Resilience for Dairy (R4D) has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 101000770

Factors contributing to the financial resilience of spring-calving pasture-based dairy farms

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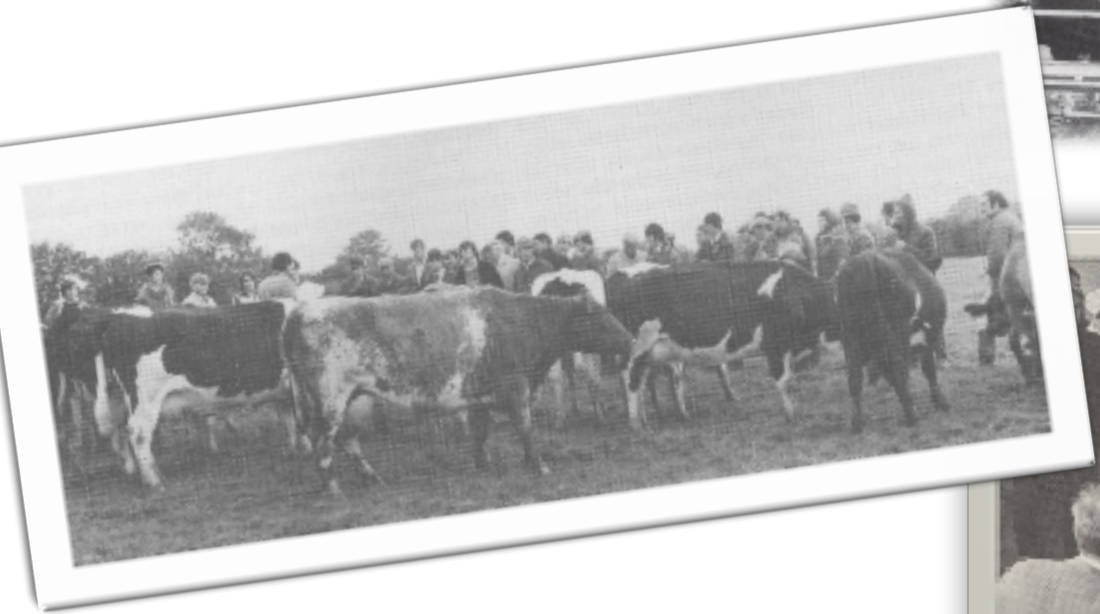
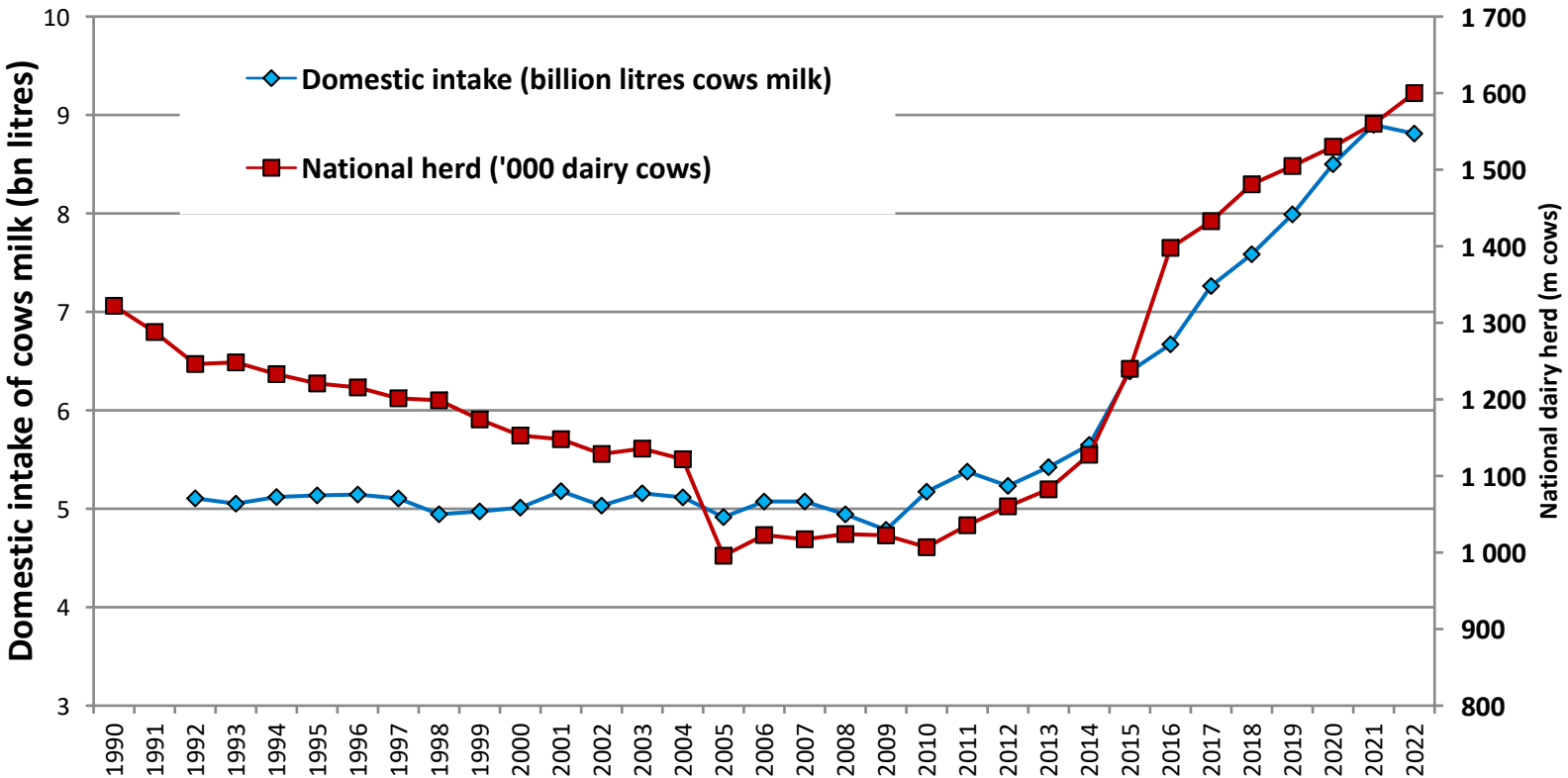
LYON 30/8/2023

Dairying in the ’70’s and ’80’s

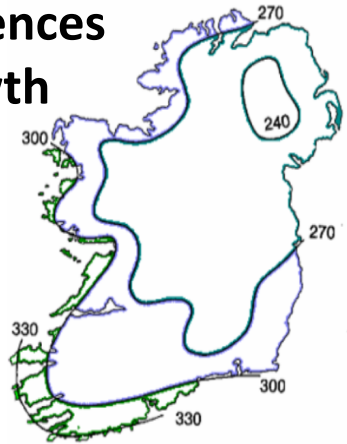


Source: Kilkenny County Committee of Agriculture Annual Reports, various years.

Irish dairy herd – strong growth since quota abolition



Seasonal milk production



kg DM / Hectare daily
% of cows in the herd

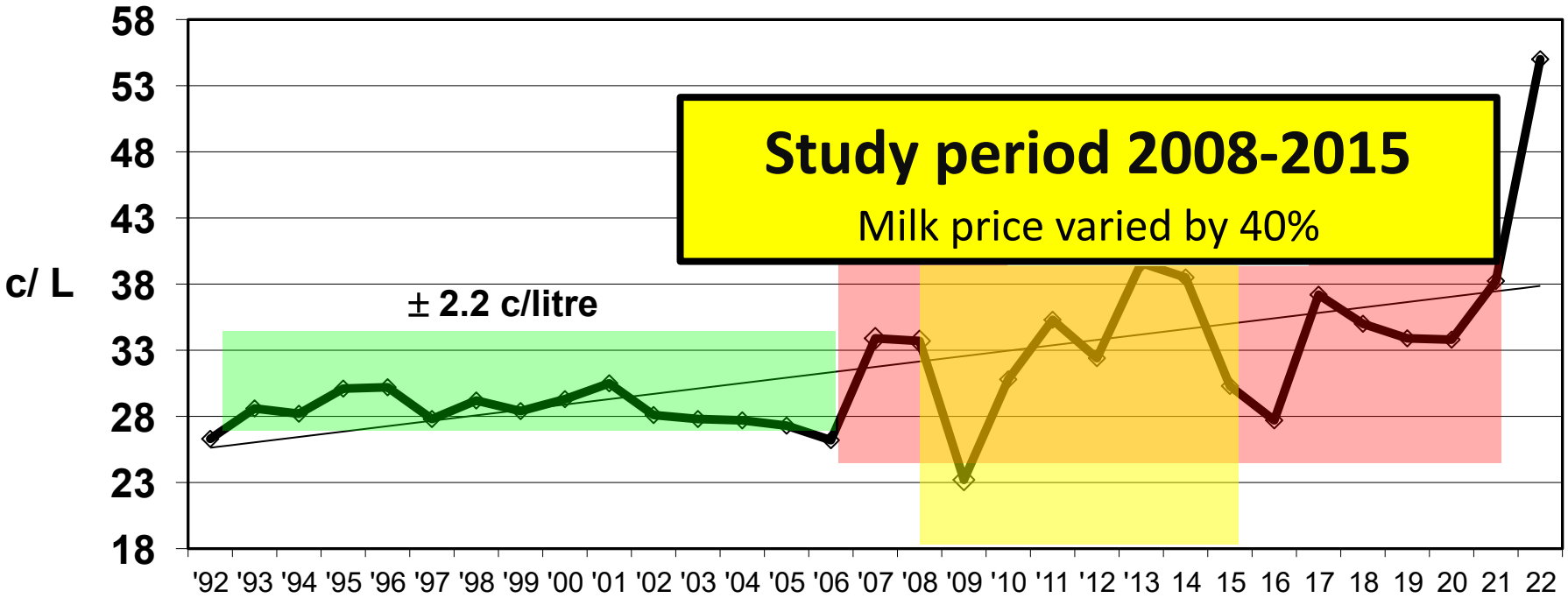
Daily pasture growth rate
Daily herd feed requirement

100
80
60
40
20
0

Spring
Summer
285+ DIM
CALVE
DRIED-OFF
CONCEIVE

Jan Feb Mar Apr May June July Aug Sept Oct Nov Dec

Milk Price – *highly volatile*



Source: Adapted from CSO database, various years.

Materials and methods

- Matched farm physical and financial data for 315 spring calving dairy farms (2008-2015)
- **Physical:** Stock numbers, stocking rate, milk production
- **Financial:** Output, variable & fixed costs, profitability

Experimental design - *profit*

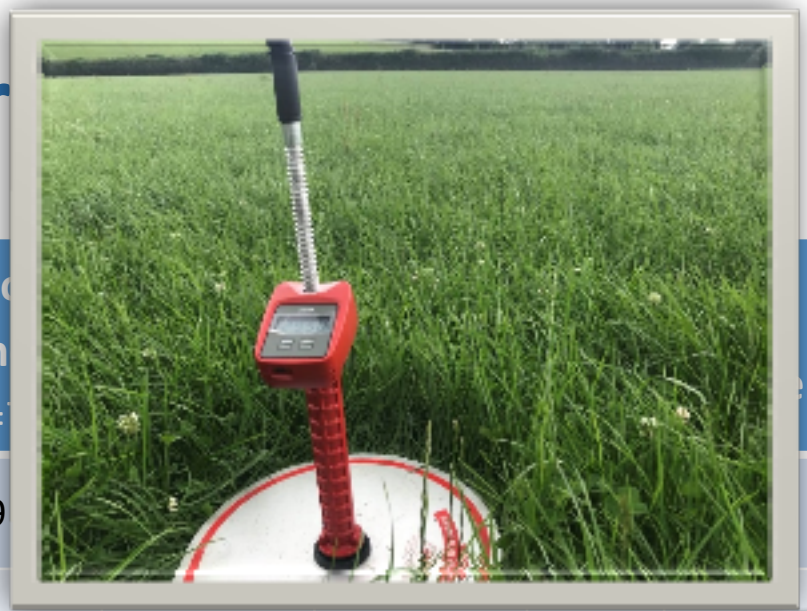
- Net farm profit/ha calculated for each farm
- **Average 8 year net profit/ha** determined
- Equal proportions from each region included in each of four profit quartiles (highest to lowest)

Statistics

- Mixed model framework in PROC MIXED
- Herd nested within region
  - as a repeated effect
  - with a first order autoregressive covariance structure assumed

Profit category r

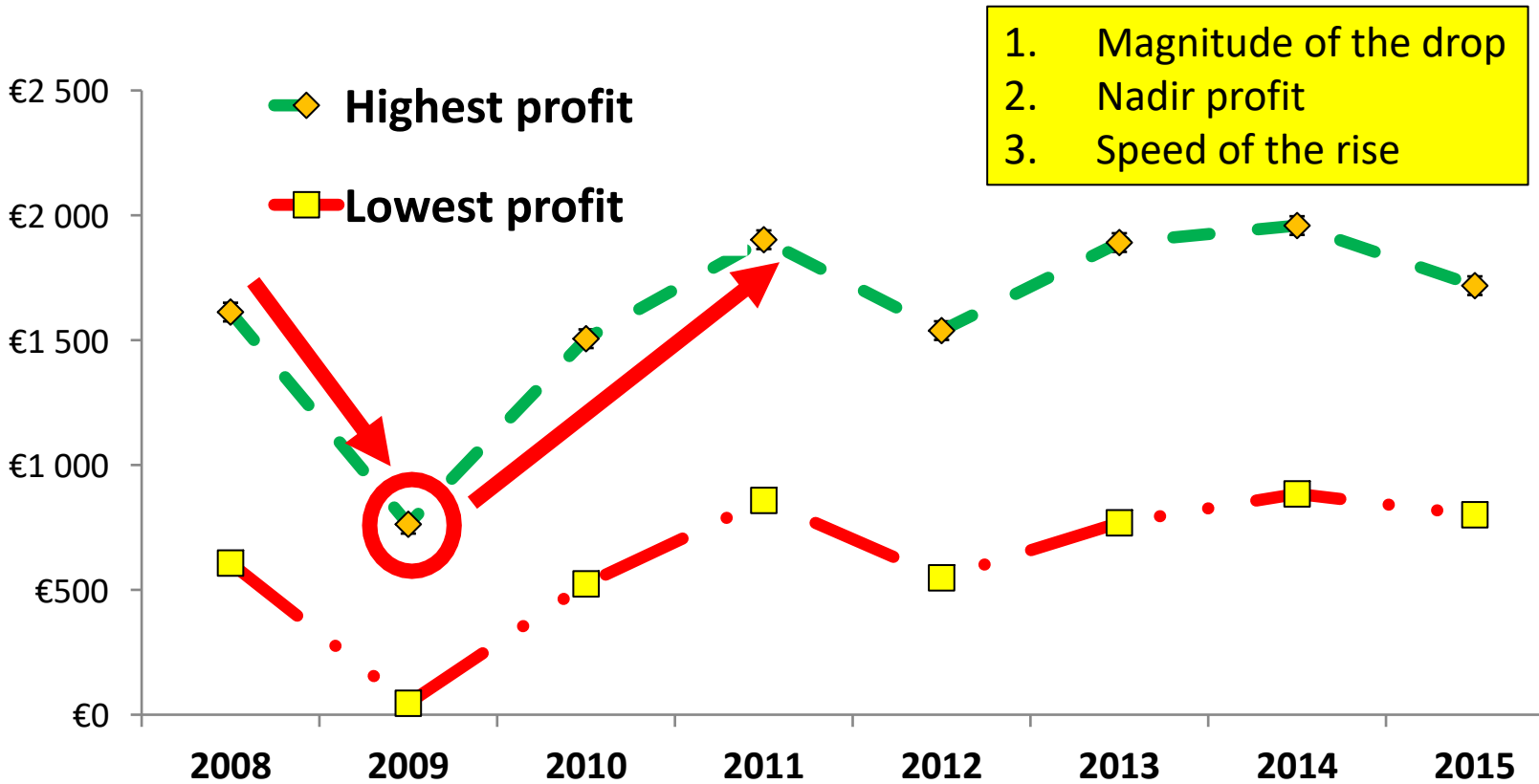
Profit category	Highest (n=79)	Seco high (n=				Profit cat. * Year
Total farm (ha)	59.0 a	65.9				0.24
Stocking rate (LU/ha)	2.42 a	2.28 b	2.13 c	1.96 d		
Pasture used (T DM/ha)	9.9 a	9.0 b	8.3 c			
Dairy cows (LU)	99.5	103.4	95.0			
Dairy cows (% LU)	71.6 a	69.6 a	66.3 b			
Milk yield (L/cow)	5,511 a	5,274 b	5,131 b			



Profit category results - financial

Profit category	Highest (n=79)	Second highest (n=79)	Second lowest (n=79)	Lowest (n=78)	SE	P value	Profit cat. * Year
Milk price (c/L)	34.3 a	34.0 a	33.6 b	33.4 b	0.13	<0.001	0.71
Gross output (€/ha)	3,831 a	3,376 b	2,978 c	2,553 d	51.8	<0.001	<0.001
Total variable costs (€/ha)	1,345 a	1,279 a	1,185 b	1,101 c	28.9	<0.001	0.08
Total fixed costs (€/ha)	876	910	858	824	25.6	0.12	0.36
Total costs (€/ha)	2,220 a	2,188 a	2,042 b	1,924 b	48.7	<0.001	0.14
Net profit (€/ha)	1,611 a	1,189 b	937 c	630 d	18.0	<0.001	<0.001

Variation in annual net profit (€/ha)



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Conclusions

- Highest profit farms were smaller with greater technical efficiency
- Such farms had the greatest reduction in profitability in adverse years but
  - Had the greatest nadir profit
  - Had the fastest recovery from nadir

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Questions