

**Ulster Grassland Society**  
**54<sup>th</sup> Annual Conference**  
**29<sup>th</sup> January 2013**

**Ian McCluggage**





*“Farming is the art and science of utilizing the land for the growing of plants and the raising of animals, for food, fibre, bio-fuel and other products used to sustain life, meet human needs and allow economic gain.”*



# Sustainable – What do we mean?

Climate Change

GHG Mitigation

Best Use of Resources

- Land
- Water
- Energy
- Labour

Animal Welfare

Production Efficiency

Consumer Confidence

**FARM PROFITABILITY**





# Sustainable Intensification

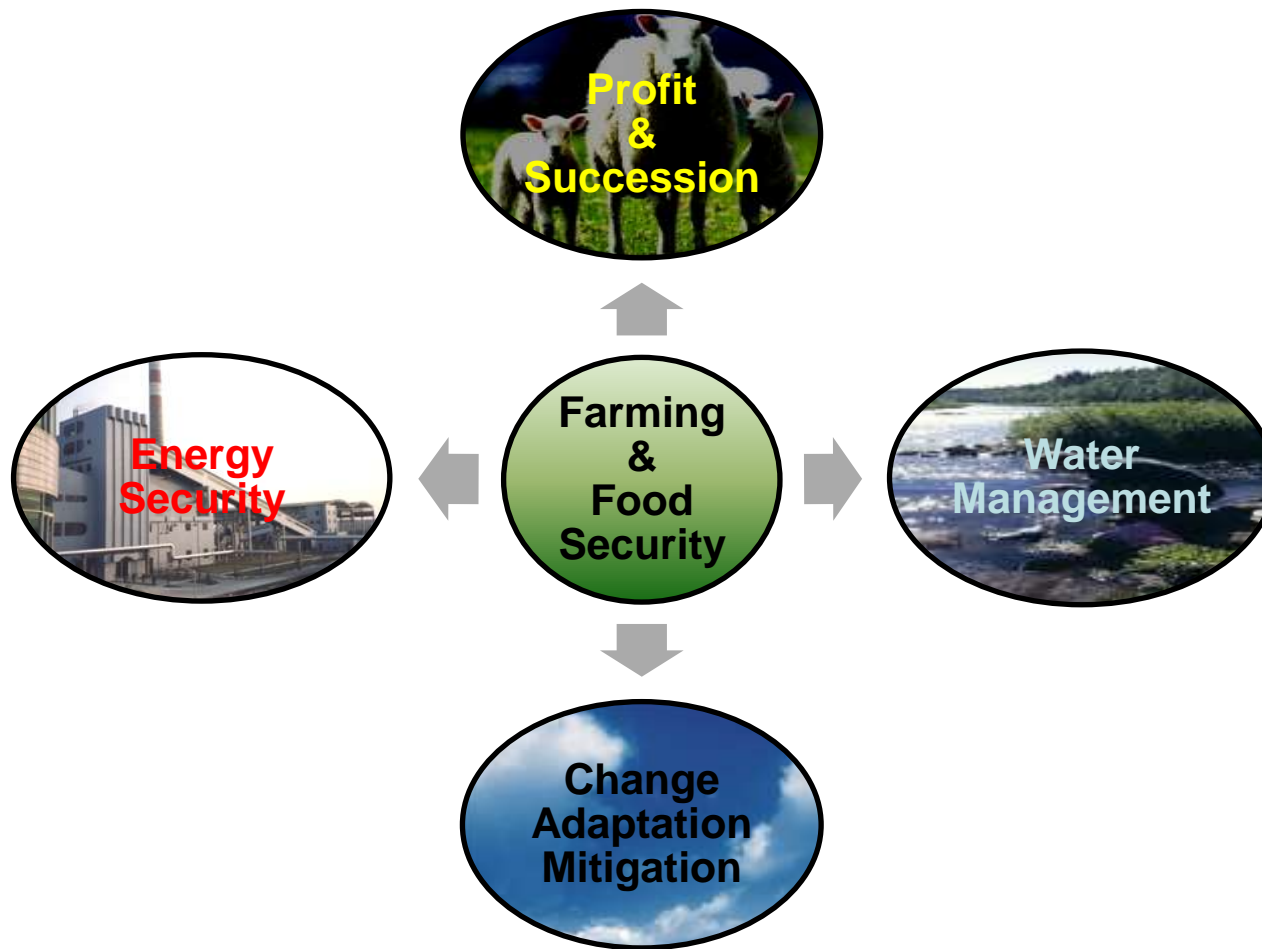


John Beddington, UK  
Government Chief Scientist

By 2050 Agriculture needs  
to **DOUBLE** its output while  
**HALVING** its environment  
and water footprint.



# What can be done to achieve “sustainable intensification”



# To achieve sustainability land management critical

As grassland farmers do we need to get “back to basics” and understand our land.

- soil structure
- drainage
- compaction
- nutrient management
- soil pH
- ploughing
- grass genetics and reseedling



Willing to purchase land at £10,000+ per acre.

Are we willing to reinvest in the acres we own?



# What is the current situation?

- < 10% grassland reseeded annually.
- > 50% soils with a pH less than 6 with 25% less than pH 5.5.
- > 25% of 1<sup>st</sup> Cut Silage Sulphur deficient.
- > 60% of 2<sup>nd</sup> Cut Silage Potash and Sulphur deficient.
- > 50% of 2<sup>nd</sup> Cut Silage Swards insufficient nitrogen.
- < 2% of grassland drained annually.





# Pay back from re-investing in land

- 10-30% increase in grass yield lifting soil pH from 5.0 - 5.5 → 6.0 – 6.5 (BGS).
- efficiency of fertilizer use reduced by 15% if pH less than 5.8.
- 15-30% grass yield reduction poorly drained soils (Teagasc).
- poorly drained soils poor GHG mitigation.
- NI can grow 12t grass DM/Ha.
  - Average utilization 5.5t DM / Ha (NI & ROI).
  - Improve to 8t DM/Ha (still only 66% utilization).
  - Additional 27,500 MJ of energy per Ha.
  - Average 100 cow dairy farm Equivalent to 100t concentrate.





# Pay back from re-investing

## Grass and Forage Genetics

- D Johnston, Loughgall
  - hybrid grass + 3 kg red clover yield 16-17t DM/Ha.
  - increased growing days.
  - improved winter hardiness.
  - greater disease resistance.
- Yield Mapping – areas of field yielding 20t/Ha winter wheat.

## Challenge

- greater percentage of field.
- consistent.
- genetic improvement varieties.



# Best Use of Resources

Fertilizer Value of Nutrients in the Province-Wide Slurry Store.

13,000t available	N	_____	£13m
13,000t available	P <sub>2</sub> O <sub>5</sub>	_____	£13m
35,000t available	K <sub>2</sub> O	_____	£20m

Total Value      £46 million

J Bailey'13





# Best Use of Resources

- Agriculture accounts for 70% of all water used globally and up to 95% in several developing countries.
- 14% more fresh water needed for agricultural purposes next 30 years.
- At current fresh water demand water scarcity will cause annual global losses of at least 350m tons of food production – greater than entire current US grain crop.



# Best Use of Resources

	1984	1992	2000	2008	2011
Cow Numbers (000's)	294.7	269.2	289.8	287.6	281.1
Replacement Heifers	39.6	35.5	46.9	62.7	67.1
Heifers to Cow Ratio	1:7.5	1:7.6	1:6	1:4.5	1:4

Current Lifetime Yield 27,000 L

Challenge to the dairy industry







**Food V Fuel  
or  
Food + Fuel**



	Wheat	Barley	Oats	Total Cereals	Horses
1912	3,188	1,262	141,933	146,656	112,299
2011	11,568	24,049	2,095	37,93	12,040



# The Next Generation in Farming



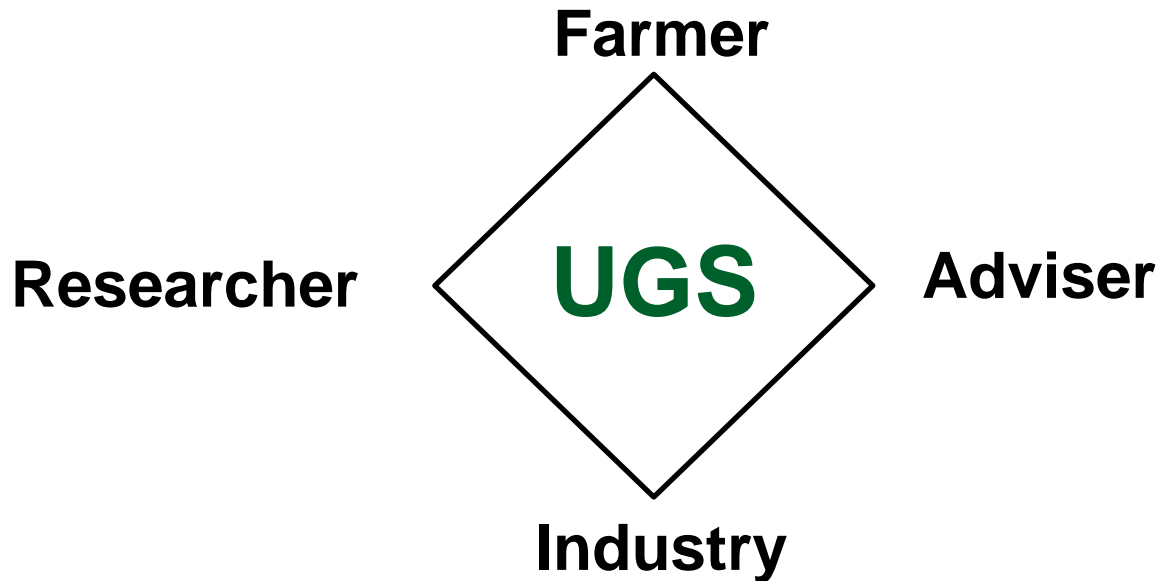
Learn from the past.  
Set clear detailed goals for the future and live in the only moment of time over which you have any control.

**NOW**





# The Role of UGS



*UGS can help cut the diamond.*

