imports 2017-2021



... and much more concerned by cereals...



Coming back to longer term, what perspectives?

- ✓ The scenario “ocean of oil”?
 - ✓ the rapid development of biodiesel as an alternative energy source makes the scenario more remote. Needs fine tuning...
 - ✓ On the last decade, the biodiesel development absorbed the equivalent of 70% of the increase in palm oil production
 - ✓ The growth of palm oil production would range between 20 and 30 MT by 2030 and in the same time, the food uses to meet the population needs should grow of about 2%/year, ie +20-25MT... if not constrained by high prices or local availability
 - ✓ Oleochemistry? Licenses for vegetable oils based plastics already available. Price competition...



Coming back to longer term, what perspectives?

- ✓ Humanity still faces a global protein challenge to meet the needs of the population AND to limit GHG emissions : feed AND direct uses for food
 - ✓ Sunflower has the double advantage to be already consumed for food in bakery, snacks, etc... and to be non-GMO, key characteristic for vegetable proteins
 - ✓ No doubt about developing added value from the protein fraction, either as direct food use or protein extracts (competition with peas, Soybean, rapeseed...)
- ✓ With regard to climate change, sunflower could improve in Northern latitudes but be affected on medium term in Southern and Eastern Europe
 - ✓ adaptation of cropping practices
- ✓ Diversity of cultivars will be important for adaptation to CC.



Thanks for your attention

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BUT ARE WE HEADING TOWARDS A SHORTAGE OF PALM OIL BETWEEN 2020 AND 2025

