The Dominant Narrative:

Feeding the World in the era of climate change requires Big Science, Big Money and integrated strategies up and down the food chain.

To maximize “Climate Smart” innovations, the Big Six seed & pesticide companies claim they need to become 5 or 4 – or merge with other links in the food chain.

Mega-Mergers in the Global Agricultural Inputs Sector:

Threats to Food Security & Climate Resilience

ETC Group participating as an NGO within the Civil Society Mechanism of the UN Committee on World Food Security

September 2015

Summary

- Monsanto's $47 billion bid for Syngenta (so far rejected) is just the beginning of a feeding frenzy in corporate control of ag inputs sector.
- Ag mega-mergers will not speed up innovation, efficiency or address climate change. The aim is market control.
- Today, six corporations control global markets for industrial seeds/agrochemicals. They determine the priorities and future direction of agricultural research.
- What are implications of ag mega-mergers for food sovereignty and climate change? What can be done?

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Table is Set for Feeding Frenzy

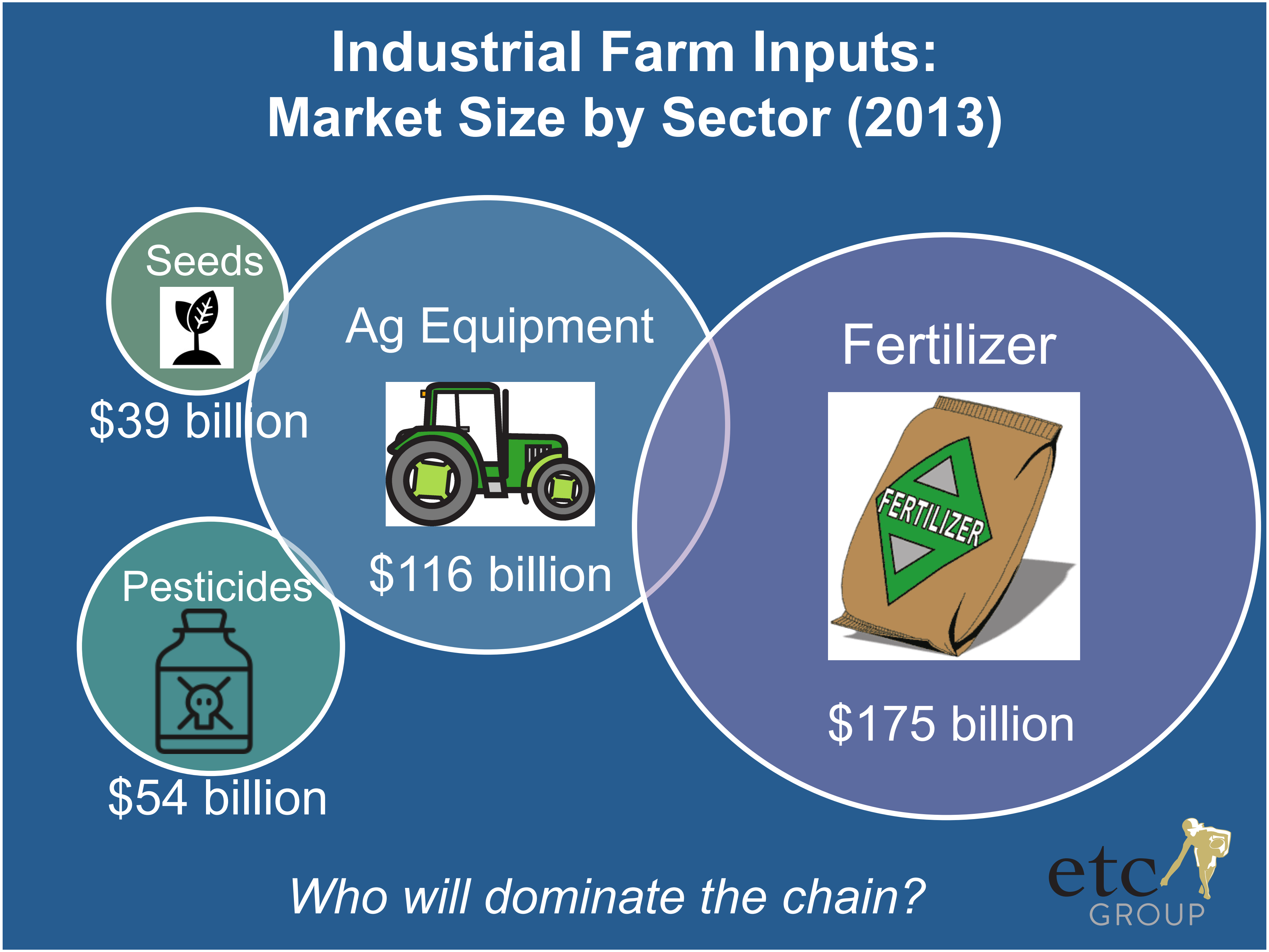
- Monsanto makes $47 billion bid to buy Syngenta; Syngenta rejects offer (Aug. 2015) and decides to sell its vegetable seed business to appease shareholders.

- Bayer will sell plastics division to focus on pharma & pesticides/seeds.

- BASF secures financing sufficient to buy Syngenta.

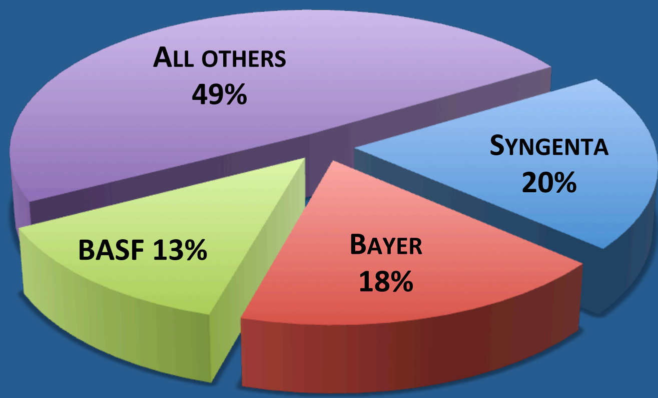
- Dow considers spinning off its agrochemical/seed unit.

- DuPont under pressure to sell its ag division – including world's #2 seed company, Pioneer.

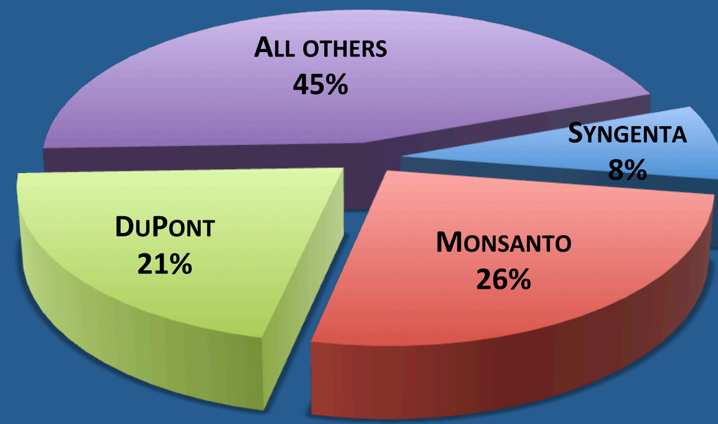

Industrial Farm Inputs:
Market Size by Sector (2013)
Seeds
$39 billion
Ag Equipment
$116 billion
Fertilizer
FERTILIZER
$175 billion
Pesticides
$54 billion
Who will dominate the chain?
etc
GROUP

Three Firm Market Concentration: 2013

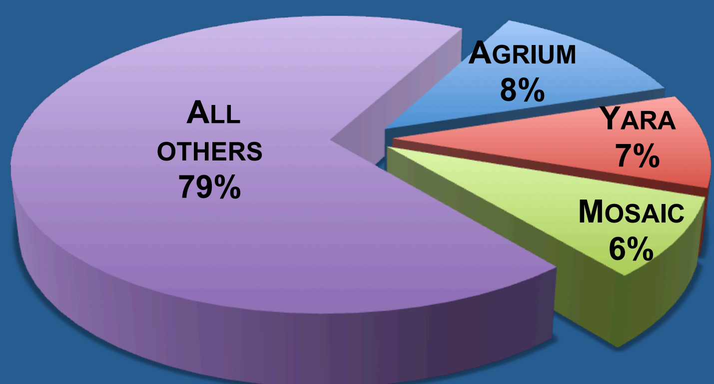
51% Agrochemicals



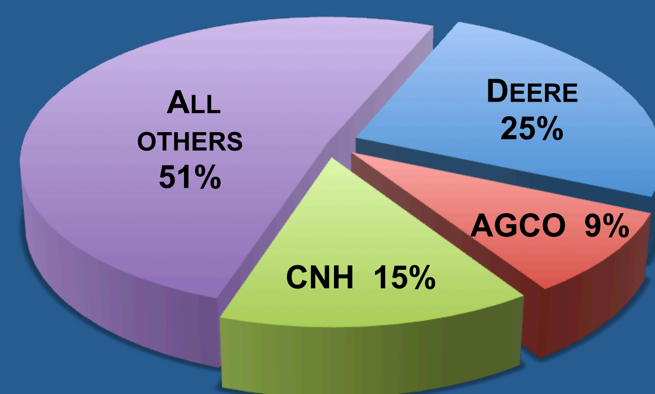
55% Seeds



21% Fertilizers



49% Farm Equipment



etc GROUP

Ground is Shifting.

Global fertilizer industry: $175 billion sales, 2013

Top 10 = 38% market share

Industry under fire for cartel practices & environmental damage; now investing in Big Data ("precision ag").

Will fertilizer companies acquire agchemical/seed companies?

Plowing New Ground?

Global farm equipment industry:
$116 billion sales, 2013
Top 3 = 49% market share

Hardware companies now investing in Big Data, robotics, drones and farm surveillance technologies.

Will they scoop up seed/pesticide companies to become one-stop shop for ag inputs?

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More Industry Wildcards

Is China's state-owned ADAMA or COFCO (or another Chinese firm) looking to acquire an industrial seed / pesticide company (e.g., Syngenta, Monsanto, DuPont Pioneer)?

In 2013, China's Shuanghui Intl. (now WH Group) bought Smithfield Foods, the world's largest pork producer, for nearly $5 billion.

China's grain imports spiked 550% from 2000-2014. Will China acquire maize technologies (e.g., Monsanto or Pioneer) to feed pigs?

etc GROUP

Big Six Status Quo:
corporate control of agrochemicals/seeds

BAYER
MONSANTO
DUPONT
DOW
BASF
SYNGENTA

- collective sales >$65 billion per annum in agrochemicals, seeds, biotech traits;
- control 75% of the global agrochemical market;
- control 63% of the commercial seed market;
- account for more than 75% of all private sector ag research in seeds and chemicals.

etc GROUP

BIG SIX CALL THE SHOTS

In 2013, combined R&D budgets of Big Six (agchem & seeds) were:

- 20 times higher than R&D spending at international crop breeding institutes (Consultative Group on International Agricultural Research – CGIAR);
- 15 times higher than U.S. government's (USDA/ARS) crop science R&D spending.

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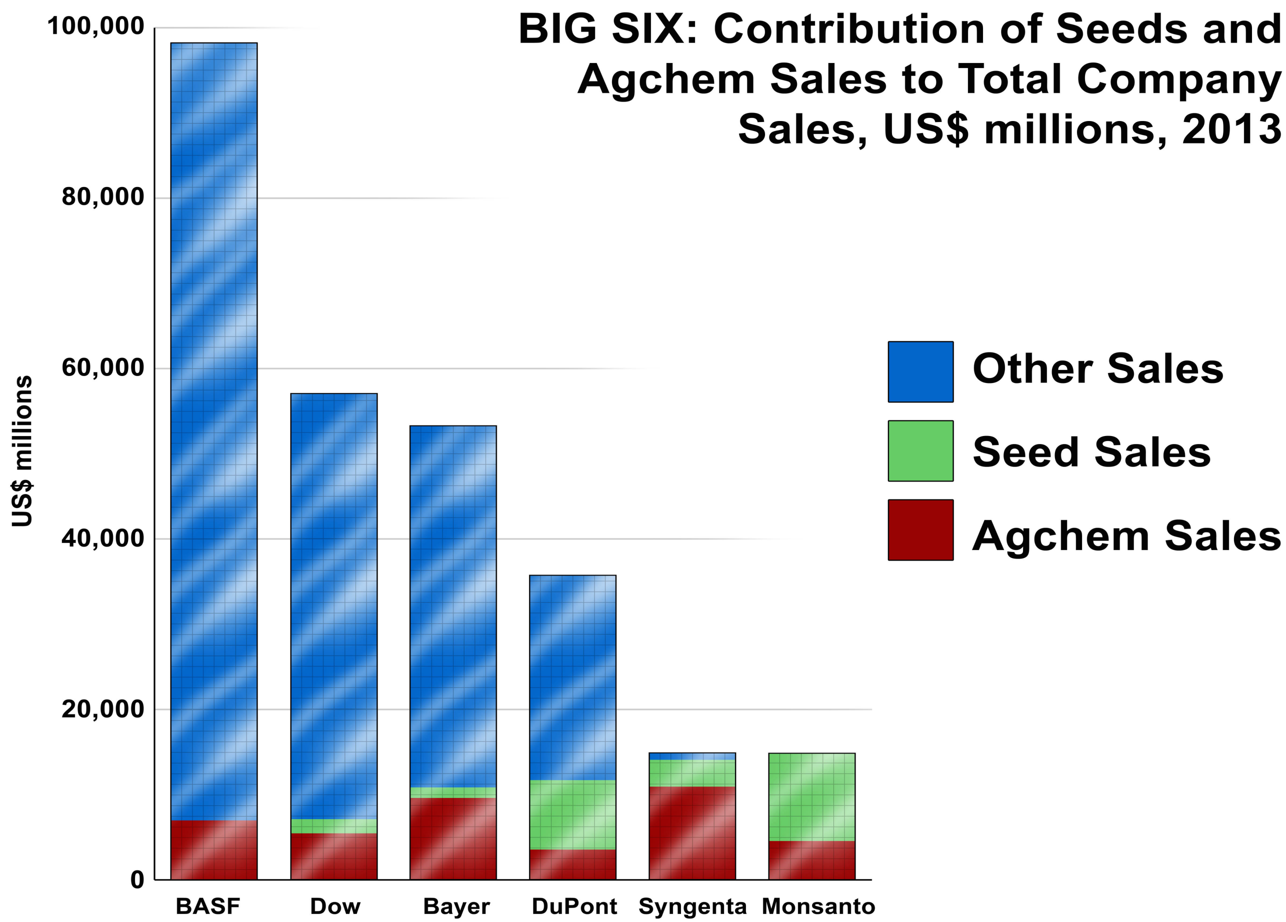
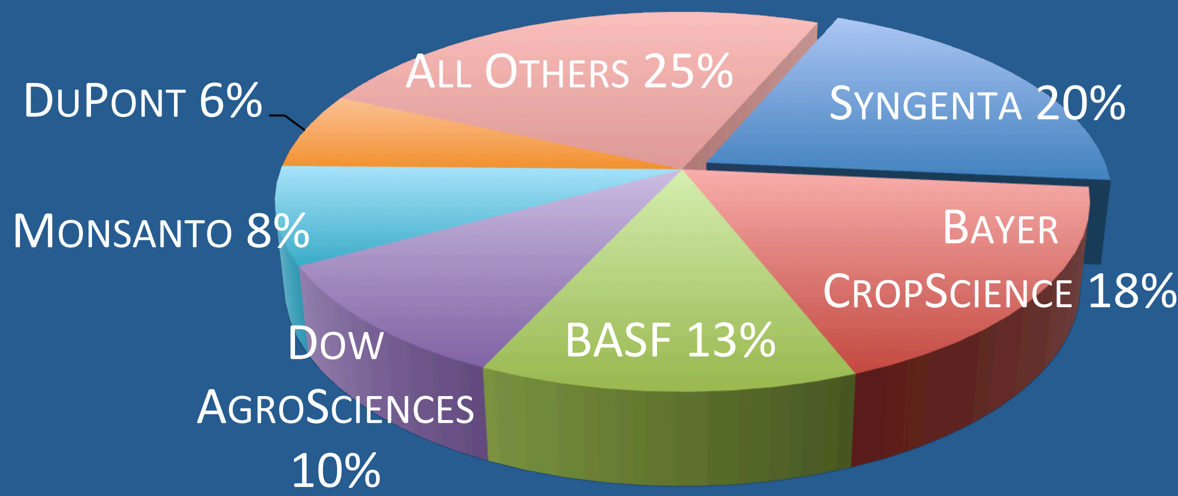


BIG SIX: Contribution of Seeds and Agchem Sales to Total Company Sales, US$ millions, 2013
100,000
80,000
60,000
40,000
20,000
0
US$ millions
BASF
Dow
Bayer
DuPont
Syngenta
Monsanto
Other Sales
Seed Sales
Agchem Sales

etc GROUP

BIG SIX: Global Agrochemical Market Share

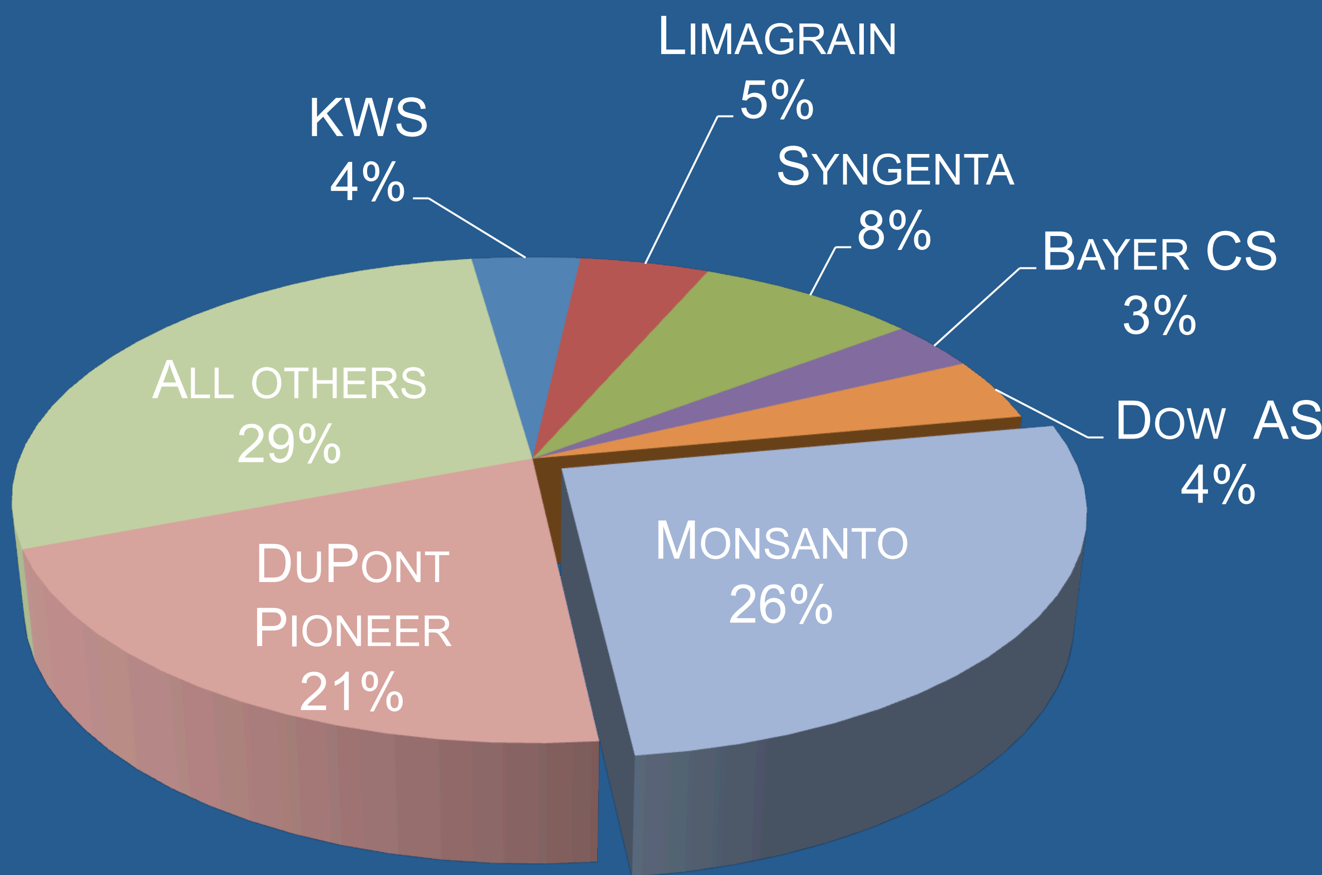


Big Six control 75% of global pesticide market.

Based on 2013 sales

Sources: ETC Group, company reports, Phillips McDougall

BIG SEED SEVEN: Global Seed Market Share



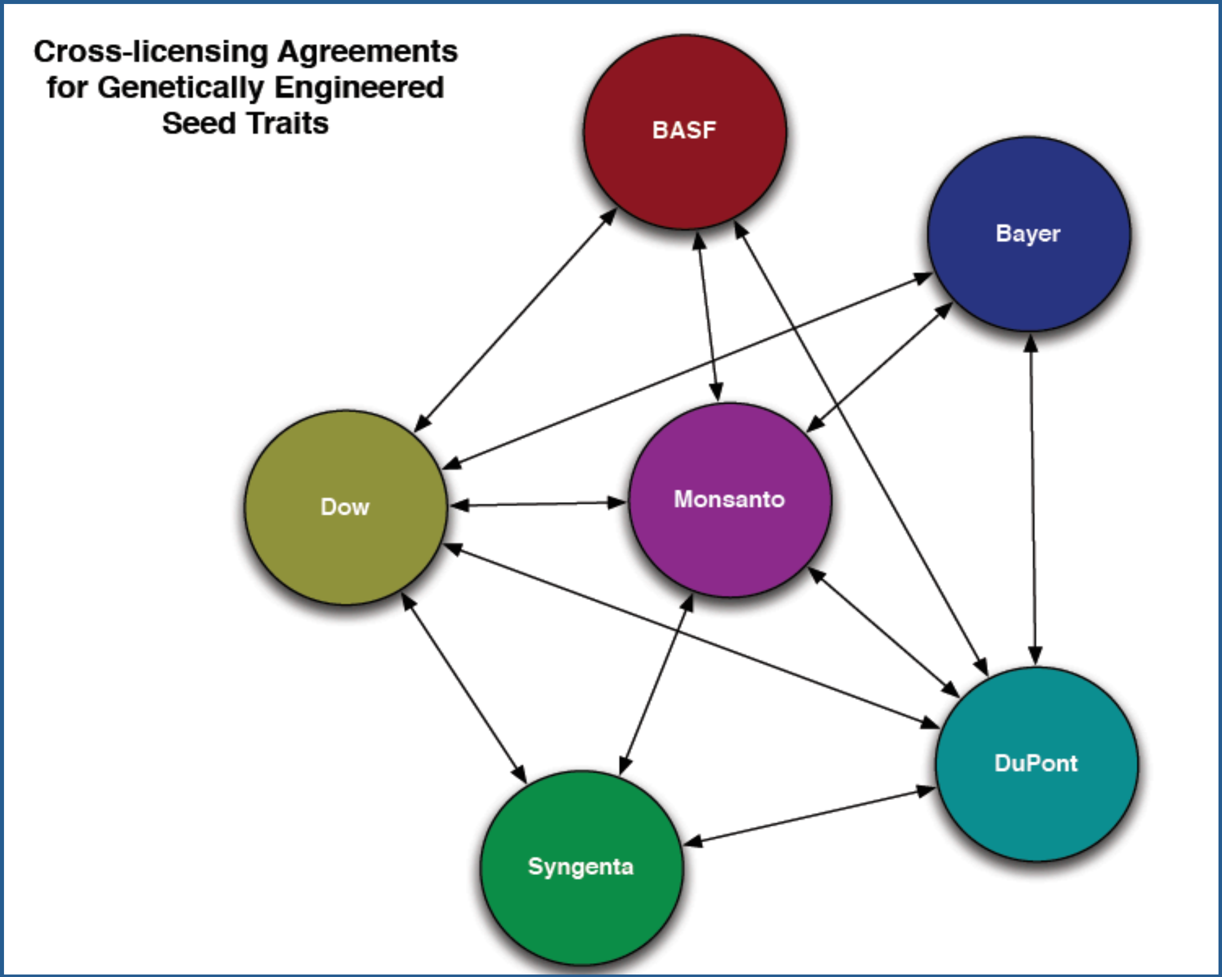
Seven firms control 71% of global seed market.

BASF invests in seed R&D, but does not sell seeds.

Based on 2013 sales Sources: ETC Group, company reports, Phillips McDougall

etc GROUP

"The Joy of Six"
Partners and Cartel-Like Collaborators in Concentrated Markets

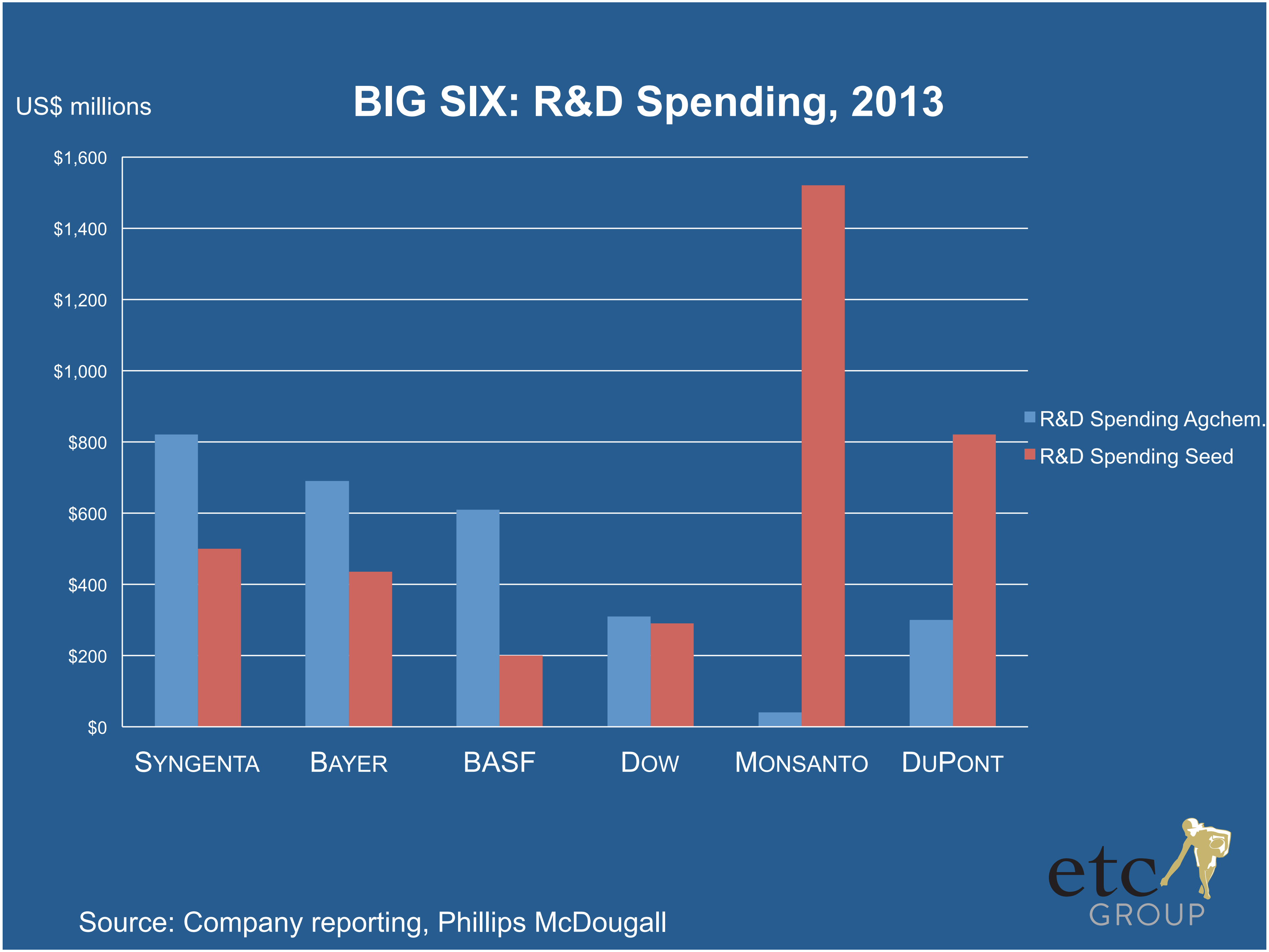


Examples of Inter-Firm Alliances:

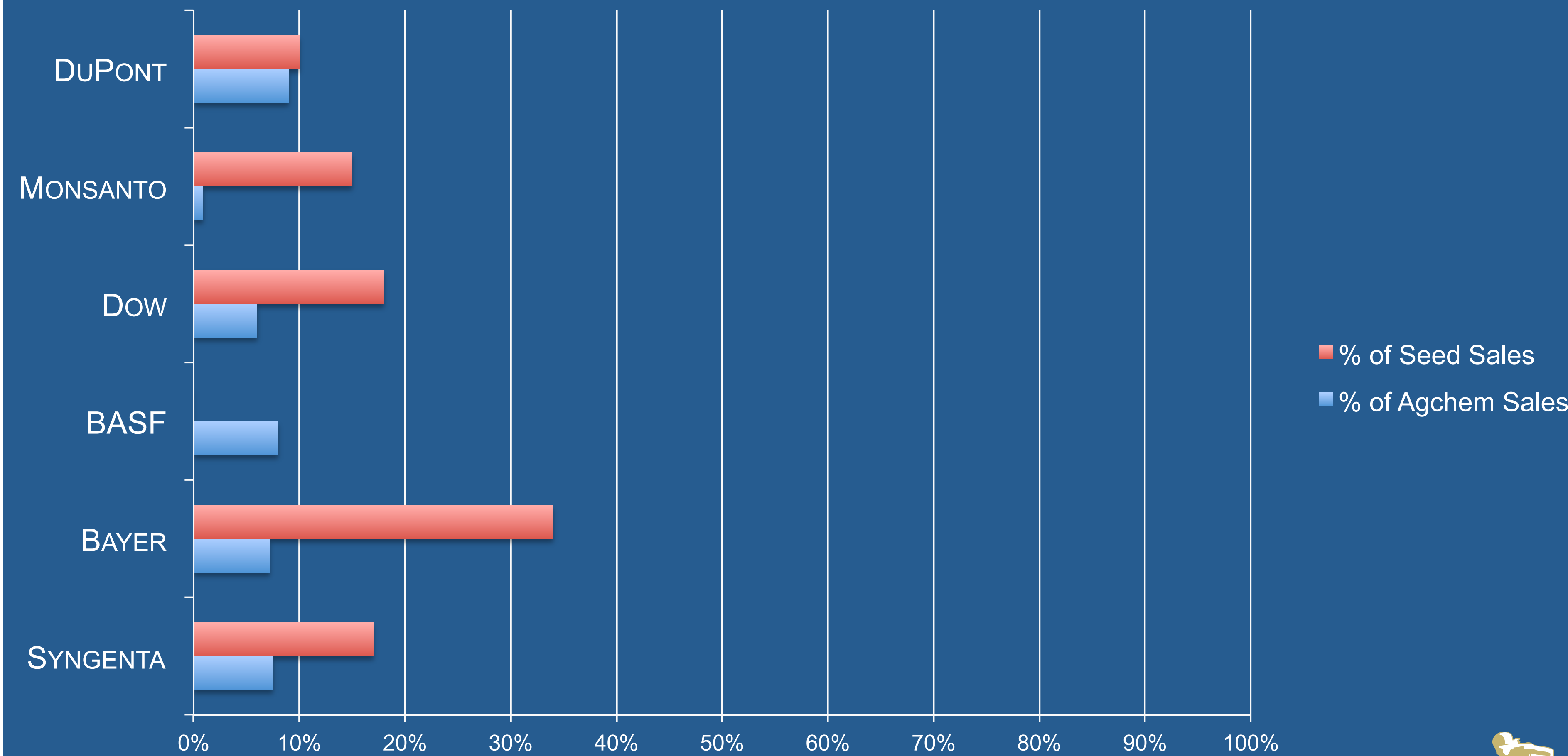
- •Trait licensing
- •R&D alliances
- •Negotiating regulatory hurdles
- •Patent litigation truces
- •Generic trait agreement

Source: Phil Howard, Michigan State University, Sept. 2013

etc GROUP


BIG SIX: R&D Spending, 2013
US$ millions
$1,600
$1,400
$1,200
$1,000
$800
$600
$400
$200
$0
R&D Spending Agchem.
R&D Spending Seed
SYNGENTA
BAYER
BASF
DOW
MONSANTO
DUPONT
Source: Company reporting, Phillips McDougall
etc GROUP

BIG SIX: R&D Spending as Percentage of Sales, 2013



Based on data from Phillips McDougall

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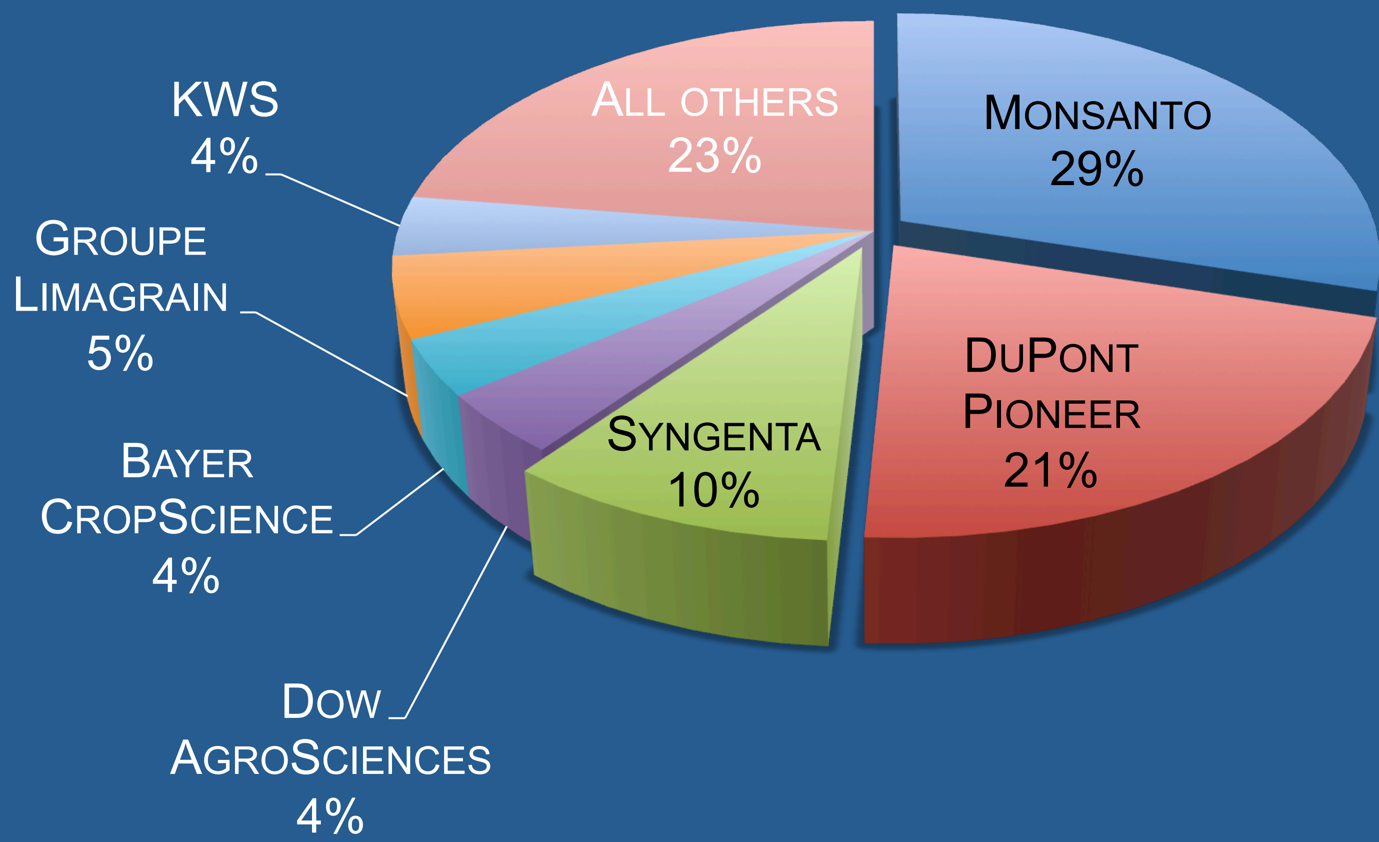
Field Crop Seed Concentration

3 firms control 60% of market, 2013



Sources: Access to Seeds Methodology Report, 2015 and Phillips McDougall, cited in Vilmorin Investor Presentation, March 9, 2015

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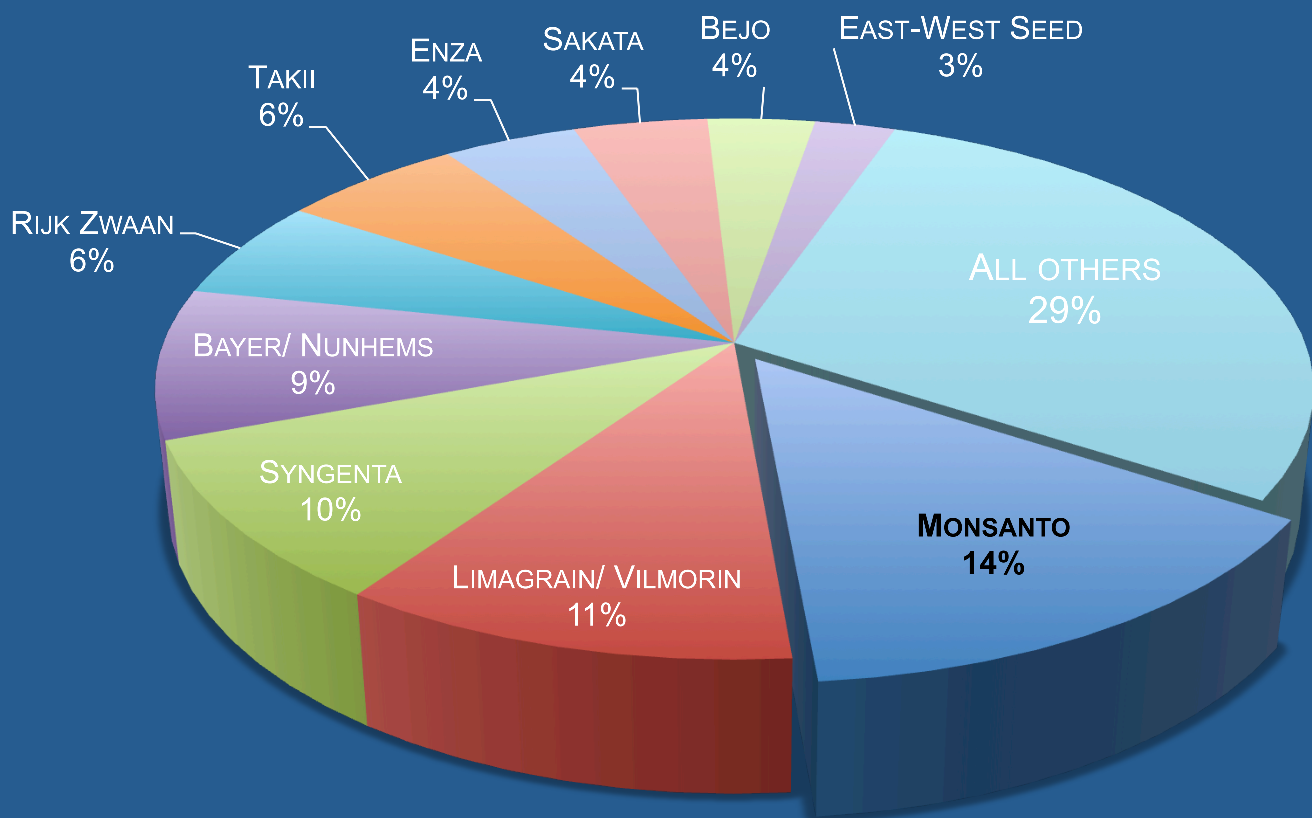
Vegetable Seed Concentration

Top 10 Global Market Share, 2013



Top 4 companies control 43% of the vegetable seed market.

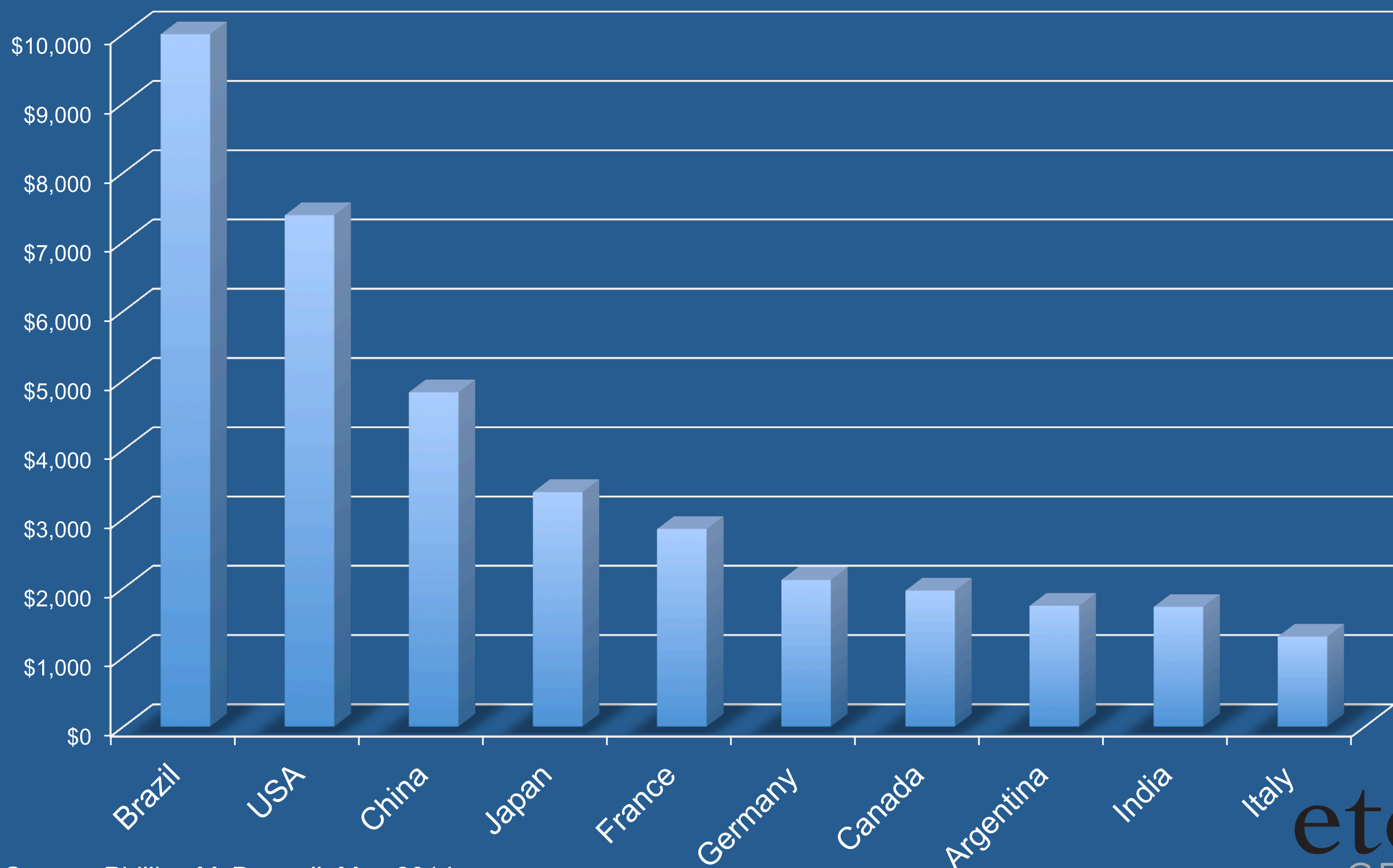
Sources: Access to Seeds Methodology, 2015 and Phillips McDougall, cited in Vilmorin Investor Presentation, March 9, 2015.

etc GROUP

Top 10 Agrochemical Markets by Country 2014,

US$ millions

10 countries account for 69% of total agrochemical sales. Together, Brazil, China, Argentina and India account for 33% of the top 10 share.

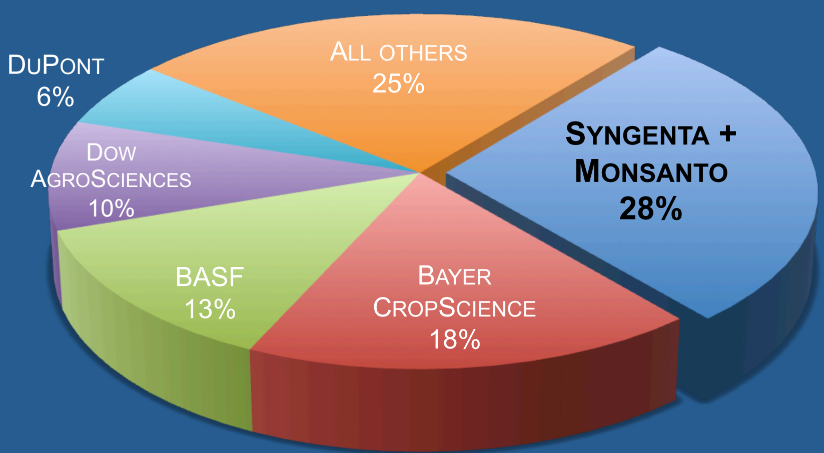


Source: Phillips McDougall, May 2014

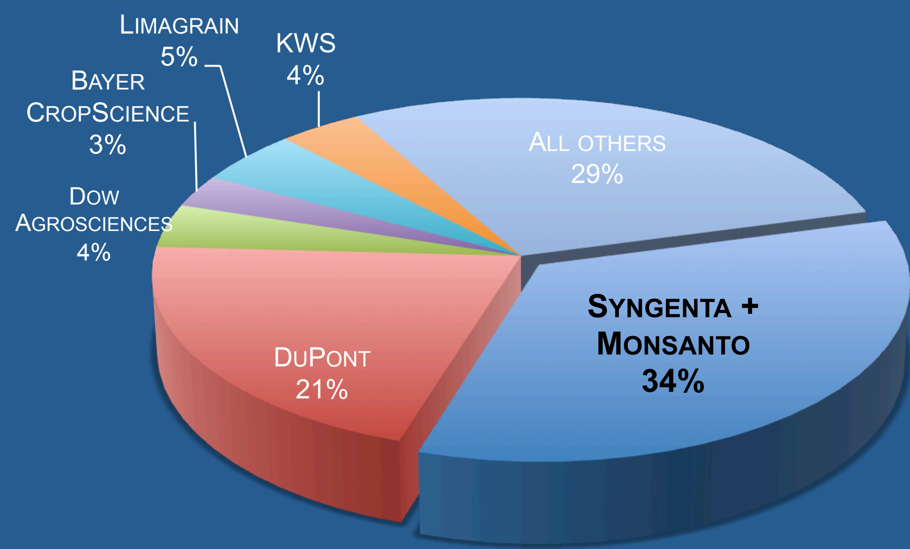
etc GROUP

Scenario 1: Monsanto + Syngenta
market share after merger, no divestment

Agrochemical Market Share



Seed Market Share

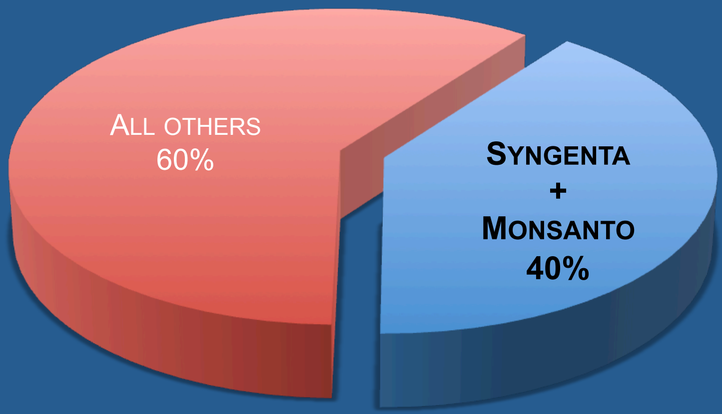


Based on 2013 sales

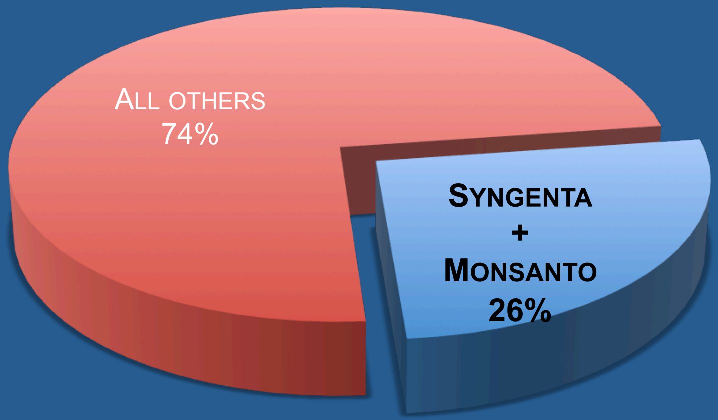
etc GROUP

Scenario 1: Monsanto + Syngenta
market share after merger, no divestment

Global Market Share: Field Crop Seeds



Global Market Share: Vegetables

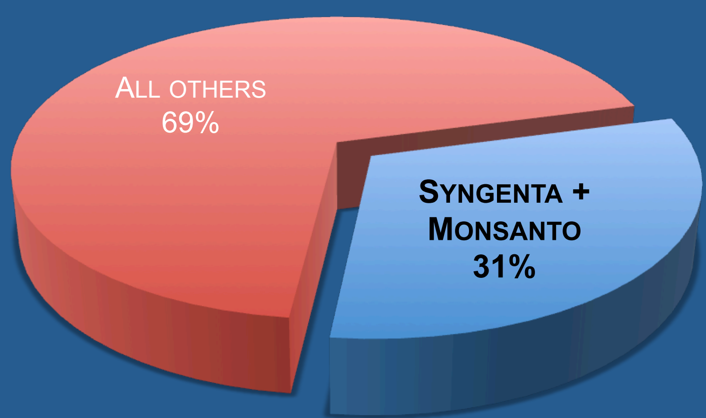


Based on 2013 sales

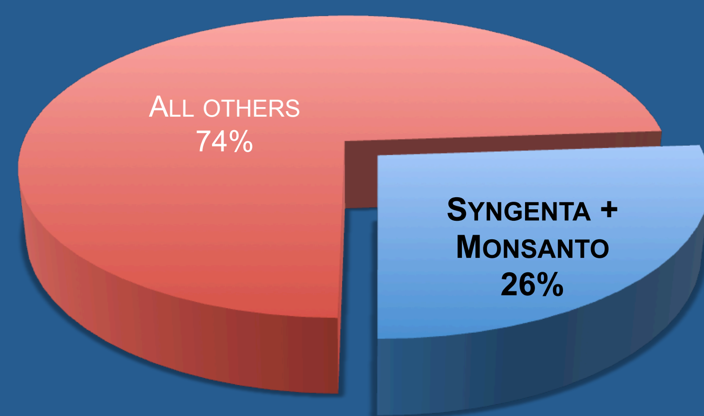
etc GROUP

Scenario 1: Monsanto + Syngenta merger with some seed business divestment

Seed Market Share with divestment of Syngenta's North American seeds/ traits business



Seed Market Share with divestment of Syngenta's global seeds/traits business

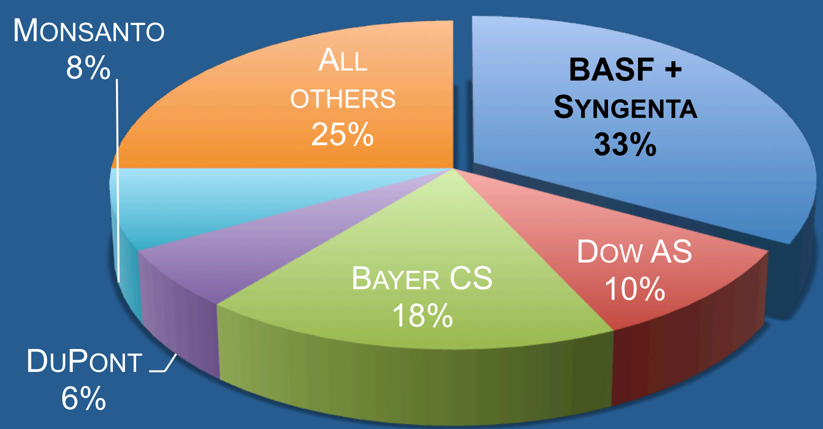


Based on 2013 sales

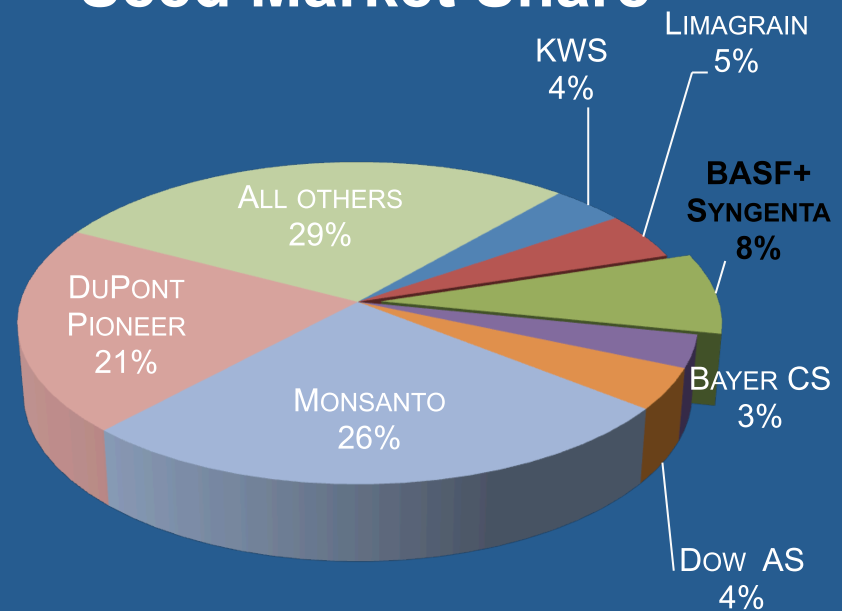
etc GROUP

Scenario 2: BASF + Syngenta acquisition with no divestment

Agrochemical Market Share



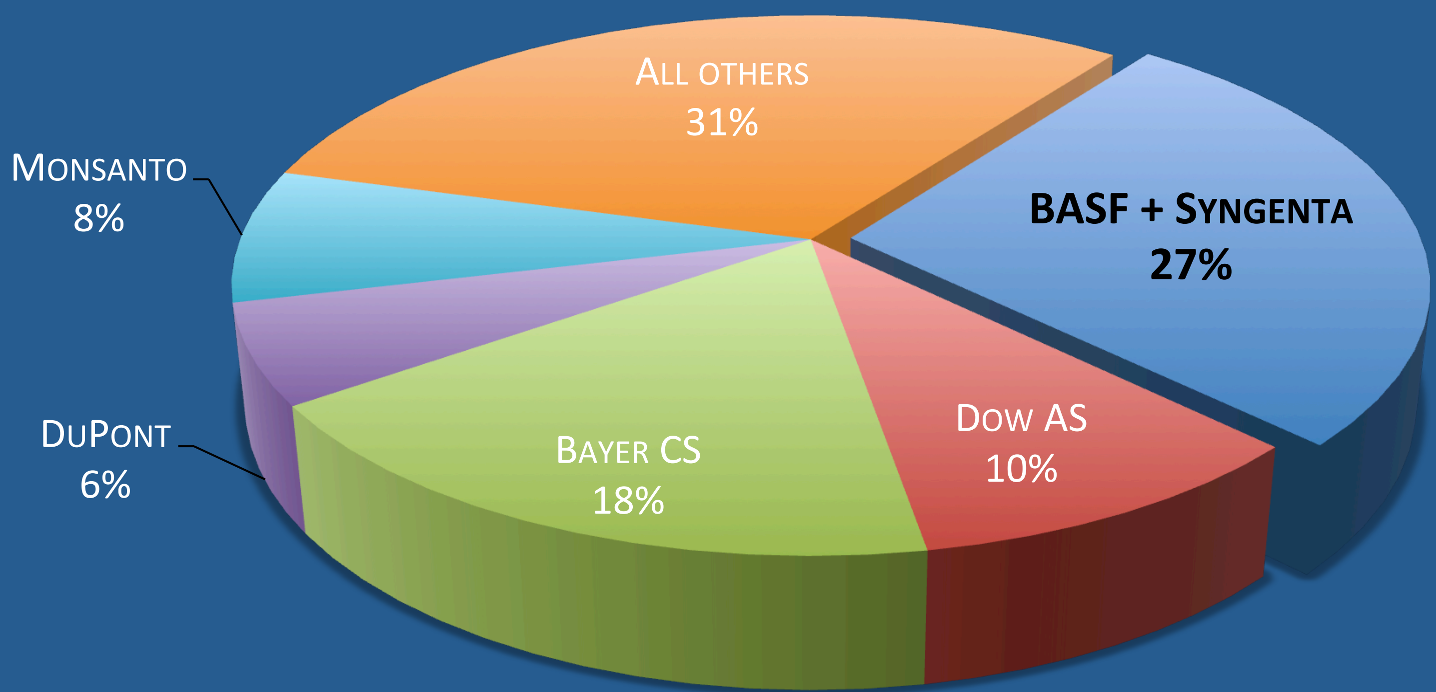
Seed Market Share



Based on 2013 sales

etc GROUP

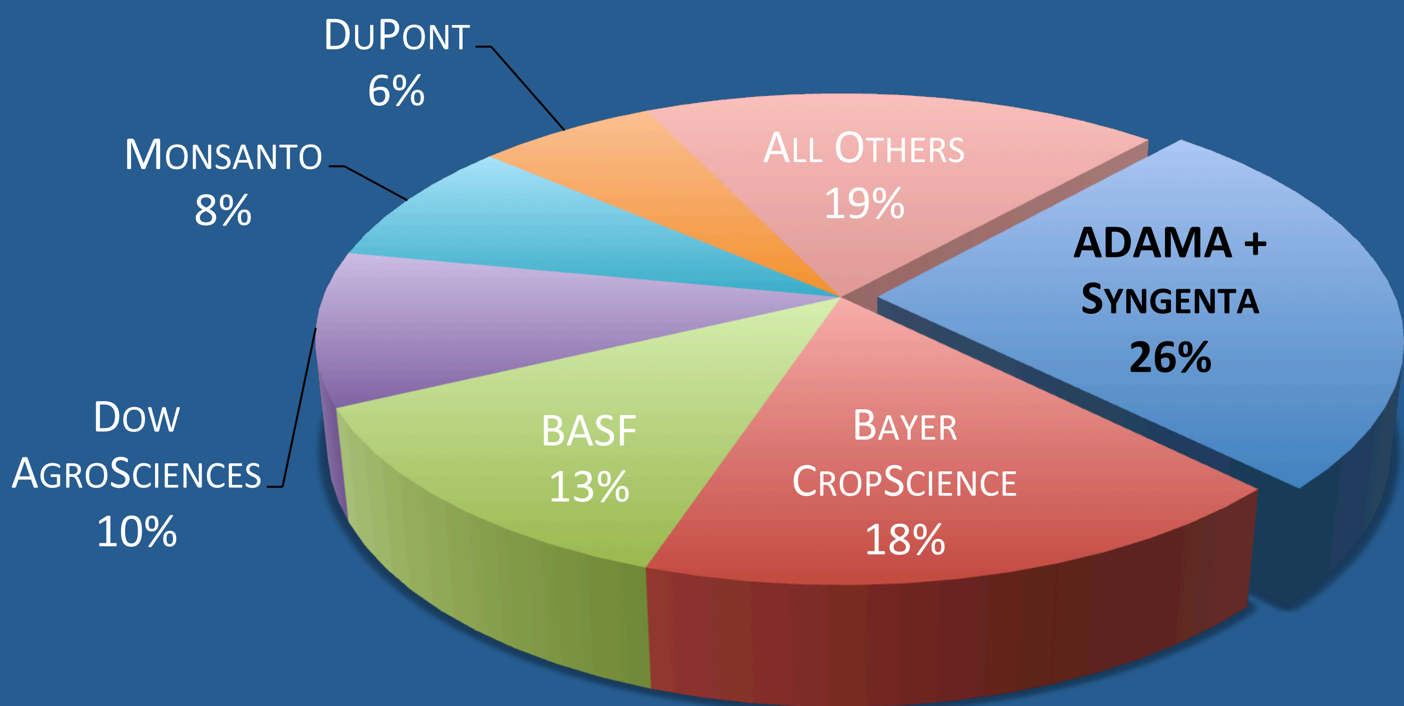
Scenario 2: BASF + Syngenta acquisition with divestment of Syngenta's fungicide business
Global Agrochemical Market Share



Based on 2013 sales

etc GROUP

Scenario 3: ADAMA + Syngenta
with no divestment
Global Agrochemical Market Share



Based on 2013 sales

China's state-owned ADAMA, formerly Makhteshim Agan Industries, is world's seventh largest agrochemical firm.

Not-So-"Smart" Agrochemical Industry: Innovation Stagnates with Increasing Consolidation

- Number of pesticide R&D companies dropped by half between 1995 and 2012.
- Number of active ingredients in the R&D pipeline decreased by 60% between 2000 and 2012.
- Between 1995 and 2005, development costs rose 118%; greatest share spent on preserving sales of old products facing patent expiration.

Source: Phillips McDougall, 2013

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It is more profitable for Big Six companies to apply chemical Band-Aids than develop agronomic solutions to pest, diseases and changing climate.

According to industry estimates:

- It costs $136 million to bring a new GM crop to market – at least 26% of the total cost is regulatory testing and registration.

- The average cost of bringing a single pesticide to market is $256 million. Regulatory share is 35%.

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Regulatory regimes also protect Big Six market dominance.

"The more costly and complex the regulatory process is, the greater the barrier to entry it poses to competing products. Moreover, the obstacle posed by regulatory requirements can consolidate the exclusivity created by patents and other forms of IP. Together they form an IP–regulatory rules complex that companies use to gain and maintain competitive advantage."

- *Nature Biotechnology*, August 2015

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“…what we’re trying to do is create more choice.”

Monsanto President Brett D. Begemann on proposed Syngenta merger, July 2015

Increased choice with agribusiness consolidation?

- 2015 study of five Nordic countries shows *decrease* in number of available cultivars and *end* to plant breeding of regionally relevant crops; shift in focus to crops and hybrids more profitable to companies.

- 2013 study on maize variety availability in Spain, Germany, Austria, Switzerland shows that local seed companies and breeding organisations increase farmers’ choices; multinational breeders offered fewer choices.

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Seed Industry Consolidation and Seed Prices

Farmers pay disproportionately higher prices for seeds as a result of seed industry consolidation and patents:

In the US, from 1990-2010, seed prices spiked higher than any other farm input, more than doubling relative to the price farmers received for their crops. Source: USDA

In the EU, between 2000 and 2008 the prices of seeds and planting stock jumped an average 30%.
Source: Greens / European Free Alliance in the European Parliament

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Anti-Trust Regulators: Under “Cubicle Arrest”

“While the European Commission’s Non-Horizontal Merger Guidelines recognize a potential concern with conglomerate mergers, there is no comparable provision of the U.S. merger guidelines, and no history of conglomerate merger enforcement in the United States in the last forty years.” – *Monsanto White Paper on Proposed Acquisition of Syngenta, June 2015*

China, Brazil, India and Argentina can’t be ignored. Global South companies would be hurt by Ag Mega-Mergers;

on the other hand, a South company could acquire one of the Big Six (e.g., Syngenta, Pioneer) without provoking anti-trust action in the EU or US.

Mega-Mergers increase costs, reduce innovation and cut choices.

What Can Be Done?

Companies with both seed and chemical divisions should be broken up.

Most effective: national level anti-trust review and enforcement, especially in the Global South.

What Can be Done?

- FAO Seed Treaty (ITPGRFA Governing Body) should review consolidation trends and implications for access to and availability of PGR (Rome, 5-9 Oct.)

- UN Committee on World Food Security should launch study of implications of Ag Mega-Mergers for world food security (Rome, 12-15 Oct.)

- UNFCCC 21 should reject so-called Climate Smart Agriculture and examine the impact of consolidation on ag research (Paris, 30 Nov.-11 Dec.)

- UN Biodiversity Convention (CBD) should investigate impacts of Mega-Mergers on biodiversity (Cancún, COP13, 4-17 Dec. 2016)

- Or, UN Secretary-General may invite the CFS to take the lead in an investigation in cooperation with other relevant bodies.

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