

Future Development of the Global Crop Protection Market

Derek Oliphant, Partner, AgbioInvestor

Introduction



Derek Oiiphant

AgbioInvestor

Partner



- Founding partner and Senior Crop Protection Analyst at AgbioInvestor, the industry's leading crop protection and seeds & traits market intelligence company.
- Began career in crop protection market analysis at Phillips McDougall, advancing to the position of Senior Analyst before leaving to establish AgbioInvestor in 2017.
- Almost 20 years of experience in crop protection market analysis.
- Key contributor to the AgbioCrop report.
- Public speaker at events.



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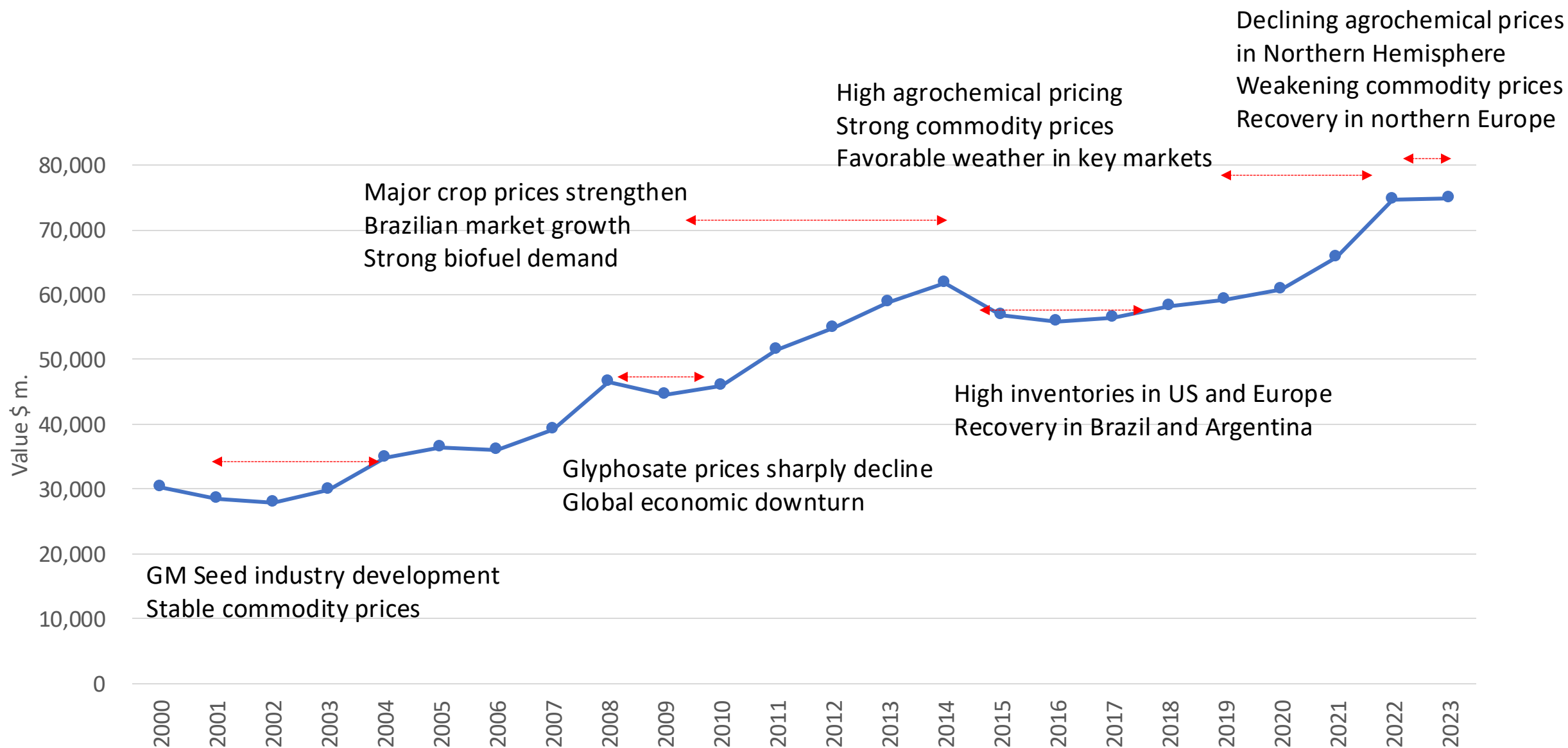
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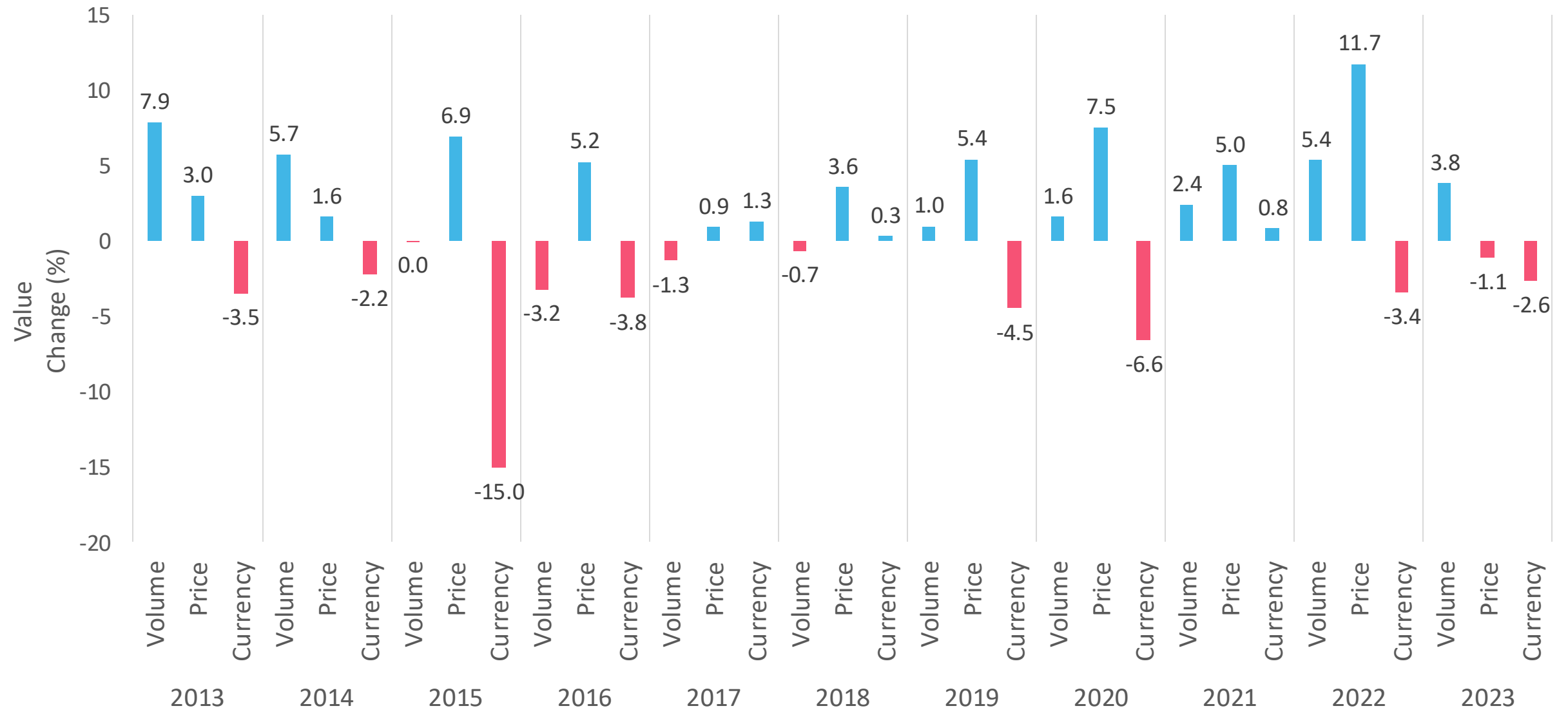
Recent Trends

Recent Trends: Crop Protection Market Development

All values: Ex-manufacturer level – average exchange rates – Nominal US\$

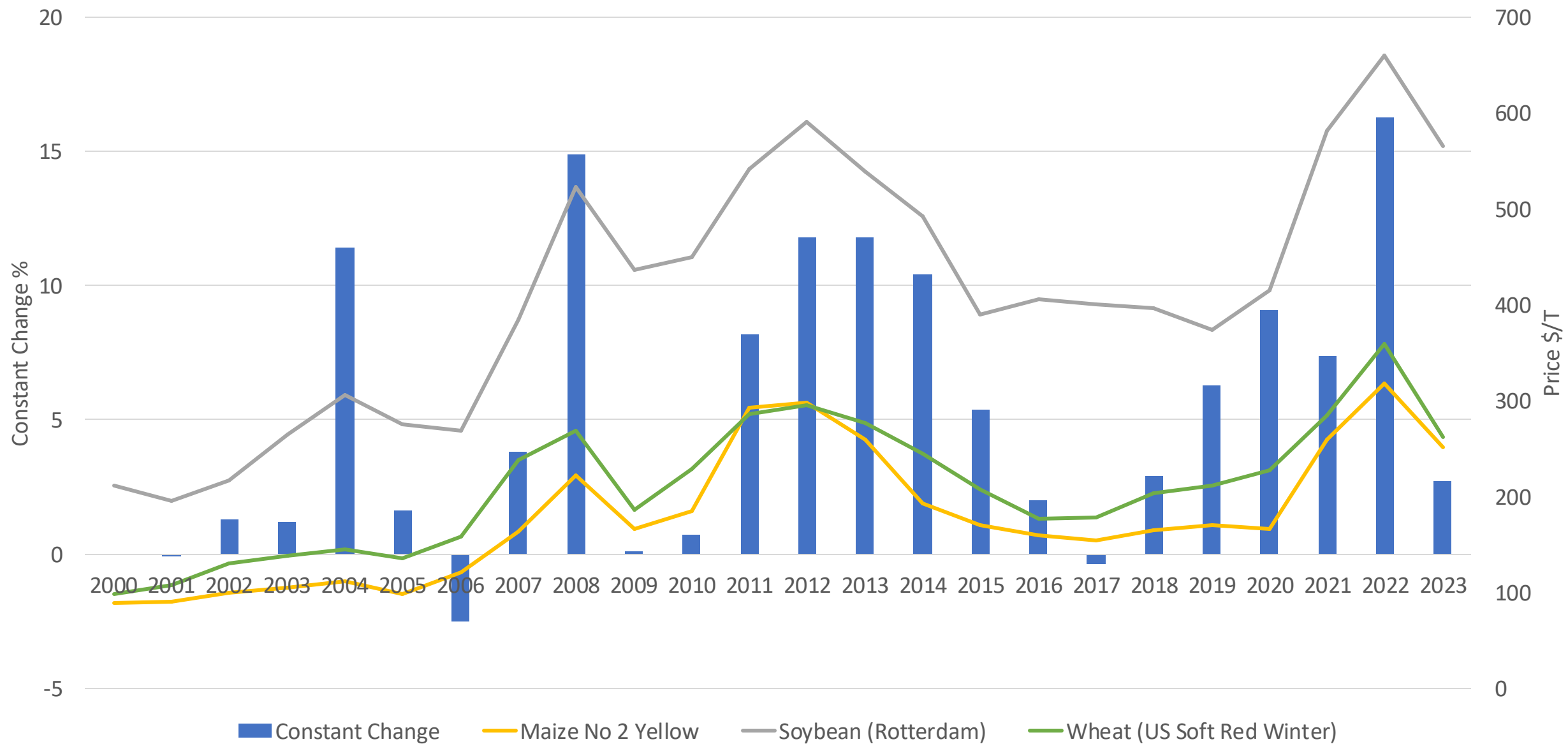


Recent Trends: Volume/Price/Currency Effects



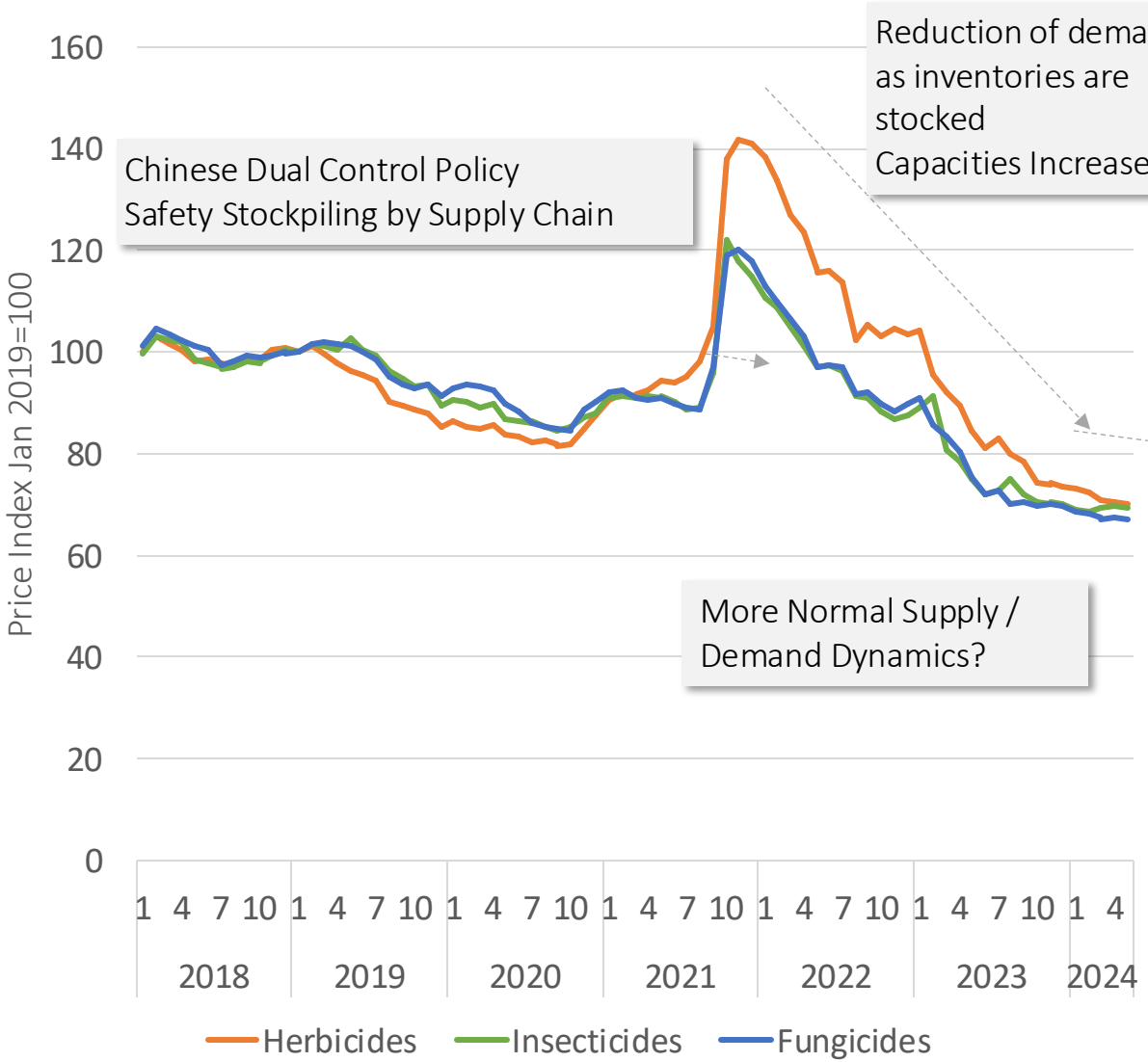
Source: AgbioInvestor's AgbioCrop Market Analysis Platform

Recent Trends: Commodity Prices and Market Development

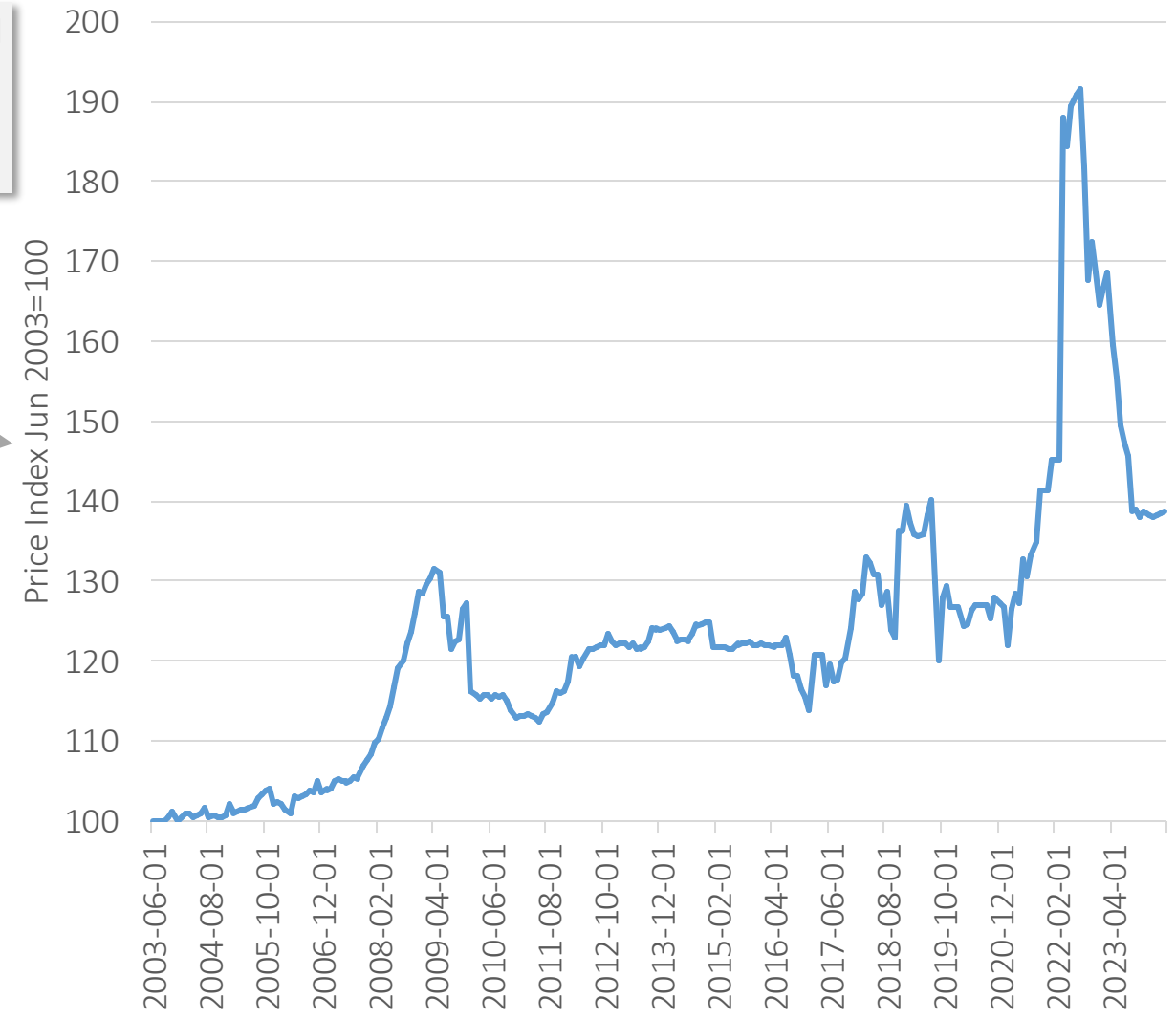


Source: FAO / AgbioInvestor's AgbioCrop Market Analysis Platform

Recent Trends: Agrochemical Price Development



Prices represent spot pricing of technical material ex-factory in the Chinese agrochemical market.
Source: China ex-factory



Producer Price Index by Industry: Pesticide and Other Agricultural Chemical Manufacturing: Agricultural and Commercial Pesticides and Chemicals
Source: FRED

Future Trends

Future Trends: Regional Markets 2024 - Preliminary



Region	2022 (\$ m.)	2023 (\$ m.)	Change 23/22 (%)	2024 Nominal (\$ m.)	Nominal Change 24/23 (%)	2024 Constant (\$ m.)	Constant Change 24/23 (%)
North America	12,684	12,379	-2.4	11,704	-5.5	11,715	-5.4
Central & South America	22,979	24,995	+8.8	23,549	-5.8	22,887	-8.4
Asia Pacific	22,609	20,327	-10.1	18,897	-7.0	19,486	-4.1
Europe	13,713	14,433	+5.3	13,693	-5.1	13,813	-4.3
MEA	2,770	2,673	-3.5	2,490	-6.8	2,660	-0.5
Total	74,755	74,807	+0.1	70,333	-6.0	70,562	-5.7

Positive Drivers

- Normalising inventory situation
- Ongoing resistance management issues
- Developing market growth:
 - SE Asia, Africa, C&S America
- Biologicals adoption increasing in many geographies

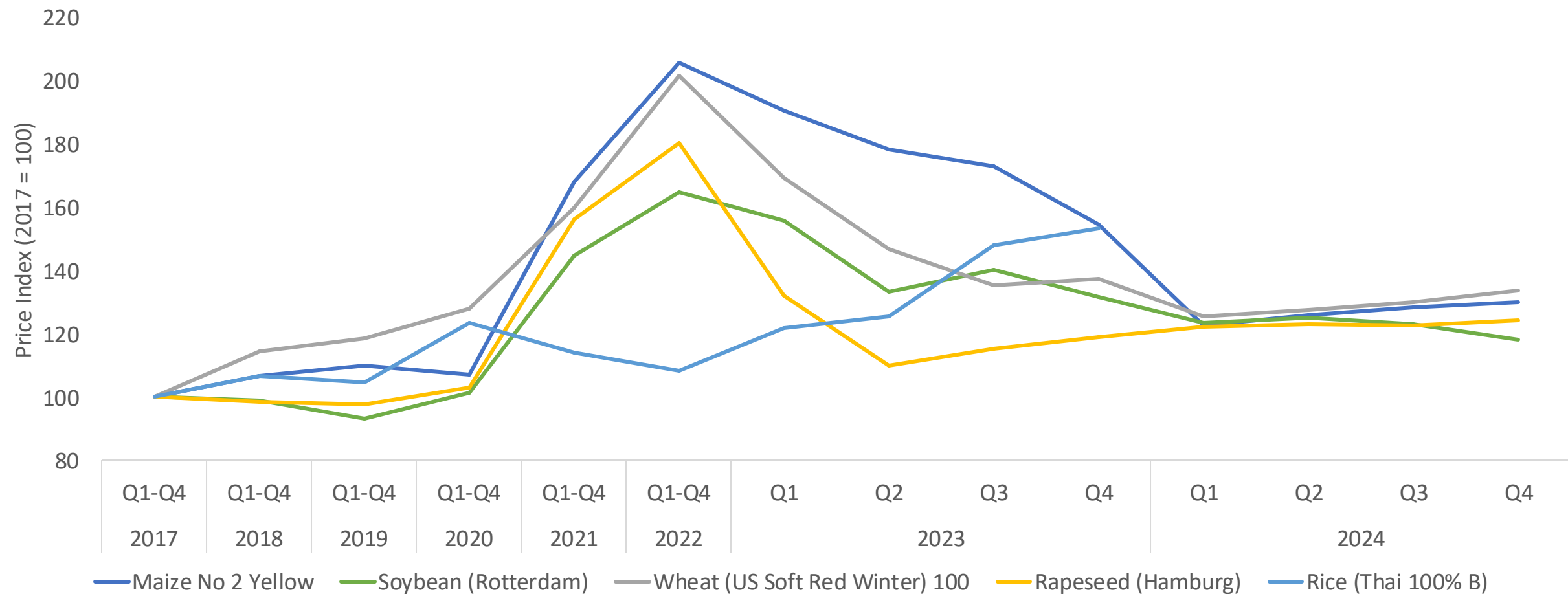
Negative Drivers

- Pricing pressure:
 - Lower crop prices and grower incomes
 - Supply normalisation from China and lower energy costs
- Poor weather in Northern Europe affects planting:
 - UK wheat down 15%, winter barley down 7%, Germany wheat down to historic lows, French wheat down 7.5%; higher spring planting

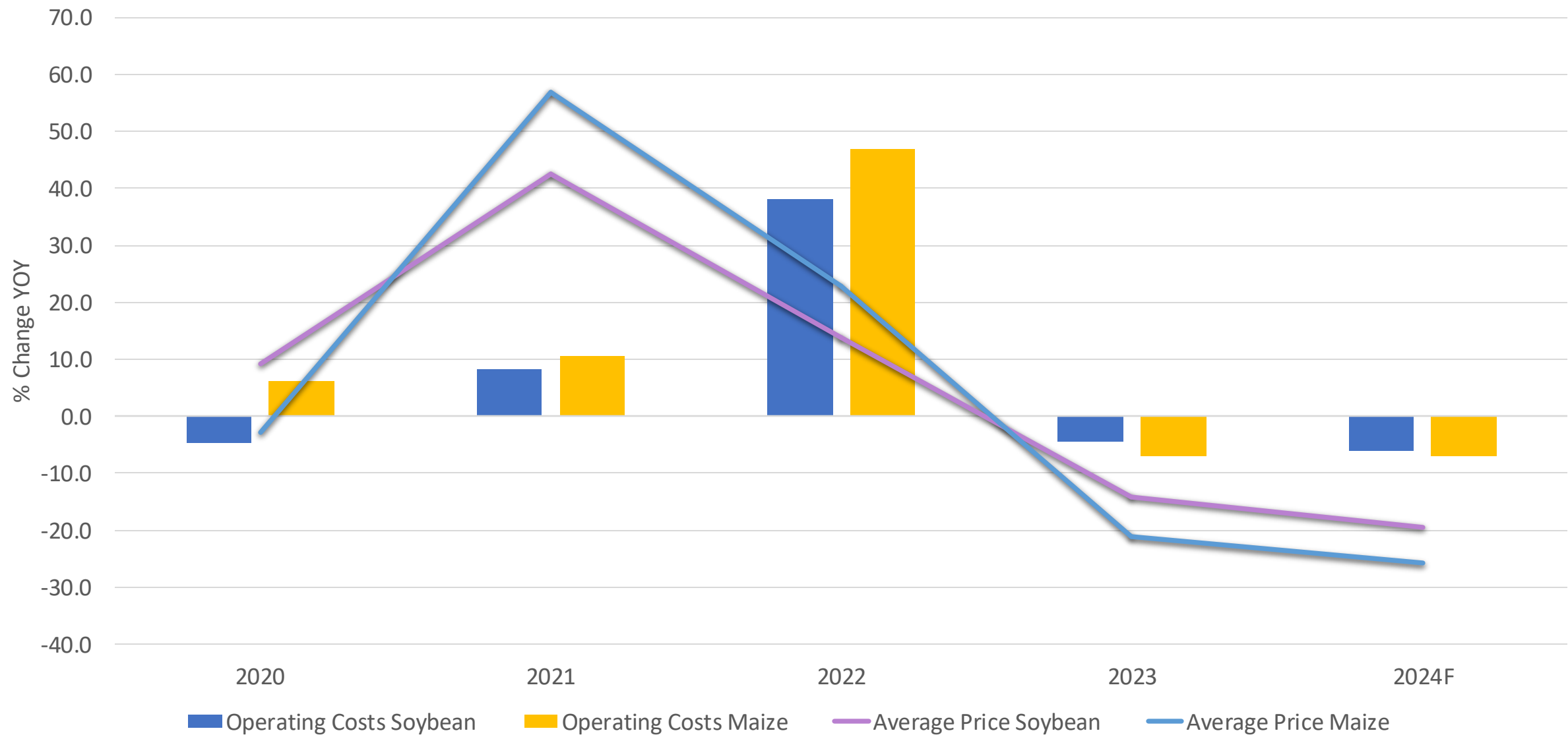
Future Trends: Crop Commodity Prices



- Crop commodity prices peaked during mid-2022
- Prices remain high by historical standards
- Covid, Ukraine and poor weather conditions initially drove strong gains
- Prices have softened as concerns over global grain supply have eased
- Winter wheat futures trading up, future Australian production a concern
- High corn pricing and low stocks stimulated a switch to increased planted areas in N. America



Future Trends: US Farmer Operating Costs vs. Crop Prices



PFAS

Many pesticides contain chemicals identified as PFAS, with these coming under increased regulatory scrutiny.

- Active ingredients with significant market values potentially under threat, notably:
 - lambda-cyhalothrin
 - fluxapyroxad
 - fipronil
 - trifloxystrobin
 - bifenthrin
- Also newer products highlighted as containing PFAS, including:
 - mefentrifluconazole
 - oxathiapiprolin
 - halauxifen
 - fluazaindolizine
- EU process already accounts for persistence and toxicity
 - Exempt from EU PFAS bans
- Potential for wider actions in US:
 - Some minor uses restricted from 2026
 - Effect on real estate values

Recent / Upcoming EU Non-renewals

Spirotetramat

- Sucking pest insecticide
- Lost approval 30/04/24
- ~\$80-100 m. value impact
- Benefits flonicamid, acetamiprid

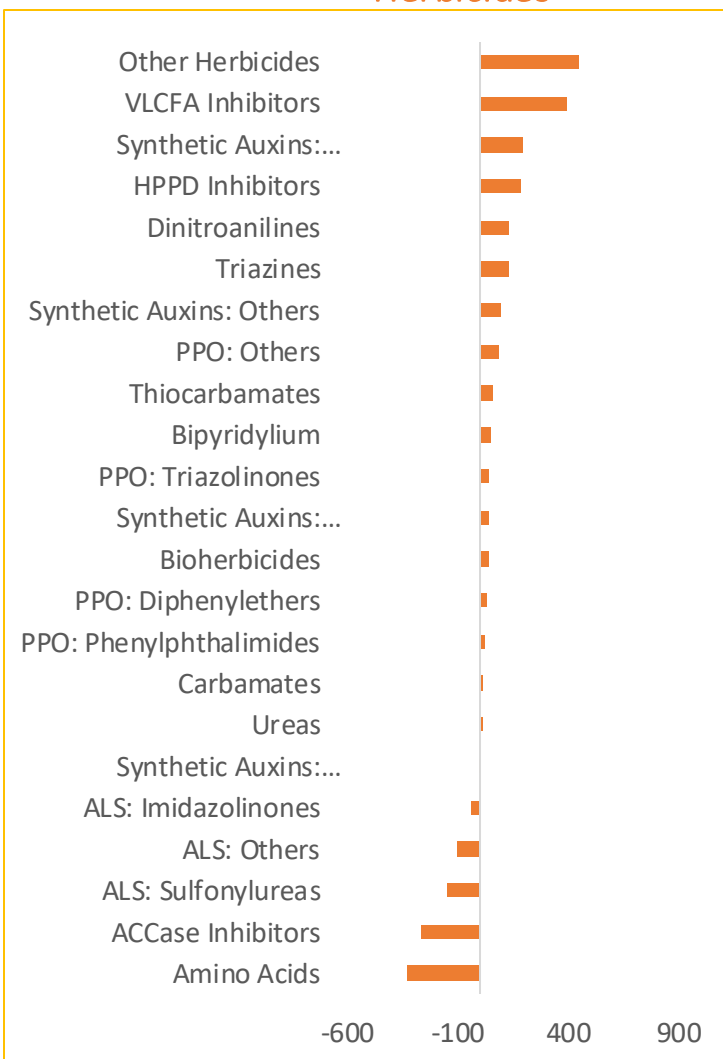
Flufenacet

- Cornerstone of EU cereal herbicides
- Expected loss of approval 15/06/2025
- ~\$250-300 m. value impact
- Benefits cinmethylin, bixlozone if registered

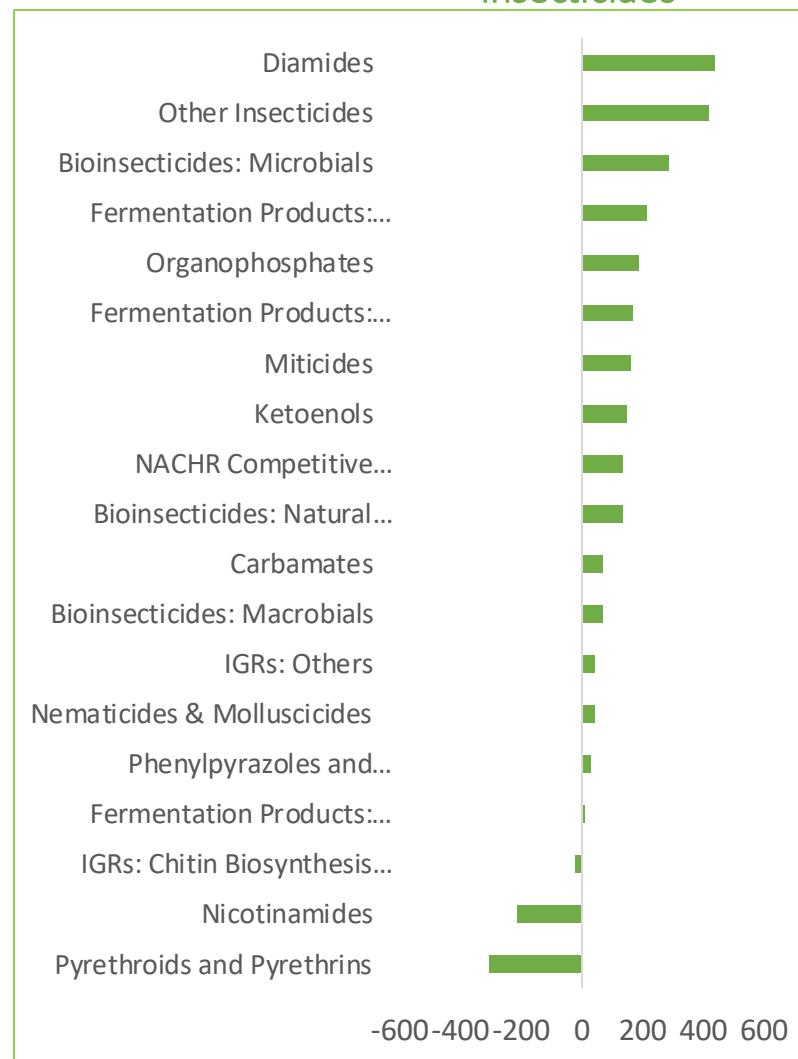
Future Trends: Resistance Management

Resistance issues provide challenges to certain products, but also opportunity for others, often newer market entrants

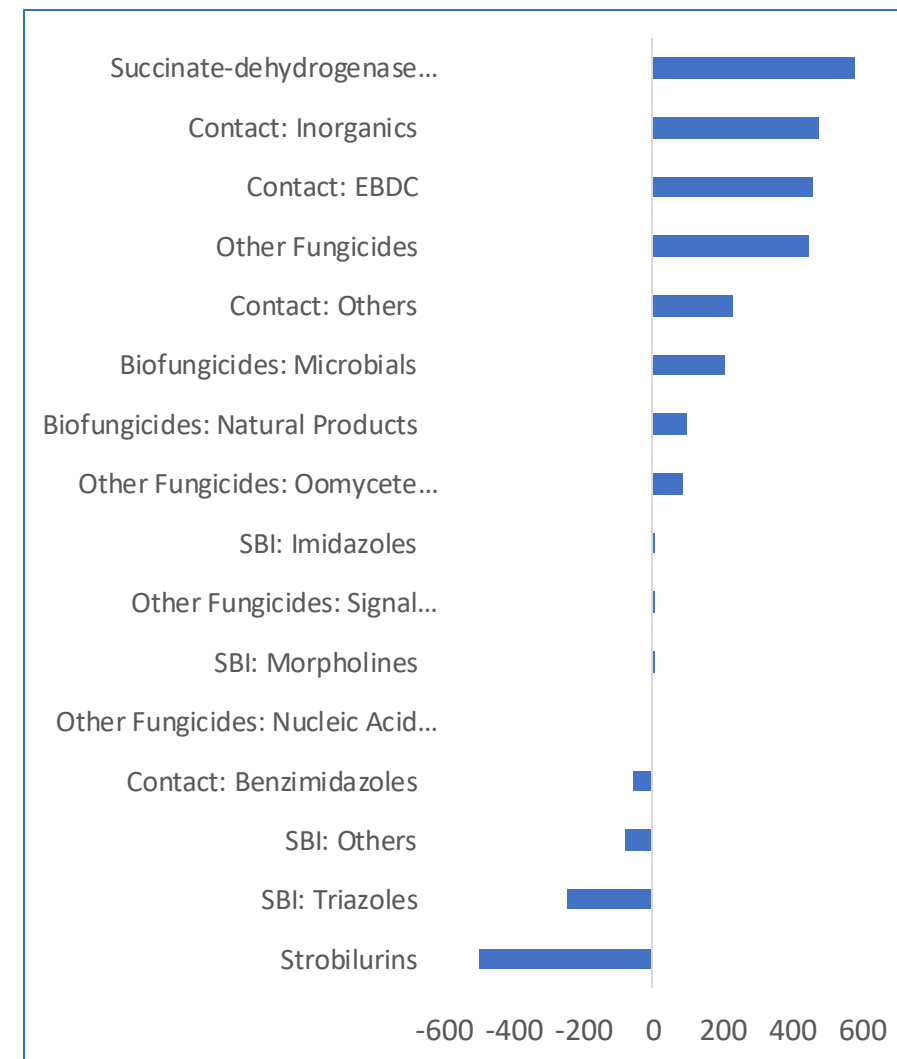
Herbicides



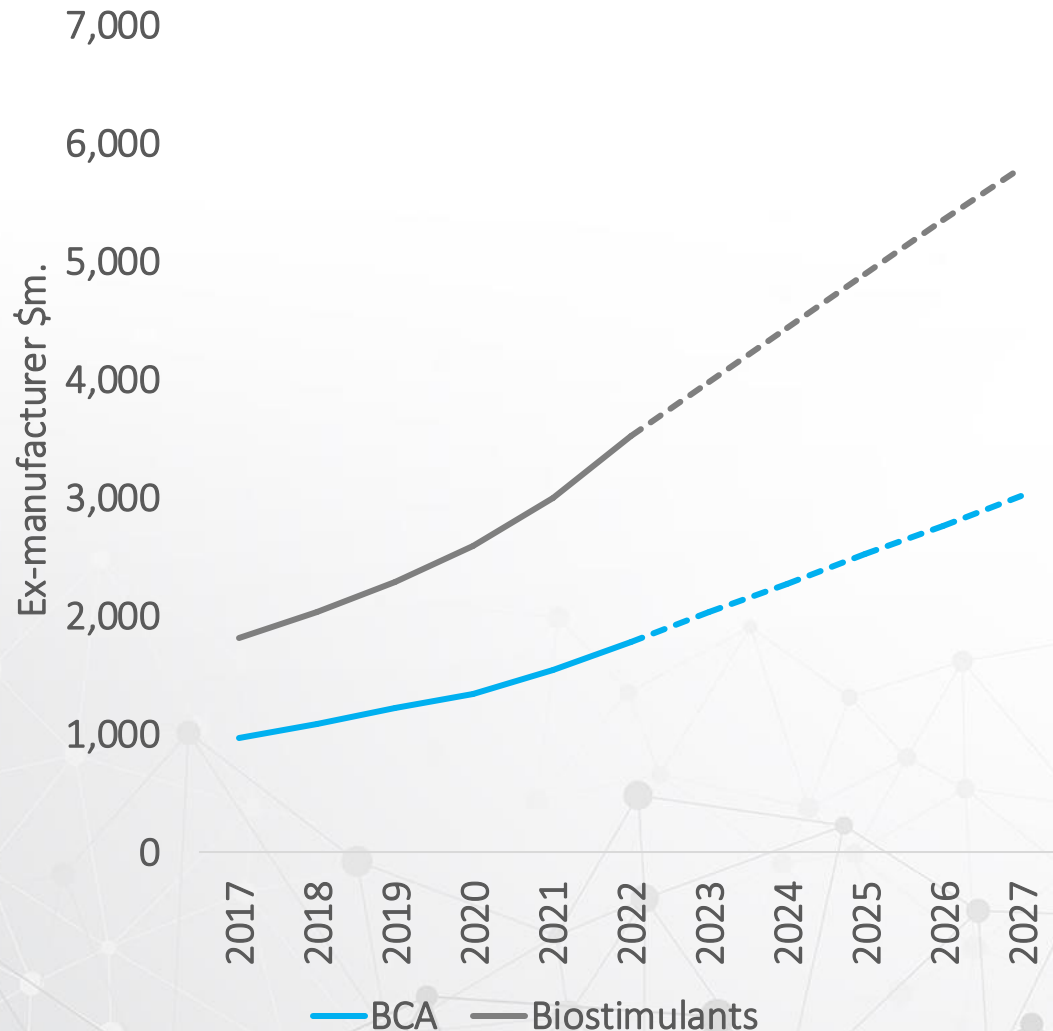
Insecticides



Fungicides



Future Trends: Biologicals Market

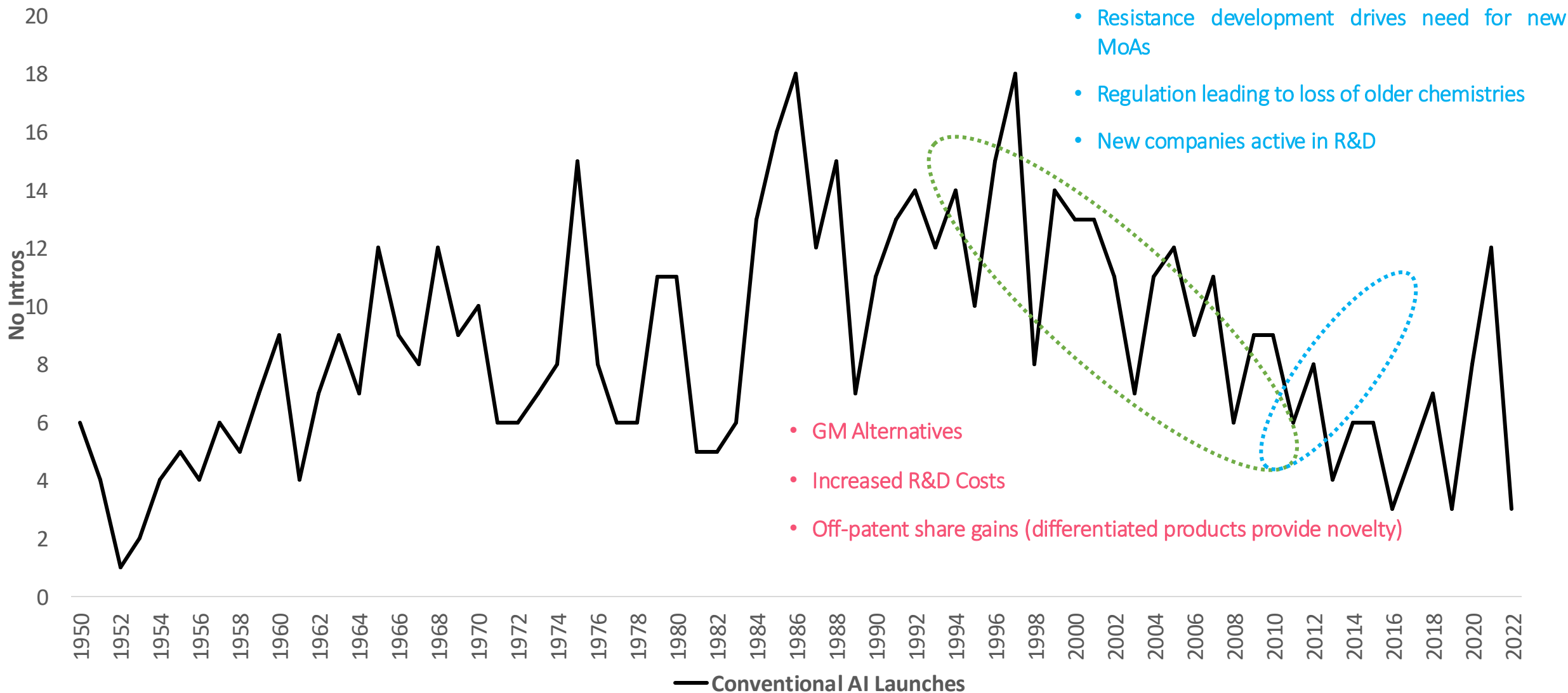


Market (\$ m.)	2017	2021	2022	2027F	2022/ 2021 (%)	2022/ 2017 CAGR (%)	2027/ 2022 CAGR (%)
Biostimulants	973	1,535	1,781	3,017	16.0	12.8	11.1
Biocontrol	1,807	2,994	3,534	5,805	18.0	14.4	10.4
Total CP	56,355	65,775	74,755	85,529	13.7	5.8	2.0

2022 Market

- Growth of 18.0% for biostimulants market in 2022 and +16.0% for biocontrol.
- Continued product uptake including in row crops, high demand for quality F&V.
- Increasing regulatory scrutiny in many markets for CCP.
- Product pricing up in 2022 driven by raw material prices as well as energy costs.
- High fertiliser prices boosted crop biostimulants market.
- Offsetting impact of strengthening of US dollar against key currencies (-3.4% offset).

Future Trends: R&D – Active Ingredient Introductions



Future Trends: R&D – New Discovery Companies



- Resistance development and regulatory pressure increasing need for new technology
- Increased use of in-silico techniques to accelerate discovery and optimisation of leads
- Interest in R&D of novel and low tox/environmentally sound CP actives
- New small R&D companies filling gap of industry majors
 - Develop new AIs faster at lower cost
 - Often based on novel approach/tech
- Potential to be collaborative and/or competitive

Select New CP AI Discovery Companies/Tech Providers		
Company	Found ed	Technology
AgPlenus	2018	In silico, Computational
Agrematch	2017	In silico, AI based discovery
Deargen	2016	In silico, Computational (tech provider)
Enko Chem	2017	DNA Encoded Libraries
GreenLight	2008	Topical RNAi pesticides
HitGen	2012	DNA Encoded Libraries (tech provider)
MicroMGx	2015	Metabologenomics (tech provider)
MoA	2018	<i>in vivo</i> plant model
Oerth Bio	2019	PROTAC protein degradation

Recent Commercial Activity

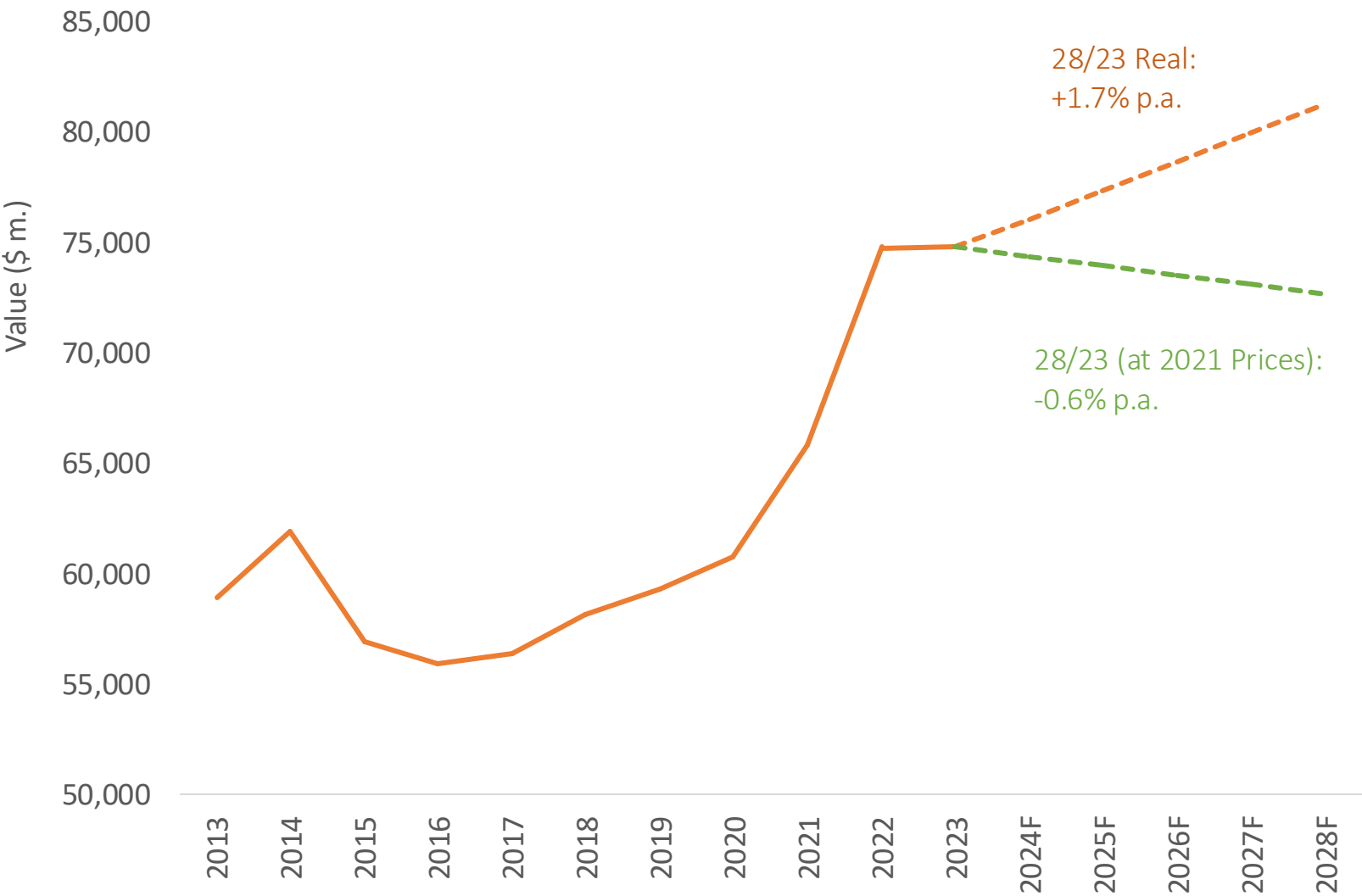
Corteva collab finds new MoA herbicide

ICL collab for crop nutrition

Syngenta collab finds new fungicide chemistry
Nufarm discovery license agreements

Nufarm new herbicide MoA commercial partner

Crop Protection Market Forecast 2028



2023

Lower prices for generics starting to have an impact

Volumes benefit from EU recovery

Weaker grower incomes over 2022, but still strong

2028F

Positive Drivers

Pest resistance development aids value

Developing markets (e.g. S&SE Asia, MEA) drive volumes

Further uptake of seed treatments and biologicals

Negative Drivers

New GM areas and traits detract from value and volume

Accelerating impacts of variable rate applicators on volumes

Commodity and Input price normalization

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Questions?

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