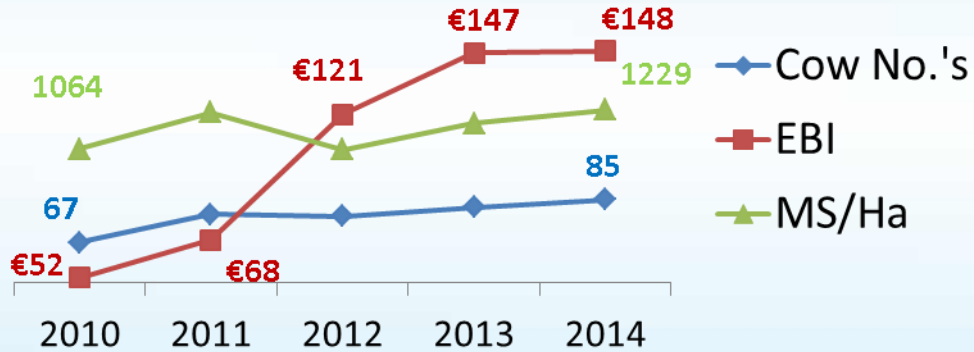
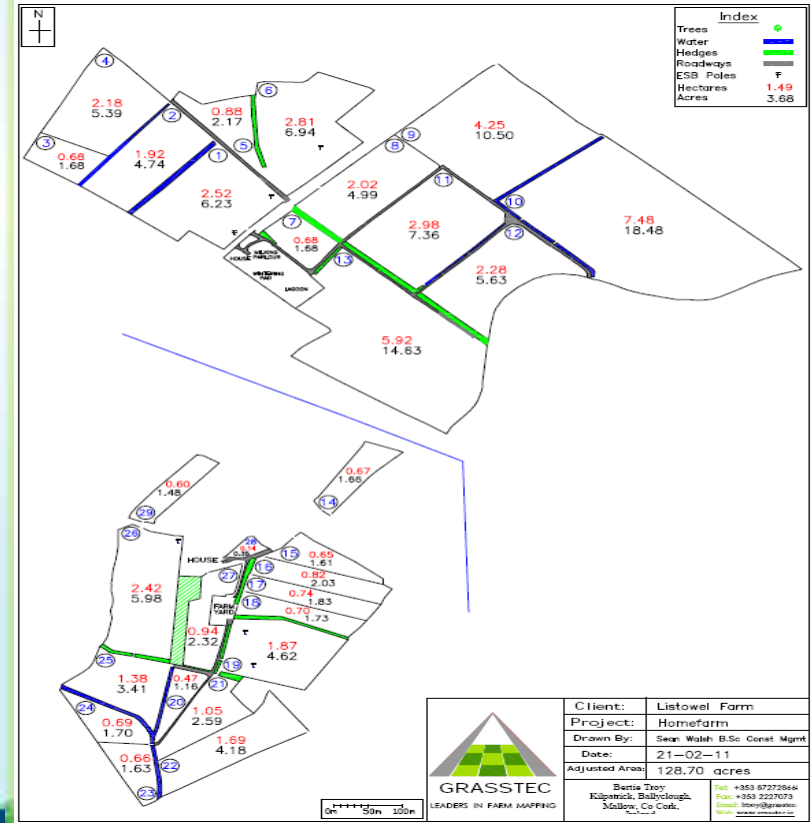


# Donal & Michael Keane's Farm Performance



## Key Farm Drivers

- € Low Cost Grass-Based Dairy Farm Infrastructure
- € Soil pH
- € Cow type – Holstein Friesian X Jersey
- € Cash Flow Management
- € Average Annual Rainfall (Lisselton – 1095 mm)



INFRASTRUCTURE	ADEQUACY		
	Good	Adequate	Needs Attention
<b>Grazing</b>			
Paddock Size	X		
Farm Roadways	X		
Water troughs	X		
<b>Milking parlour</b>			
No. of rows	X		
Collecting Yard		X	
Drafting		X	
<b>Farmyard</b>			
Slurry Storage	X		
Silage Slab	X		
Cubicle Spaces	X		
Head Feed Space	X		
Calf Facilities			X
Calving Facilities			X

# 5 Steps to Improving Soil Fertility

## Soil Fertility Summary: Keane's Farm

Information

1) Soil Test

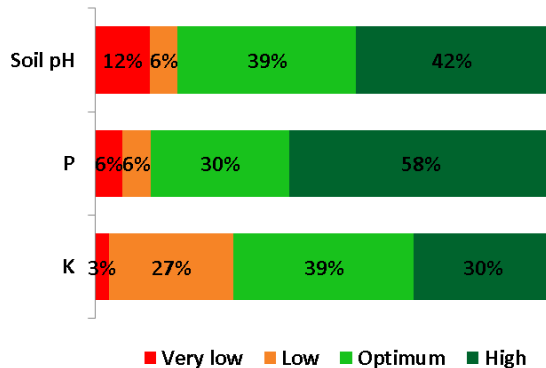
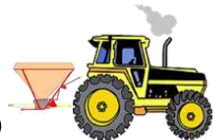
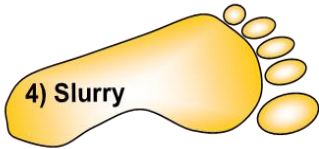
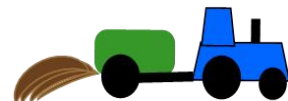
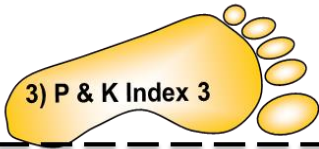
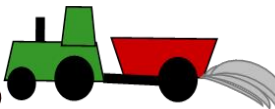
Interpretation

3) P & K Index 3

Index	Description
1	Very Low
2	Low
3	Target
4	High

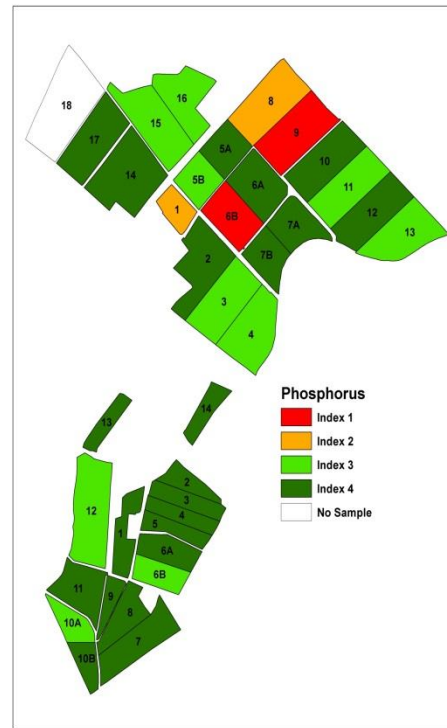
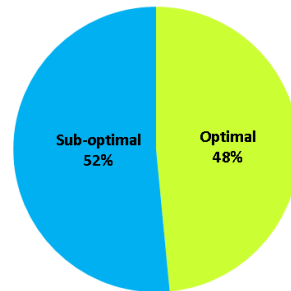
Action

5) NPKS Balance



Very low Low Optimum High

Percentage of soils with optimum soil pH, P & K status



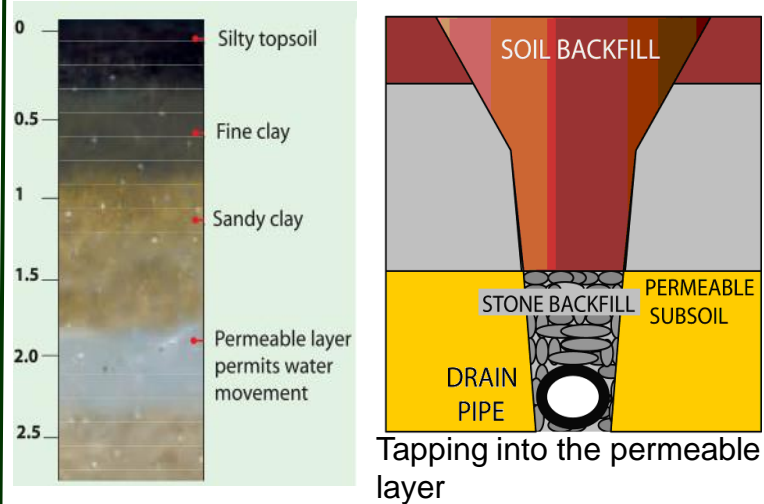
## Problem Diagnosis



### Soil Test pits (at least 2.5m deep)

- Design varies with soil type
- Is it a groundwater or shallow drainage problem?
- Water enters in permeable layers
- Other layers need help

## Groundwater Drainage System



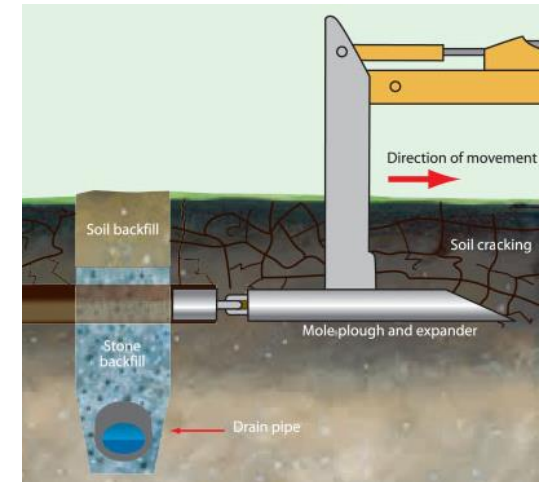
### Conventional or deep pipe drains:

- Where a permeable layer will transmit water
- Where water can percolate to watertable
- Most effective way to discharge water

## Shallow Drainage System

### Mole/Gravel Mole drain/Subsoiling:

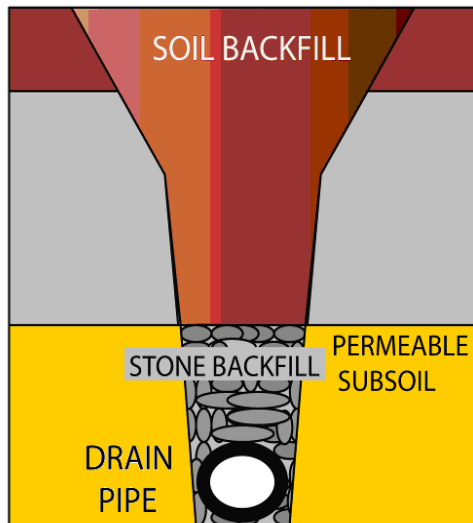
- Aim to fracture and crack the soil
- Effectiveness dependent on:
  - Soil clay/stone content
  - Implement used
  - Weather conditions
- Used In tandem with collector drains



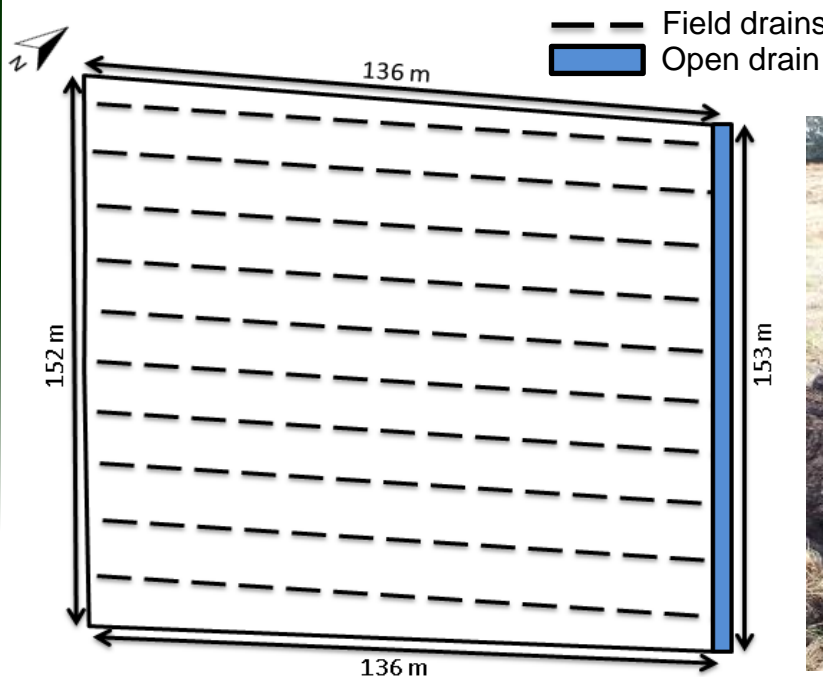
## Groundwater Drainage

### 1.7 m deep drains

- Where a permeable layer will transmit water
- Where water can percolate to watertable
- Most effective way to discharge water



## Drainage System Design



# Keane's– Drainage Costs

## Key points:

- Soil investigation
- Site appraisal
- Drainage system design

**Costs**

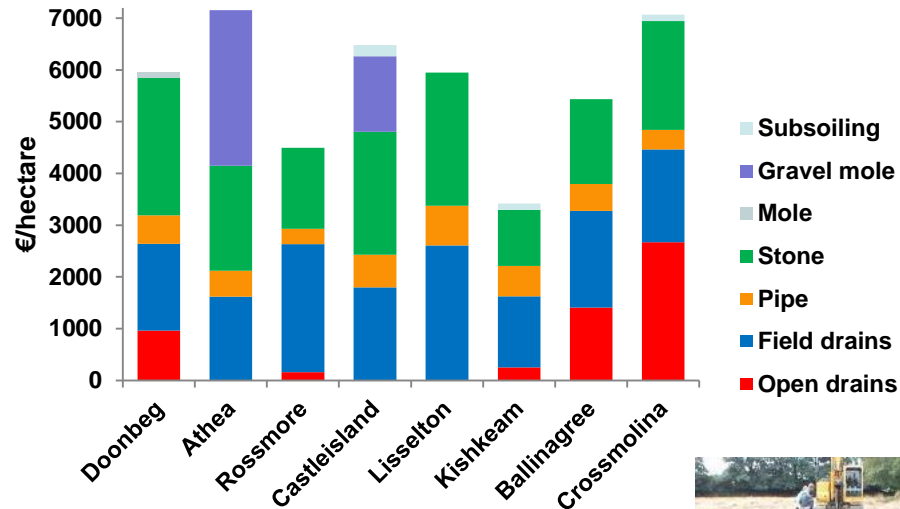
**Total/ha**

**Drain installation @ €40/hr (65 hrs) €2,610**

**Drainage pipe @ €1.09/m (700 m) €765**

**Drainage stone @ €12.30/t (209 t) €2,570**

**Drainage cost €5,945**



## Decision process:

- Soil fertility
- Farm roadway and water Infrastructure
- Ryegrass pasture
- Drainage

