Voluntary on-farm resource efficiency initiative

Harold Kingston
Chairman
IFA Environment & Rural Affairs Chairman
Presentation Overview

✓ Background
✓ Collaborative & voluntary
✓ Objectives
✓ Whole farm approach
✓ Resource Efficiency Assessments (REAs) / Cost Saving Studies
✓ Plans for 2015
Current farming background

- Commodity Price Pressures
- Increased Input Costs
- Cross-Compliance
- Environmental Regulations
- CAP Reform
- Milk Quotas – Abolished 2015
- Food Harvest 2020

Smart Farming

Improve Farm Returns with Better Resource Management

IFA - Celebrating 60
Background

- Food Harvest 2020
- Milk Quotas – Abolished 2015
- Commodity Price Pressures
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- Environmental Regulations
- And More

Smart Farming
Improve Farm Returns with Better Resource Management
Background

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And More

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Improve Farm Returns with Better Resource Management
Background

Source: Teagasc
Background

Marginal Abatement Cost Curve (LCA)

Source: Teagasc

Resource Efficiency
Smart Farming Origin

• National Waste Prevention Programme
  – GreenBusiness.ie
  – Sectoral approach e.g. healthcare, hospitality, food sector, garages
  – Resource efficiency

RE = Behaviour + Technological
Smart Farming - Origin

• Gap identified in Resource Efficiency programme
• Increasing Agri-Environmental obligations
• Irish Agriculture for 2014
  – Value of outputs = €6.5 billion
  – Cost of inputs = €4.9 billion
• Even an increase of 1% in resource efficiency on-farm potential savings of €49 million
Background

- **Smart Farming** initiative - collaborative & voluntary
- **Collaboration**
  - Using existing knowledge and expertise
  - Improve farm returns and deliver environmental benefits
  - Through better resource management
- **Implementing Partner**
  - Irish Farmers’ Association
UCD

Fertiliser Association

SEAI

NFGWS

Teagasc

Grassland Association

IFA

FTMTA

EPA

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Whole farm approach

• Top tips on how to save money and maximise outputs
  – i.e. doing the simple things better
Soil fertility

Grassland

Time management

Internalised environmental protection
The double dividend!

Energy

Water

Feed

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Soil Fertility

By soil testing, you can save €23/acre on fertilizer \(^1\)
This is on land with high P and K levels (Index 4) and stocked at 2 dairy cows/ha (0.8 cows/acre)

- Without a soil test you do not know the amount of fertiliser to apply
- The annual cost of a soil test is 50 cents/ac/year or 0.5 units of P!
- Apply lime it could save you 2 bags/acre of CAN
- Optimum pH for grassland is 6.2 to 6.3
- Low soil pH reduces availability of nutrients in soils and poorer response to applied fertiliser

Saves money
Increases efficiency
Reduces nutrient losses to water
The double dividend!
Energy

Know your energy use

- Replacing older T12 florescent tube with energy efficient T5 will save €17/tube/year.
- Correctly sized plate heat exchangers for cooling milk can reduce energy costs by up to 50%, saving €9/cow/year.
- A variable speed drive on vacuum pump at milking can reduce pump running costs by 60% or €4/cow/year.

Saves money

84kWh saving /T5 = 37 kg CO$_2$e/T5

The double dividend!
Water

- Compare daily water requirements against total daily usage?
- Repairing a leaking ball-valve on a trough will save up to 150 m$^3$ per year or €170.
- Adequate trough space to allow 10% of the herd to drink at one time saves money.
- Increases efficiency/unit of production.
- Reduces risk of nutrient loss to water.
- Less energy used.

The double dividend!

### Water Consumption

<table>
<thead>
<tr>
<th>Drip Size</th>
<th>Stream Wastes</th>
<th>Water Usage</th>
<th>Cost per Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 drip/sec</td>
<td>4 liters/day</td>
<td>€1.62 per year</td>
<td></td>
</tr>
<tr>
<td>1.5mm</td>
<td>90 liters/day</td>
<td>€39.46 per year</td>
<td></td>
</tr>
<tr>
<td>3mm</td>
<td>320 liters/day</td>
<td>€129.64 per year</td>
<td></td>
</tr>
<tr>
<td>6mm</td>
<td>985 liters/day</td>
<td>€399.07 per year</td>
<td></td>
</tr>
<tr>
<td>6mm</td>
<td>3,500 liters/day</td>
<td>€1,418.02 per year</td>
<td></td>
</tr>
</tbody>
</table>

**Smart Farming**

Improve Farm Returns with Better Resource Management
Inputs & wastes – Silage effluent

Why?
✓ Saves money & time
✓ Reduces concrete erosion
✓ Reduces environmental risks
  • BOD; nutrients
✓ Reduces CO₂ emissions

How much is generated?
• 20% DM grass = 160l/t
• 24% DM = 70l/t
• 26% DM = 20l/t
• 28% DM = 0

Cost of landspreading for 600 tonnes grass = €170-190
Dissemination & Implementation

• Smart Farming Guide
• [www.smartfarming.ie](http://www.smartfarming.ie)
• IFA has 88,000 members and network of 947 branches
• Smart Phone App and IFA Farm Directory [www.ifarm.ie](http://www.ifarm.ie)
• National Conference
• Farmers Journal 12 page supplement – readership 100,000
On-farm Cost Saving Studies (CSS)

• On-farm CSS commenced in 2013
• Six farms participated
• Mix dairy, beef, sheep, arable
• Average savings of €5,000 identified on feed, fertiliser, energy and waste

Smart Farming

Improve Farm Returns with Better Resource Management
Doing a CSS

- Farmers indicate willingness to participate – self declaration
- All are members of discussion groups
- Prepared to share findings with members of discussion group
Doing a CSS

• Standard letter issued to farmer seeking information on:
  – Energy & Fuel Use
  – Soil fertility information and relevant map
  – Copy of most recent Single Farm Payment application form
  – Land parcel identification numbers
  – Water
    • Water bills
    • Results of any water quality tests
  – Feed quantities and costs
  – Results of silage tests
Doing a CSS

• Draft CCS prepared in advance of farm visit by agricultural consultants
• Farm visit
• CCS finalised over phone with farmer
• CCS discussed on-farm with members
• Farmers informing farmers
Activities During 2014

- 30 on-farm CSS
- Across all farm types
- Farmers informing farmers
2014 – The Results

Cost savings per farm

• Range €260 - €15,779

• Average savings per farm: €7,120

• Average (exclude €15,779): €6,663

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## Example of a CSS

<table>
<thead>
<tr>
<th>Focus Area</th>
<th>Action</th>
<th>Economic Return</th>
<th>Environmental Dividend</th>
</tr>
</thead>
</table>
| Soil Fertility | Apply Lime 2.5 ton/ac – 60% of the farm  
• Low soil pH  
• Cost €4,500 | Release equivalent of 2 bags of CAN per acre  
Save 9 ton of CAN per year = €2,610  
Payback period = 2 years | More efficient use of nutrients  
Reduced risk of run-off |

*Smart Farming*  
Improve Farm Returns with Better Resource Management
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<tr>
<td>Water</td>
<td>Invest €7750 in water • 20 troughs @ €200 • 1500m pipe @ €2.5</td>
<td>Cows currently yield 5500 L +10% yield @ €0.1/L profit = €4,400 Benefits in less than 2 years</td>
<td>Increased output/unit of production Increased resource efficiency</td>
</tr>
<tr>
<td>Feed</td>
<td>Measured the amount of feed that was being delivered to the cows</td>
<td>Saving by feeder adjustment €3300</td>
<td>Improved feed efficiency Reduced GHG emissions</td>
</tr>
</tbody>
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<tr>
<td>Inputs &amp; Waste</td>
<td>Reduce Inputs by reducing gap between finishing and sales by 3 days per lamb • by accurately knowing when animals are finished</td>
<td>€4400 saving per year</td>
<td>Increased efficiency per unit of production</td>
</tr>
<tr>
<td></td>
<td>Spend = €2,800</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Register for FREE On-Farm Cost Savings Study

• Are you in a Discussion Group? ✔
• Would you like a free on-farm cost savings report to identify savings on your farm? ✔

Spaces are Limited. To Register Your Interest Email: smartfarming@ifa.ie Tel: 01 4260343
Resource Efficiency – the double dividend!
Acknowledgement
Thank you

www.smartfarming.ie and www.ifarm.ie