



# Webinar 3: Economics and Policy in Agricultural Science

# Economics and Policy in the New Specification

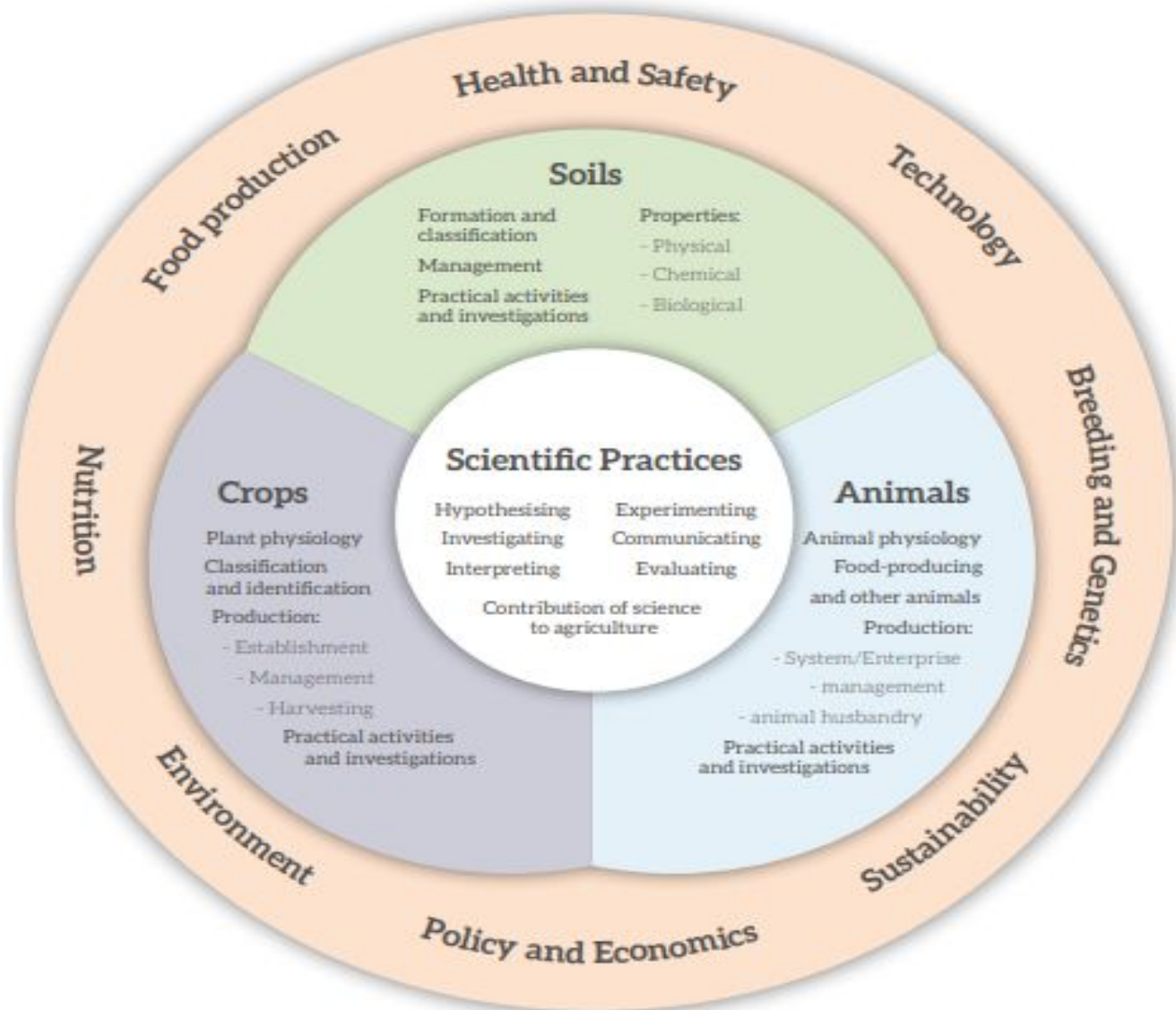


Figure 4: Structure of the specification

## Economics and Policy in the Agricultural Science Specification:

- Learning Outcomes
- Cross-cutting themes

# Economics and Policy in the New Specification

## Economics and Policy In the Learning Outcomes:

- **4.3.1 (b)** Recognise the importance of market trends and requirements, including value-added/niche markets/artisan produce/export markets
- **4.3.1 (c)** Use secondary data to discuss the impact of milk quality on milk price
- **4.3.1 (d)** Appreciate the impact on farm economics of different animal production systems
- **4.3.2 (a)** Ensuring quality, safe and traceable food for the consumer
- **4.3.2 (b)** Appreciate the role of policies related to traceability and animal welfare, and their connection with the food-supply chain
- **4.3 (k)** Appreciate the challenges of sustainable intensification



# Importance of Scientific Practices in Economics

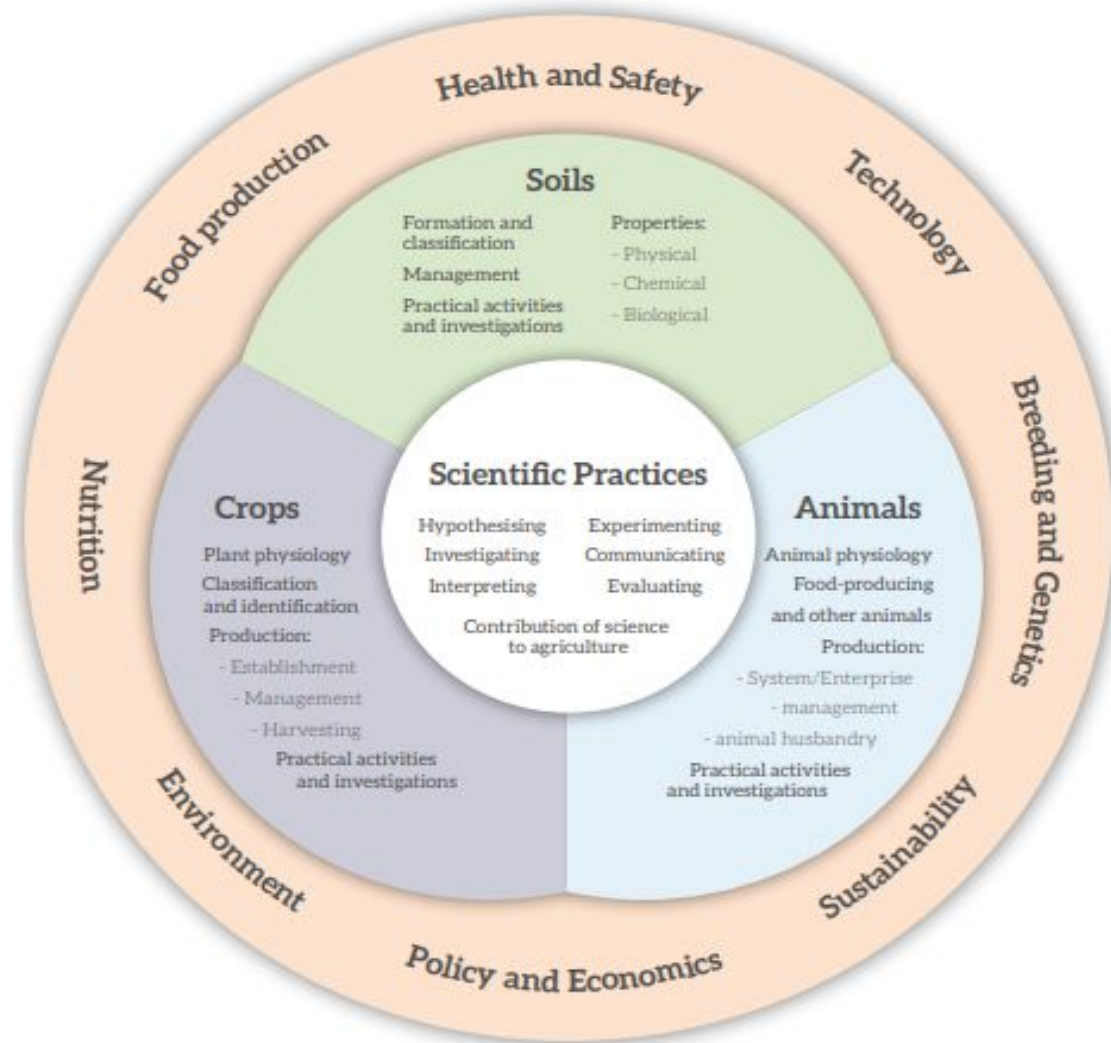


Figure 4: Structure of the specification

- **1.2 (c)** Collect, organise, interpret, present and analyse primary and secondary data
- **1.2 (d)** Describe relationships (qualitatively and/or quantitatively) between sets of data
- **1.3 (c)** Make judgements and draw informed conclusions arising from the result of the investigation—their own and those of others— and consider the reliability and validity of data

# Farm Financials



**Shane Whelan**

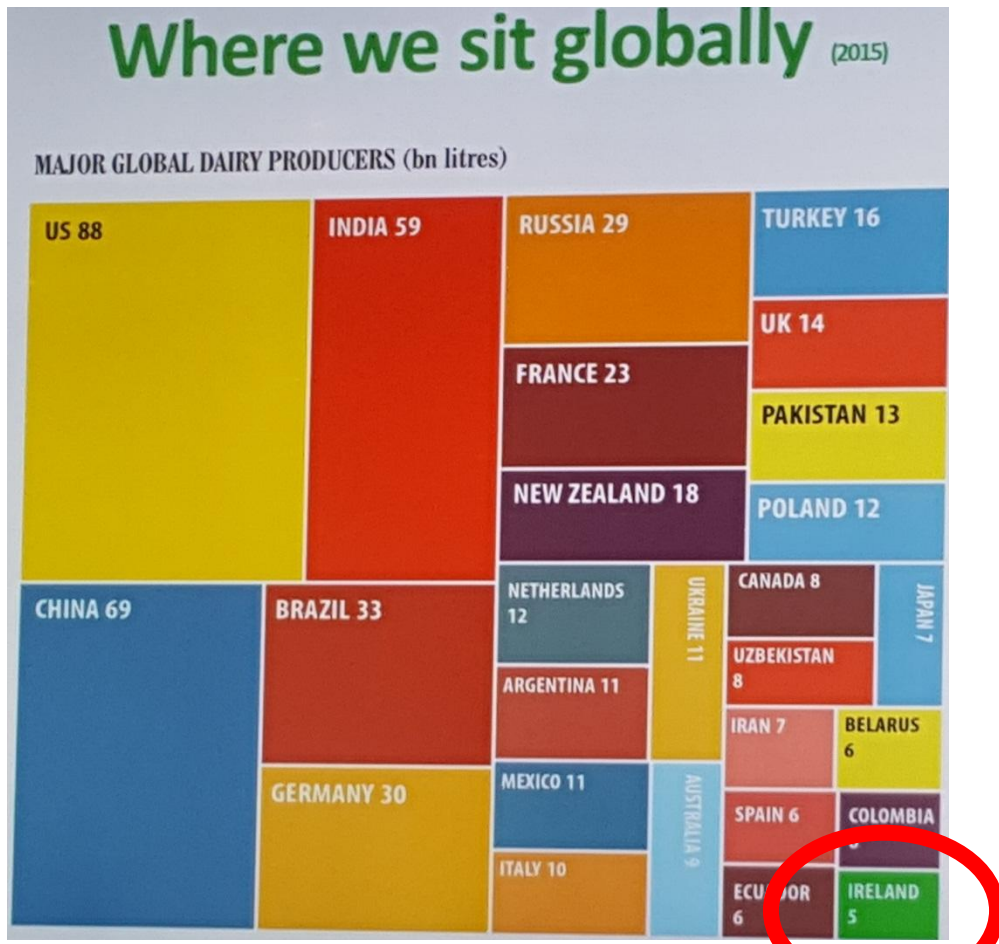
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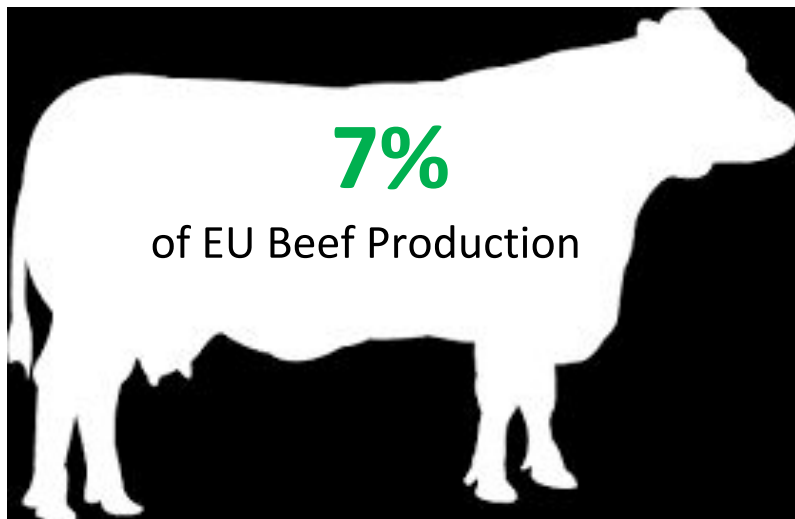
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# Ireland is a relatively small producer ...



**c.1%**  
of global milk supplies



# ... but with a significant global presence



✓ c.10% of global infant milk export requirements



✓ Number 1 butter brand in Germany



✓ 5<sup>th</sup> largest beef exporter in the world



✓ Irish whiskey is the fastest growing spirits category in the world



✓ World's best selling cream liqueur

# Agri = Ireland's Largest Indigenous Industry



139,556 farm holders in Ireland  
with  
250,000 jobs dependent on sector

Largest user of Irish produced inputs – c75% of inputs used is domestically produced [Sector has a low import content]

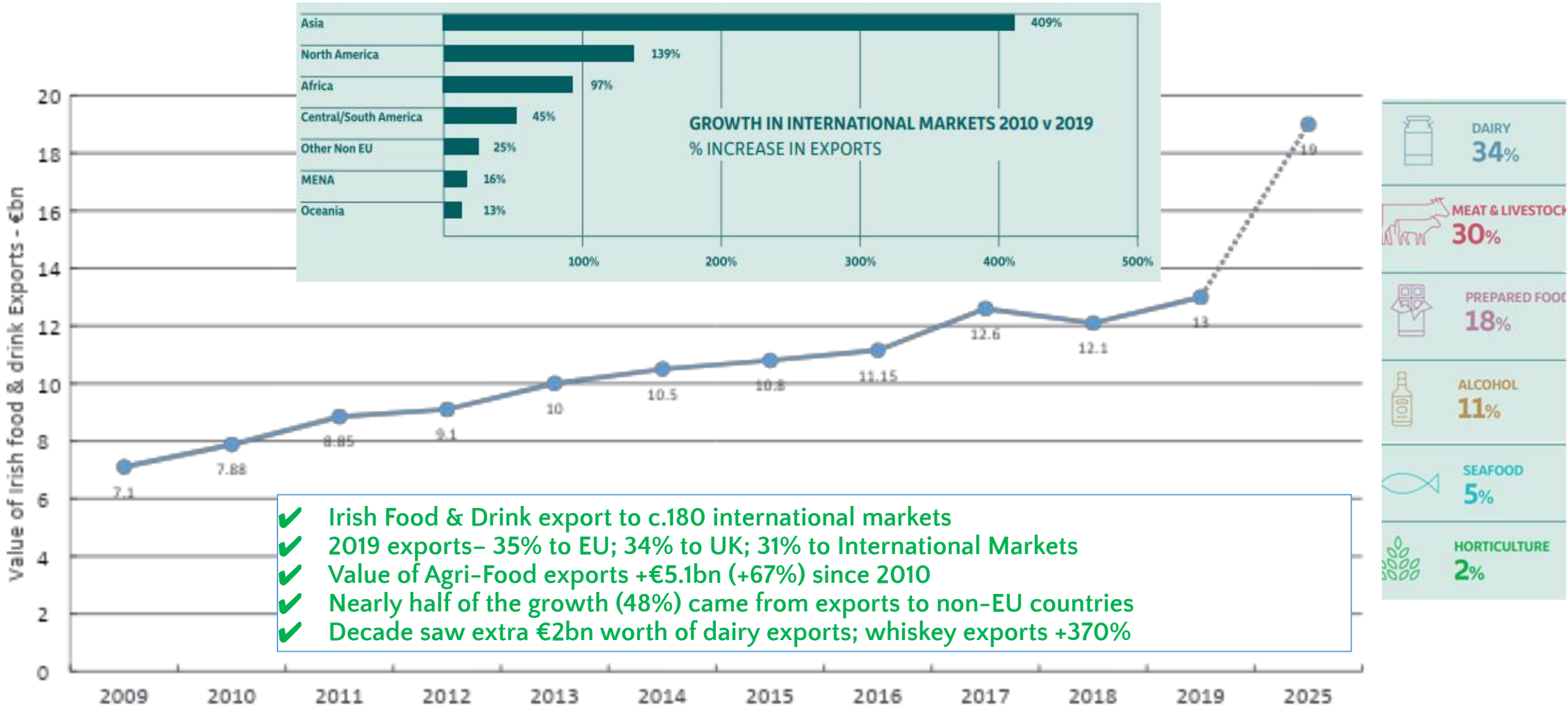


Agri-Food Contribution to GDP – c.7%

Every €1 of output generates c.€1 of GNP through spin off purchases & spending



# Export markets: Irish Agri-Food exports on a growth trajectory



- ✓ Irish Food & Drink export to c.180 international markets
- ✓ 2019 exports- 35% to EU; 34% to UK; 31% to International Markets
- ✓ Value of Agri-Food exports +€5.1bn (+67%) since 2010
- ✓ Nearly half of the growth (48%) came from exports to non-EU countries
- ✓ Decade saw extra €2bn worth of dairy exports; whiskey exports +370%

(Source: Bord Bia, various years)

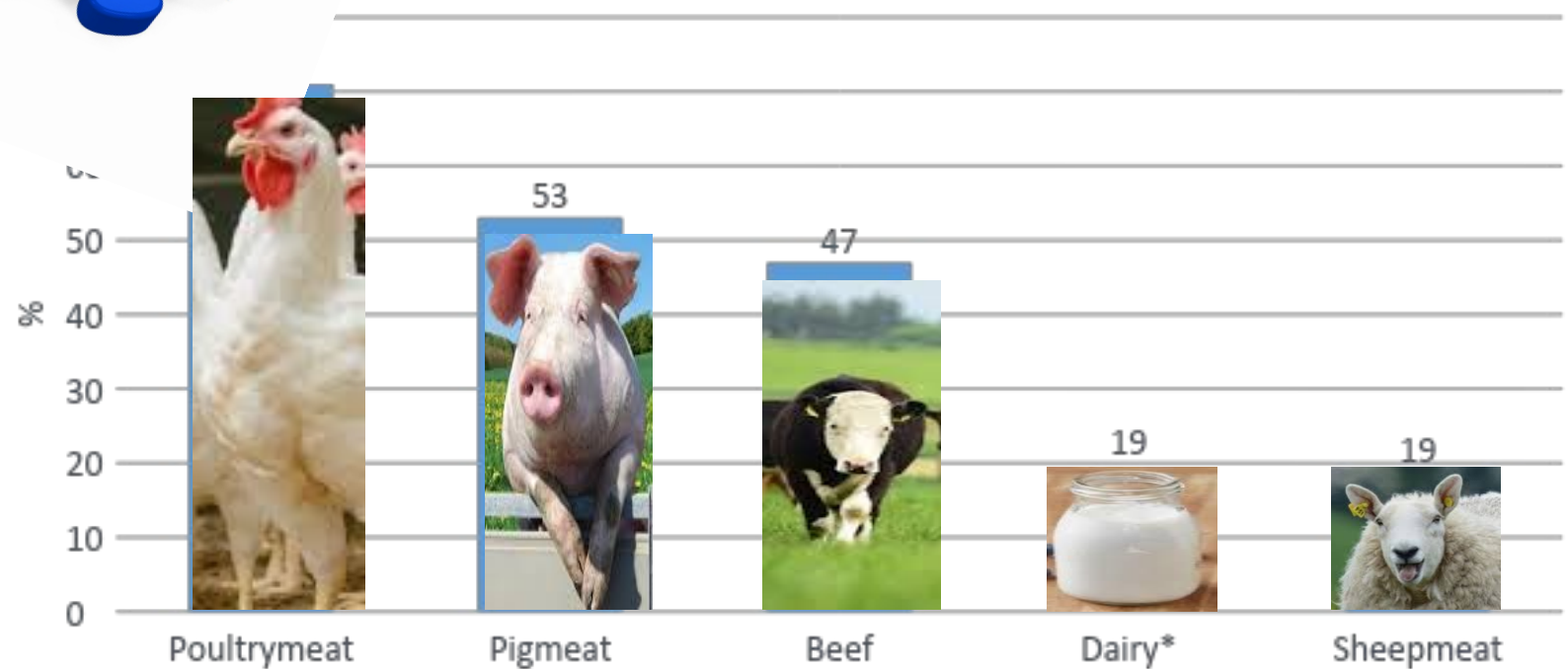
# Export Markets: Changed EU:UK trade relations from Jan 2021



## Key destination for Irish Agri-Food exports

EU surpassed UK as principal destination for the first time in 2019

UK as % of Irish Agri Food exports (by value)



(Source: Bord Bia, 2019; \*Bord Bia, 2018)

Sanitary & Phytosanitary controls and imposition of Import Tariffs make Irish Agriculture particularly vulnerable to Hard Brexit scenario

# Other catalysts of change ...

COVID-19

Adverse  
weather

Brexit

CAP Reform

Climate  
Change

... bringing  
considerable  
challenge, stress  
& uncertainty

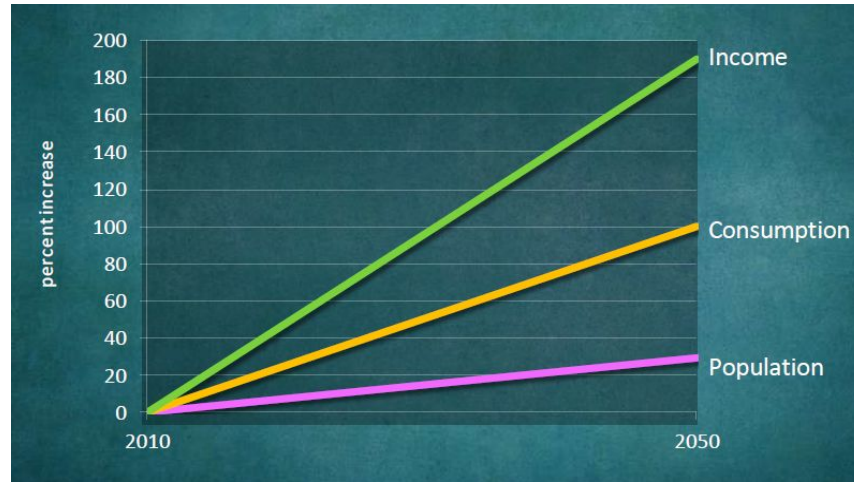




There are opportunities ahead too ... that we are well placed to capitalise on



Increased global populations – 9bn by 2050



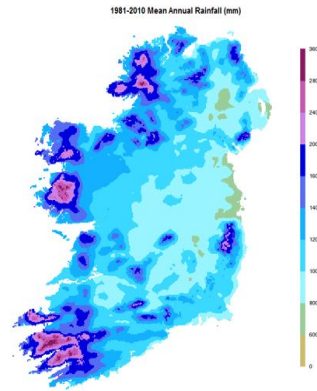
Rising incomes & urbanisation



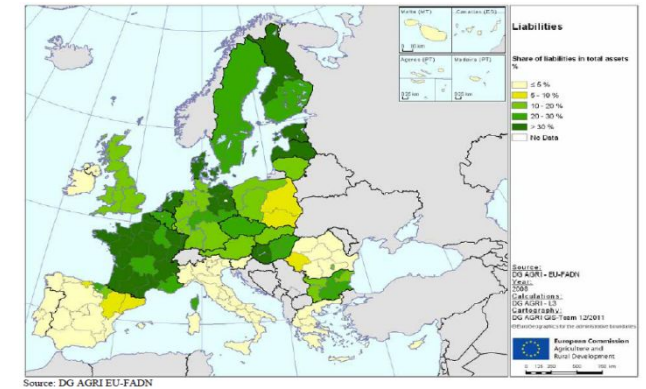
Shift from more stable to more protein diets



Our grass based production offers us a cheap source of feed & competitive advantage

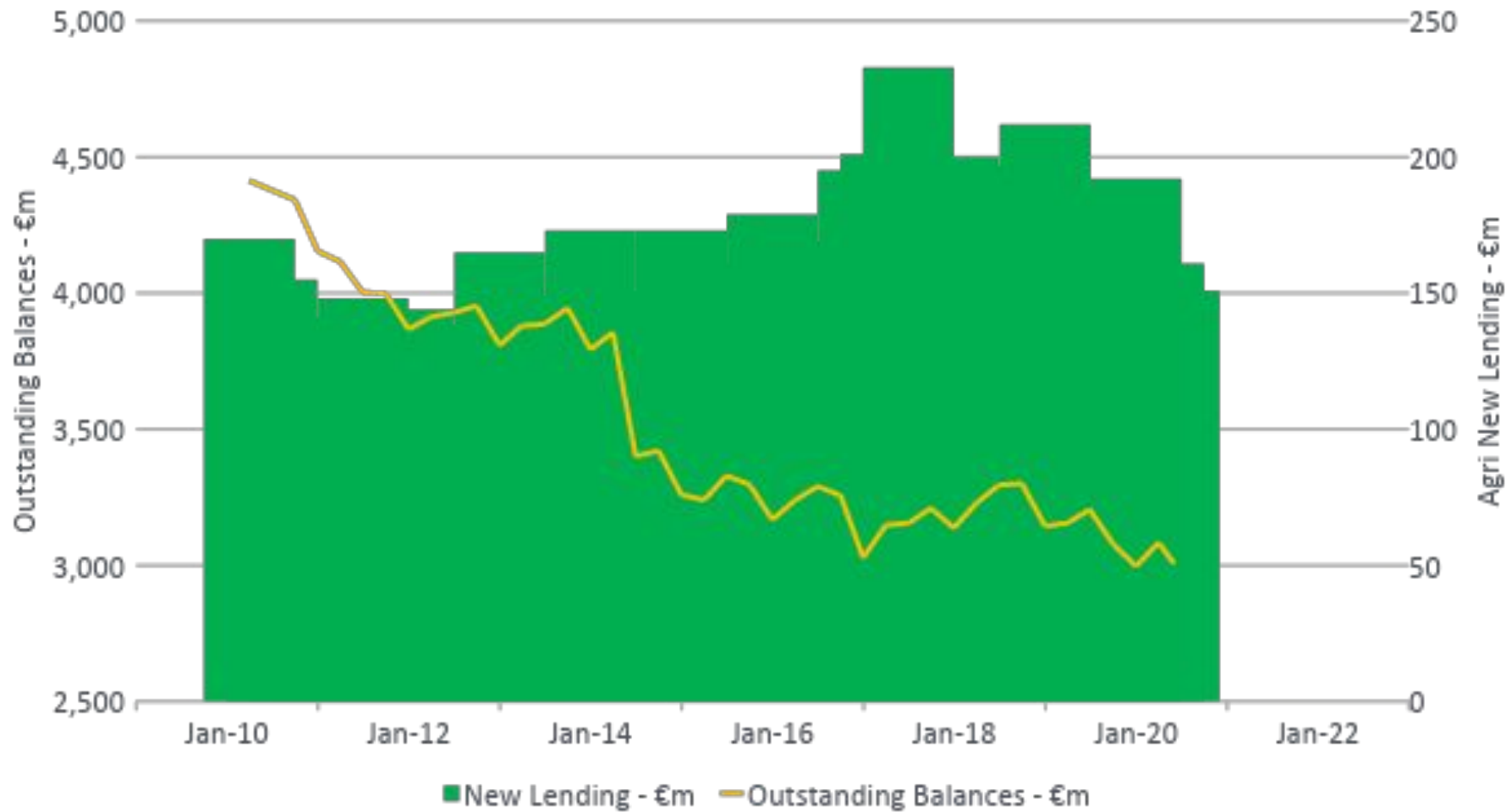


We enjoy a climatic advantage in comparison to many of our competitors



Lowly geared farms with strong asset base relative to liabilities

# Significant new investment at farm level while overall stock of debt reduces



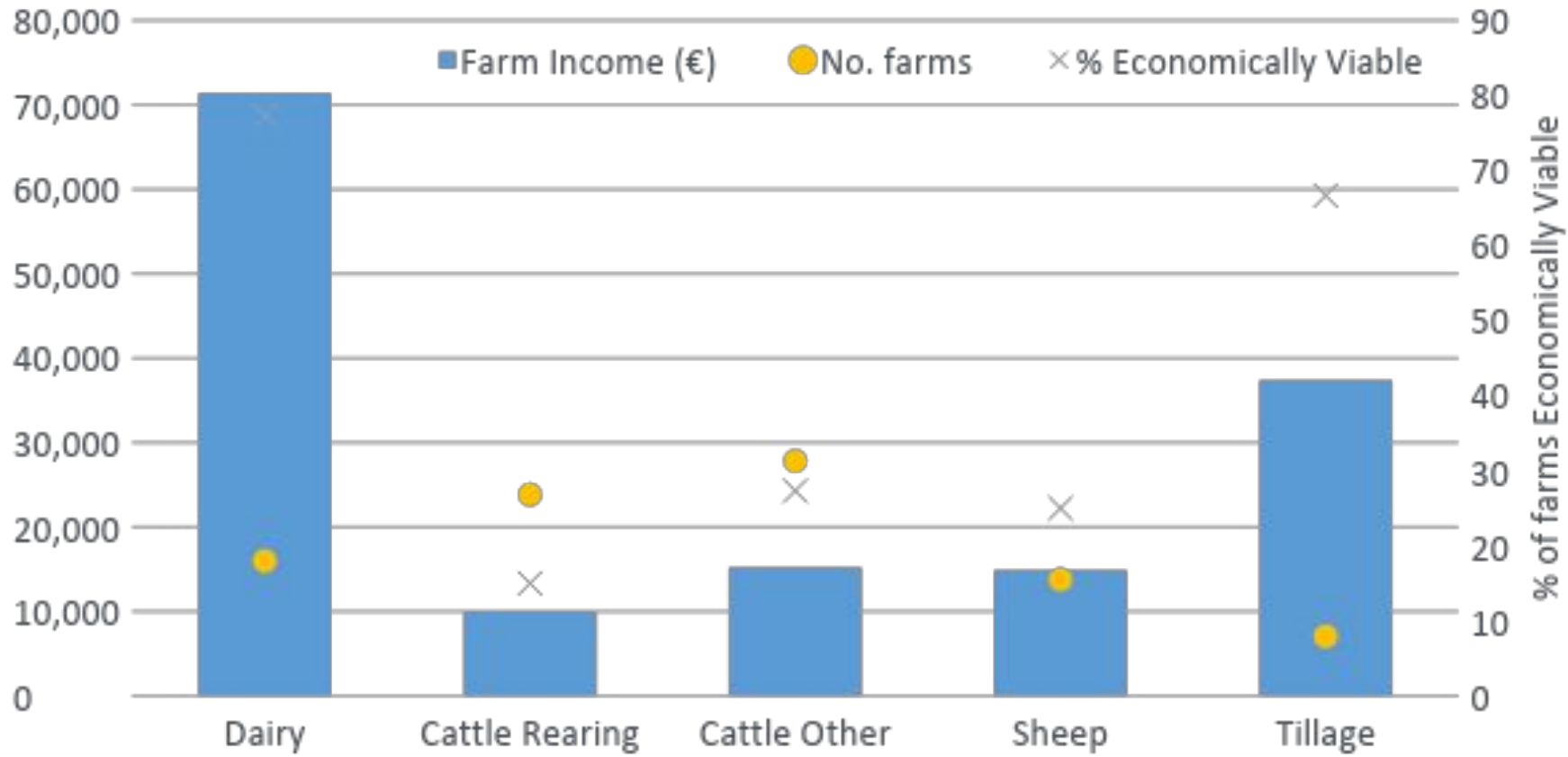
2019	
Farms with Borrowings	Average Debt (farms with Debt)
Dairy: 64%	€112,377
Suckler: 31%	€26,627
Finishers: 34%	€34,632
Sheep: 26%	€25,907
Tillage: 35%	€63,661
All Farms: 38%	€59,598

Source: Teagasc National Farm Survey, 2020

Source: Central Bank of Ireland (Credit Advanced to Irish Resident Private-Sector Enterprises)



# Farm Economics- Economic Viability – Two Realities

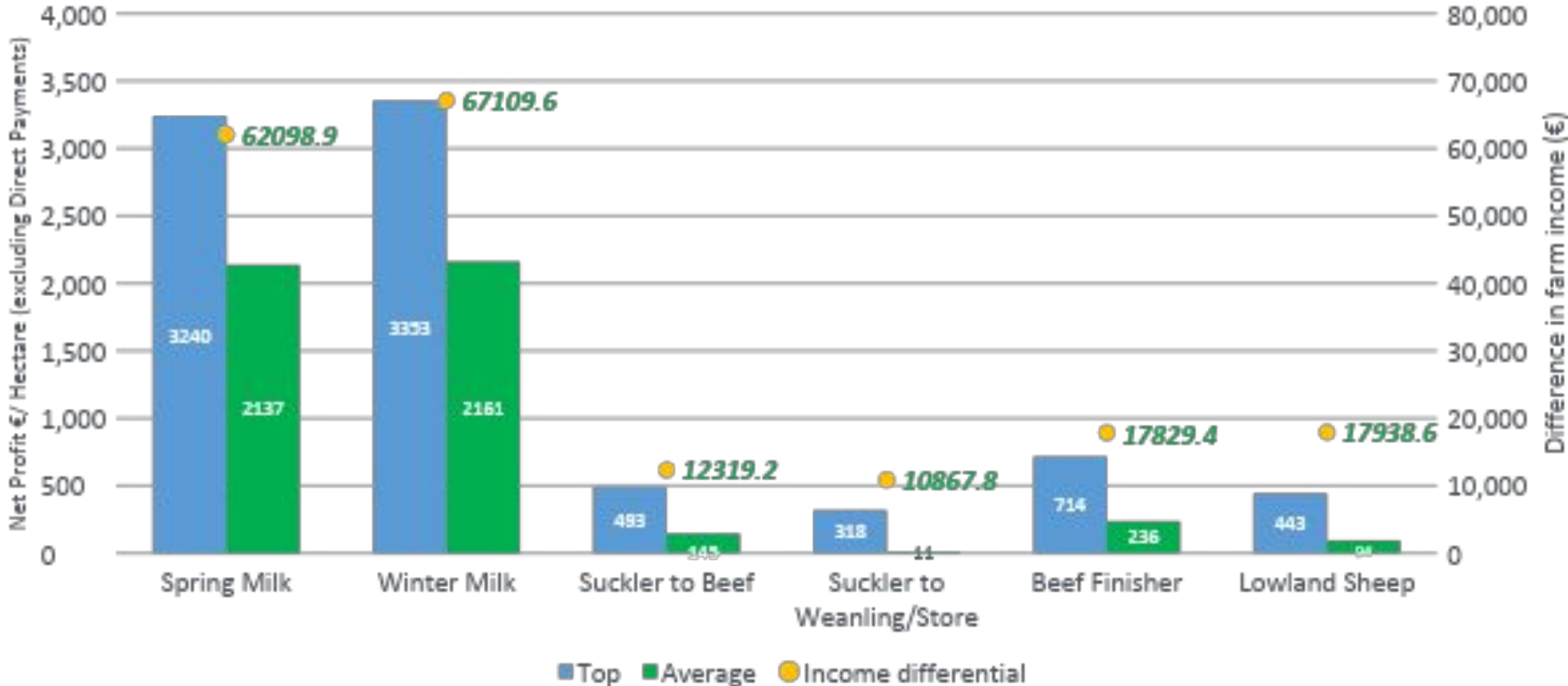


*Economically Viable:* Family farm income is sufficient to remunerate family labour at the minimum agricultural wage (€20,129 per labour unit in 2019) and provide a 5% return on the capital invested in non-land assets (i.e. machinery and livestock)

Average FFI/ha (€)	Dairy	Cattle Rearing	Cattle Other	Sheep	Tillage
	€1,232	€306	€412	€306	€620

(Source: Teagasc National Farm Survey – 2017 / 2018 / 2019)

# Farm Economics: Efficiency is key – Better Before Bigger!!



Note:  
 Top performing Spring Milk & Winter Milk operations relates to Top 25% performers  
 Top performing Beef & Sheep operations relates to Top 33% performers  
 Example assumes average farm size as per 2016 Teagasc NFS

(Source: Teagasc Profit Monitor, 2018)

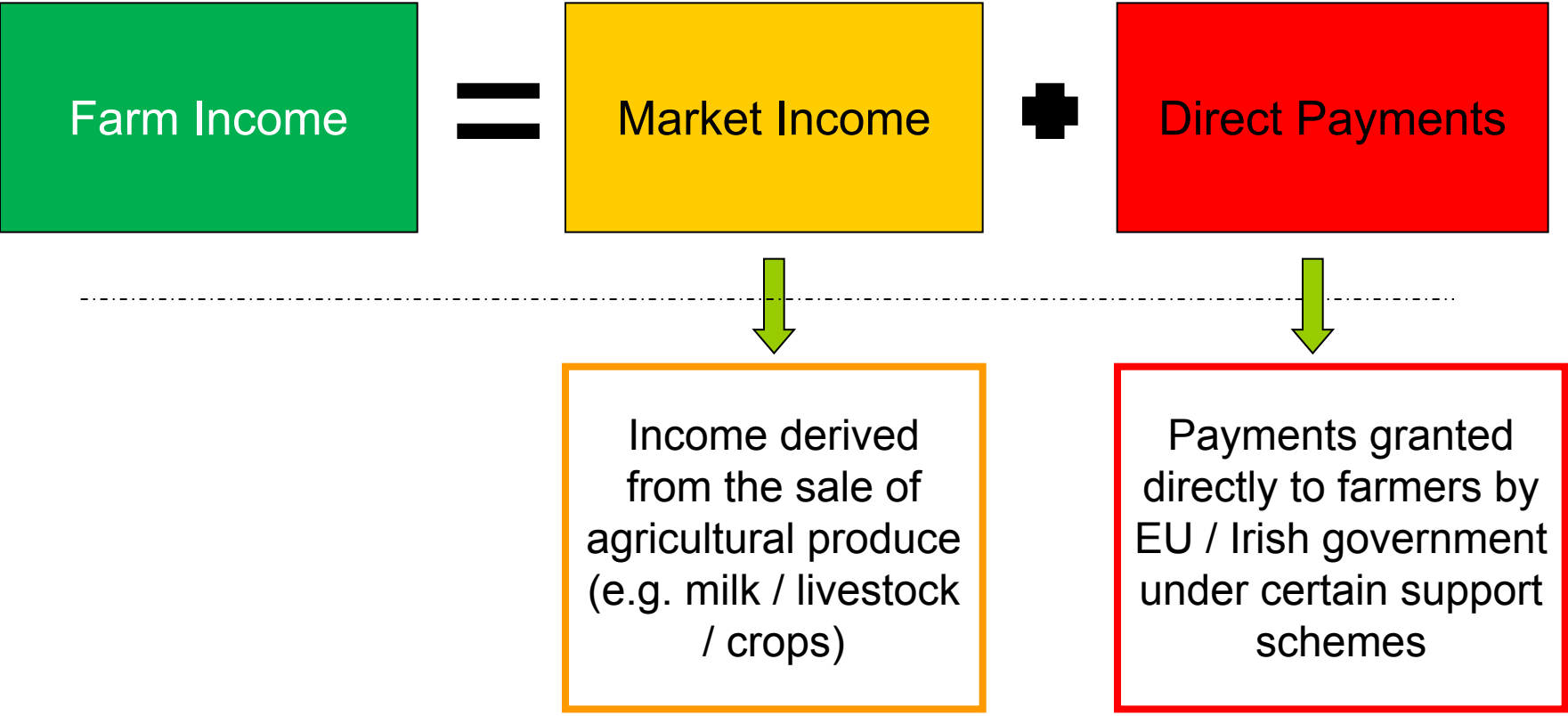
## Farm Economics: Who are the top performers?

- ❑ Don't necessarily have the biggest farm or the largest number of animals
- ❑ Clear and defined farm system
- ❑ Measuring grass
- ❑ Member of progressive discussion group
- ❑ Strong financial management skills / benchmarking
- ❑ Focussed on costs
- ❑ Strong network
- ❑ Quick adaptors of new technology

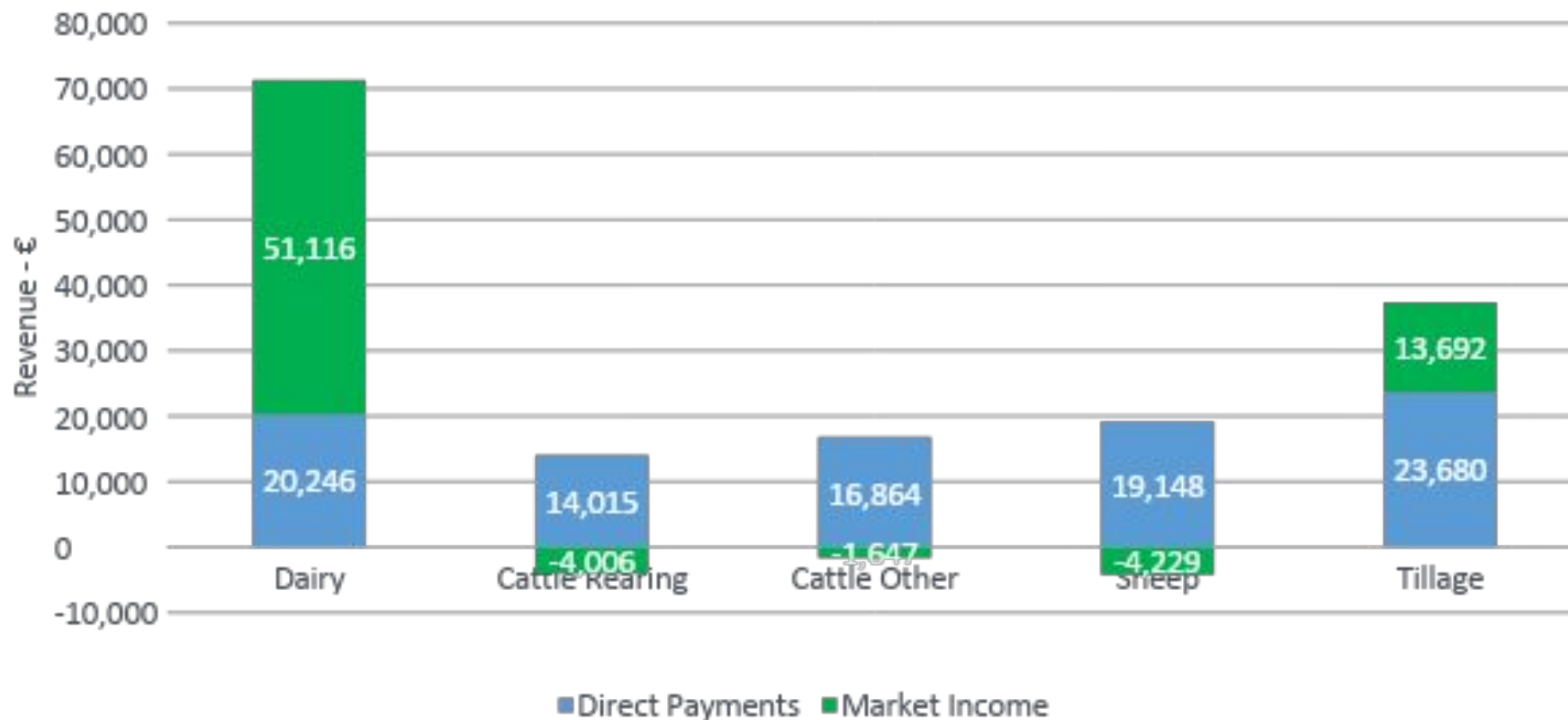


**They do the basics brilliantly!!**

# Farm Economics: How do farmers generate income?



## Farm Economics: How do farmers generate income?

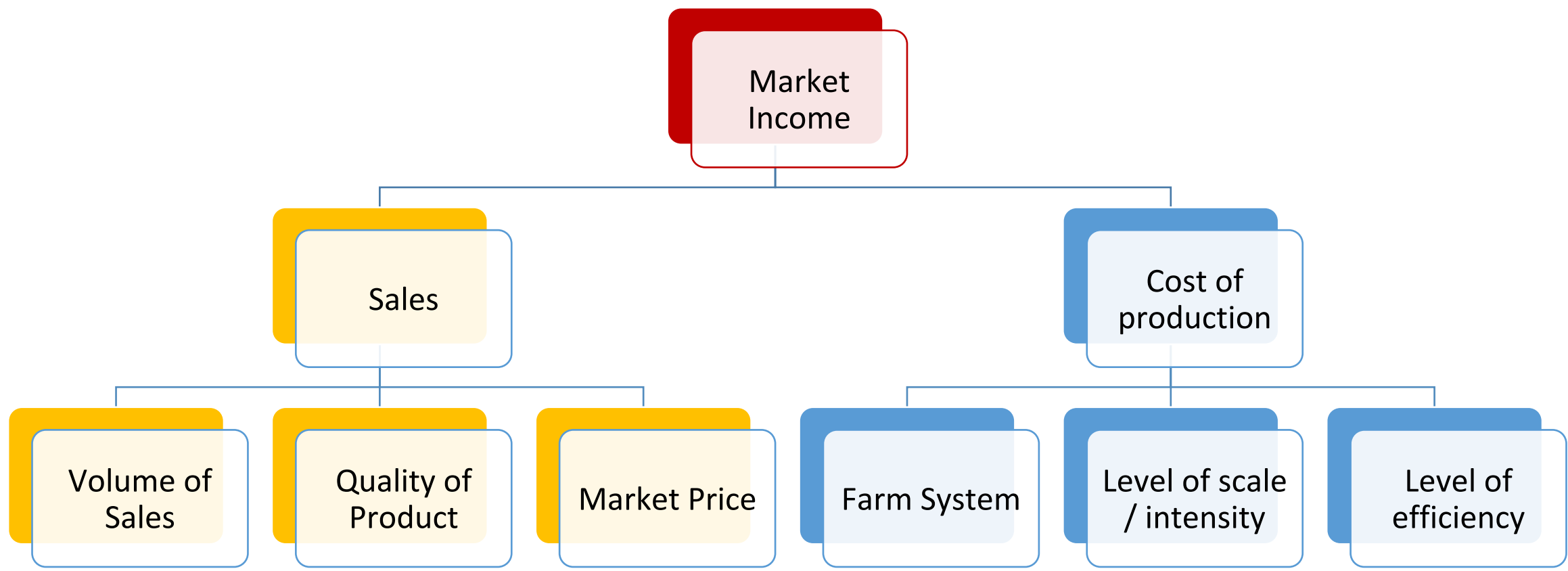


Direct Payments €/ha	349	429	457	392	393
Market Income €/ha	882	-123	-45	-87	227

(Source: Teagasc National Farm Survey – 2017 / 2018 / 2019)



# Farm Economics: Irrespective of farm type - what factors influence Market Income on farm?



\* All operating under influence of global markets; prevailing weather conditions; & political influence

- Sales – number of animals/litres sold
- Beef/Sheep/Milk market price
- Production system
- Replacement costs
- Production efficiency / costs of production
- Scale of operation
- Level of Direct Payments received and retained

## Livestock Farm Profitability – put simply a factor of:

## Tillage Farm Profitability – put simply a factor of:

- Yield per acre (e.g. 3ton/acre)
- Price per tonne
- Crop mix
- Sale of straw
- Costs of production (does farmer own land farmed / is land rented)
- Scale of operation
- Level of Direct Payments received and retained





## Examining YoY input/output price trend – CSO Agri Input & Output Price Indices is a useful resource

**Agricultural Input and Output Price Indices (Base 2015=100) by Agricultural Product and Year**

	2015	2016	2017	2018
Crop output	100.00	106.08	104.13	119.31
Potatoes including seeds	100.00	128.50	117.25	138.91
Cattle excluding calves	100.00	93.03	94.77	93.46
Calves	100.00	90.48	87.94	76.17
Pigs	100.00	102.60	110.35	96.48
Sheep	100.00	99.92	99.65	105.06
Milk	100.00	91.05	121.32	114.05
Seeds	100.00	98.46	98.54	98.16
Energy	100.00	91.94	97.81	106.54
Electricity	100.00	96.47	95.53	102.23
Motor fuel	100.00	90.08	98.26	108.02
Fertilisers	100.00	86.19	81.47	86.36
Plant protection products	100.00	102.28	103.09	103.93
Veterinary expenses	100.00	101.94	102.12	105.29
Feeding stuffs	100.00	100.01	100.56	107.15
Maintenance of materials and buildings	100.00	100.68	101.14	103.41

(Source: Central Statistics Office, 2018)

\* How to read figures:

Pig prices dropped 13.87% in 2018 vs 2017 levels (i.e.  $110.35 - 96.48 = 13.87\%$ )

\* How to read figures:

The price of Feed rose 6.59% in 2018 vs 2017 levels (i.e.  $107.15 - 100.56 = 6.59\%$ ). If your clients feed expenses increased by more than this, it was likely volume related.

# Farm Economics: Useful to know farm break-even price i.e. Price where income = expenditure

Example: 100 cow Spring Calving dairy herd (€)

Farm Income (incl €35,950 non-milk sales)	199,150	
Farm Expenditure	107,500	
<b>Surplus Before Drawings, Tax &amp; Financials</b>		<b>91,650</b>
<i>Less:</i>		
Household Expenses	44,000	
Taxation	11,500	
Financial repayments	18,500	<u>74,000</u>
<b>Net Surplus</b>		<b>17,650</b>

\* Figures for indicative purposes only

Example: 100 head cattle finishing system. Steers purchased c.350kg and slaughtered at 24mths (c.750kg)

	€
Cattle purchases	1,000/head
Grazing costs	60/head
Silage costs	315/head
Meal costs	211/head
<i>Vet / medicines</i>	40/head
Transport/Other costs	35/head
Fixed costs	210/head
<b>Total costs</b>	<b>1,871/head</b>

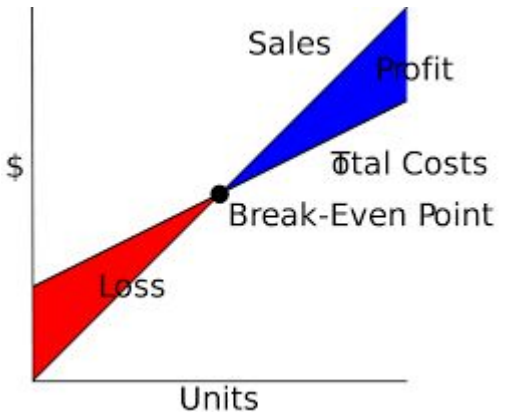
*Direct Payments received* 300/head  
**Market income required** **1,571/head**

*Kill-out weights (750kg @ 55% kill-out)* 412.5kg  
**Market break-even price** **3.81/kg**

\* Figures for indicative purposes only  
<sup>1</sup> Assumes all else remains constant & off-farm income covers Drawings; Tax & Financials

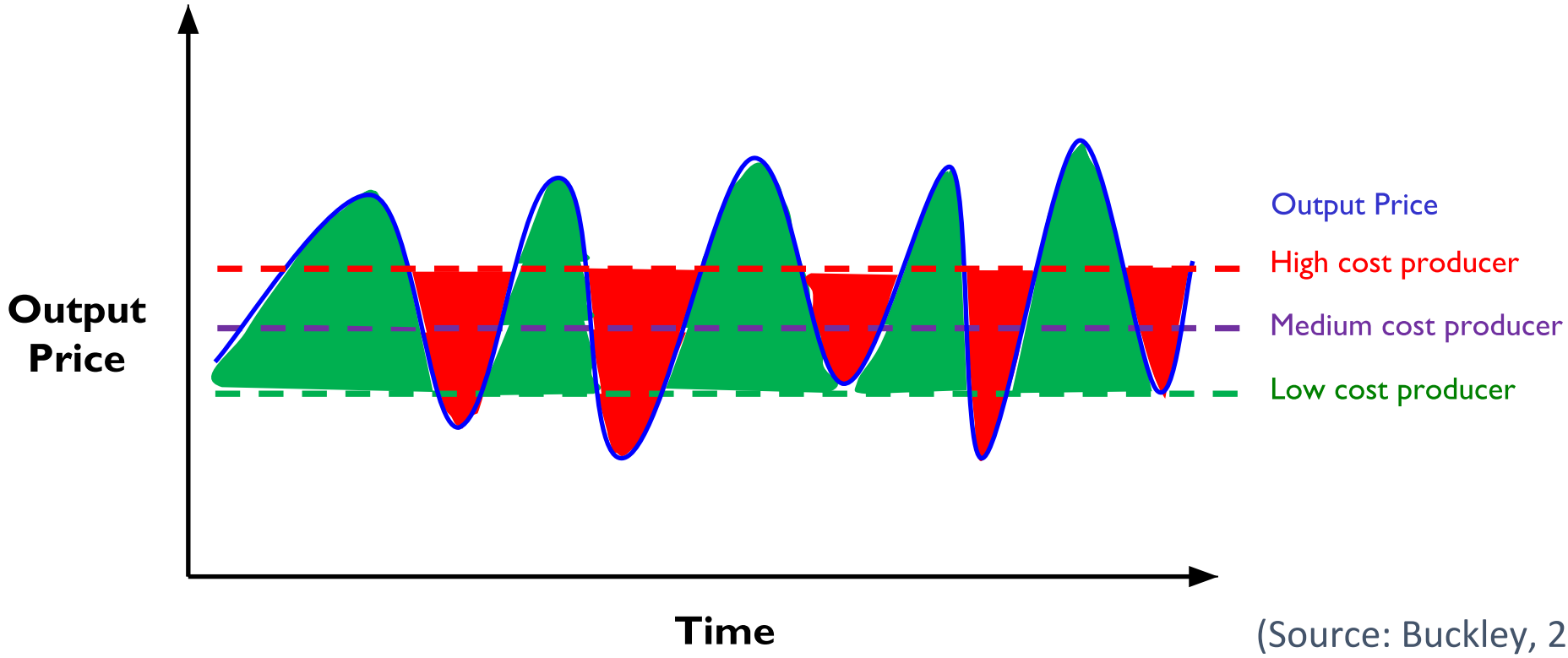
Break-even Calculation	c / litre
Co-op Milk price received	32
Less Net Surplus in c/litre (€17,650 / 510,000 litres)	3.5
<b>Break-even milk price<sup>1</sup></b>	<b>28.5</b>

<sup>1</sup> Assumes non-milk sales remains constant



Each break-even price will be case specific but useful re aiding future action

# Farm Economics: High cost producers most exposed to output price volatility



- High cost producer makes a profit when output price is above red line (Competitiveness problem)
- Medium cost producer makes a profit when output price is above the purple line (Needs to manage price risk)
- Low cost producer makes a profit when output price is above the green line (Can ride out the volatility)