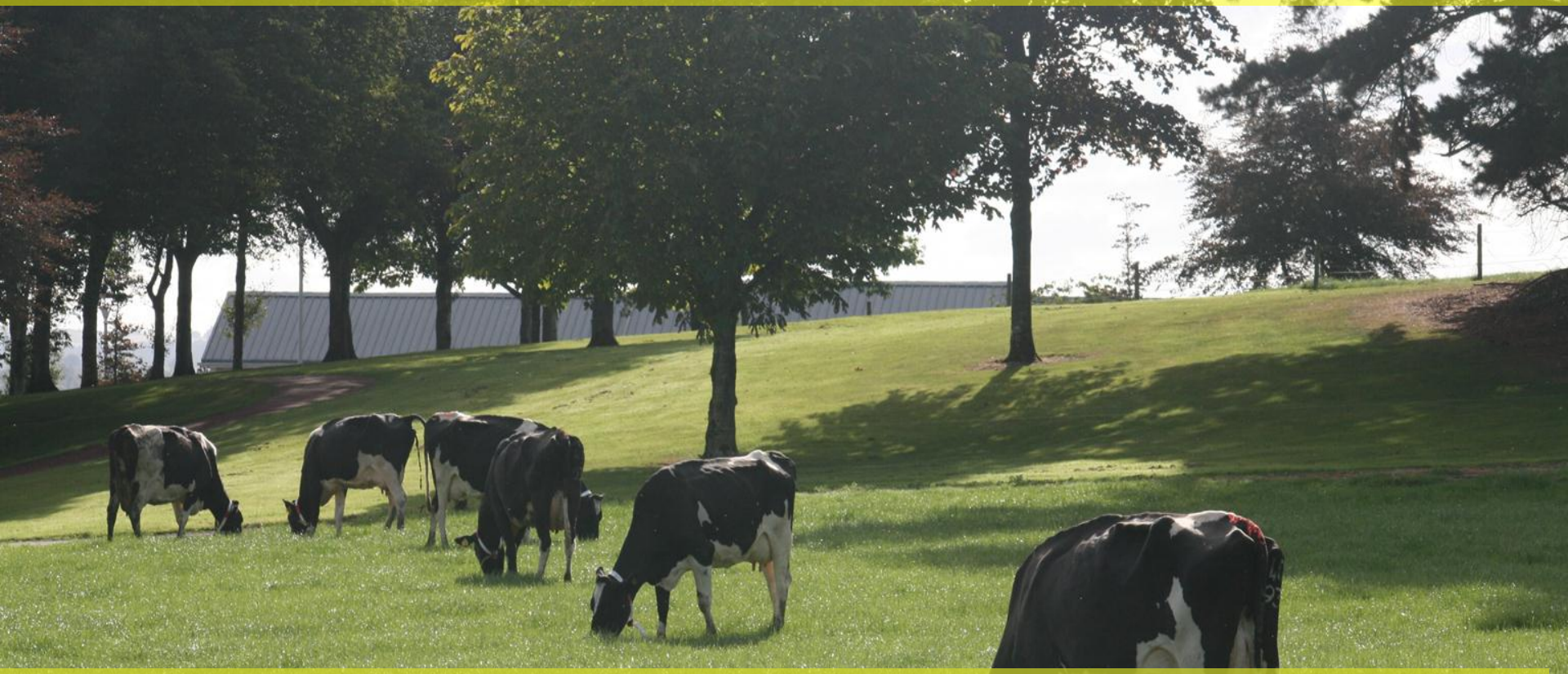
Tipperary Co Op



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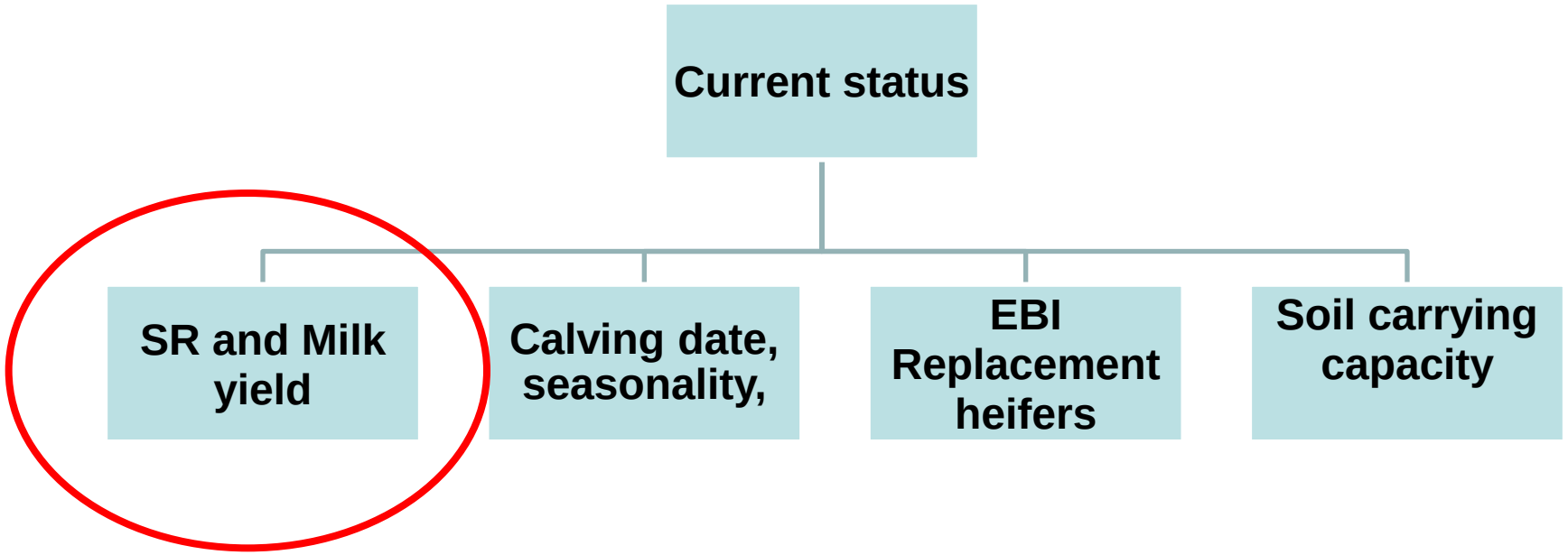
Background

- Study of key factors affecting productivity in Tipperary region
- Data sources
    - Tipperary Co Op
    - Supplier survey
    - ICBF
    - PastureBaseIreland
- Key outputs from the study
    - SR and milk yield
    - Seasonality
        - Milk supply profiles
        - Calving dates
    - Herd EBI and heifer generation
    - Regional breakdown of soil carrying capacity and potential expansion

Tipperary Region



Milk Yield and stocking Rate

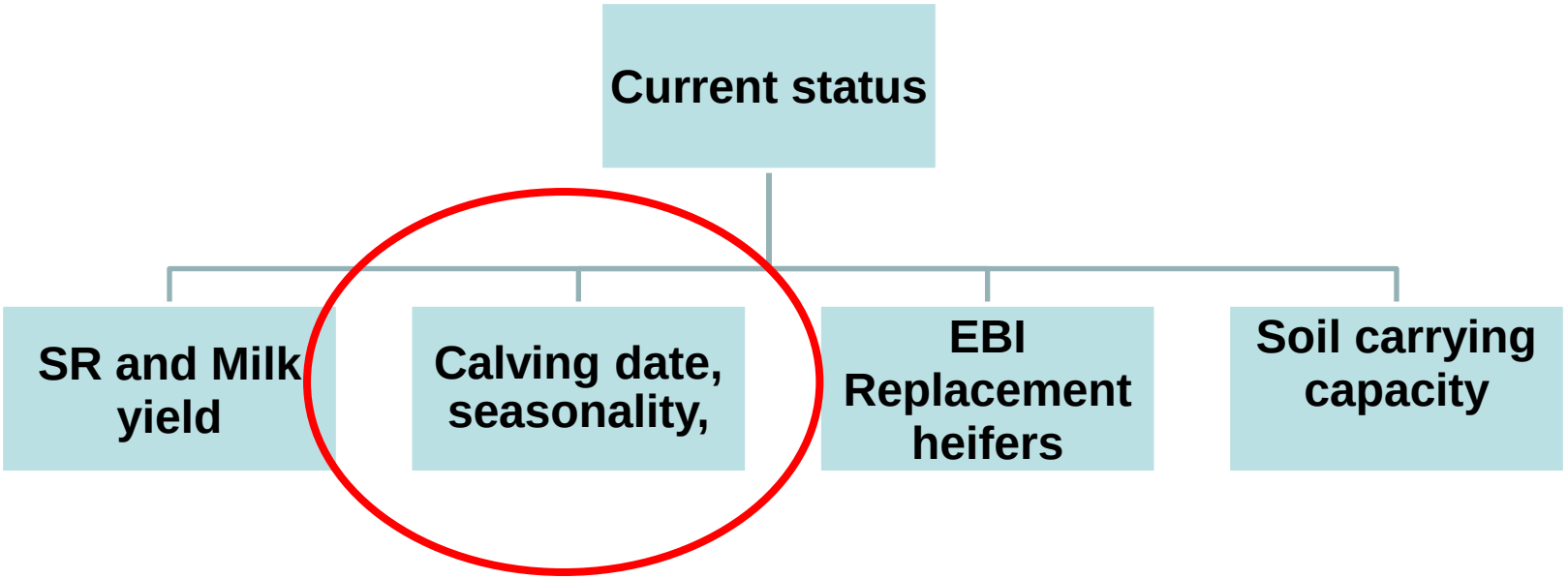
	Tipperary Average	National Average
Milk Yield L/Cow	4,515	*4,645
Stocking rate Dairy LU/ha Total Area	1.43	[1]1.54
% Area of the outside farm	77	[1]66

- Significant volumes of milk being fed to calves
- Every 1 acre on the platform is associated with an additional 0.77 acres on outside block

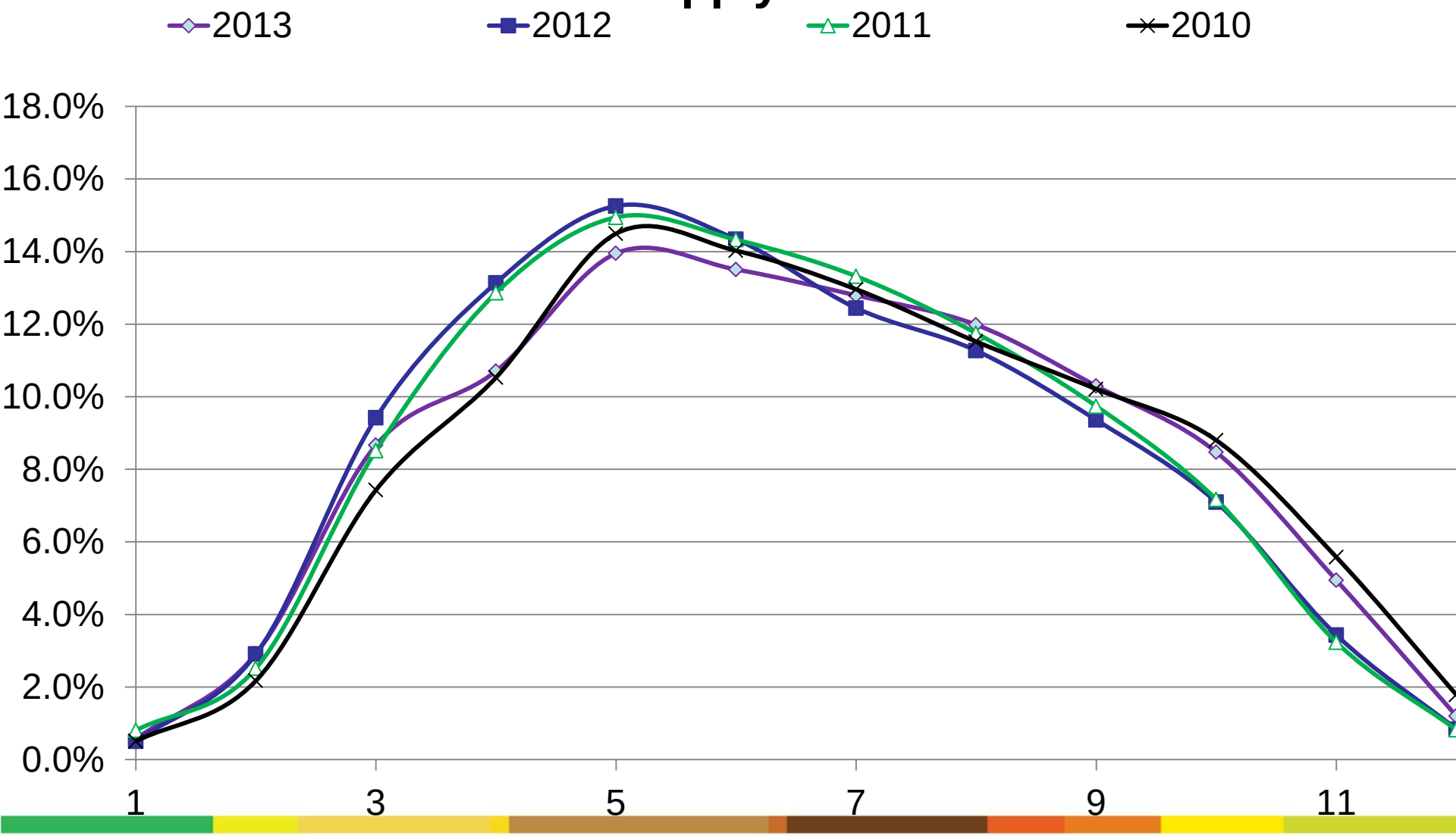
* Calculated based on June cow numbers

[1] O' Donnell et al., 2008

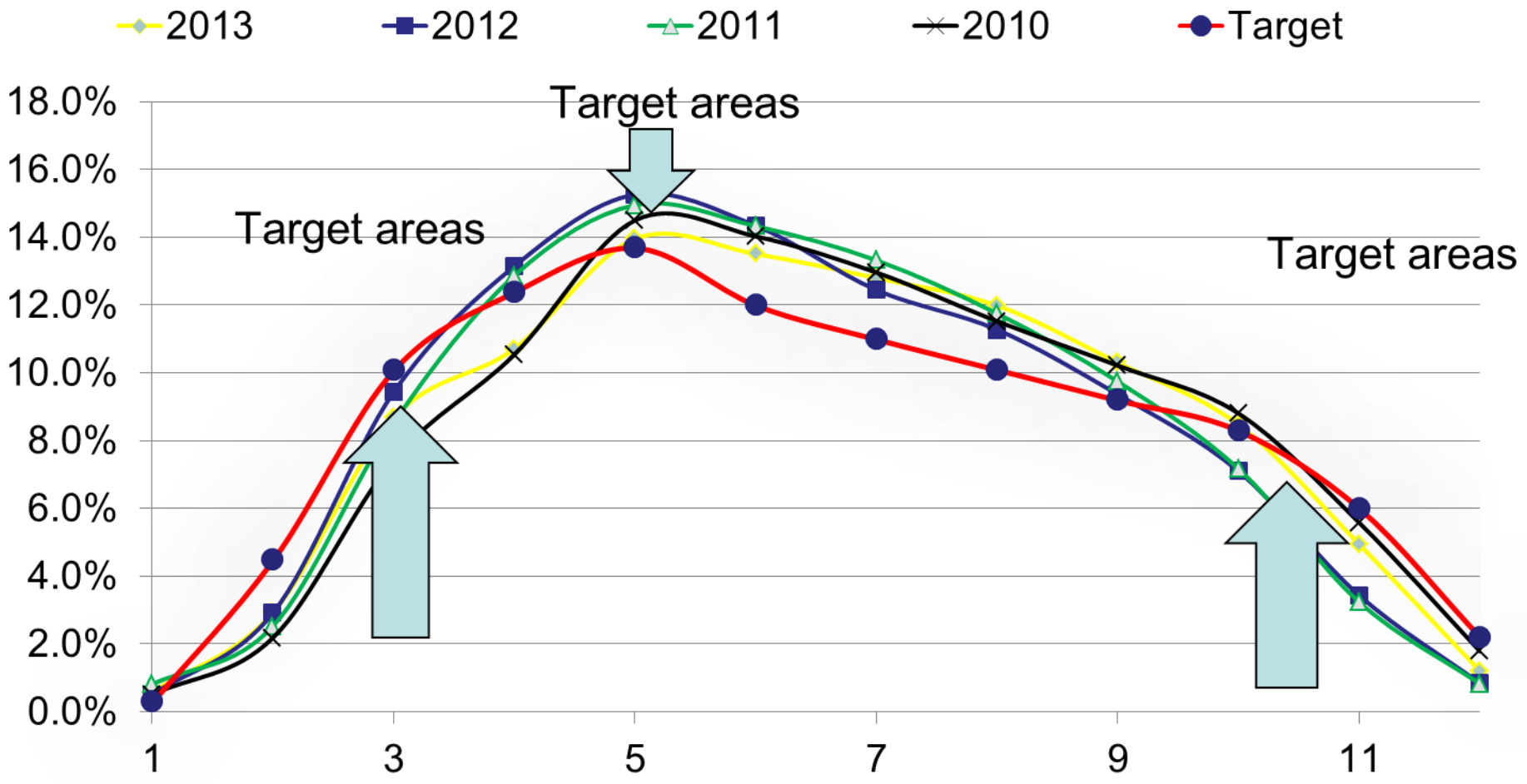
Tipperary Region



Milk Supply Profile



Milk Supply Profile



Calving Date

- ICBF Data
  - Mean calving date 7th March
  - Mean calving date Heifers 28th Feb
  - Nationally March 8th

Profitability associated with Calving date and lactation Length

Lactation Length	Jan 15th	Feb 15th	Mar 15th	Apr 15th
Milk yield L/Cow	5,230	5,177	4,811	4,421
Milk yield kgMS/Cow	378	380	352	333

Profitability associated with Calving date and lactation Length

Lactation Length	Jan 15th	Feb 15th	Mar 15th	Apr 15th
Milk yield L/Cow	5,230	5,177	4,811	4,421
Milk yield kgMS/Cow	378	380	352	333
Grass kgDM/Cow	3,434	3,836	3,500	3,245
Silage kgDM/Cow	1,214	1039	1,278	1,538
Concentrate kgDM/Cow	606	299	289	196

Profitability associated with Calving date and lactation Length

Farm profit €	Jan 15th	Feb 15th	Mar 15th	Apr 15th
Projected milk price 24.5c/l				
No Quota 40Ha	2,156	12,783	70	-4,508

Profitability associated with Calving date and lactation Length

Farm profit €	Jan 15th	Feb 15th	Mar 15th	Apr 15th
Projected milk price 24.5c/l				
No Quota 40Ha	2,156	12,783	70	-4,508
Projected milk price 29.5c/l				
No Quota 40Ha	30,107	40,939	25,811	19,855

Profitability associated with Calving date and lactation Length

Farm profit €	Jan 15th	Feb 15th	Mar 15th	Apr 15th

Calving Date

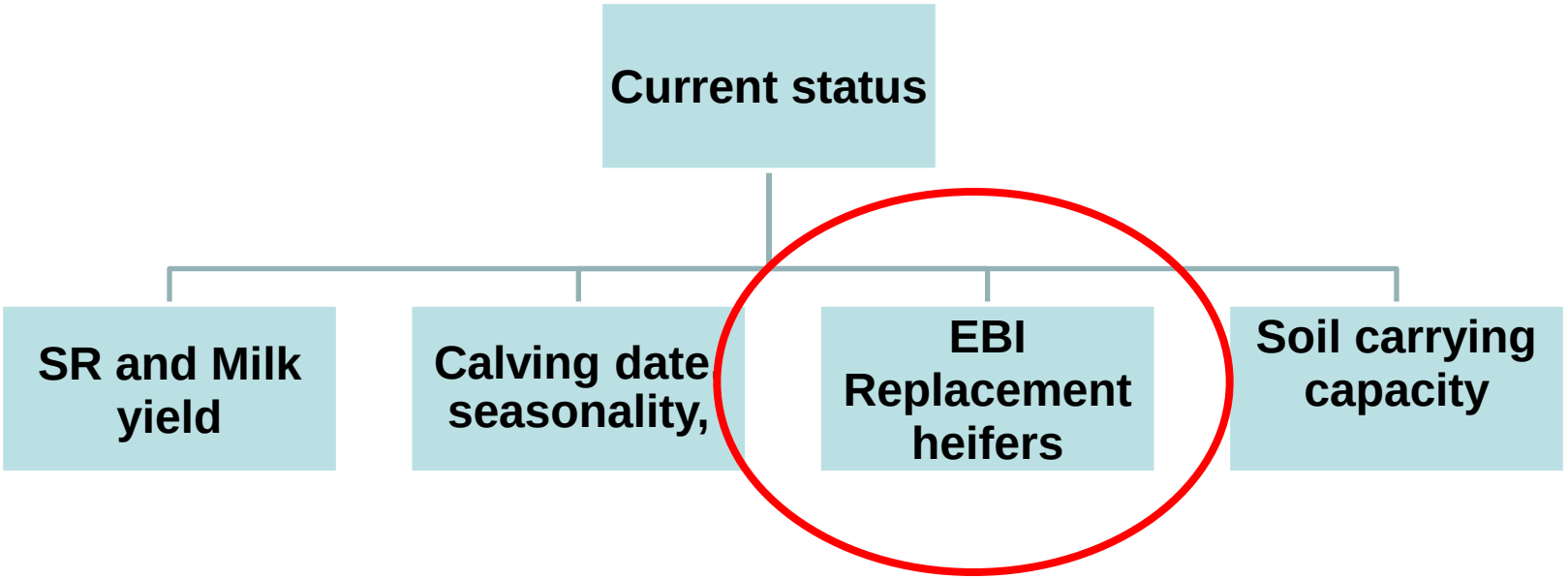
1 day later than optimum costs €3.51@Milk price of 29.5cpl

Optimum mean calving date between Mid and Late February depending on soil type

Projected milk price 34.5c/l

No Quota 40Ha	58,058	69,096	51,552	44,218

Tipperary Region



EBI

	Tipperary Average	National Average
Dairy Cows	117	121
1st lactation animals	123	124
Heifer calves born in 2012	132	133
Heifer calves born in 2013	143	150

Replacement Heifers

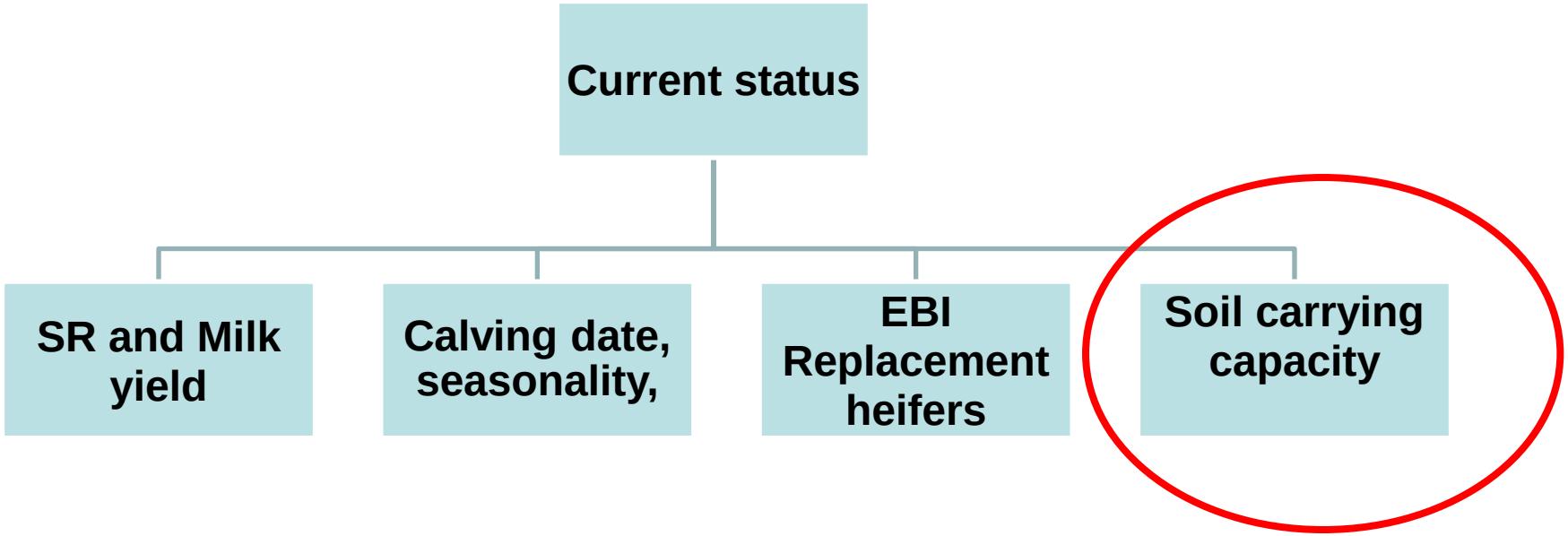
	Heifers per 100 cows	
	Tipperary	**National**
2013 born heifers	28	36
2014 born heifers	25	*32

Tipperary Region

Enough heifers to maintain herd size

More heifers needed for expansion

Tipperary Region



Soil Type

- All farms were grouped into three categories
  - Dry
  - Mixed
  - Wet

Definition

- Dry > 70% of land area free draining
- Mixed Between 30%-70% free draining
- Wet < 30% of land area free draining

Current Performance

	Dry	Mixed	Wet
No. of farms	134	147	111
% of farms	34.2	37.5	28.3
Av. milk plat size (Ha)	41.1	40.8	32.8
Cow SR (cows/ha on MP)	2.03	1.90	1.67
Total Area Ha	5,216	5,514	3,287

Soil carrying capacity & expansion potential

Soil Type	Milking platform SR
Dry	2.8 cows / ha
Mixed	2.5 cows / ha
Wet	2.2 cows / ha

Milking platform stocking rates
– *silage can come from out farms*

Potential expansion on existing land base

	Dry	Mixed	Wet
Stock carrying capacity	2.8	2.5	2.2
Additional cows	4,845	4,086	2,170
Additional Milk (m. litres)	25.4	19.3	10.2
% Increase	70.5	64.0	54.2

Supplier stated expansion

	Actual	Supplier Projections	
	2013	**2014**	**2015**
Milk Production L	277,858	293,703	317,629
% Increase		10.9	19.5
No farmers expanding		**244**	**295**

Potential is 64% increase

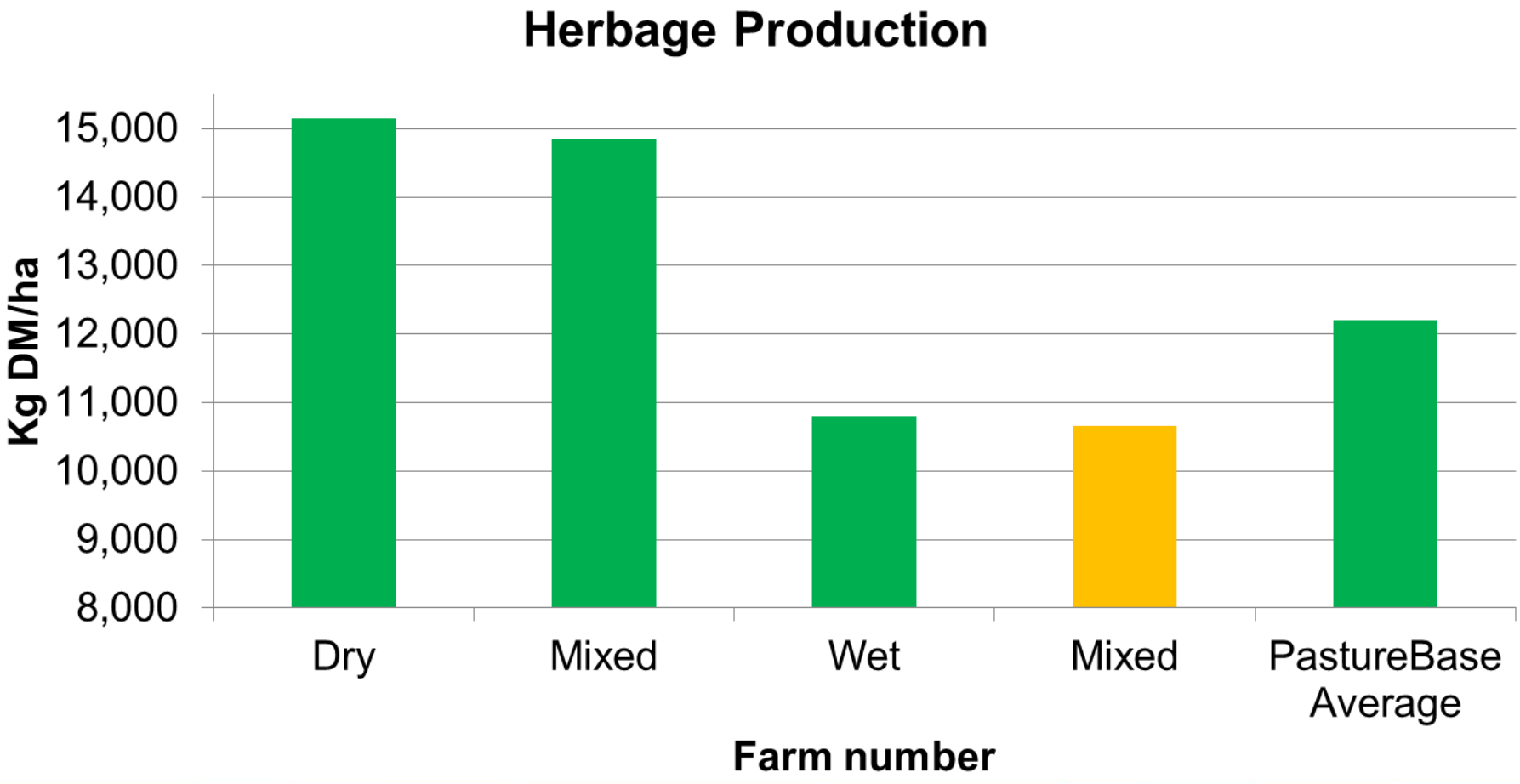
Grass growth required - milking platform self sufficient

	Dry	Mixed	Wet
Stock carrying Capacity	2.8	2.5	2.2
Grass growth (T DM/Ha)	14.8	14.1	12.4
Grass used (T DM/Ha)	12.6	11.3	9.9

Grass growth required - 50% silage from out farm

	Dry	Mixed	Wet
Stock carrying Capacity	2.8	2.5	2.2
Grass growth (T DM/Ha)	13.2	12.2	10.5
Grass used (T DM/Ha)	11.2	9.8	8.4

Tipperary Farms PastureBASEIreland



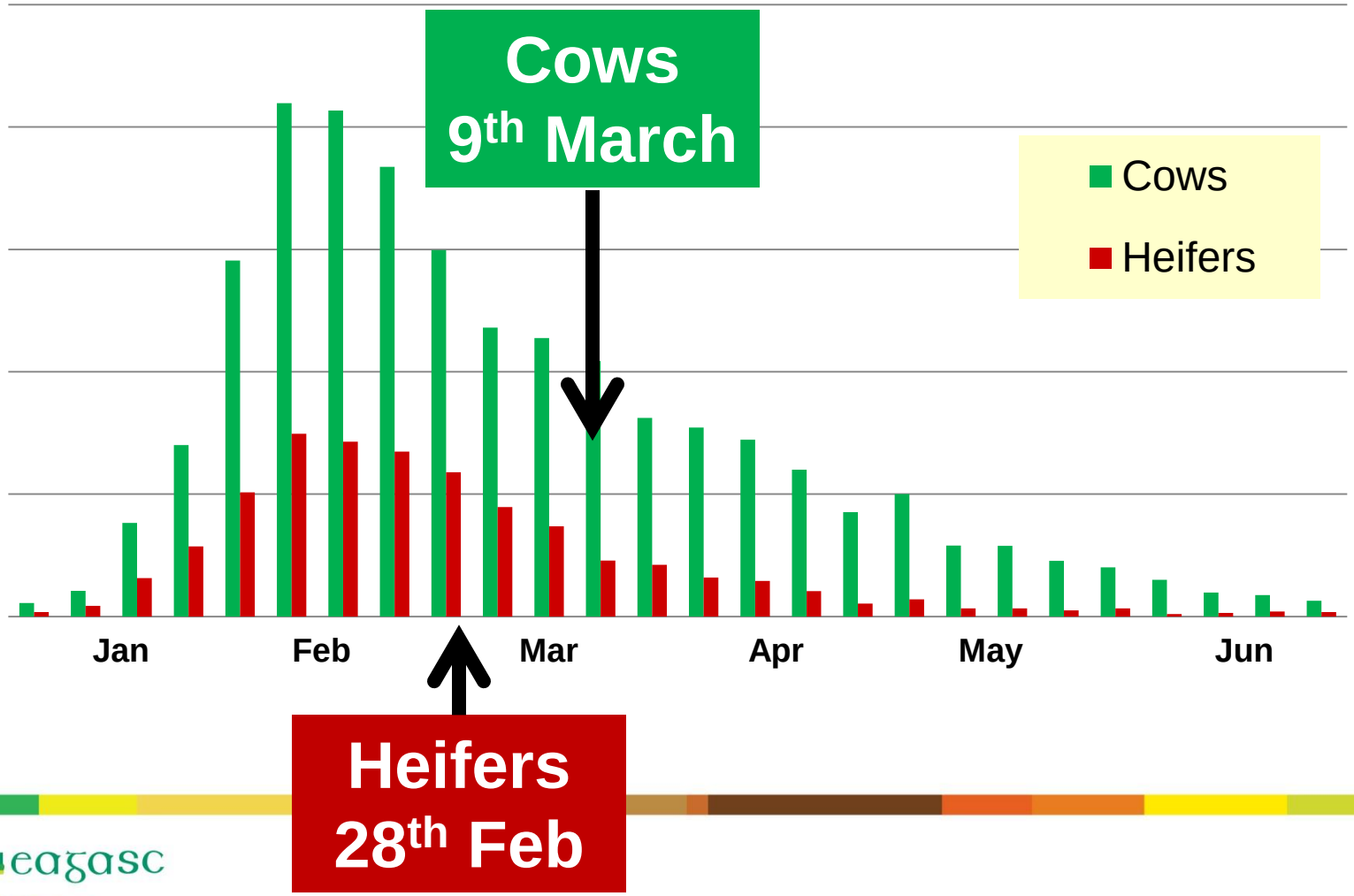
Summary

- Significant scope for expansion in Tipperary Region
- Key focus areas at farm level
  - Calving date
  - EBI and replacement heifer generation
  - Grass growth, soil nutrient status & grazing infrastructure
  - Enterprise shift towards dairy
- Profitable expansion will be driven by increasing grassland productivity and increasing the fertility status of the herd
- Increasing fertility status will increase milk yield per cow
  - Replacement rate (age profile circa 200L/year)
  - Calving Date 25 days (circa 400L/cow/year)

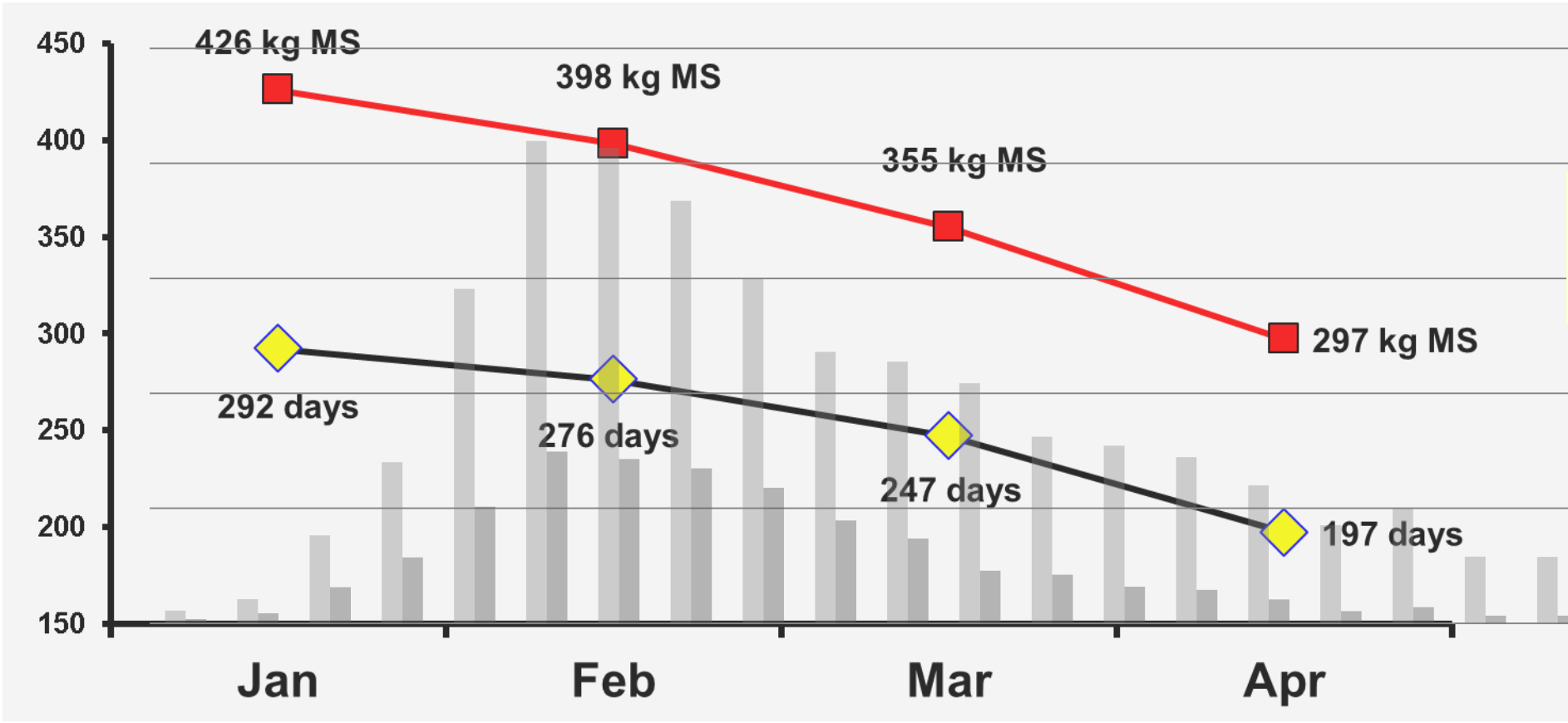
Four major factors

- Calving date
- Heifer numbers
- Increasing grass grown
- Land use change

Calving date



Calving Date



Calving Date

Mean calving date: From 7th Mar to 10th–20th Feb

Co-op	Seasonality scheme
Advisory	Farm walks Discussion groups Newsletters Seminars
Research	Solohead Research Farm

What % of live heifers born in 2007, calved down at 22-26 mths?

	No. ('000's)	
Heifers born alive in 2007	249	100%
Heifers calved at 22-26 m.o.	**119**	**47%**
Heifers calved at 22-26 m.o.	3	1%
Heifers calved at 22-26 m.o.	22	9%
Heifers calved at 22-26 m.o.	47	19%

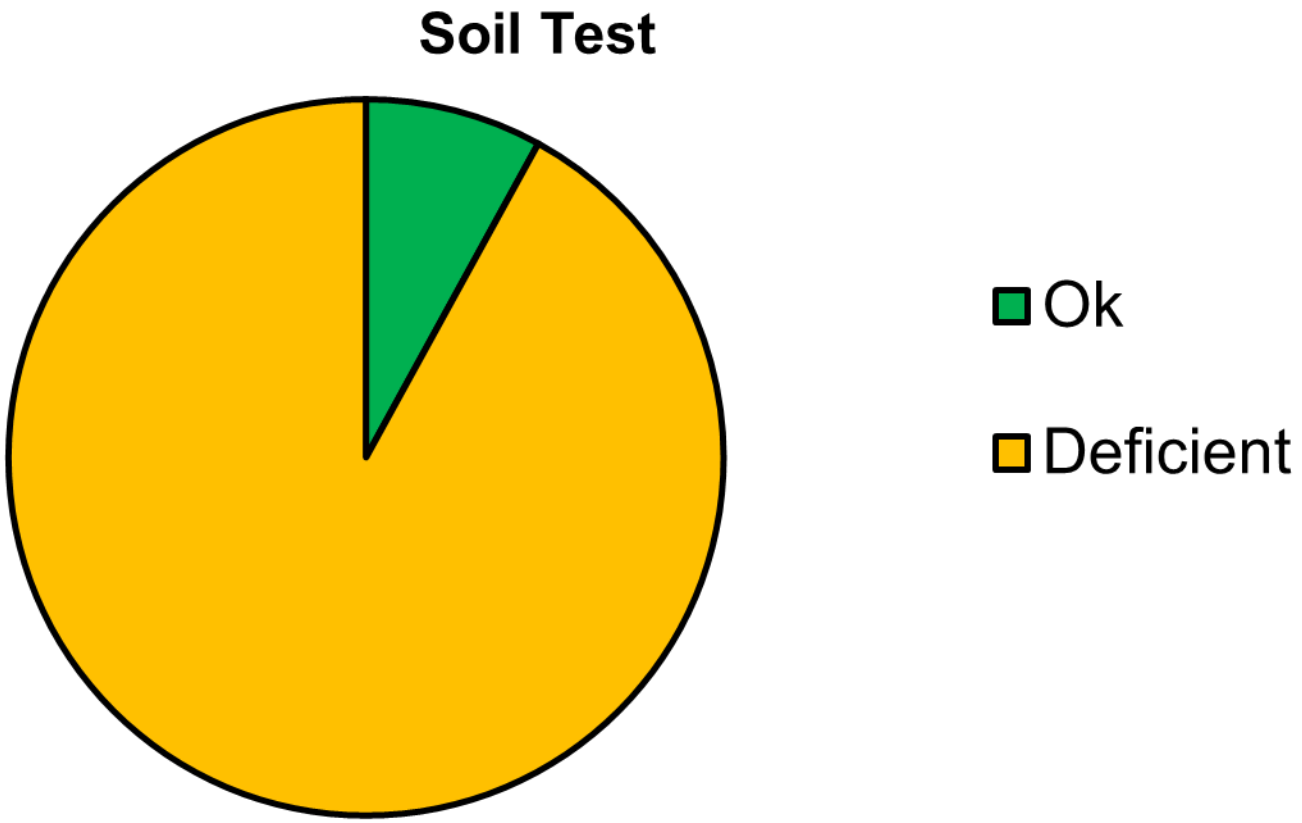
Heifer Numbers

Increase heifer number : 28 to 40 per 100 cows

Increase heifer liveweight

Advisory	**Five year physical plans** **Investment appraisal workshops** **Weighing demos on focus farms**

Increasing grass grown

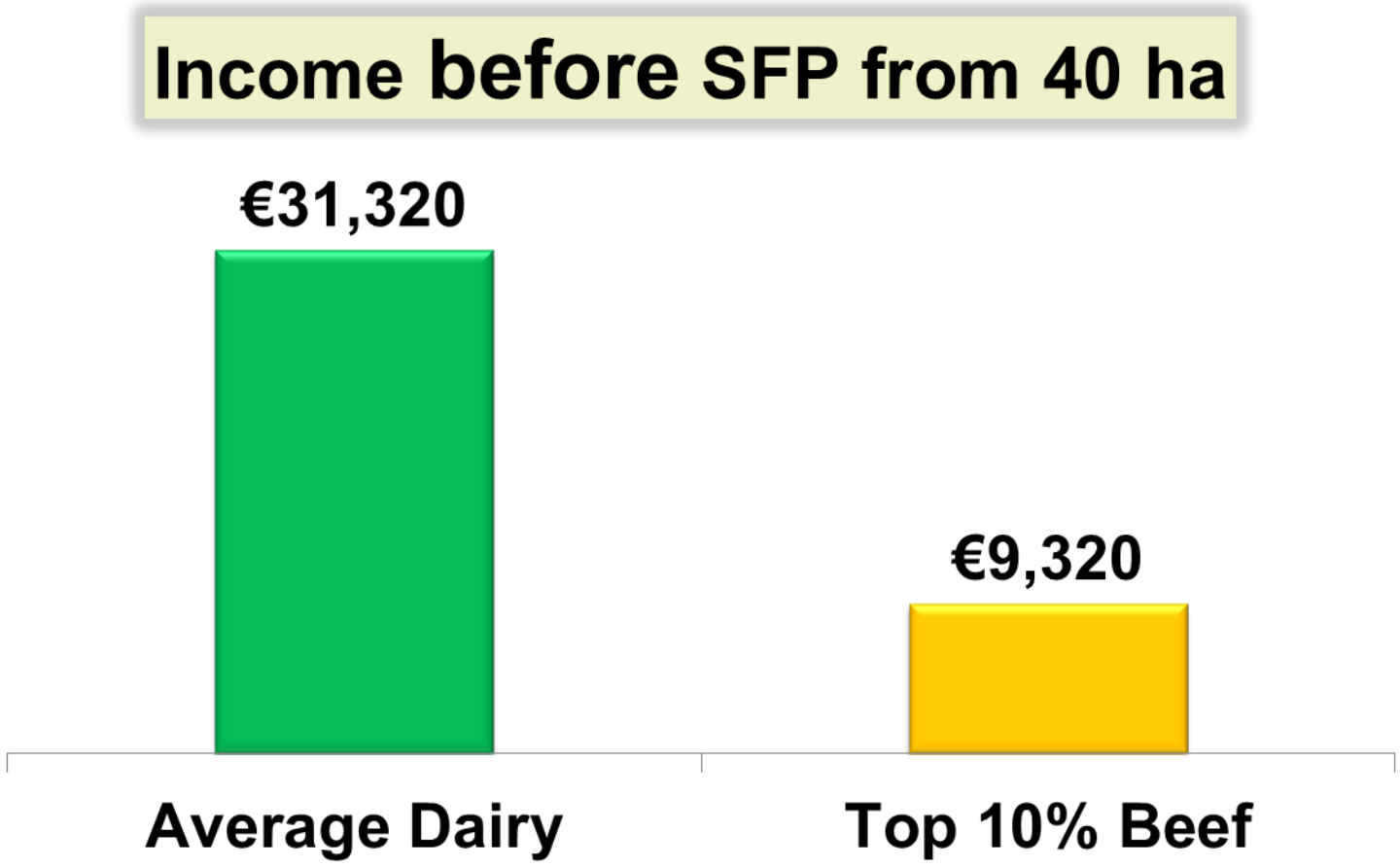


Increasing grass grown

Target for all soils: pH 6.3 ; index 3 P & K

Co-op	Soil test subsidy
Advisory	Soil focus farm walks • Light soil farms • Mixed soil farms • Heavy soil farms

Enterprise shift



Enterprise shift

Co-op **&** **Advisory**	**New entrants** **Land lease** **Partnerships** **Share farming**

Solahead Research Programme

- Solahead farm classified as mixed in farm description
- Refocus of research programme
  - Sustainable intensification

"Increasing output in a sustainable and profitable manor in order to maximise the potential of the key farm constraints Land area"

Solahead farm treated as milking platform with heifers contract reared

Solahead Research Programme

	2010-2013	2015-2018
Grass growth TDM /ha	13	14-15
Cow numbers	90	130
Farm SR	2.30	2.50
Nitrogen kg/Ha	200	270
Concentrate feed kg/ cow	350-800	<500
Milk Sales kg MS	36,000	58,500
Milk sales kg MS/ Cow*	400	450
Milk Sales kg MS/Ha	700	1,125

* Half increased milk sales per cow based on less milk to calves

National calving 2002-2012

	2004	2005	2006	2007	2008	2009	2010	2011	2012
Jan	10.8	10.0	9.9	10.0	10.9	11.4	11.8	10.6	13.2
Feb	29.7	29.1	28.8	29.4	31.6	31.2	30.3	31.7	35.3
Mar	28.0	28.6	28.5	27.5	26.4	26.9	26.8	27.4	25.2
Apr	18.6	17.3	18.2	18.3	16.7	16.2	17.2	16.8	15.4
May	10.4	10.3	9.6	9.8	9.6	9.5	9.6	9.1	8.3
Jun	2.6	4.7	4.9	4.9	4.8	4.8	4.3	4.4	4.2
MCD	13th Mar	15th Mar	16th Mar	16th Mar	14th Mar	13th Mar	13th Mar	13th Mar	9th Mar

National calving 2002-2012

70% reduction in April, May and June Calvers

	2009	2010	2011	2012	2009	2010	2011	2012
Jan	11.4	11.8	10.6	13.2	11.4	11.8	10.6	13.2
Feb	31.2	30.3	31.7	35.3	52.6	52.1	52.9	35.3
Mar	26.9	26.8	27.4	25.2	26.9	26.8	27.4	25.2
Apr	16.2	17.2	16.8	15.4	4.9	5.2	5.0	15.4
May	9.5	9.6	9.1	8.3	2.9	2.9	2.7	8.3
Jun	4.8	4.3	4.4	4.2	1.4	1.3	1.3	4.2
MCD	13th Mar	13th Mar	13th Mar	9th Mar	25th Feb	25th Feb	25th Feb	22nd Feb