Concentration in the fertilizer industry

IFPRI – AMIS SEMINAR SERIES
Market Concentration in the Grain Industry

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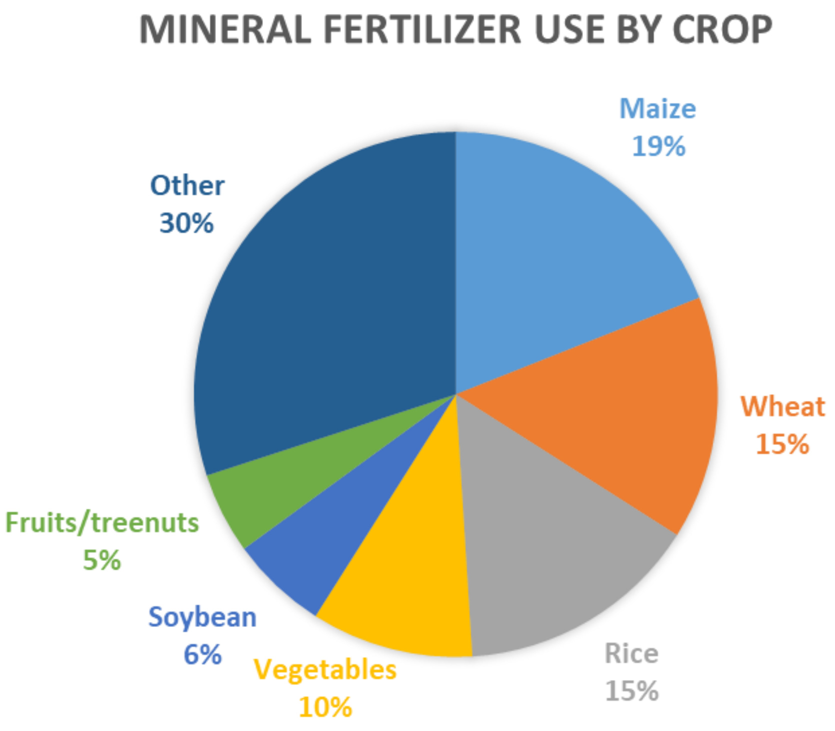
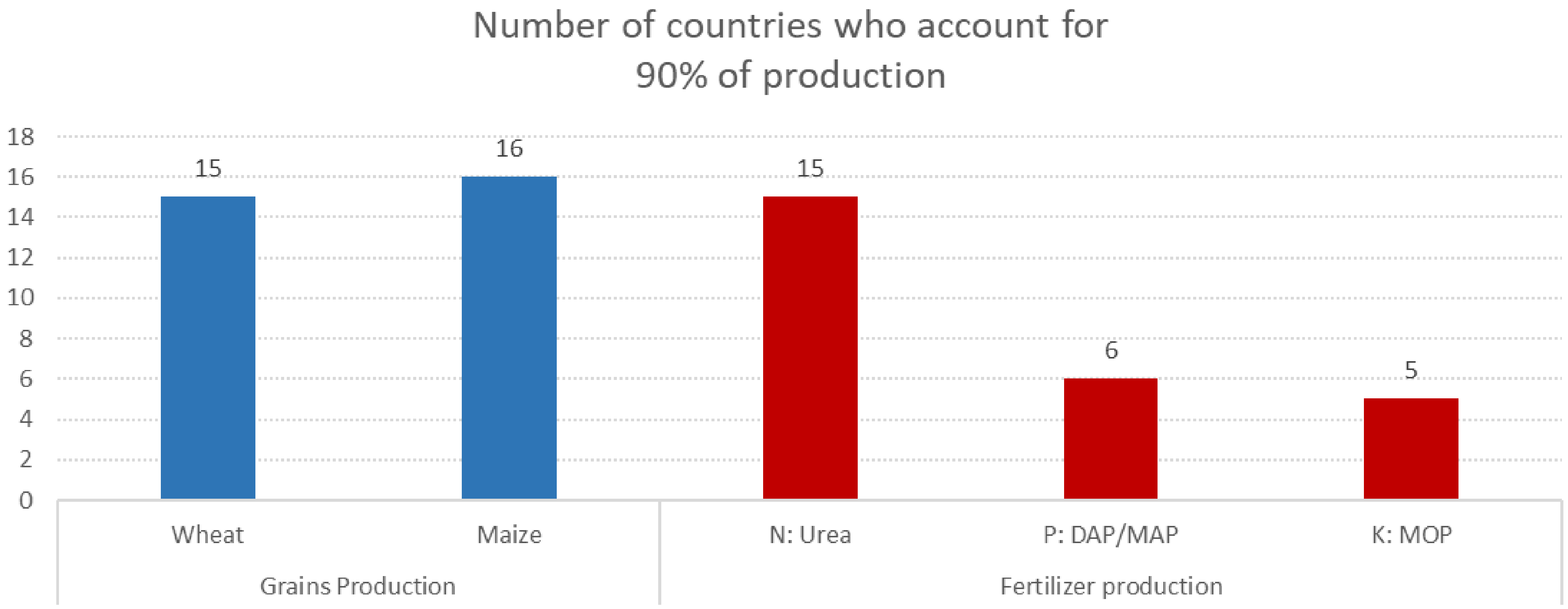
The importance of fertilizers for food production



Source: IFA

- Mineral fertilizers replace nutrients removed with the harvest
- Half of global food production relies on fertilizer applications
- Macronutrients: Nitrogen (N), Phosphate (P), Potash (K)

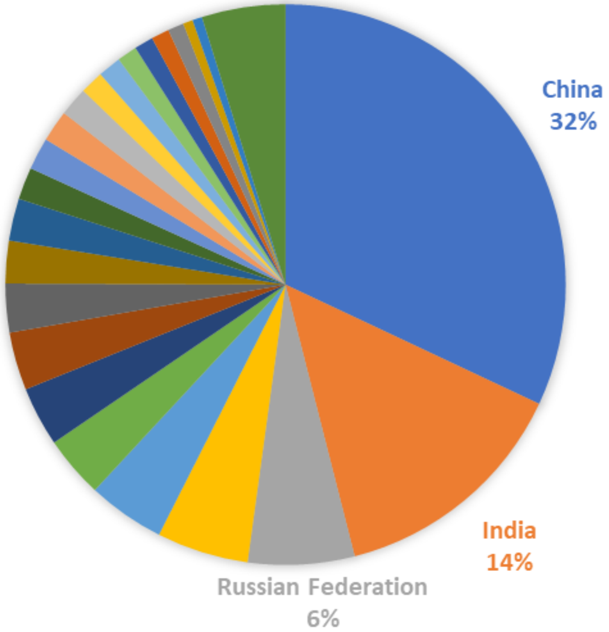
Market concentration



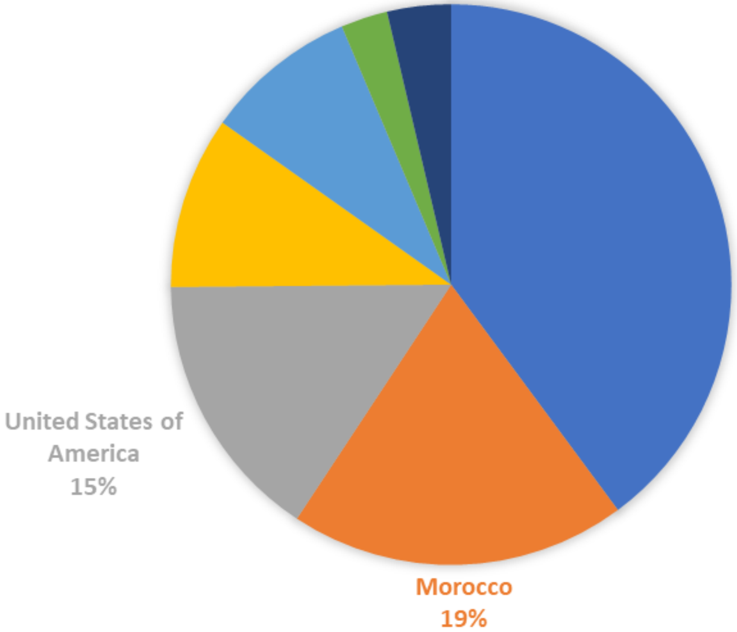
Source: AMIS, USDA, FAO, IFA

- Most fertilizer supply is concentrated in a reduced number of countries
- Phosphate and potash supply are comparatively more concentrated than nitrogen supply
- Fertilizer trade is similarly concentraded

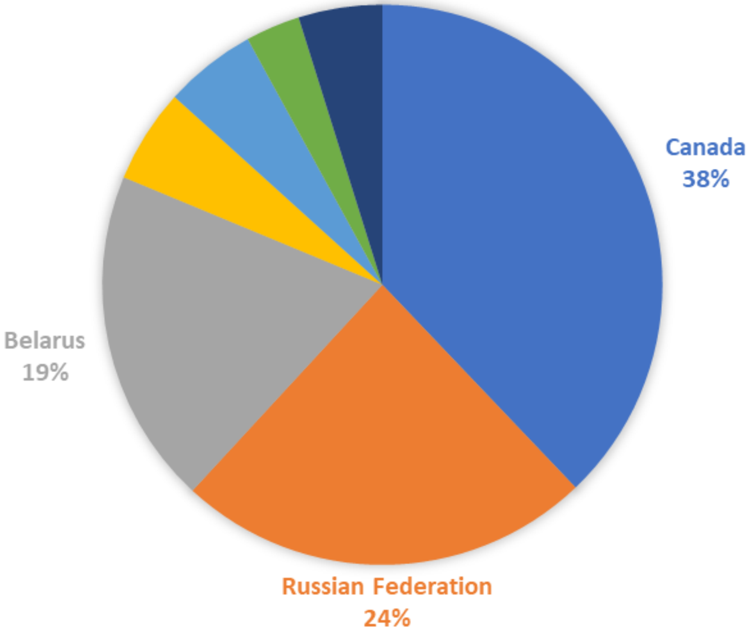
Concentration of supply by geography



N: Urea



P: DAP & MAP



K: MOP

Source: AMIS estimates for fertilizer production - 2021

- Three suppliers make up for 52% of urea supply, 74% of DAP/MAP supply and 81% of potash supply
- Nitrogen is captured from the air, production relies on source of energy (coal, natural gas)
- Phosphate and potash fertilizer production rely on the presence of phosphate and potash deposits

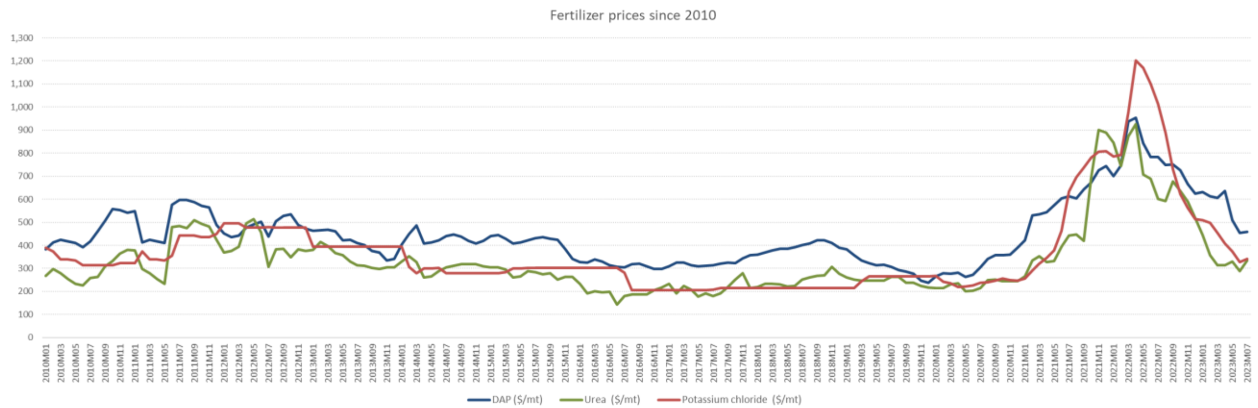
Major industrial players reflect country distribution

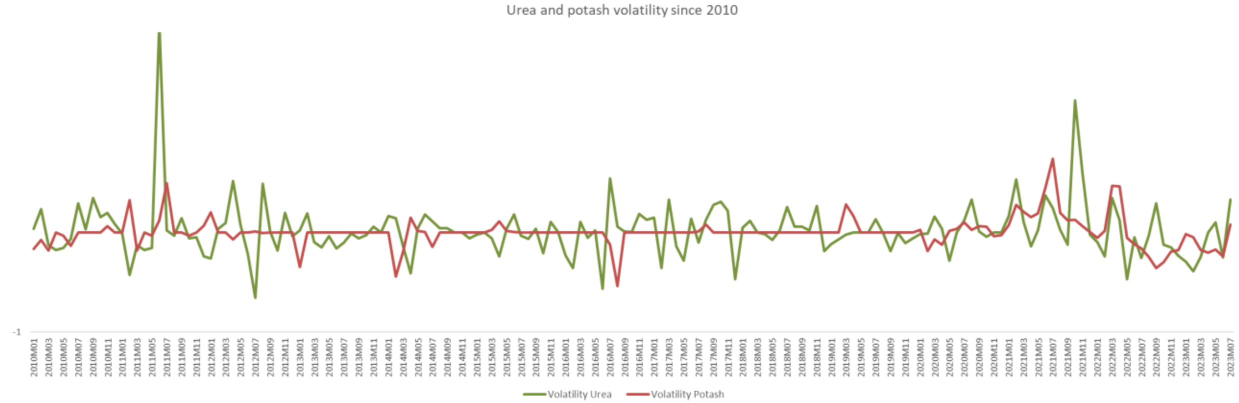
	Company name	Location
Nitrogen	**CF Industries**	Illinois, USA
	Yara	Oslo, Norway
	Nutrien	Saskatoon, Canada
	Ostchem	Donetsk, Ukraine
	OCI	Amsterdam, Netherlands
	TogliattiAzot	Tolyatti, Russia
	Koch	Wichita, USA
	Eurochem	Zug, Switzerland
Phosphates	**Guizhou Phosphorus Chemical group**	Guizhou, China
	Nutrien	Saskatoon, Canada
	Mosaic	Tampa, USA
	OCP	Casablanca, Morocco
	Ma'aden	Riyadh, Saudi Arabia
	Phosagro	Moscow, Russia
Potash	**Nutrien**	Saskatoon, Canada
	Mosaic	Tampa, USA
	Belaruskali	Minsk, Belarus
	Uralkali	Berezniki, Russia
	K+S	Kassel, Germany

Source: Yara, AMIS

- Fertilizer majors are headquartered in the main producing countries
- Some players are focused on one nutrient while others are present on different markets
- Increasing geographical and vertical integration

As concentration increases, volatility decreases





Source: World Bank, AMIS

- Despite different supply, fertilizer price trends are linked and connected to global commodities
- As potash buyers have less supply options, they are price takers
- Fertilizer markets are sensitive to supply shocks

Impacts on fertilizer use are complex

Estimates of Nutrient Use in 2022 (million tons nutrients) and variation compared to 2020

Fertilizer year	N		P		K		Total	
2022	105.3	*-5%*	45.5	*-9%*	34.4	*-12%*	185.2	*-5%*

Source: AMIS, IFA

- Nitrogen is the most used nutrient each year
- Phosphate and potash reserves in the soil allow to skip applications to some extent
- Some crops are more reliant on fertilizer use
- Reliance on fertilizer uses depend on countries

Thank you!

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