

The Changing Climate for Oats

A European Perspective

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AOWC, 14th July 2014





Drink Canada Dry







Senova

- Private seed company.
- Global oat positioning through IBERS.
- In licence to the UK market.
- Private and commercial trials.
- Production, marketing & sales.
- IP management.





Senova activities



Breeding & crop development – private/official trials, R & D projects, quality and end market potential.

Seed production & processing



Royalty area and end-point contracts for oats

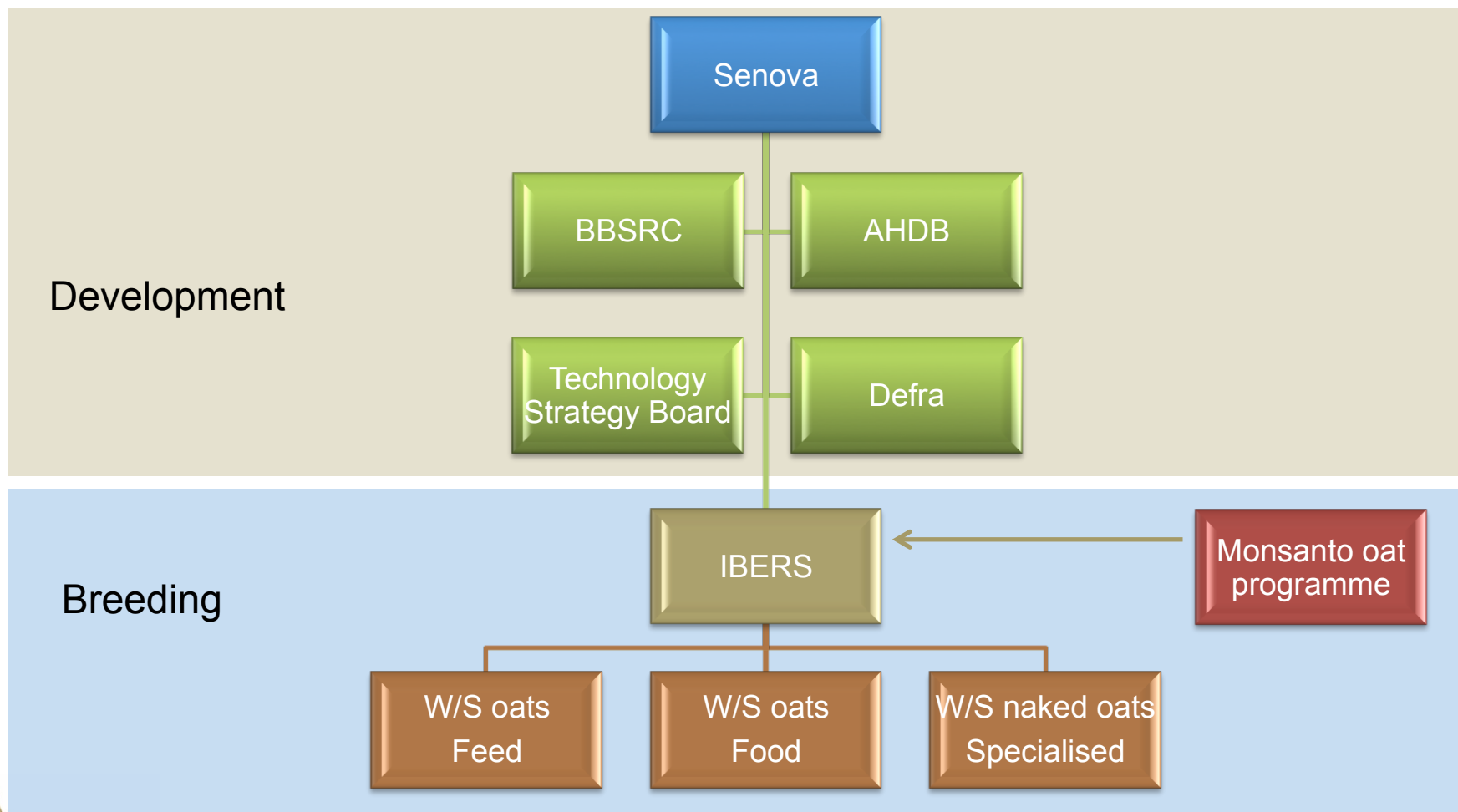


Marketing & promotion





Oat development





Oat Projects



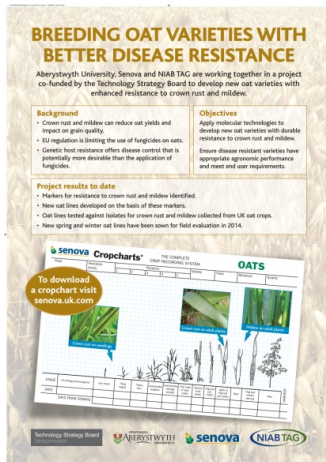
www.QUOATS.ORG

HARNESSING NEW TECHNOLOGIES FOR SUSTAINABLE OAT PRODUCTION AND UTILISATION



Technology Strategy Board
Driving Innovation

- Quoats - Defra Link (£5 million)
- TSB – Crown rust and mildew
- BBSRC – di-haploid
- TSB – Feed (ENDEVOR)
- TSB – 2 pending





Senova – ‘The Oat House’



Breeding

Trials and agronomy

Seed production

Marketing and IP





Senova Oat Goal

“Through innovation, knowledge and collaboration increase the value and uptake of oats”.



The challenges



↑
Less land

↑
Less water

↑
Climate
change

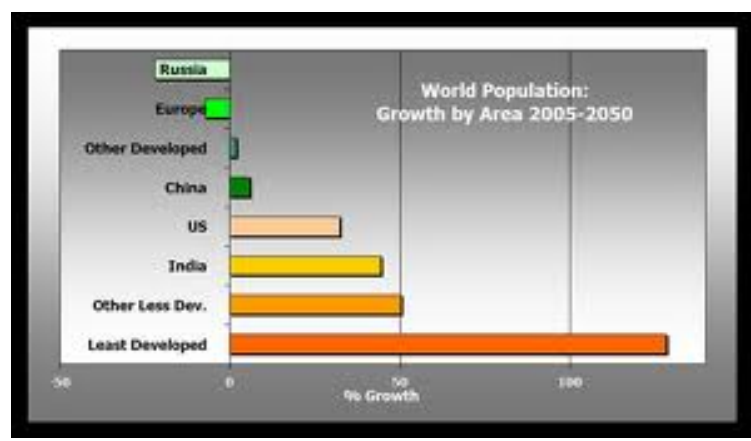
↑
Less
resources

↑
Population
growth

↑
Social
unrest



Agriculture now on political agendas





Oats – a crop in decline?

Global

1960 = 56 million tonnes

2013 = 24 million tonnes

Europe

2004 = 3.3 million hectares

2014 = 2.6 million hectares





Forces

Technical

- Adoption of technologies hybrids, di-haploid, GM ?
- Narrow diversity
- Reduced public funding
- Lack of agrochemicals
- Knowledge gap

Competitiveness

- Lack of markets
- Reduced crop profitability
- Cheaper feed grains
- Market polarisation
- Loss of critical mass (skills etc)

Economic

- Diminishing returns
- Increased costs
- Rationalisation
- Higher market risks
- Smaller market
- Cropping simplification



European oat prospects

– areas generally lower but potentially higher carry-over stocks?

Production (thousand tonnes)

| Ireland | |
|---------|-------|
| 13/14 | 14/15 |
| 179 | 164 |

| Sweden | |
|--------|-------|
| 13/14 | 14/15 |
| 858 | 666 |

| Finland | |
|---------|-------|
| 13/14 | 14/15 |
| 1,229 | 1,139 |

| Germany | |
|---------|-------|
| 13/14 | 14/15 |
| 604 | 648 |

| France | |
|--------|-------|
| 13/14 | 14/15 |
| 431 | 466 |



| Spain | |
|-------|-------|
| 13/14 | 14/15 |
| 962 | 735 |

| Poland | |
|--------|-------|
| 13/14 | 14/15 |
| 1,225 | 1,220 |

| United States | |
|---------------|-------|
| 13/14 | 14/15 |
| 956 | 1,000 |

| Canada | |
|--------|-------|
| 13/14 | 14/15 |
| 3,888 | 3,300 |

| Australia | |
|-----------|-------|
| 13/14 | 14/15 |
| 1,326 | 1,150 |



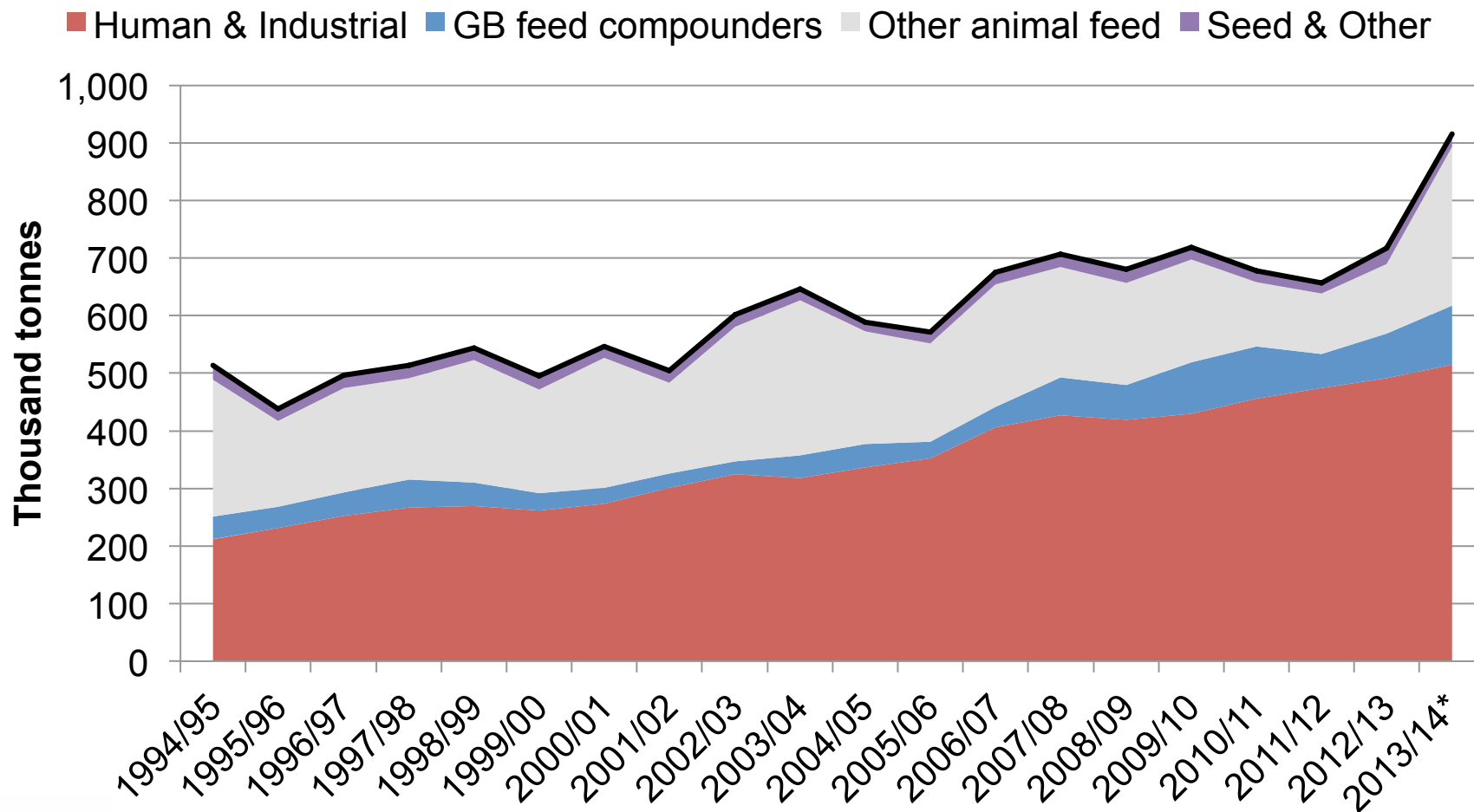
Source: International Grains Council, Agricultural Ministries





UK demand

– higher animal feed demand key to balancing large crop



* total season forecasts except GB feed compounders, data to end April-14 (102Kt)

Source: Defra



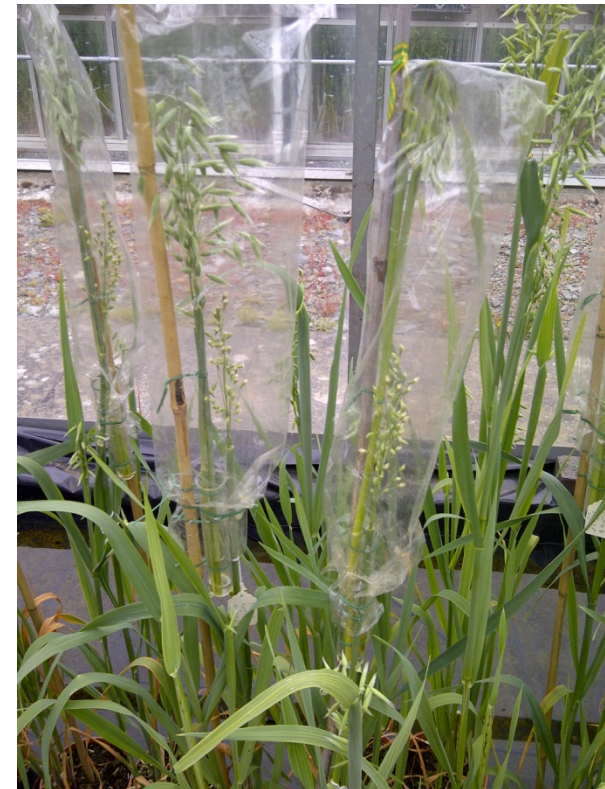


EU Oat Breeding

In the UK, new variety development
~ £2 million.

European oat royalty £22 million.

‘Sustaining’ 20 active EU oat
breeding programmes.





Economic Sustainability

- 4 member states with active oat programmes.
- Collectively these have 150,000 hectares of oats.
- Gross royalty = €0.5 million



Are these programmes sustainable?



Plant breeding

- harnessing resources and knowledge to deliver improvements



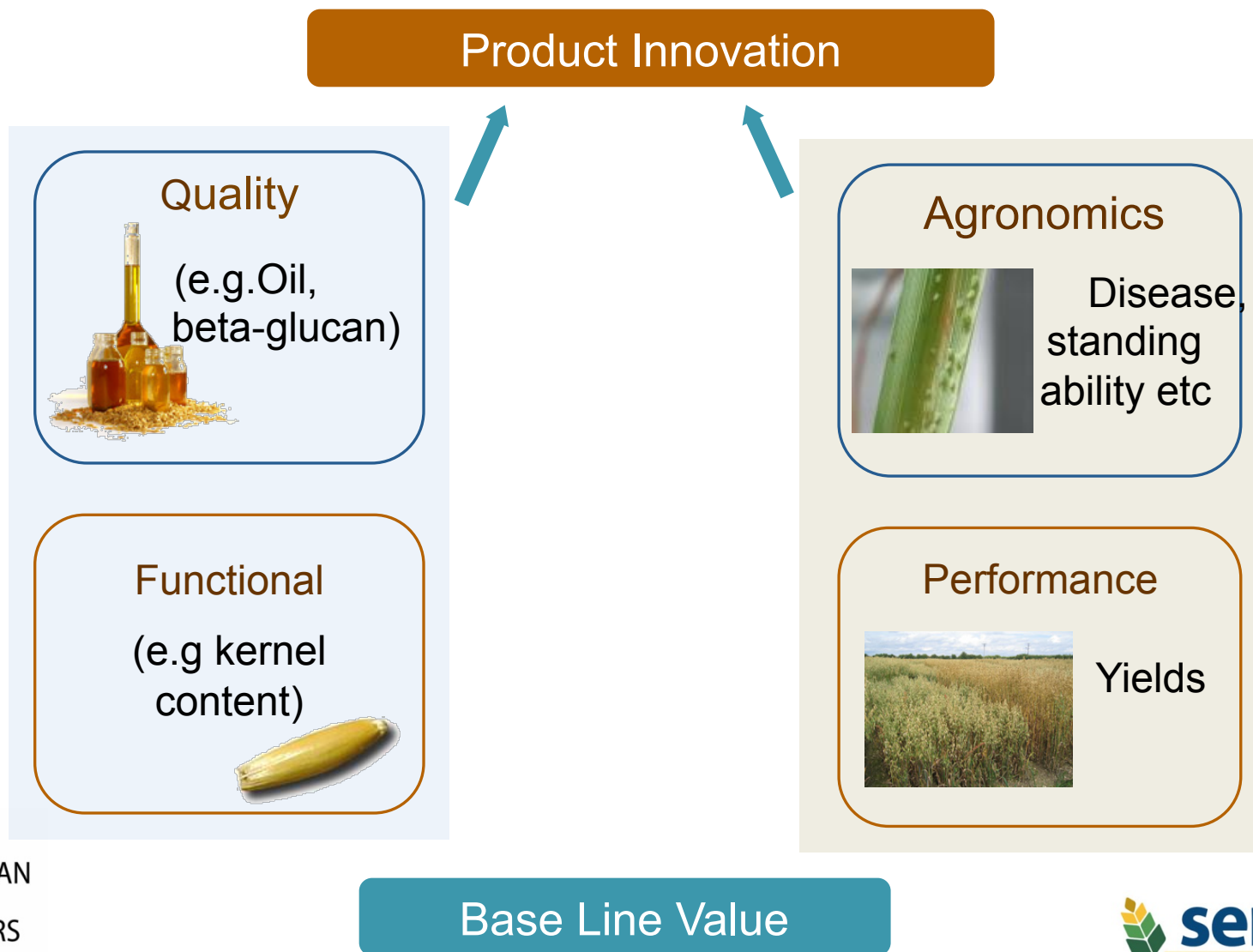
Improve growing cost efficiency
– main benefit is with the grower



Quality & market attributes benefit the processor or end user



Where can we add value?



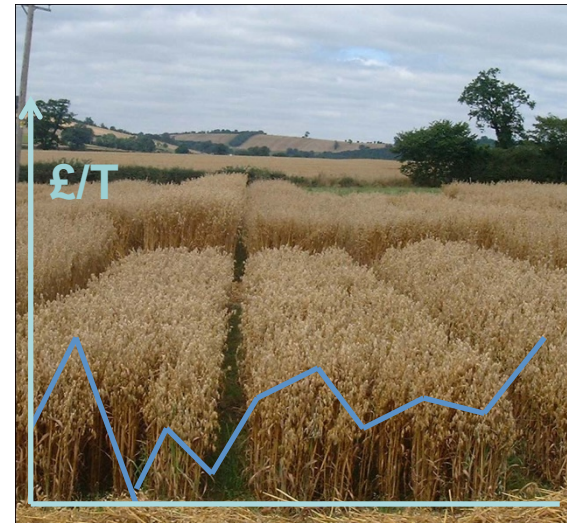


Value adding – field or market



Farm Yield


X



Market Price



Margin



Adding yield – adding value?

Winter oat “Eureka” 5% higher yield

Farm yield = 8 tonnes / ha

Extra yield = 400kg

Extra value @ £120/T = £48/Ha

1 tonne of seed sows 6.5 Ha

1 tonne Eureka seed adds £312 – added value

Plant royalty typically = £70/tonne





Adding quality – Adding value ?



4% beta-glucan (minimum)
78g or 3 bowls of oatmeal



6% beta-glucan (minimum)
52g or 2 bowls of oatmeal



8% beta-glucan (minimum)
39g or 1.5 bowls of oatmeal



Capturing value – continuing challenge

Value is added through genetic improvement.

The problem for the plant breeding industry is how to recover a share for the financial gain.



So what have we got wrong?



Intellectual Property

Patents

PBR

Knowledge





Challenges

Our industry can deliver genetic improvements...

..but holistically we appear unable to secure adequate returns against the financial gains of others.

...we need to reappraise our approach





3 pillars to improve agricultural productivity



Genetics



Environment



Management

CRITICAL



Key to success

And to sustain programmes ...

We need to have a more transparent value to the improvement which comes from our genetic investment delivering.



Challenges – Diminishing markets

Mitigation Strategy

Strengthen spring oat programme

Revitalise old markets - feed

Explore new markets – AD (and overseas aid)

Prospect new territories – NA, SA

Refine breeding targets

Alliance (Tactical, strategic)

Sharing resources (talent)



Challenges

– Diminishing revenues / value

Mitigation Strategy

Adaptive and appropriate IP modules (hybrids?)

Value streams – short chain production

Rebuilt economic models (PEF / LCA)

Attract inward investment – public, private

Contract breeding

Enhance brand equity (oatlay, avenola)



Challenges

– Retaining crop competitiveness

Mitigation Strategy

Harness new technologies

Greater understanding of crop physiology

Improved knowledge transfer

Benchmarking

Promote biodiversity

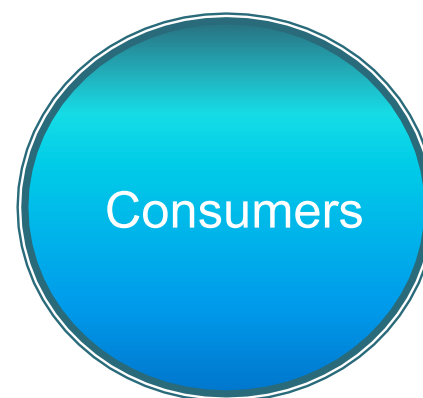
Contracts



Bridging the value gap



**G
R
O
W
E
R
S**



Value integration



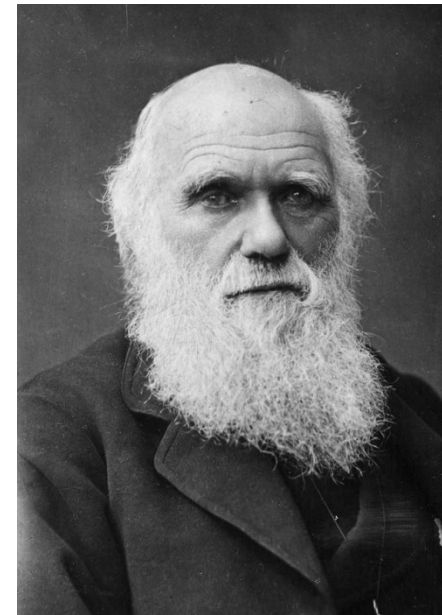
Thank you





“It is not the strongest of the species that survives, nor the most intelligent that survives. It is the one that is the most adaptable to change”.

Charles Darwin





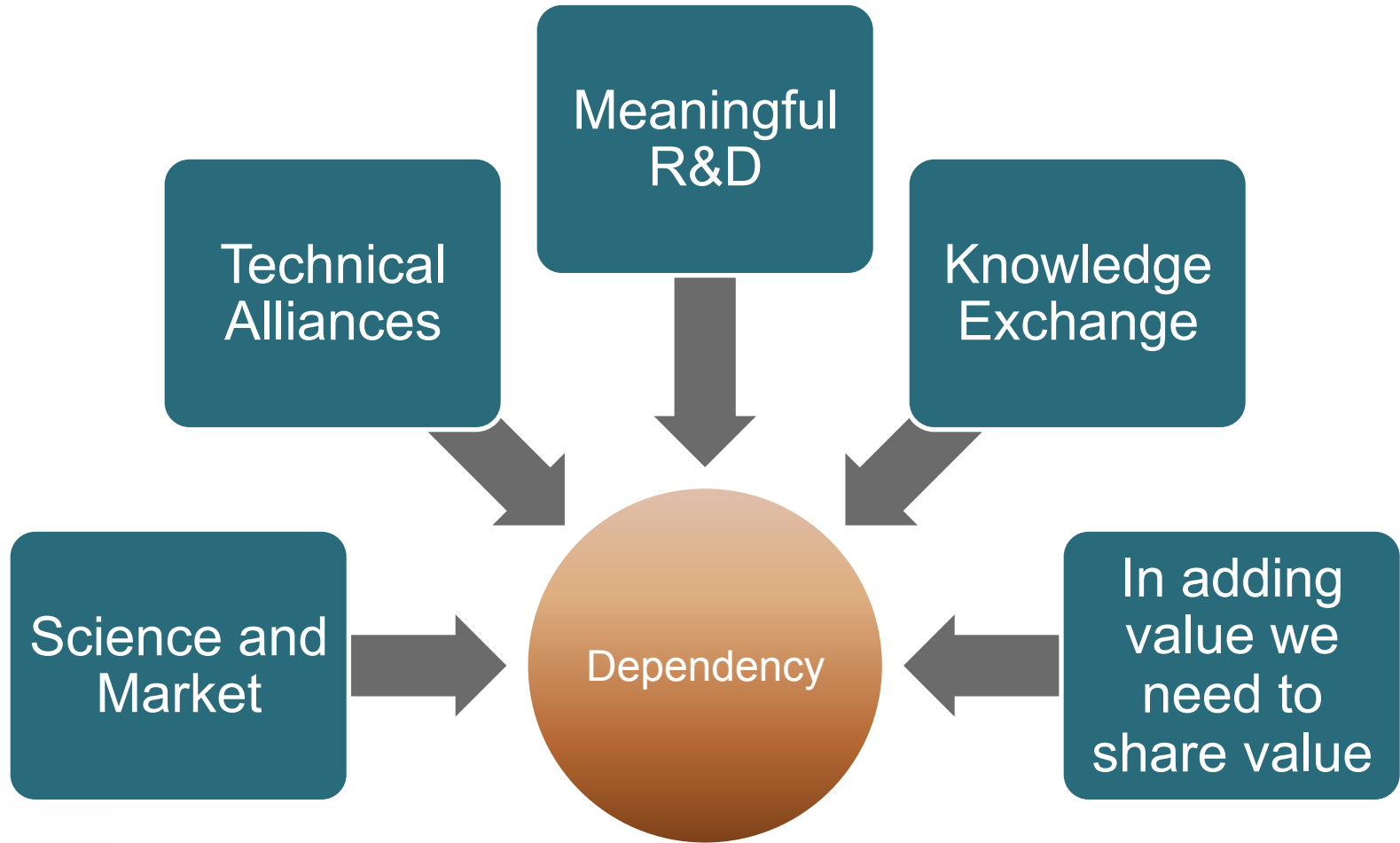
Tomorrow's future
is being bred
today.

We are all part of
that future.





We are all interdependent





Plant breeding is not about producing better seed, it is about producing better crops.

