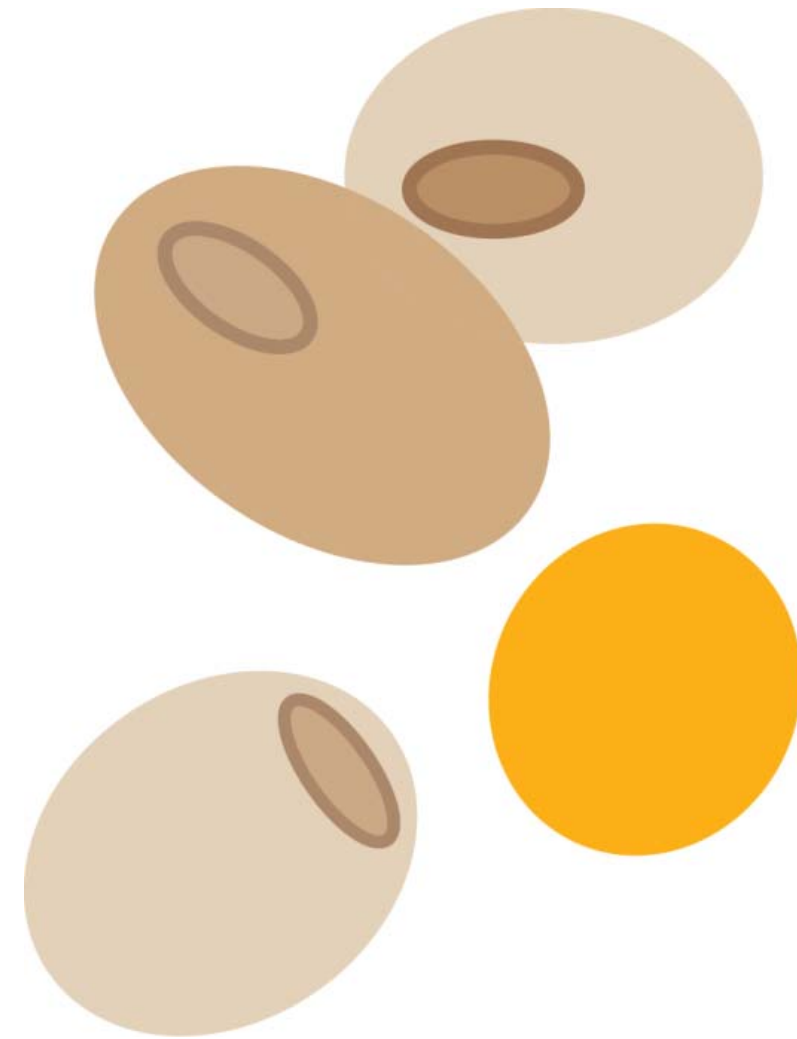

Soybean

Presented by:

Peter Berweger

Global Head Soybean

December 4, 2013



syngenta

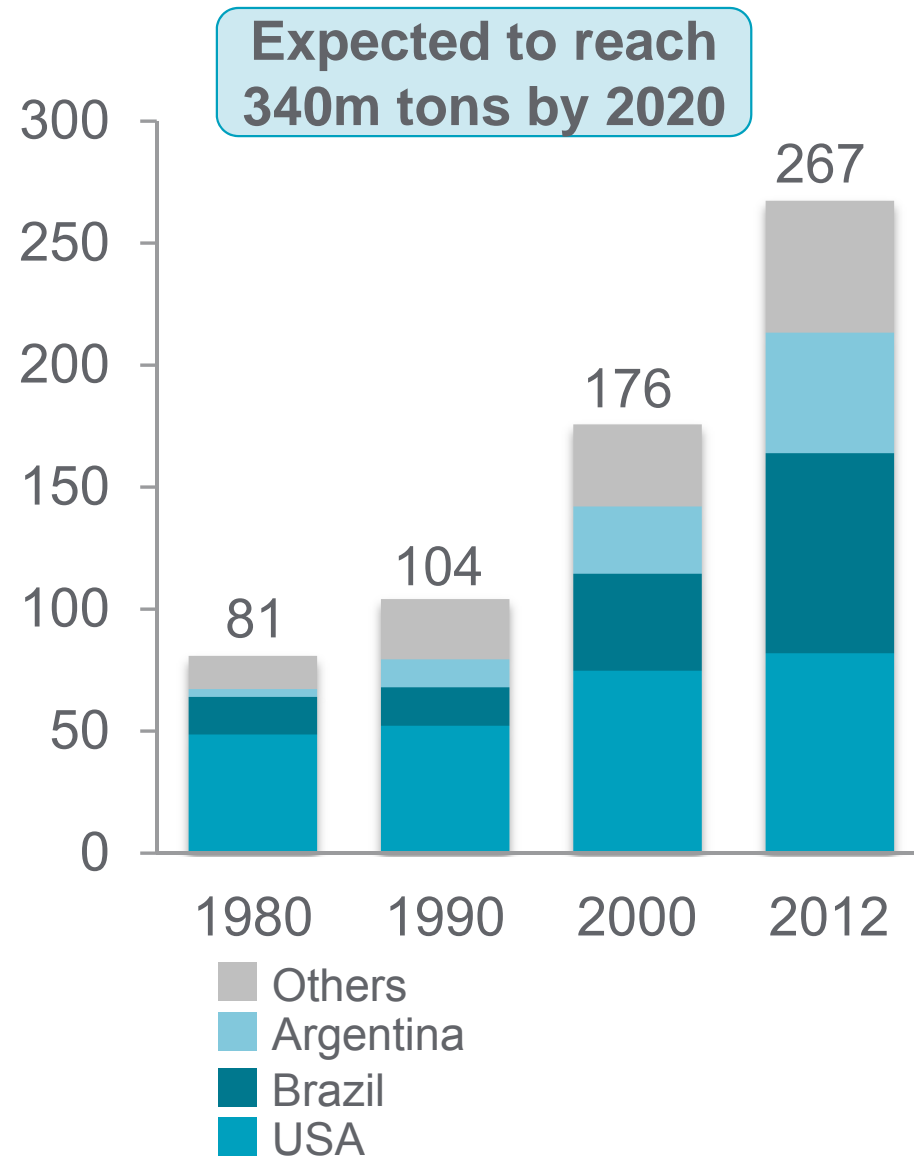
Soybean: most efficient protein source



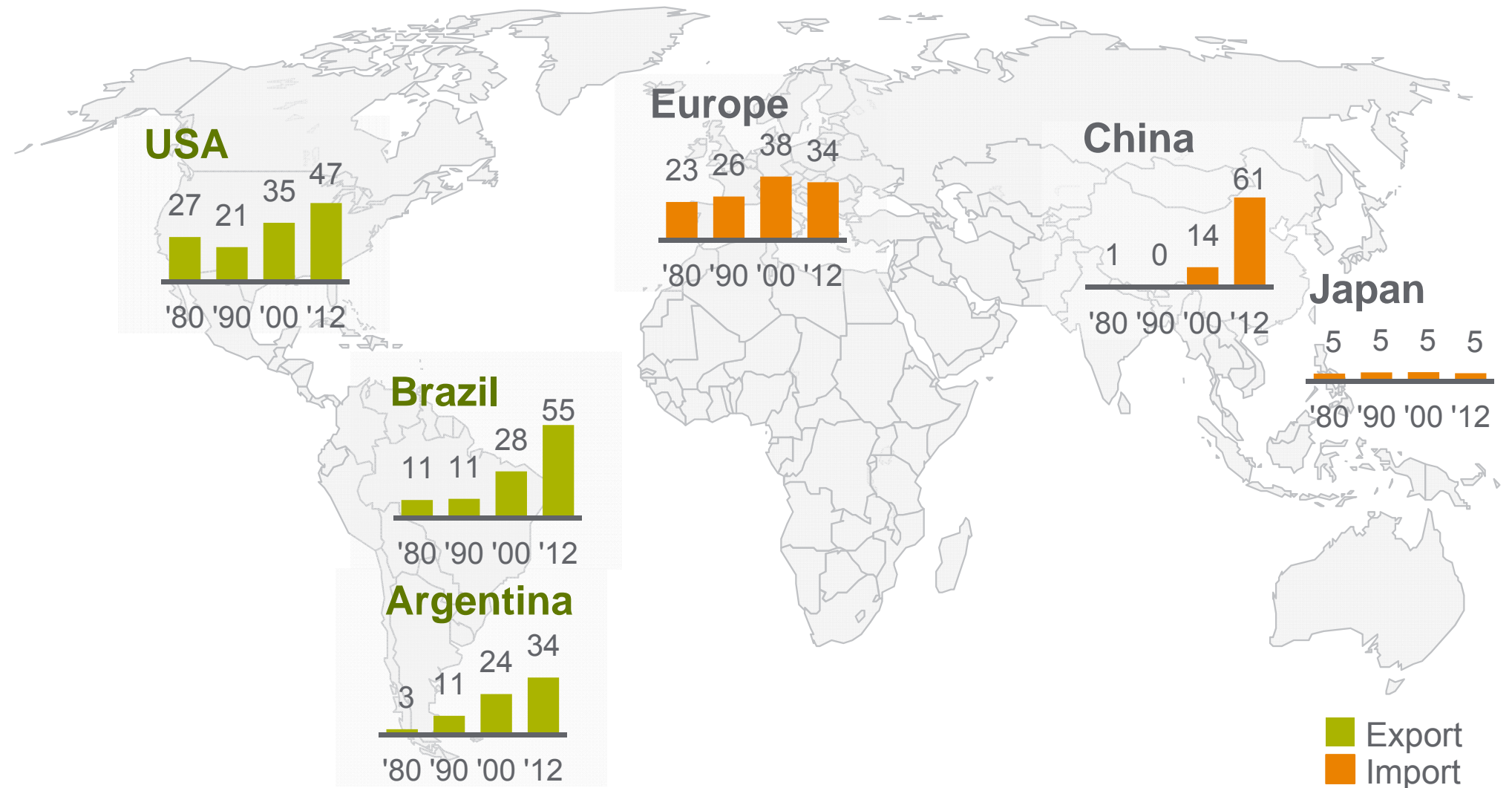
- Soybeans contain ~18% oil and ~38% protein
- Livestock feed for poultry, pork, cattle, fish, pets – more than 95% of soybean meal
- Meal for human consumption: soy milk, soy flour, soy protein, tofu
- Refined oil for cooking
- Oil for biodiesel or industrial uses

Strong soybean demand resulting from population growth, dietary change and biodiesel policies

Global soybean production, Mt



Global soybean trade (grain, meal and oil), Mt

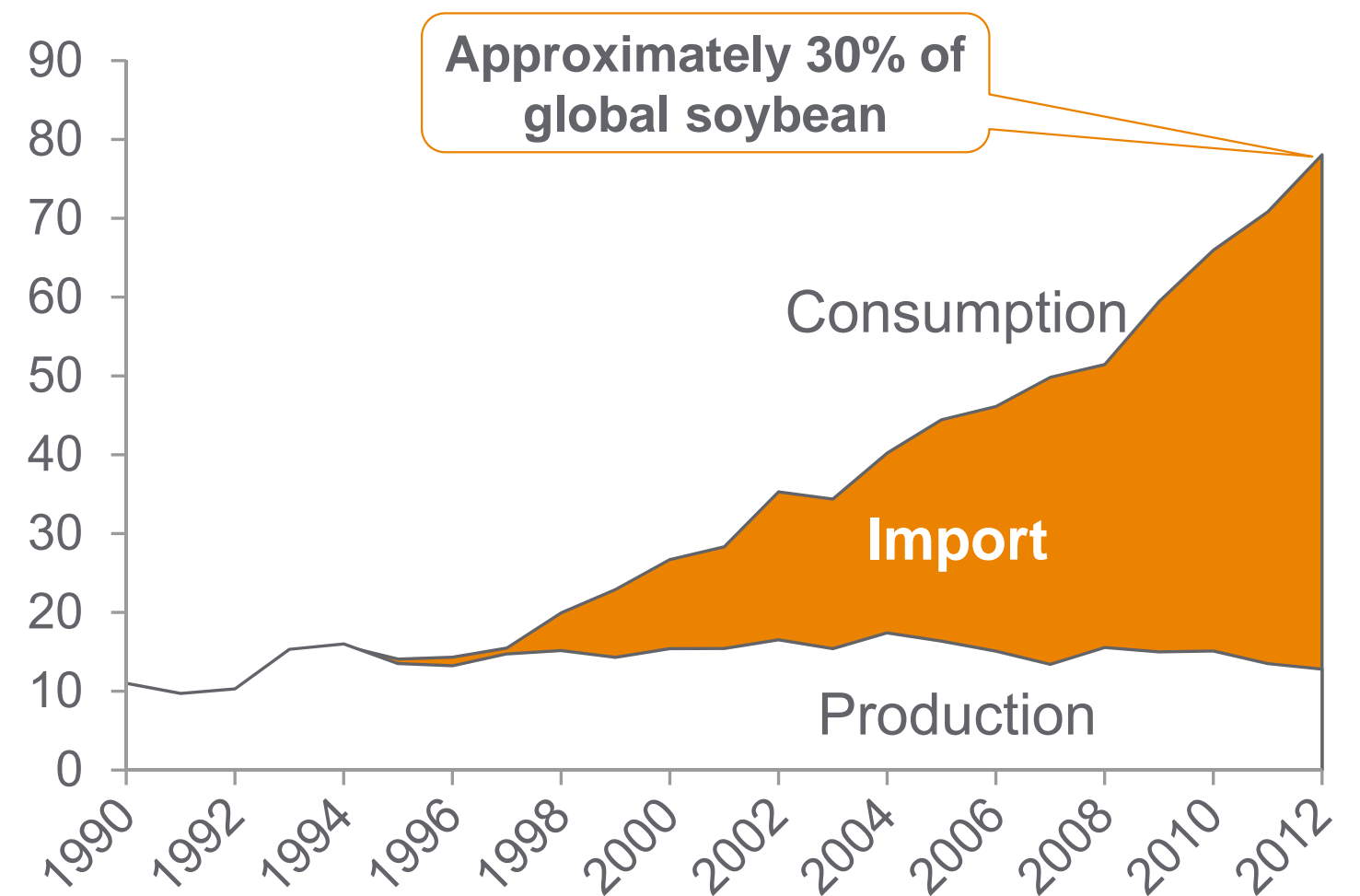


Dietary change in China: use of soybean meal as animal feed has accelerated demand



Source: USDA

China soybean production/consumption, Mt



- Animal feed: pork and poultry
- Nearly half the world's pigs are in China

Soybean offers good ROI for farmers



Angelo Dias Munari – Tupaciguara, MG, Brazil

- Reduced risk, lower investment, better ROI
- High adaptability (better stress tolerance)
- Easy to farm; high mechanization
- Reliable price and liquidity
- Passion for soybean (Brazil)
- Rotation crop (USA)

Grower pain points

Biotic stresses

“We need new products to control rust because fungicides available are **losing efficacy**”

Farmer in Mato Grosso/Brazil

Abiotic tolerance stresses

“It’s important for the crop not to suffer from **drought**. If it is suffering from water stress and then from a pest, it is a disaster”

Farmer in Rio Grande do Sul/Brazil

Sustainability

“**Sustainable technologies**, which are not aggressive to the environment, have to be **adopted**, otherwise sooner or later it will be a problem”

Farmer in Goias/Brazil

Productivity and efficiency

“In leased land, with the current commodity price, soybean **breakeven is 4 t/ha**”

Grower in Pergamino/Argentina

Weed resistance

“Everybody loved GM, decreased herbicide, less work, less people needed, but in 4-5 years, maybe **no herbicide will control weeds in soy**”

Farmer in USA

Logistics

“We use **trucks**, the most expensive means of transportation”

Farmer in Brazil

Source: Kleffmann market research, AACREA

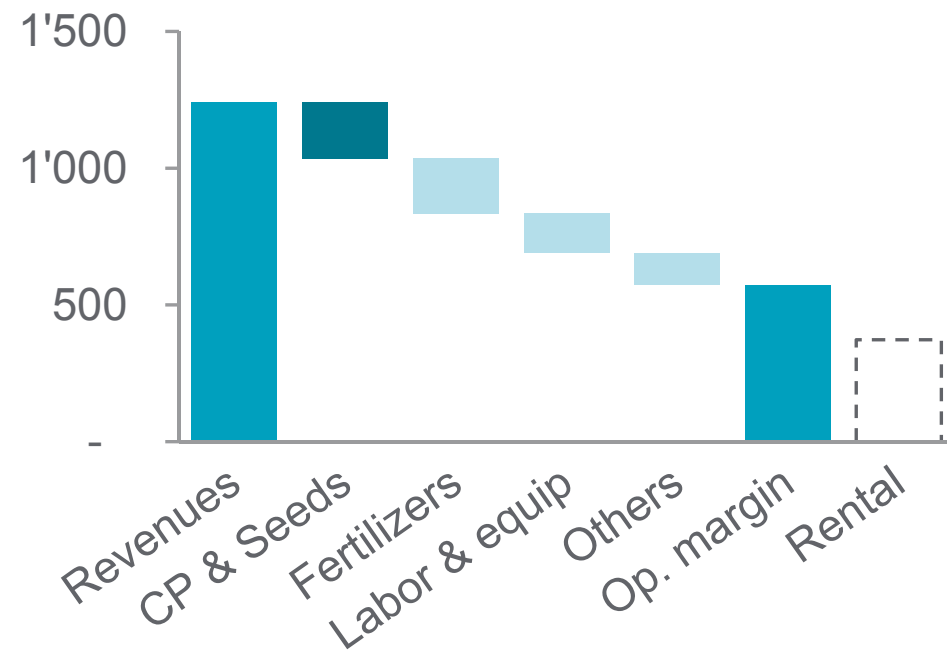
High profitability resulting in increased intensification

Brazil

ROI without rental: 85%

CP&SE as % revenues: 17%

2012: \$/ha

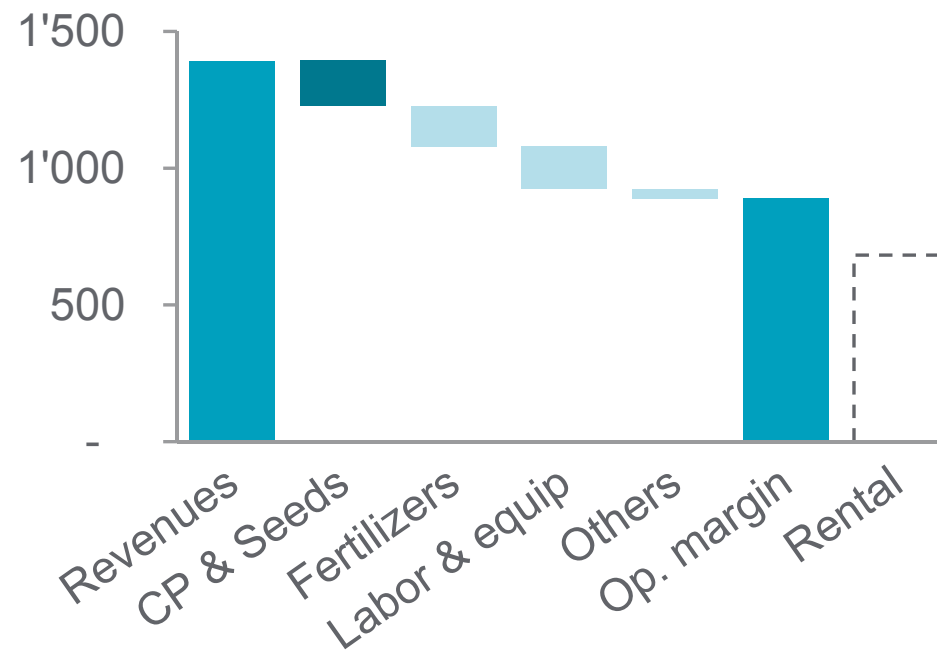


USA

ROI without rental: 178%

CP&SE as % revenues: 12%

2012: \$/ha

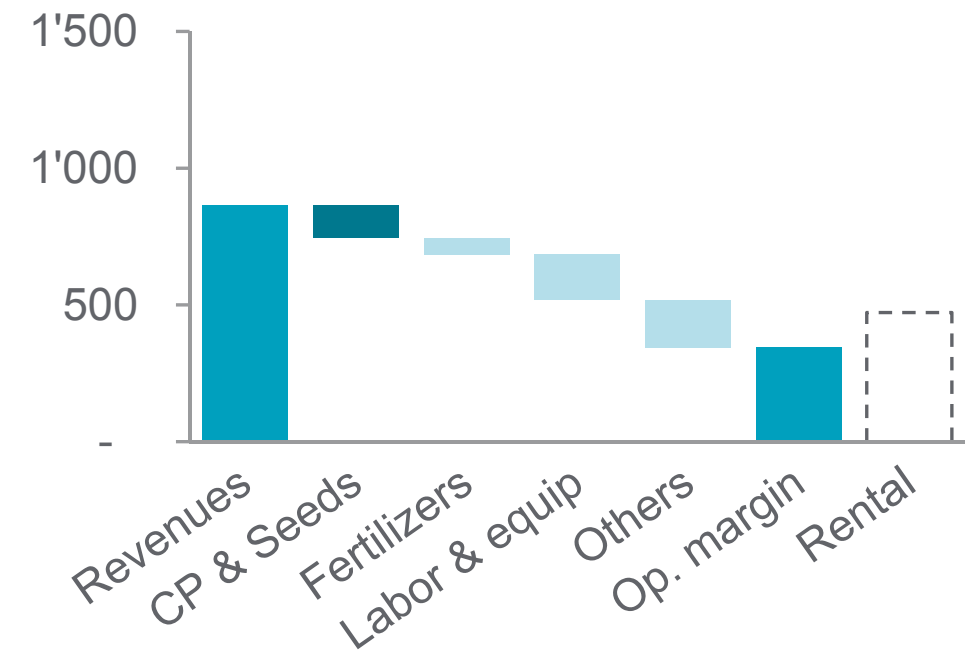


Argentina

ROI without rental: 66%

CP&SE as % revenues: 14%

2012: \$/ha



Soybean CP and Seeds market

2012 CP and Seeds market value: \$13bn



Market expected to grow ~6% p.a. until 2020:

Latam:

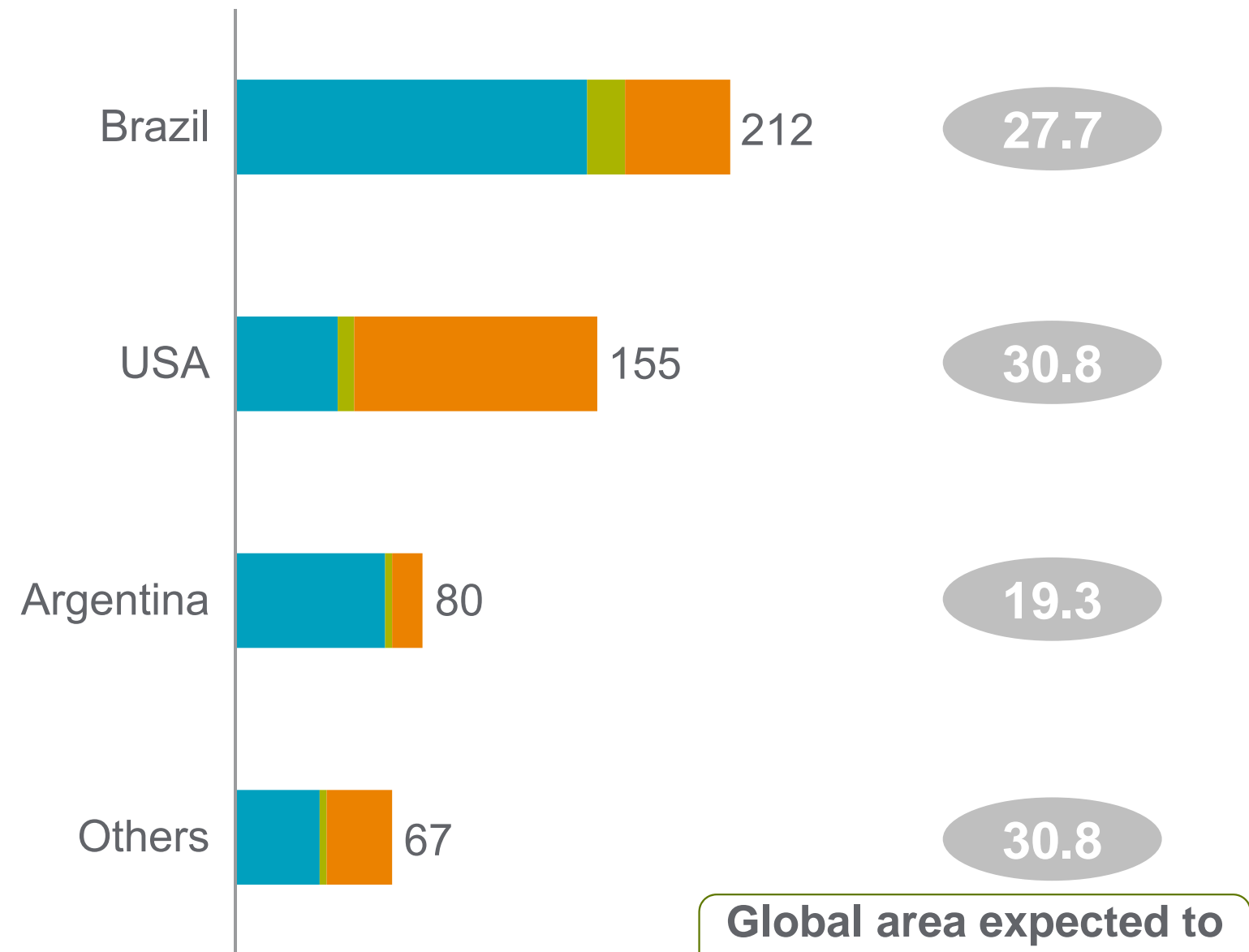
- Land expansion
- Trait value and certified seeds
- Rust resistance and new fungicides
- Insect pressure/resistance

North America and Latam:

- Weed resistance; traits
- Nematicides
- Addressing yield and drought

Spend (\$) per hectare

2012 Area Mha



Global area expected to reach 115 Mha by 2020

Syngenta: complete portfolio in all markets



Pre-plant

Herbicides

- Touchdown®
- Gramocil®
- ZappQI620®

Seeds

- syngenta
- SPS

Seed care

- Cruiser®
- Apron®XL
- Maxim®XL
- Vibrance™
- Avicta®Complete
- Clariva™Complete Beans
- Plenus®

Herbicides

- Fusilade®
- Boundary®
- Sequence®
- Prefix®
- Flexstar®GT3.5
- DualGold®
- Flex®
- Fusiflex®
- Reflex®

Insecticides

- Ampligo®
- Vertimec 8,4 SC
- Curyom®

Fungicides

- Priori Xtra®
- Score®
- Amistar®
- Quadris®
- Quilt Xcel®
- Mazen™
- Elatus™
- ScoreBeta
- Frowncide

Foliar fertilizers

- Quantis

Insecticides

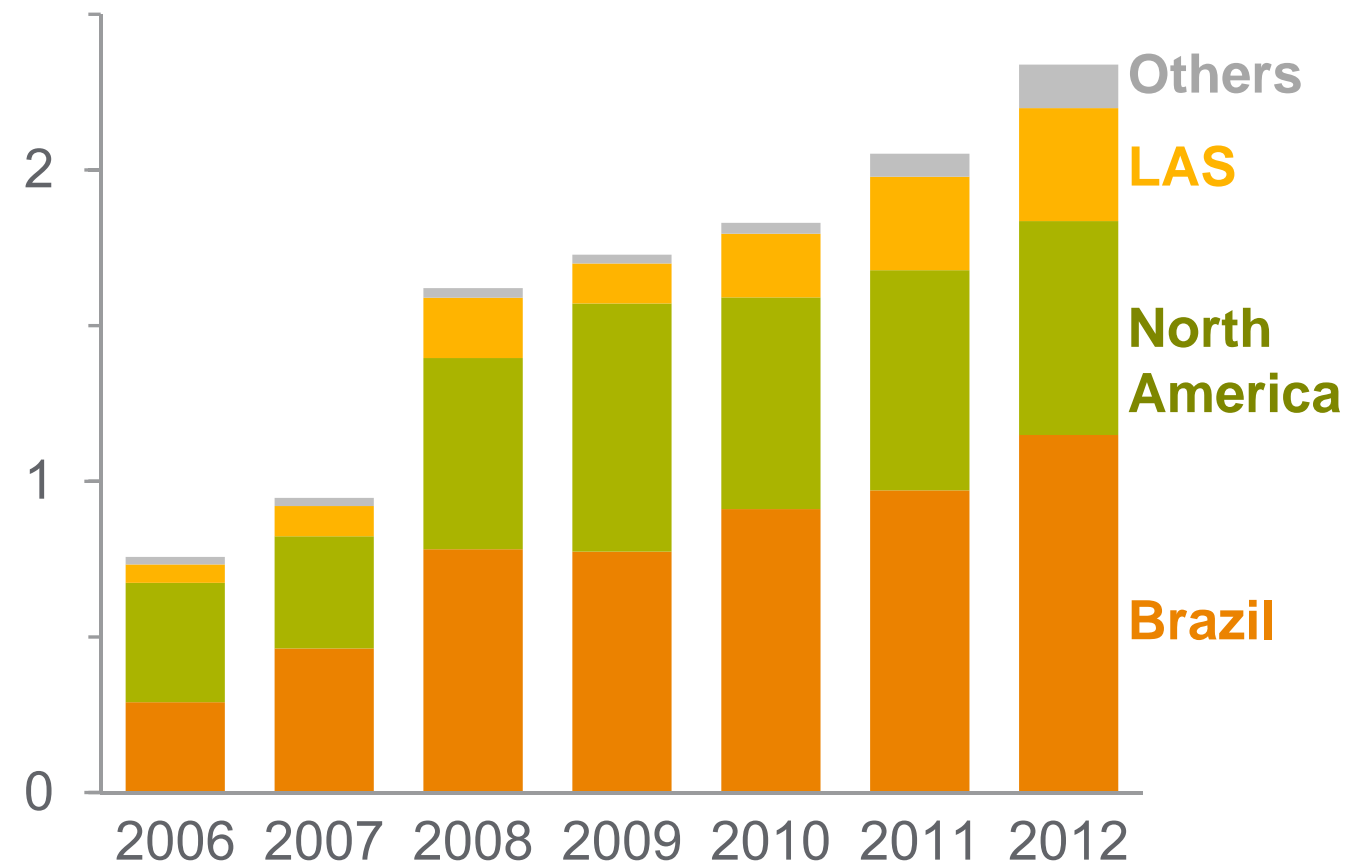
- Engeo®
- Endigo™
- Karate®
con tecnología Zeon
- Warrior II
with Zeon Technology®
- Voliam Flexi®
- Voliam Targo®

Herbicides

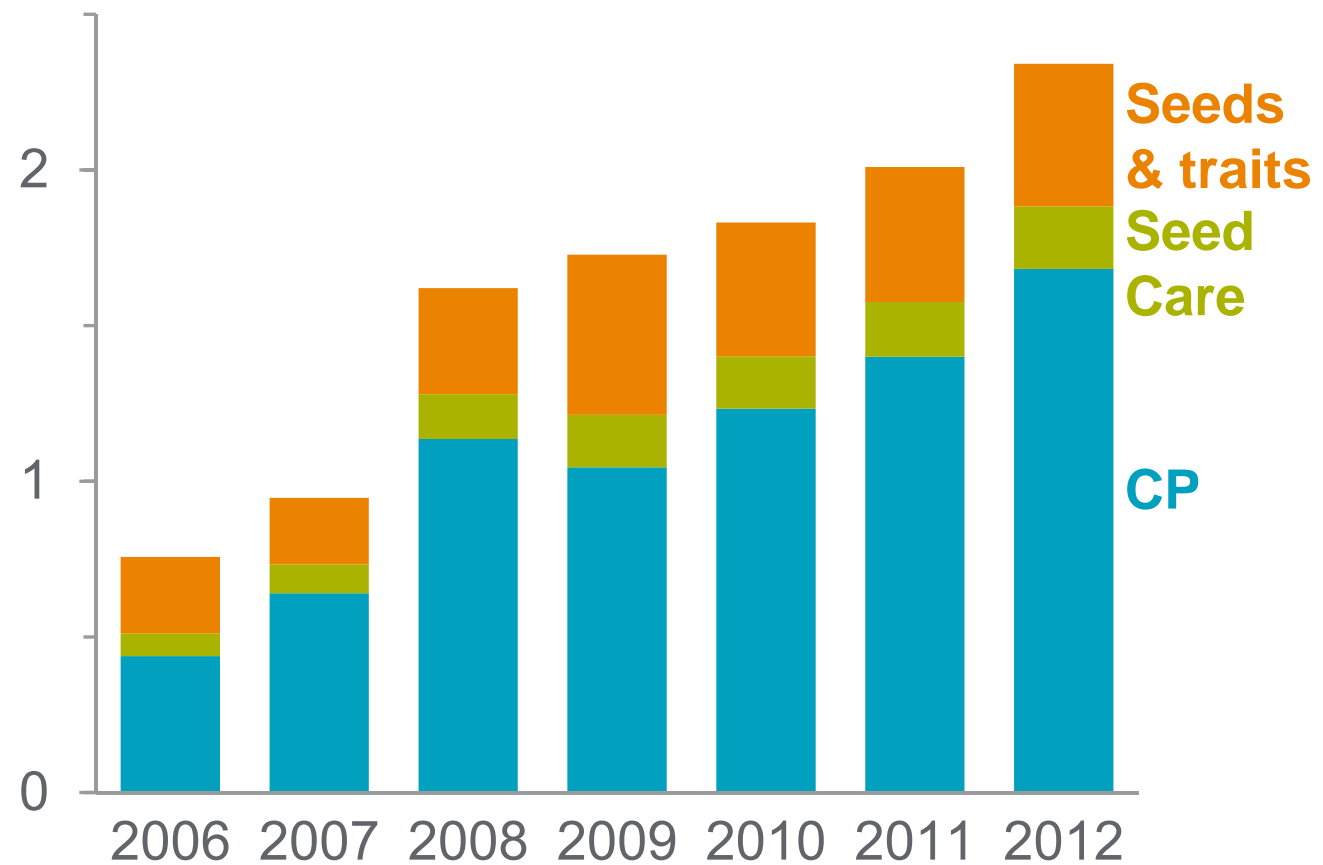
- Reglone®
- Gramoxone®

Broad portfolio across regions

Soybean sales by territory: \$bn



Soybean sales by business: \$bn



Market share

Seeds & traits 9% (#3)
 Seed Care 28% (#1)
 CP 24% (#1)

Soybean three point integrated strategy

New integrated solutions

High yield

Drought stability

Land optimization

Value chain solutions

CP and Seeds portfolio

Plant establishment

Leaf protection

Grain protection

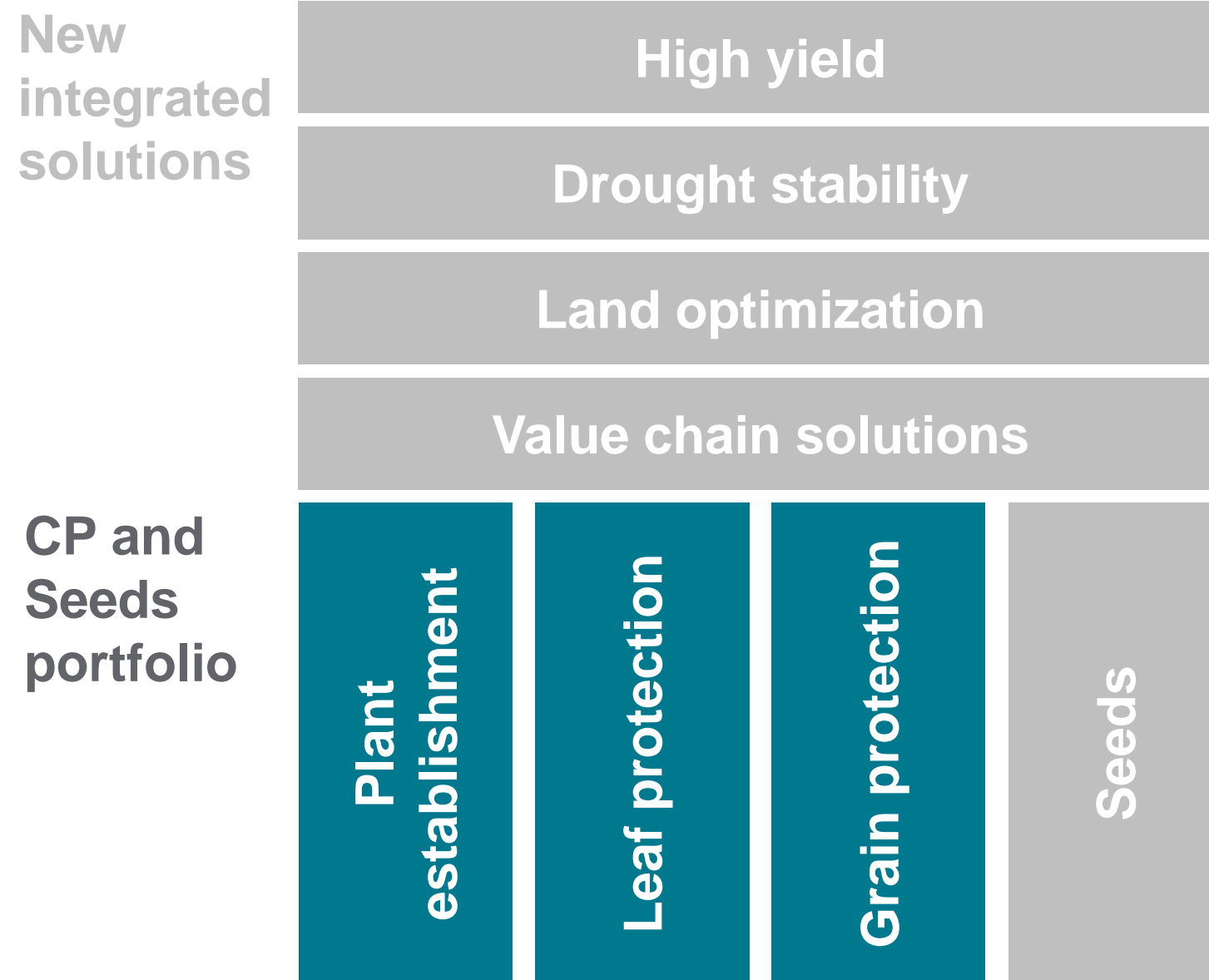
Seeds

Enhance leadership position with portfolio and pipeline

Increase seeds footprint in fastest growing market segment

New integrated solutions to help growers increase yield, productivity and ROI

Strategy: CP and Seeds portfolio



Enhance leadership position with portfolio and pipeline:

- **Plant establishment:** leading SC and herbicide portfolio coupled with sustainable management to *start strong*
- **Leaf protection:** Limiting stress through best weed, insect and disease control to *grow strong*
- **Grain protection:** protecting yield from late-season stresses and harvest losses to *yield strong*

Plant establishment: nematode control

Shift in virulence of nematodes requires additional tools ...


... Syngenta providing broad spectrum, full season control



- >\$3 billion production lost per year
- 'Resistance breakdown' of native traits

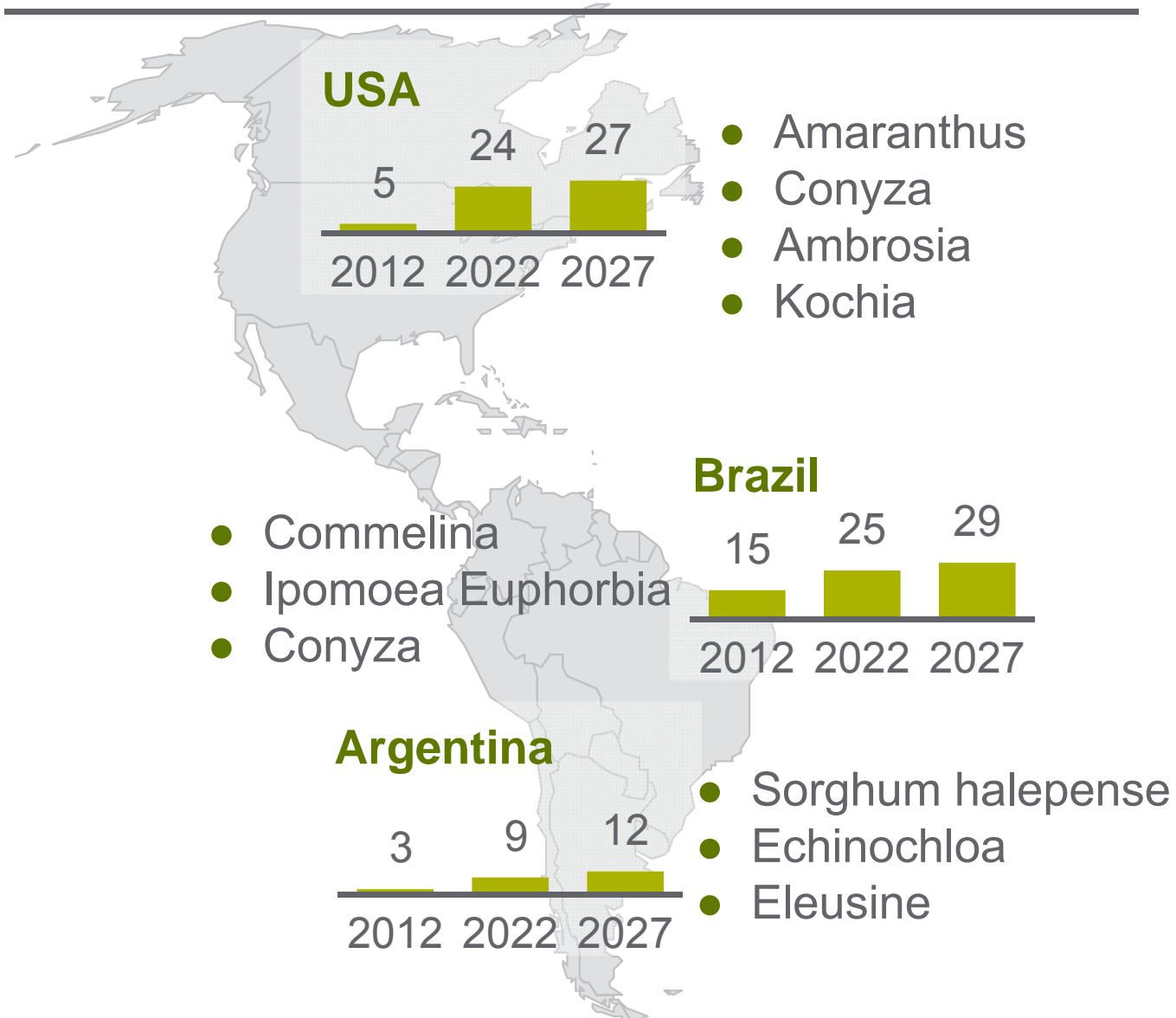
 varieties with novel resistance genes

 broad spectrum, non-cyst focus

 cyst nematodes edge
Bio-nematicide from Pasteuria Bioscience, Inc.

Plant establishment: early season weed management to avoid resistance

Glyphosate weed resistance Mha resistant weeds



Syngenta solution

Non-selective herbicides for pre-plant burn down Selective herbicides with residual in pre-emergence/early-post



- | | | |
|------------|----------------|-----------|
| Touchdown® | Boundary® | Reflex® |
| Gramocil® | Sequence® | Flex® |
| ZappQI620® | Prefix® | Fusilade® |
| | Flexstar®GT3.5 | |

Leaf protection: SOLATENOL™ a potential future blockbuster



- Rust can devastate the crop (Brazil, Paraguay, Bolivia)
- Resistance development: more and more sprays needed

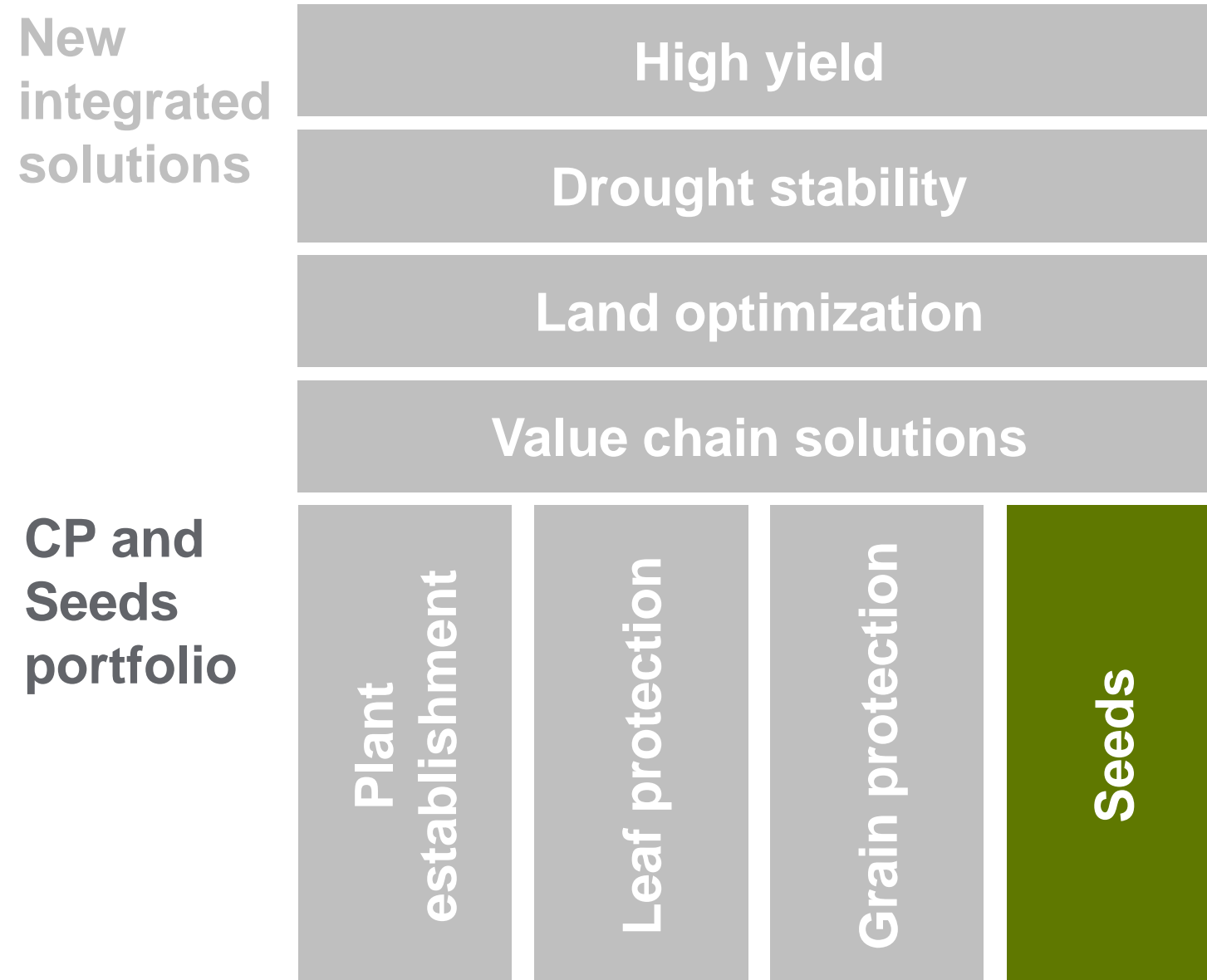
- Syngenta is market leader in rust control
- SOLATENOL™: next generation SDHI
- Step change in rust control:
 - longer spray intervals
 - higher yields
- SOLATENOL™ will further enhance leadership position



Standard



Increase seeds footprint in fastest growing market segment



- **Invest in Seeds R&D and maximize efficiencies:**
 - expand breeding programs to all relevant markets; outperform with genetic gain
 - use of technologies (markers, prediction models etc)
 - new native traits
 - novel mathematics for decision-making and optimization
 - GM traits
- **Leverage CP position**
- **Accelerate market access (eg business models Brazil, USA)**
- **Integrate high-yielding solutions**

Seeds: Syngenta expanding portfolio in Brazil

**SEMENTES DE SOJA DA SYNGENTA.
AS ÚNICAS COM DUPLA RENTABILIDADE:
PRECOCIDADE COM MÁXIMO
POTENCIAL PRODUTIVO.**



a sinalização de trânsito.

First Syngenta variety for maturity group 8, largest segment in Brazil, launched in 2013

Seeds: new business model to accelerate position in Brazil

Licensing business



- Varieties out-licensed to multipliers
- Produced and sold by multipliers: low risk, lower profit for Syngenta
- Low seed care penetration



IBP (Integrated Business Partner)

- Switching licensing business to Syngenta brand
- Multipliers (now IBP) become Syngenta distributors to their customers
- IBPs also produce seeds for Syngenta channels

Branded business



- Branded seeds through Syngenta channels
- Outsourced production
- Higher margin
- High seed care penetration



Seeds: three strong routes to market in the USA

Retail

WINFIELD
SOLUTIONS



People...Products...Knowledge..



Crop
Production
Services 

 **GROWMARK**

- Micro-marketing and segmentation to prioritize local opportunities
- Ease of doing business (simplified programs, system improvements)

Dealer



- Upgrade dealer effectiveness and coverage, seed-focused sales force
- Building one national brand and professional approach to market

Licensing and distribution



- Launching new route to market: GreenLeaf Genetics
- Builds on success in corn with same customer base

Strategy in new integrated solutions

New integrated solutions

High yield

Drought stability

Land optimization

Value chain solutions

CP and Seeds portfolio

Plant establishment

Leaf protection

Grain protection

Seeds

Solutions to help growers increase yield, productivity and ROI

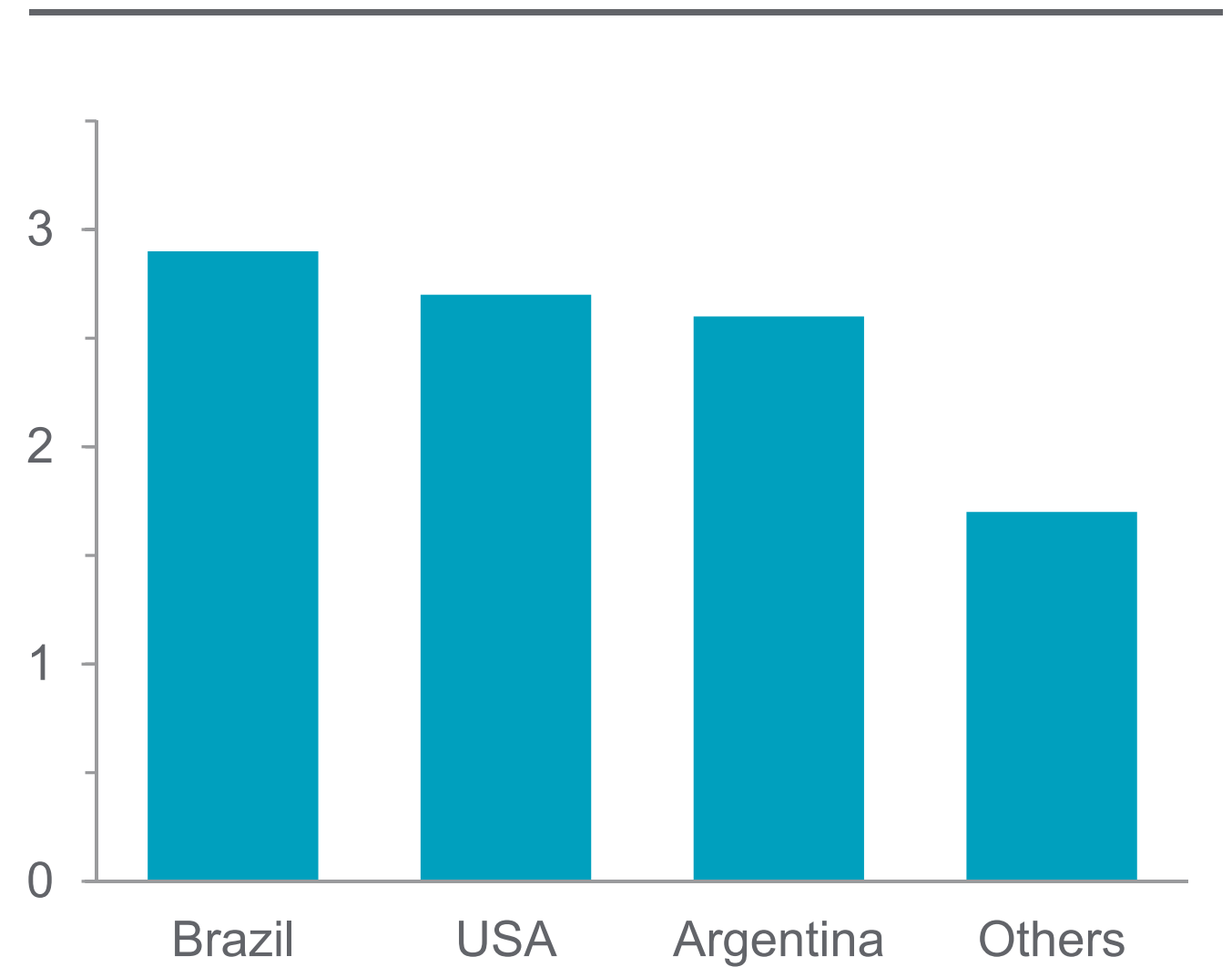
- **High yield:** lead intensification, creating customized high-yielding offers at scale
- **Drought stability:** drought tolerant genetics, stress related crop enhancement, financial services to reduce yield volatility impact
- **Land optimization:** agronomic solutions, improve farm productivity and ROA; double cropping systems
- **Value chain:** capture value in food chain, connect industry and grower

High yield solution: huge potential for maximization

Highest yield in Brazil 2012 (yield contest)



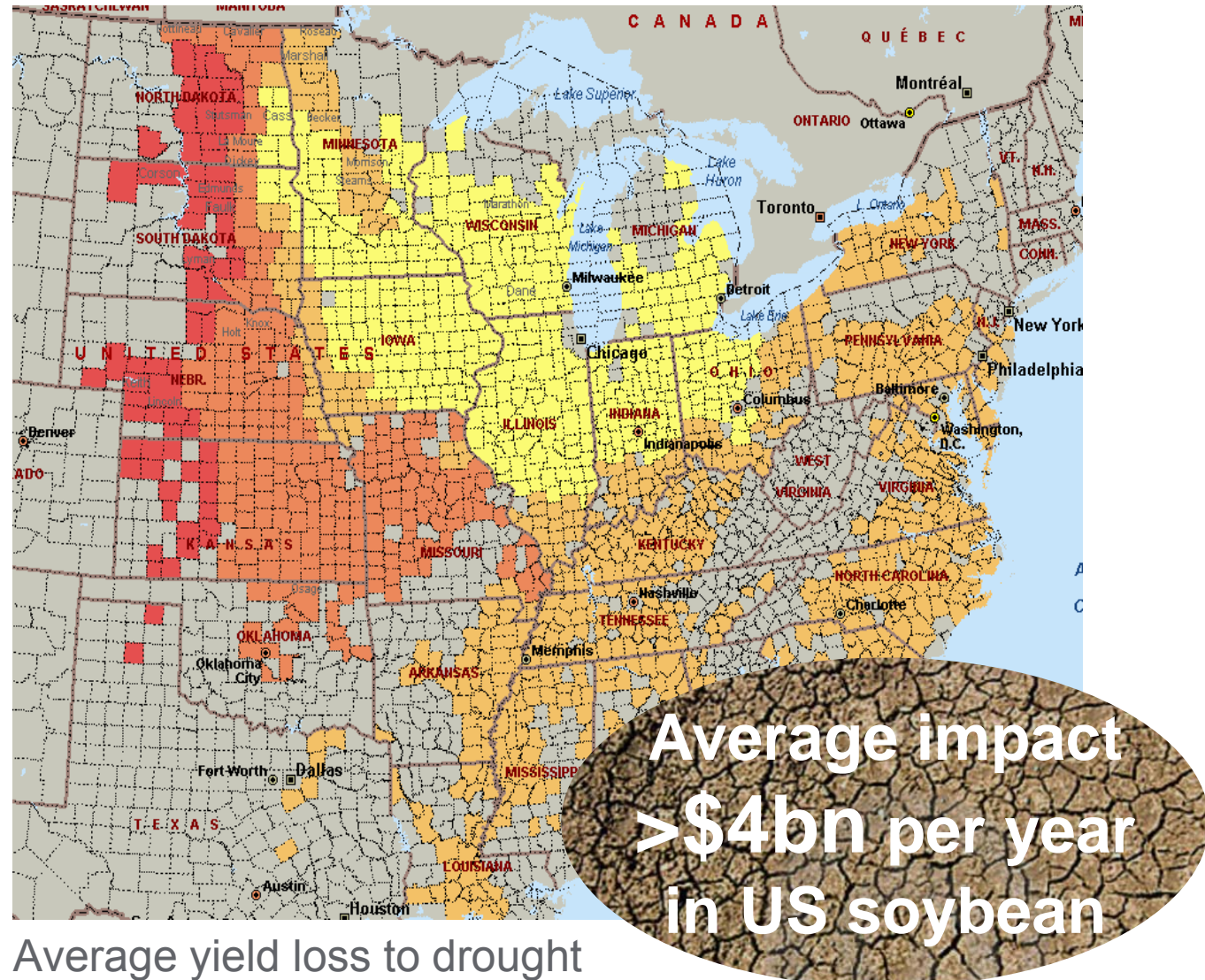
Average yield 2012: t/ha



Source: CESB, USDA

Photo: Hugo Harada, Gazeta do Povo

Drought stability: reducing yield volatility impact



Average yield loss to drought

- <10%
- 10-30%
- 30-50%
- >50%

- **Stress tolerant genetics**
More yield than standard genetics in stress conditions
- **Crop enhancers**
Crop Protection and PGRs to promote root health and improve root/leaf ratio
- **Adapt agronomic practices**
Prepare plant to overcome water deficit and avoid flowering and pod development in critical periods
- **Protect with yield assurance**
Improved insurance offer to protect grower in extreme conditions

Land optimization: optimize grower ROA in a sustainable way creating different double cropping options



“Our goal: to plant short-cycle, have a good harvest, and then plant winter corn. Soy is very important to us, the way it allows two different crops in our area.”

Grower in Cerrado/Brazil

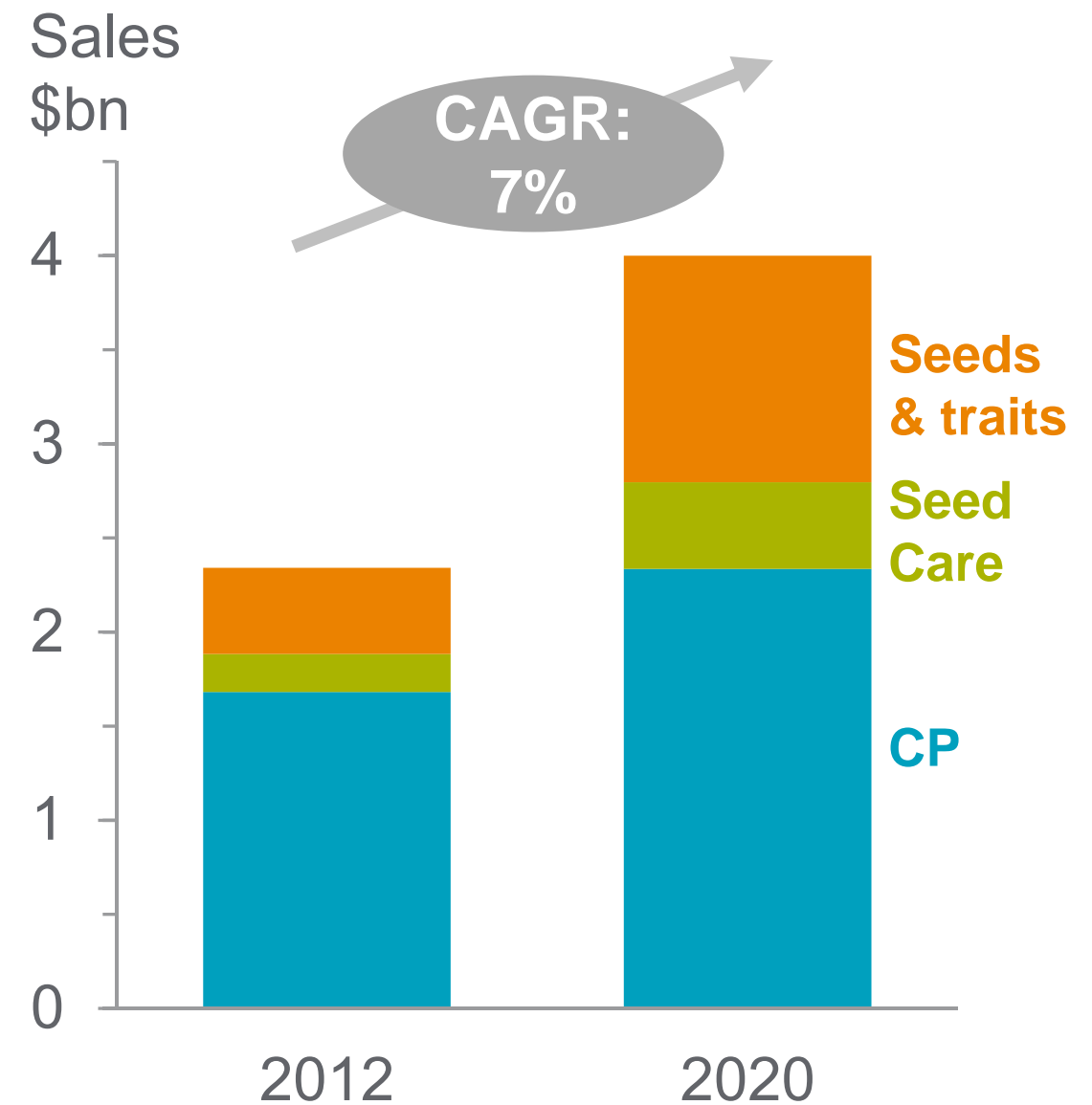
Photo: Leomar José Mees

Sales projection

Enhanced leadership position with portfolio and pipeline

Expansion of seeds footprint: improved genetic gain, traits, new business models

New integrated solutions to address unmet needs



Soybean value creation horizons

- Integrated solutions
- Seeds
- Crop protection

2012 sales: \$2.3bn

2015 sales: ~\$3.0bn

2020 sales: ~\$4.0bn

- High yield solution, including foliar fertilizer QUANTIS
- Elite varieties with market leading traits, including GENUITY ROUNDUP READY 2 YIELD in North America and INTACTA RR2 PRO in LATAM
- Market leading soybean rust control: PRIORIXTRA, AMISTAR, ELATUS
- Broad portfolio for insect control: ENGEO, AMPLIGO, CURYOM, WARRIOR, ENDIGO
- Broad portfolio for weed resistance and early season control: FLEXSTAR, PREFIX, SEQUENCE, FUSILADE, BOUNDARY
- High performance seed care: CRUISER, AVICTA, VIBRANCE, CLARIVA

- Expand high yield solution, land optimization, rust integrated solution
- Integrated nematode solution, including CLARIVA and multiple resistance genes
- ESWM and ROUNDUP READY XTEND in North America
- Improved genetics, including improved resistance for nematode, SDS, drought, IDC
- Improved control of late cycle diseases and Sclerotinia

- Multiple herbicide modes of action
- Stress tolerant genetics, drought solution
- New GM: IR, rust, nematode
- Improved control of pests, rust, grasses



syngenta

Bringing plant potential to life