

Soaring fertilizer prices: Do we need a contingency plan to safeguard global food security?

FAO Geneva Agriculture Trade Talks, 3 February 2022

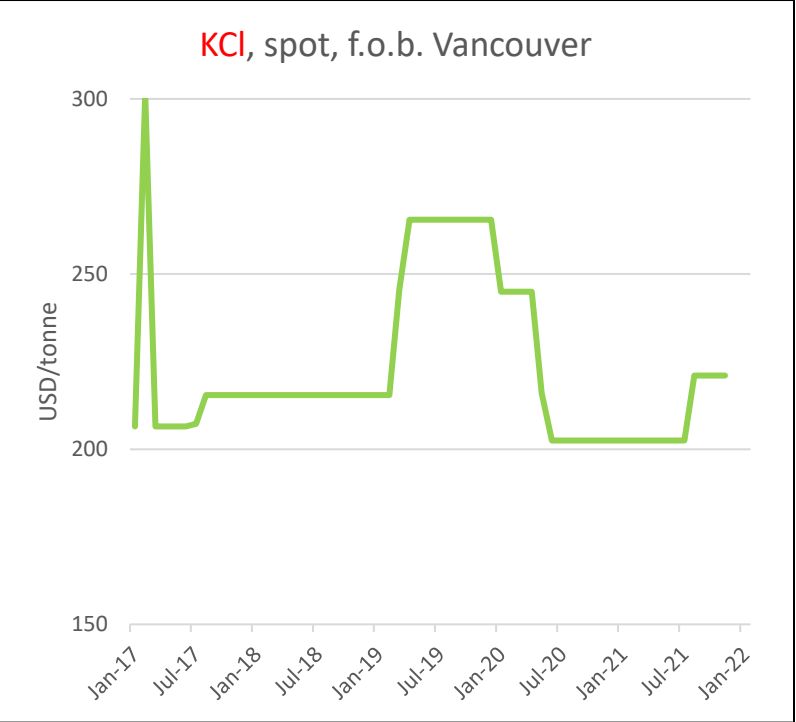
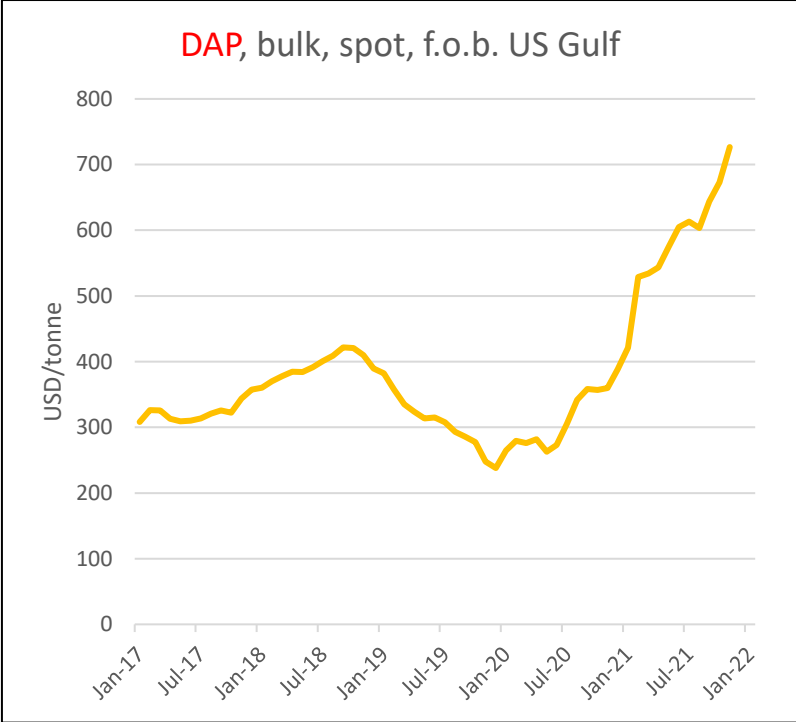
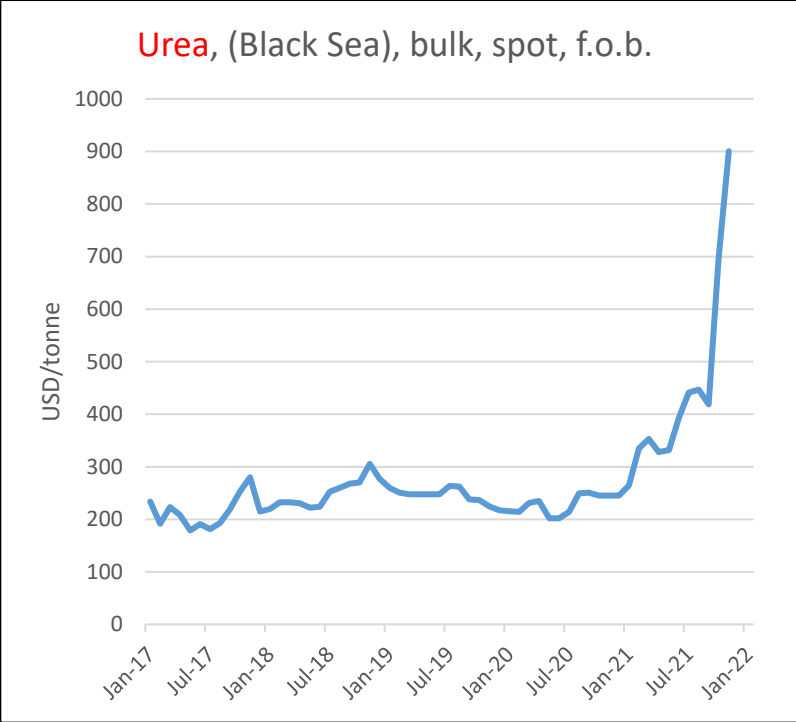
Josef Schmidhuber

Deputy Director, Markets and Trade Division, FAO

Overview

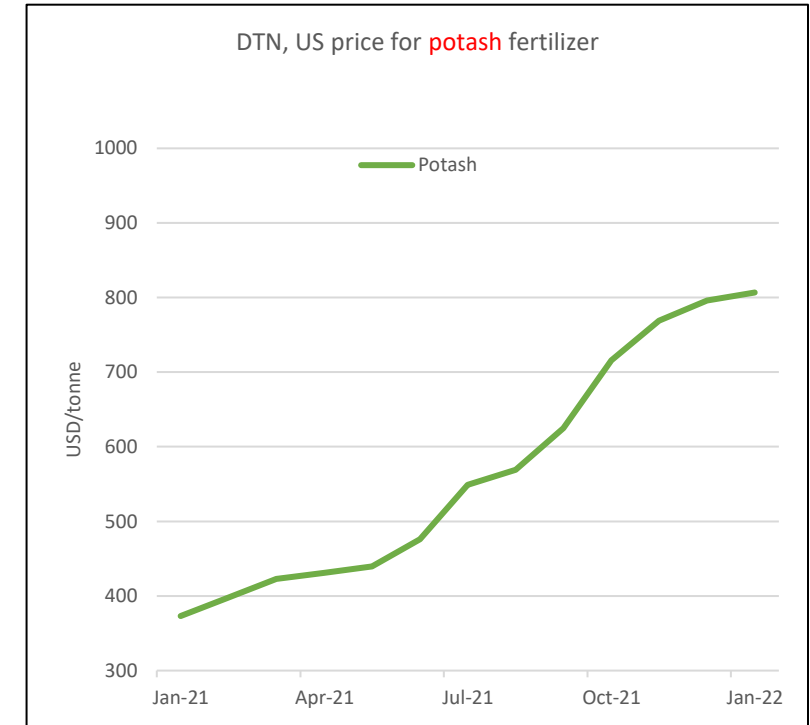
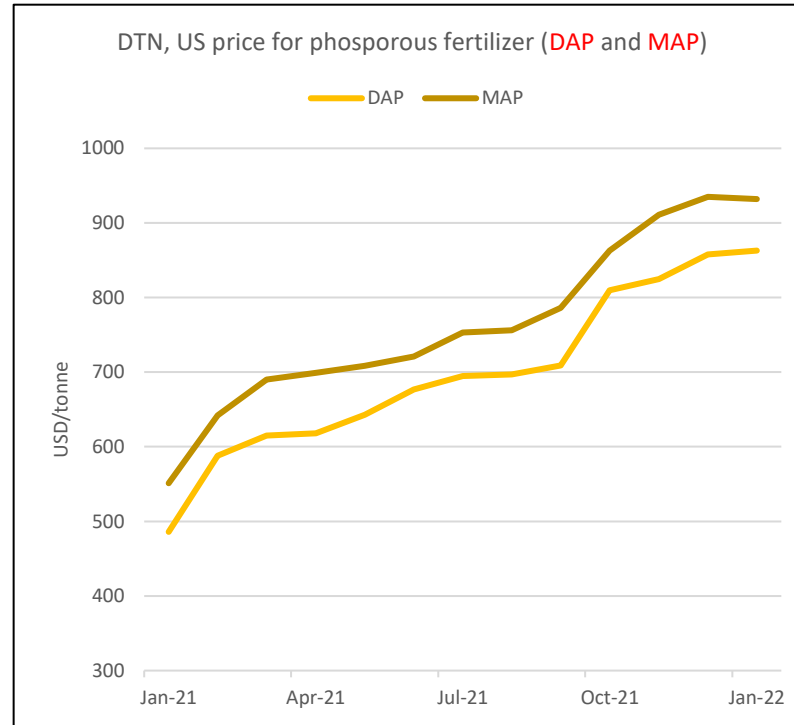
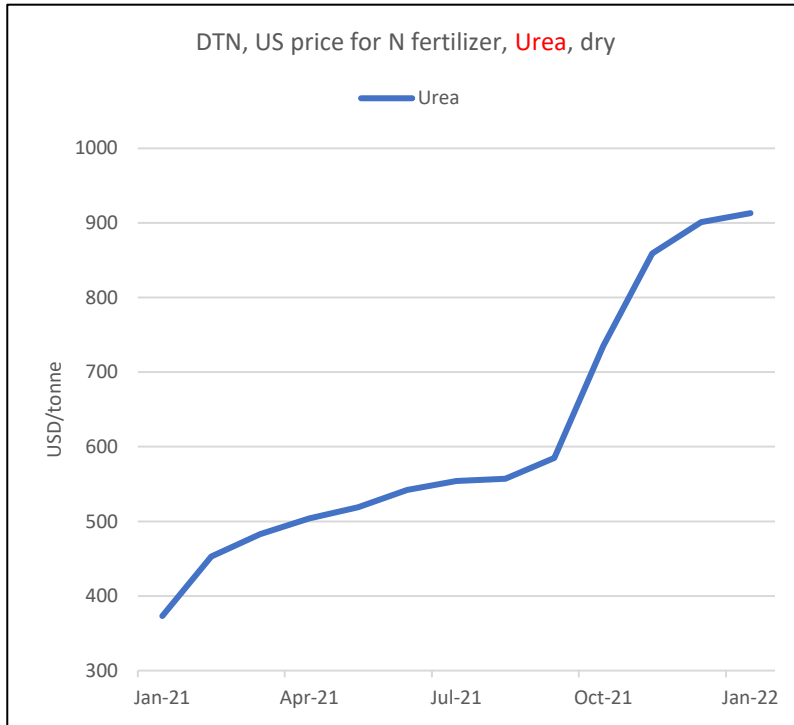
1. Recent trends in fertilizer prices
2. Market structure, export concentration
3. Drivers of prices, supply and demand
 - Energy (natural gas) prices
 - Trade restrictions and support policies
 - Transportation costs and clogged supply chains
 - Affordability
4. Outlook and next steps

Recent trends in fertilizer prices: Spot prices for N,P have spiked



Source: Index Mundi

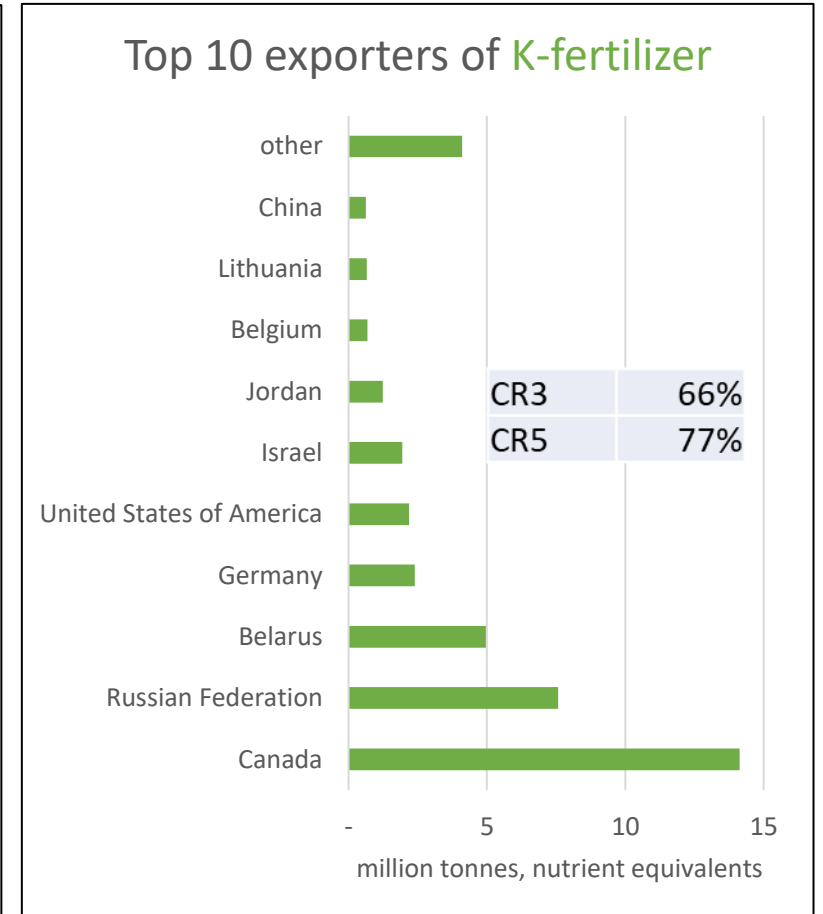
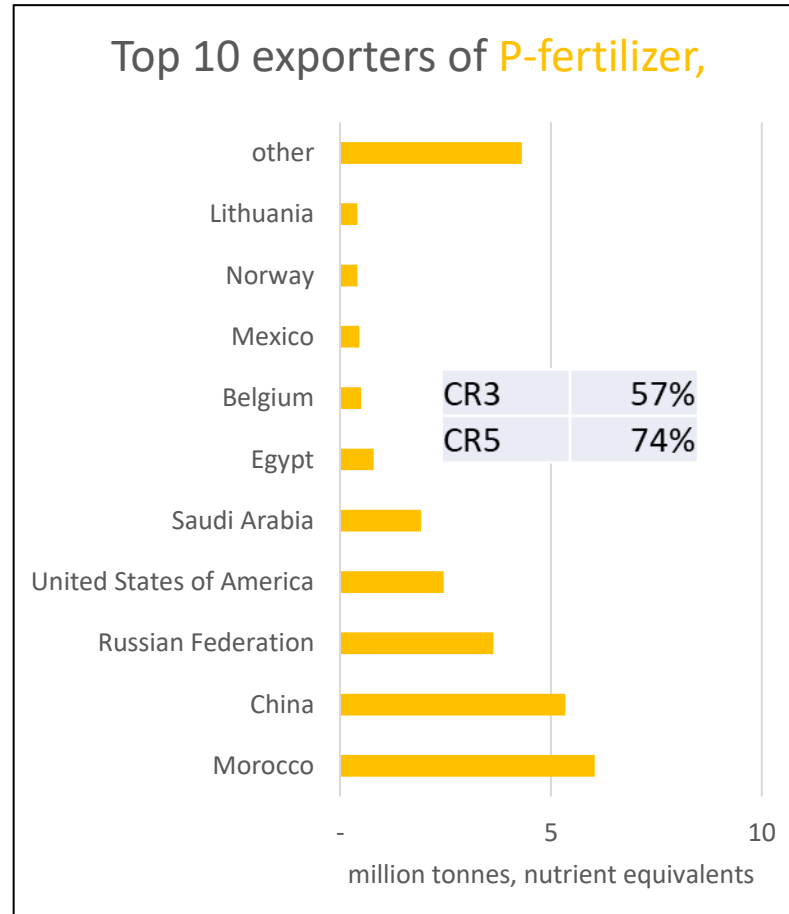
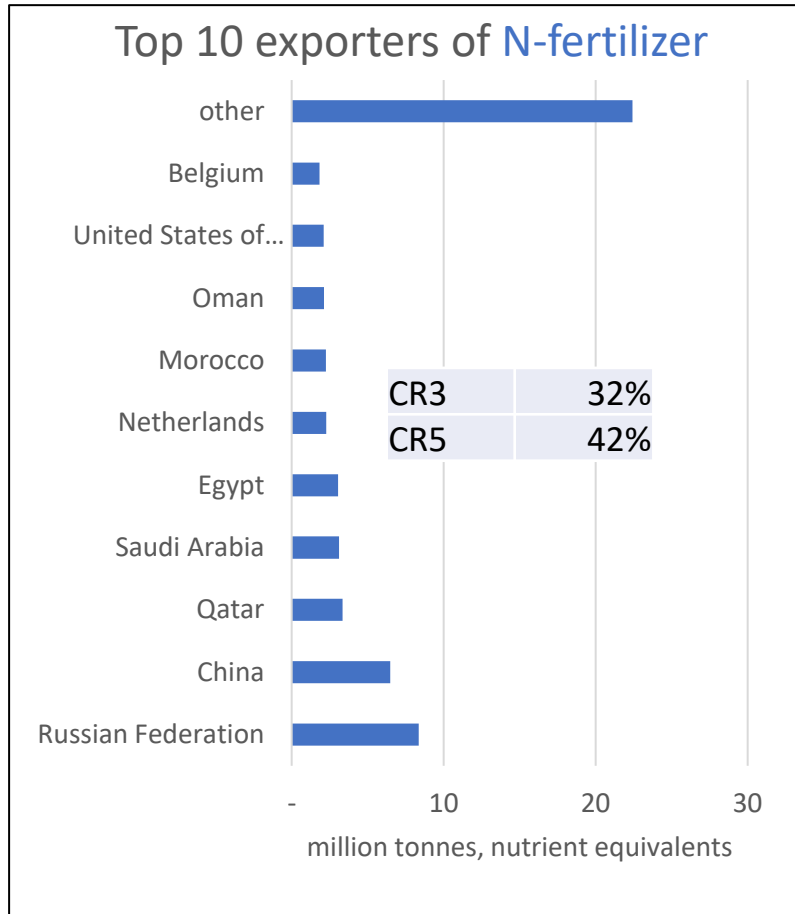
Recent trends in US fertilizer prices: Spot prices are levelling off



Source: based on data available at: <https://www.dtnpf.com/agriculture/web/ag/crops/article/2022/01/19/fertilizer-prices-continue-mostly>

The market structure:
high export concentration

Background: middling – very high levels of export concentration, 2020



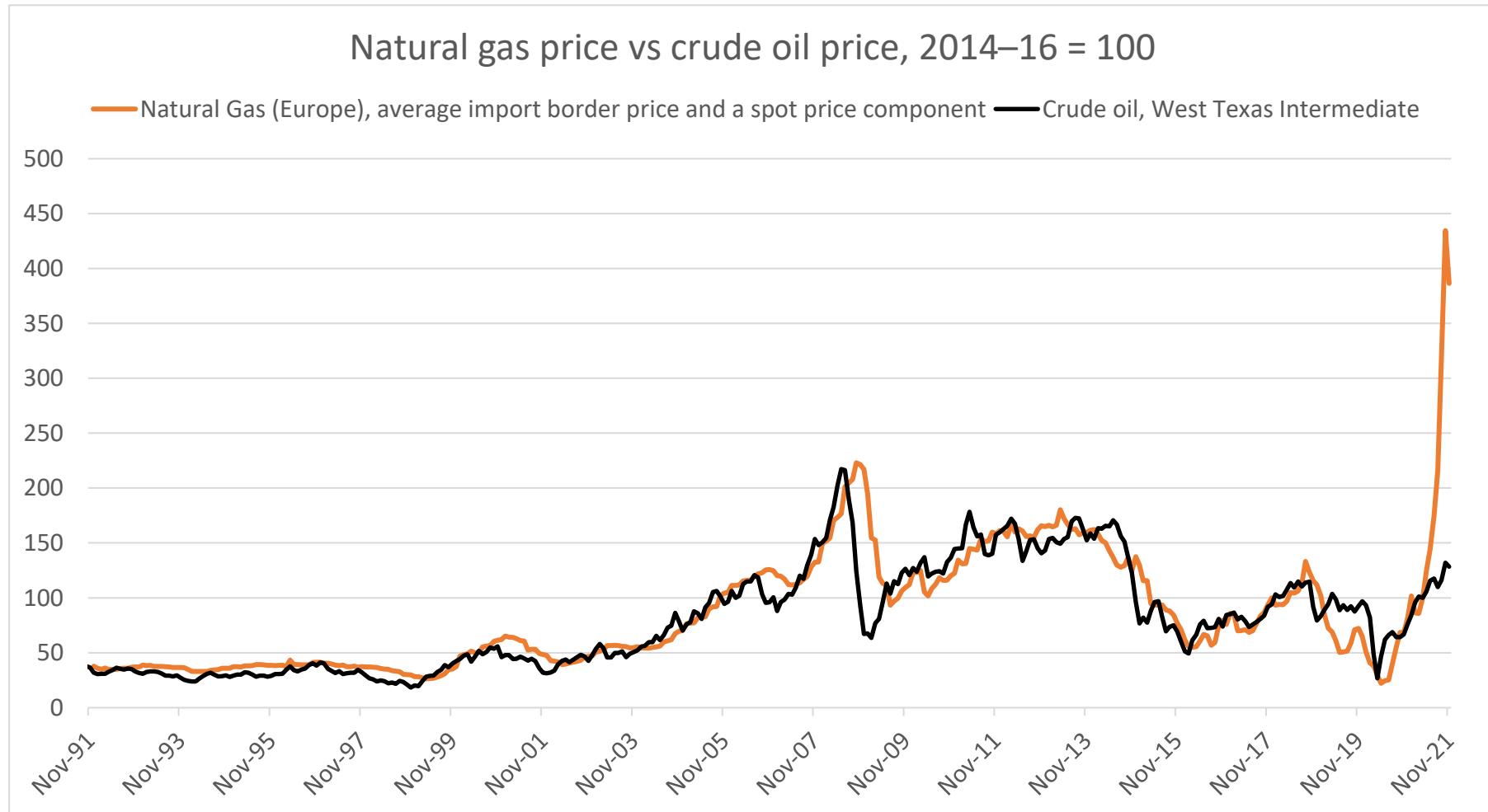
Source: TDM, own calculations

Drivers of supply, demand and prices

1. High energy prices

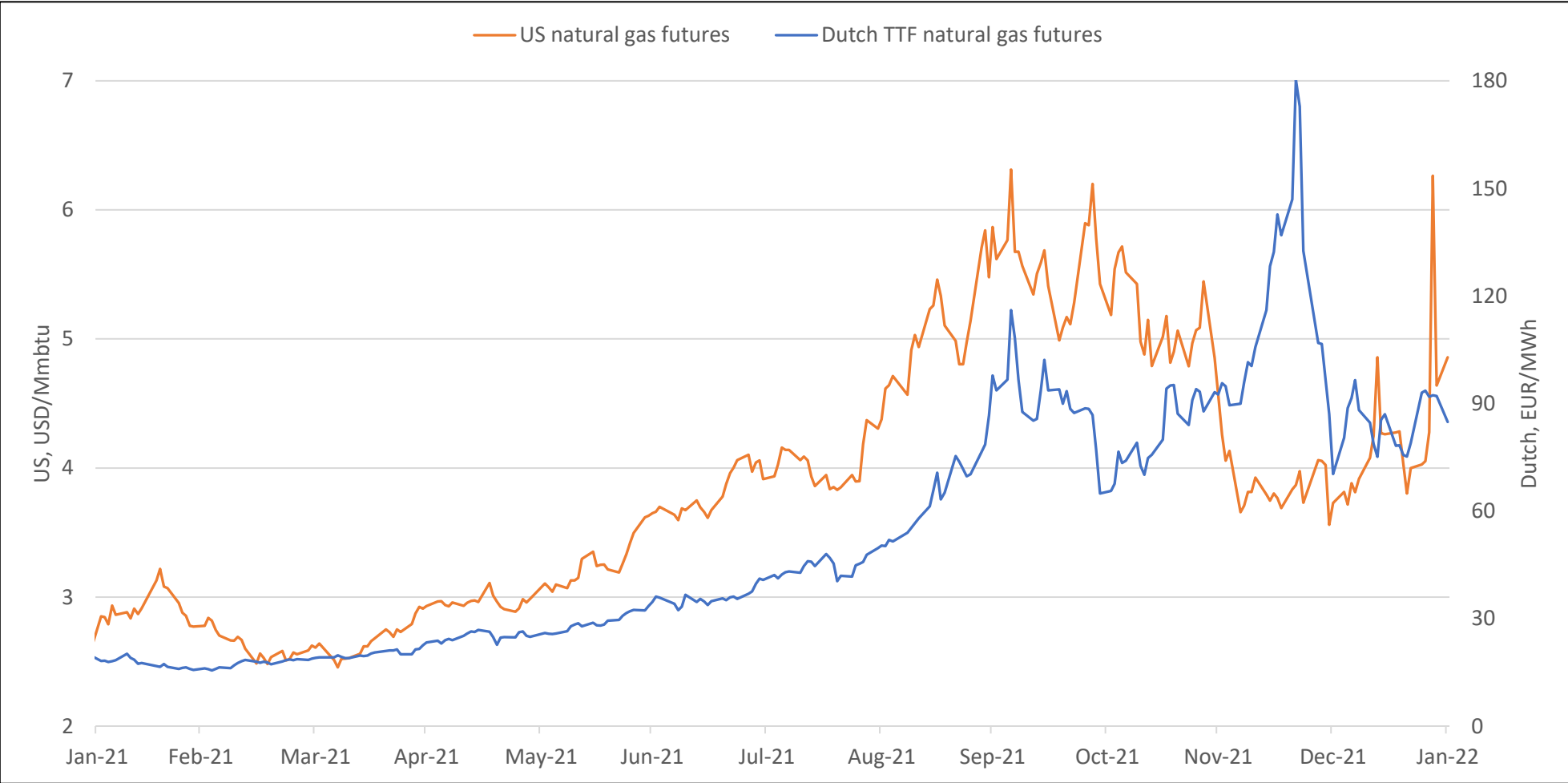
High and volatile energy prices; prices for natural gas have spiked in recent weeks

1. High and volatile energy prices



Source: Index Mundi

First signs of abatement in gas market?

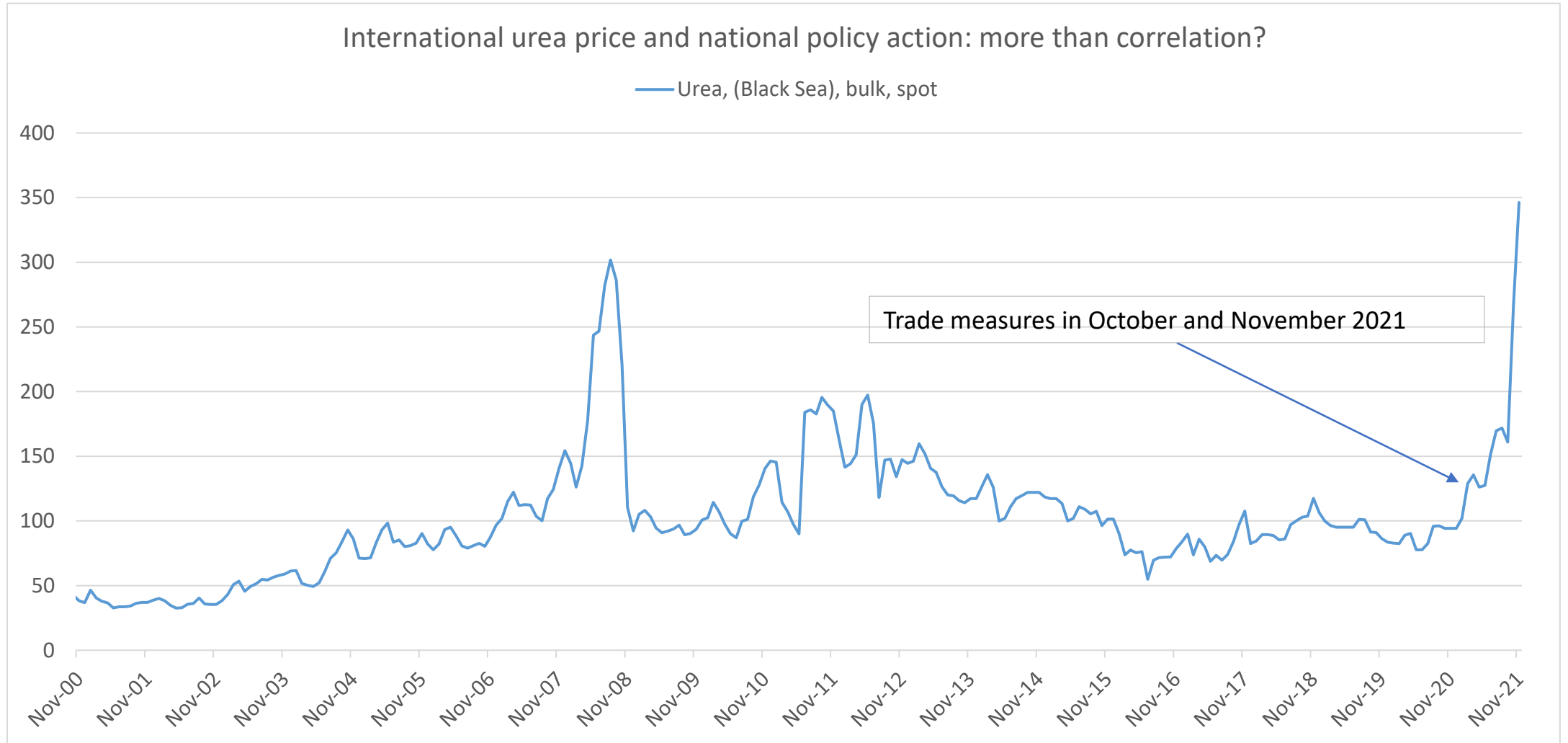


Source: Investing.com

2. Trade restrictions

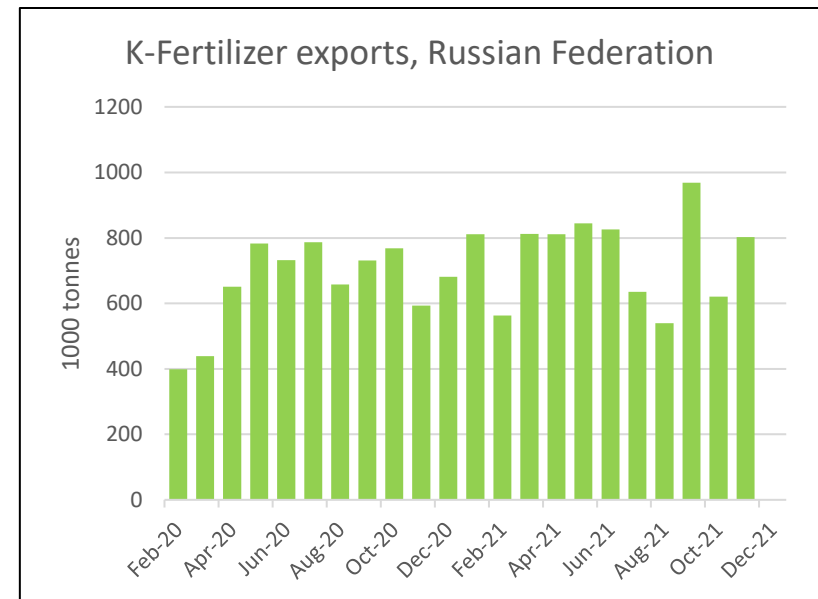
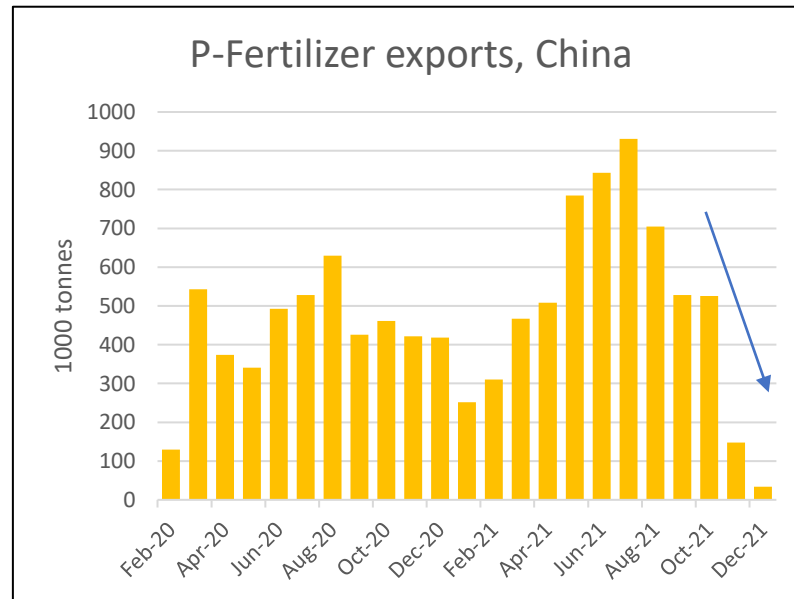
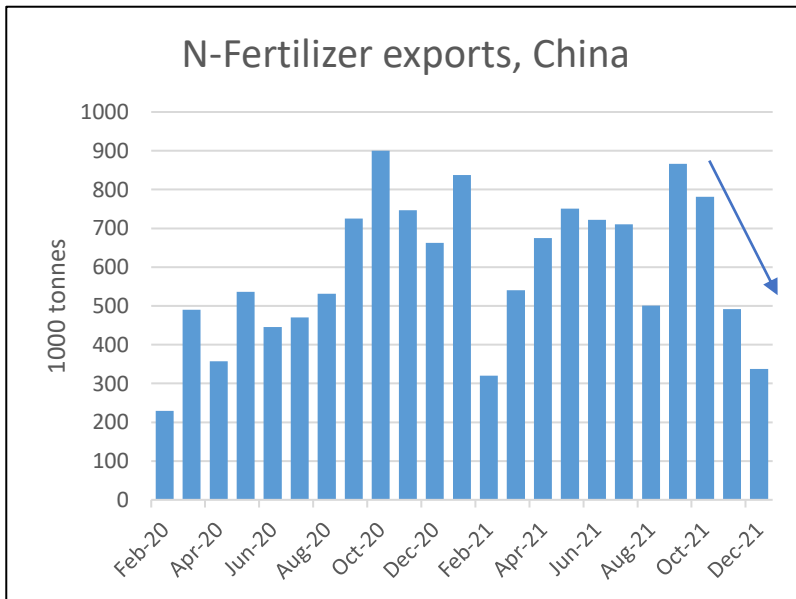
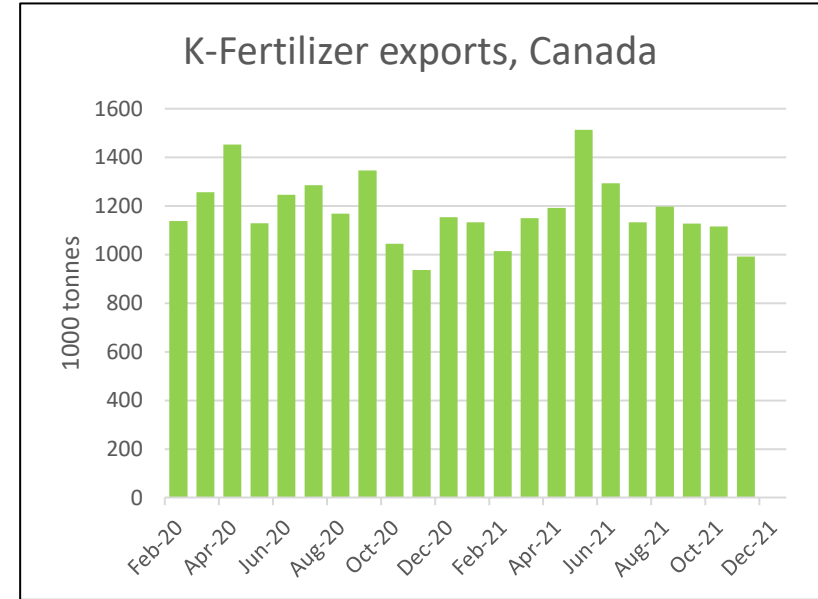
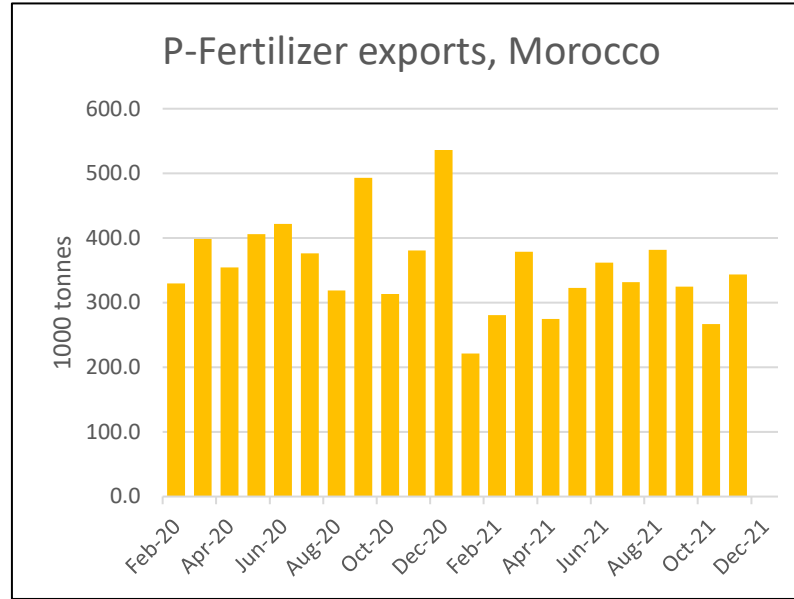
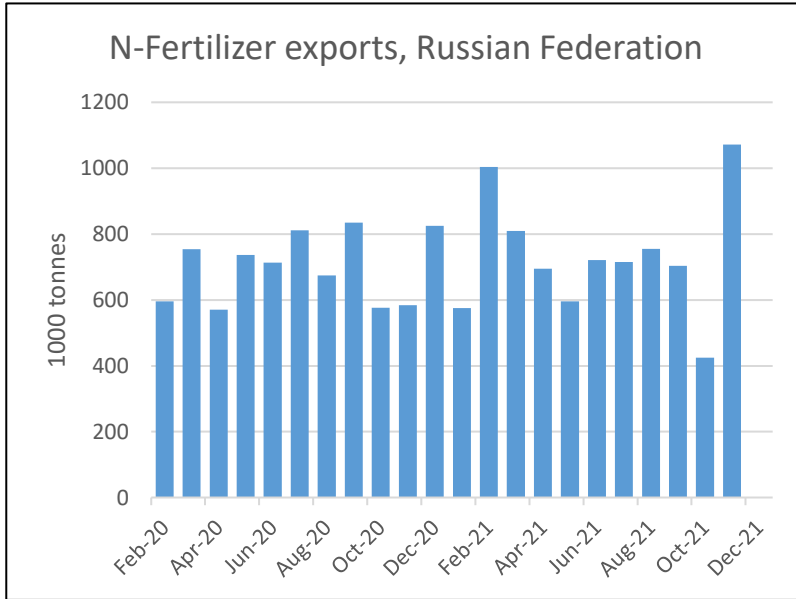
There has been a growing number of export restrictions in recent months

2. Trade restrictions and domestic policy measures



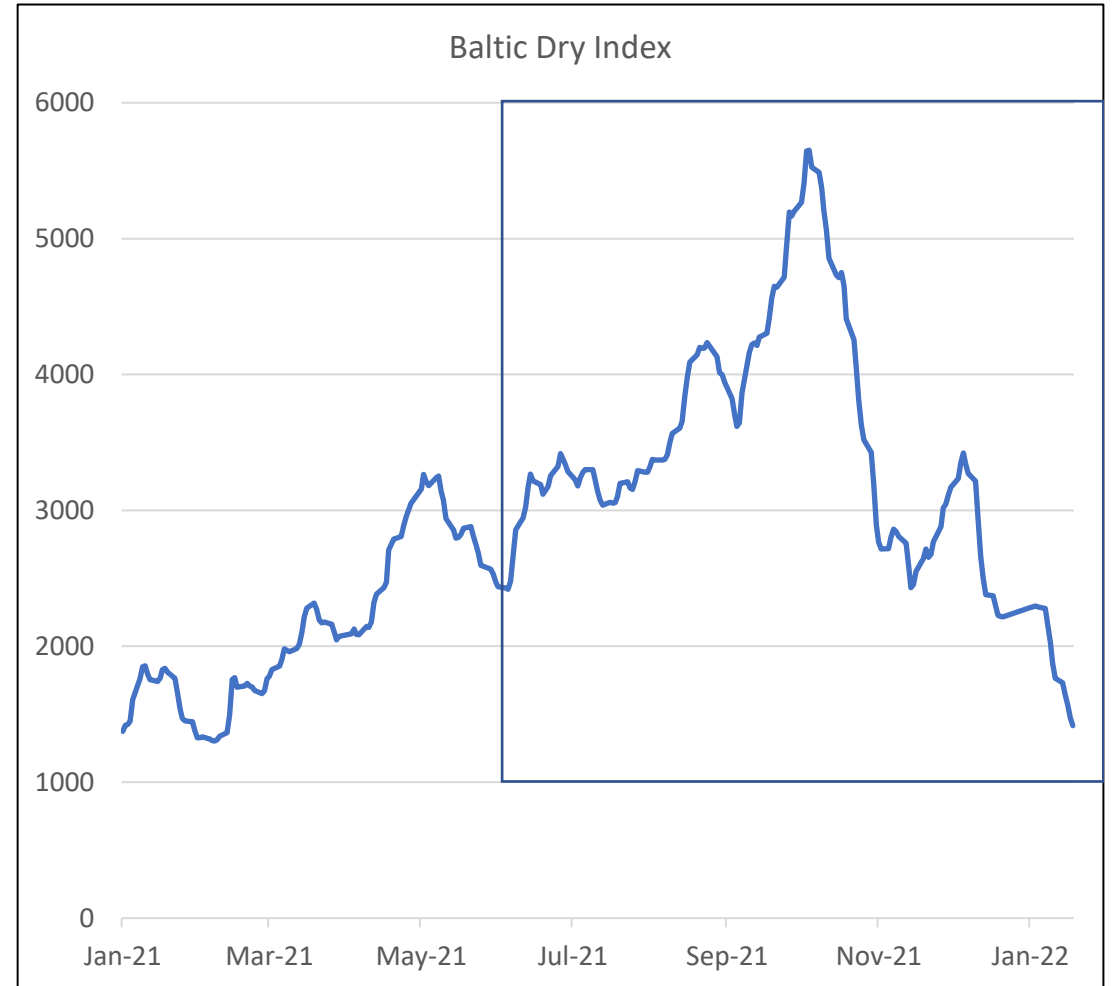
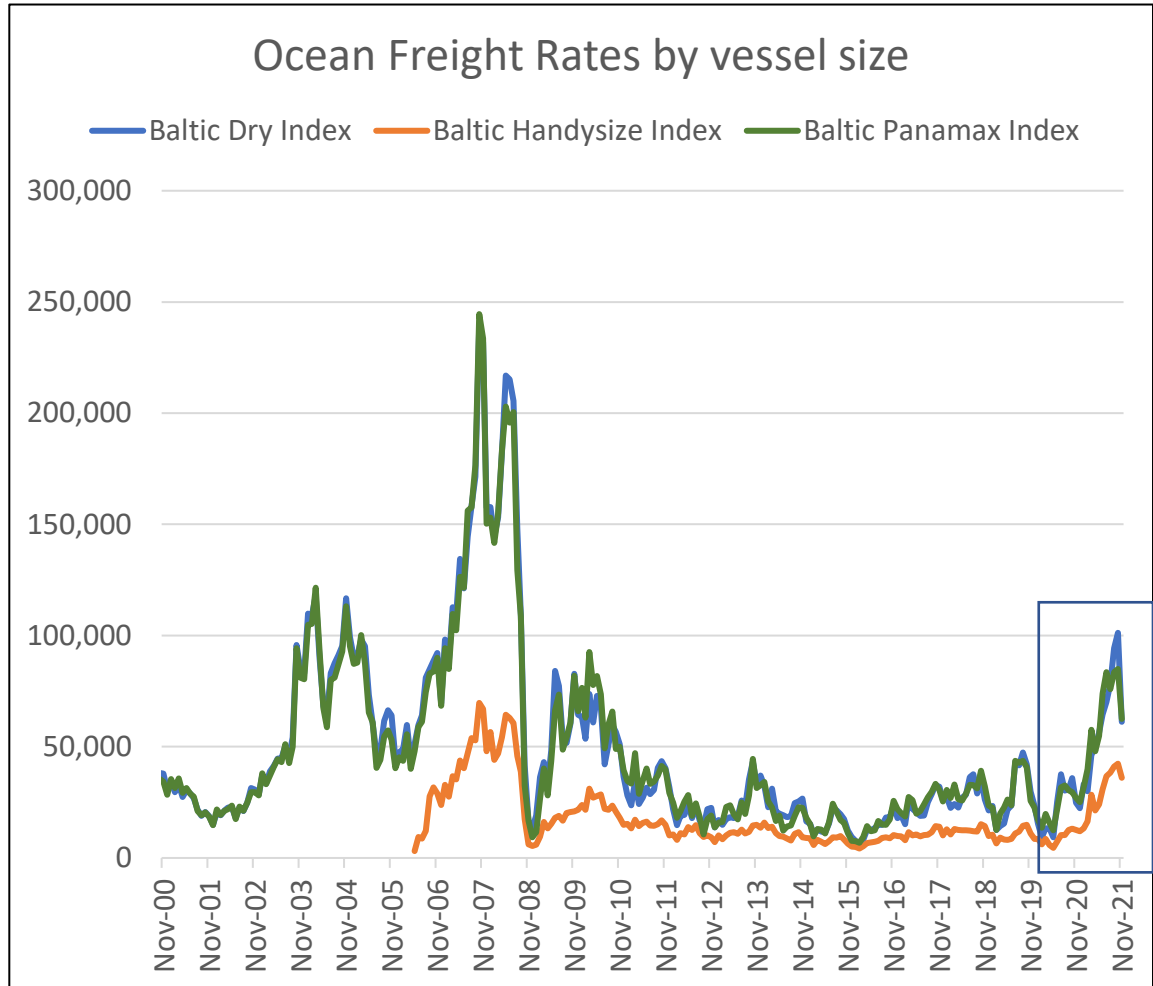
Source: Index Mundi, IFA, author's calculations

N,P,K fertilizer exports by key players



3. High and volatile transportation costs

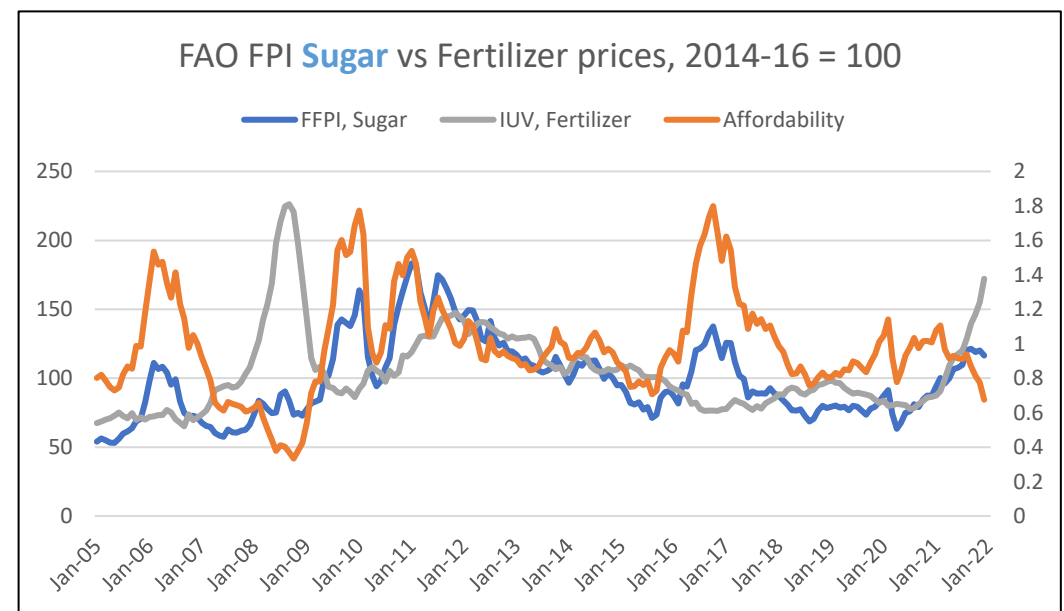
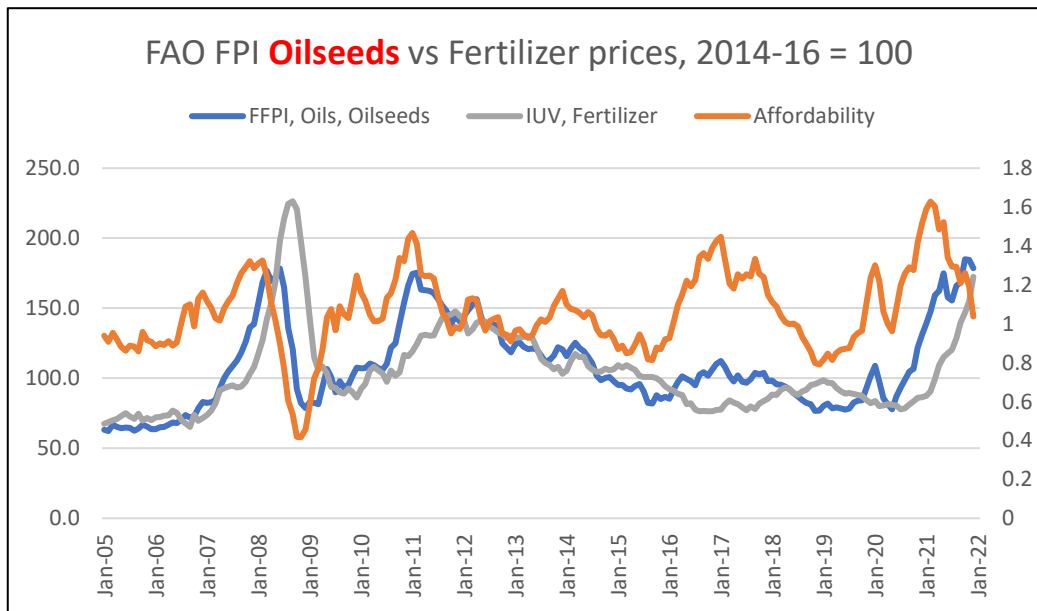
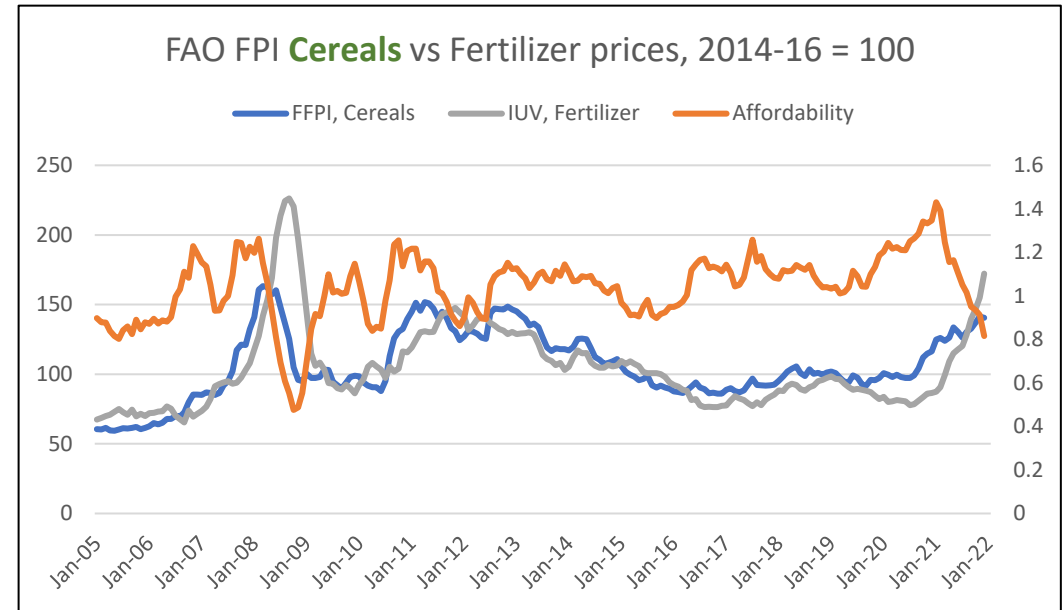
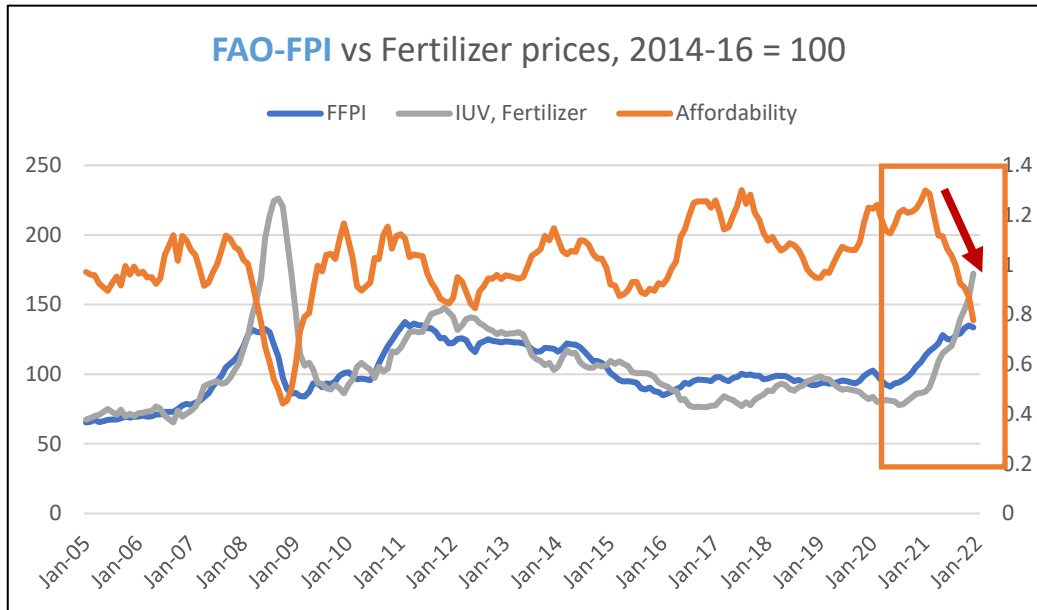
Ocean Freight Indices: higher and volatile



4. High fertilizer affordability 2021/22

... but rapidly declining as of late, notably for grains and sugar

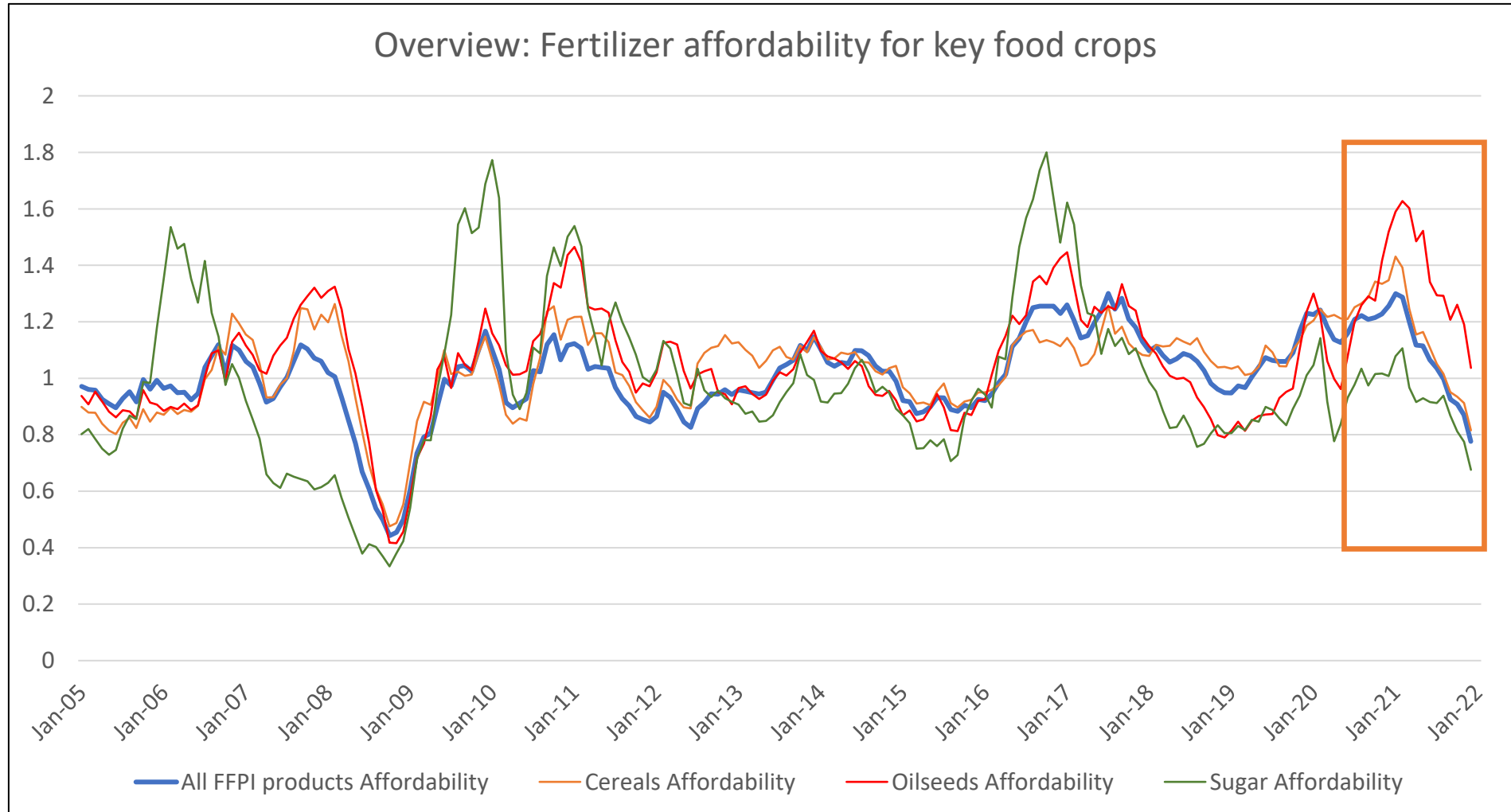
Affordability: Fertilizer vs crop prices



Source: FAO, TDM, author's calculations

Affordability: Fertilizer vs crop prices

Oilseeds > Cereals > Sugar



Source: FAO, author's calculations

Possible impacts

Immediate

- Lack of fertilizer for FAO/humanitarian projects (e.g., Afghanistan).
- Lack of industrial grade ammonia (AdBlue), catalytic converters for diesel vehicles.
- Lack of CO₂ (by product of fertilizer production) for food and drink supply chain, stunning pigs and chickens for slaughter.
- Lack of gas to heat greenhouses, notably in the NL.

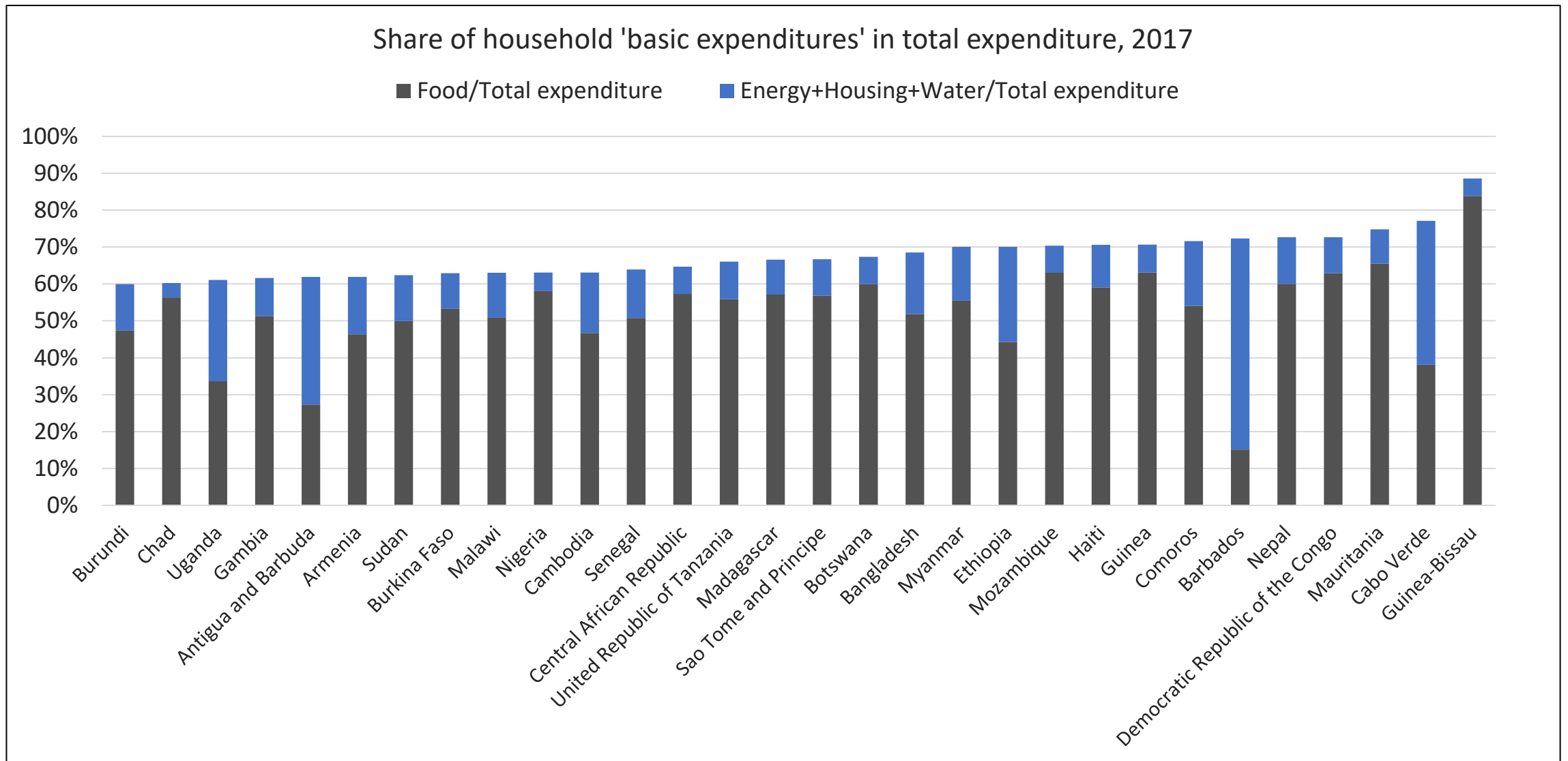
Short term

- Lack of N, P fertilizer in spring 2022 in the northern hemisphere.
- Lack of N, P fertilizer in fall 2022 in the southern hemisphere.
- Higher price responsiveness of demand in low-income countries could result in significant lower use levels and food production levels in 2022/23.

Longer term

- If energy prices remain high, food prices will remain high.
- Higher headline inflation, eventually higher core inflation.
- Most regressive on poor consumers, high share of their incomes spent on food and energy (in developed and developing countries alike).

High food/energy prices are regressive on poor countries/households



What can be done?

Short term

- Need for better data, better fertilizer market intelligence: AMIS initiative
 - Towards up-to-date and reliable N-balances
 - Early warning indicators: Stock levels and changes, stocks-to-use ratios, stocks-to-disappearance ratios, etc.
- Keep fertilizer trade open and supplies reliable, avoid ad hoc trade restrictions
- Monitor trade and trade policies, subsidies
- Support poorer consumers, but avoid structural producer protection and support (South Asia).
- Prioritize agricultural over non-agricultural use. Ensure humanitarian assistance (projects)

Longer term

- Appropriate timing, pacing and sequencing of the transition towards low-carbon energy sources
- Need to improve fertilizer use efficiency
- Review and eventually repurpose fertilizer subsidies
- Better agronomic practices, improved soil fertility, targeted extension services

Summary and outlook

1. 2021/22: Prices for fertilizer spiked in tandem with energy prices, further rose with trade restrictions, high and volatile transportation costs, adverse weather conditions, and high output prices (affordability).
2. 2022/23: Very high fertilizer prices have lowered the affordability, high output prices notwithstanding
3. Global fertilizer use to decline by 3% in 2022/23 (IFA), after a 6.3% increase in 2021/22. If prices remain at current high levels, the drop in demand could be much more pronounced.
4. Developed countries' farmers are inelastic in their demand for (N) fertilizer; they will try to keep high application levels, which means lower availability for developing and emerging economies.
5. Lower use may mean lower crop production and food quality in 2022/23, **and potentially food security issues**. How much is still to be examined in detail, but cues from 2008.
6. Contingency plan:
 - Short-term: keep trade open, avoid export restrictions
 - Collect data, better balances, stocks, prepare early warning indicators (SURs, etc.)
 - Long-term: keep energy affordable, need for cheap, "green" energy.
 - Beware policy trade offs
7. Was this the **"boom before the bust"**? Will we see a normalization (mean reversion) in the natural gas market? The fertilizer market?

Thank you