

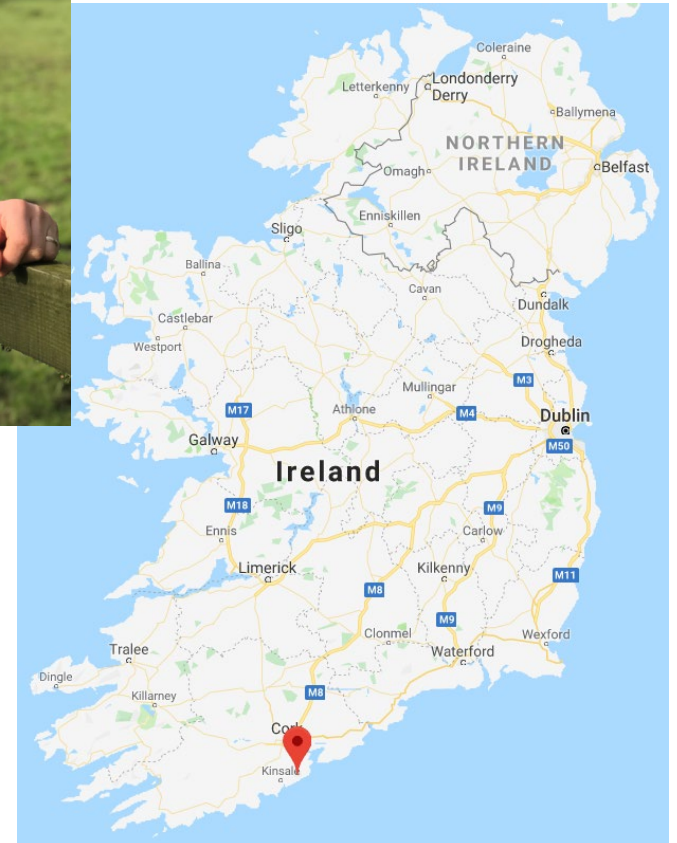


# CLIMATE CHANGE AND ANIMAL WELFARE — THE FARMERS STORY

**Alan Jago**  
ICOS National Conference  
7<sup>th</sup> November 2019

# ABOUT ME

- Dairy and Cereal Farmer
- Family Farm Partnership
- Agri Aware – Chairman
- Teagasc - Former Authority Member
- Macra na Feirme – Former President
- CEJA – Former President
- Teagasc Agricultural Education



# INDUSTRY CHALLENGES

- Climate Change
- Animal Welfare
- Sustainability

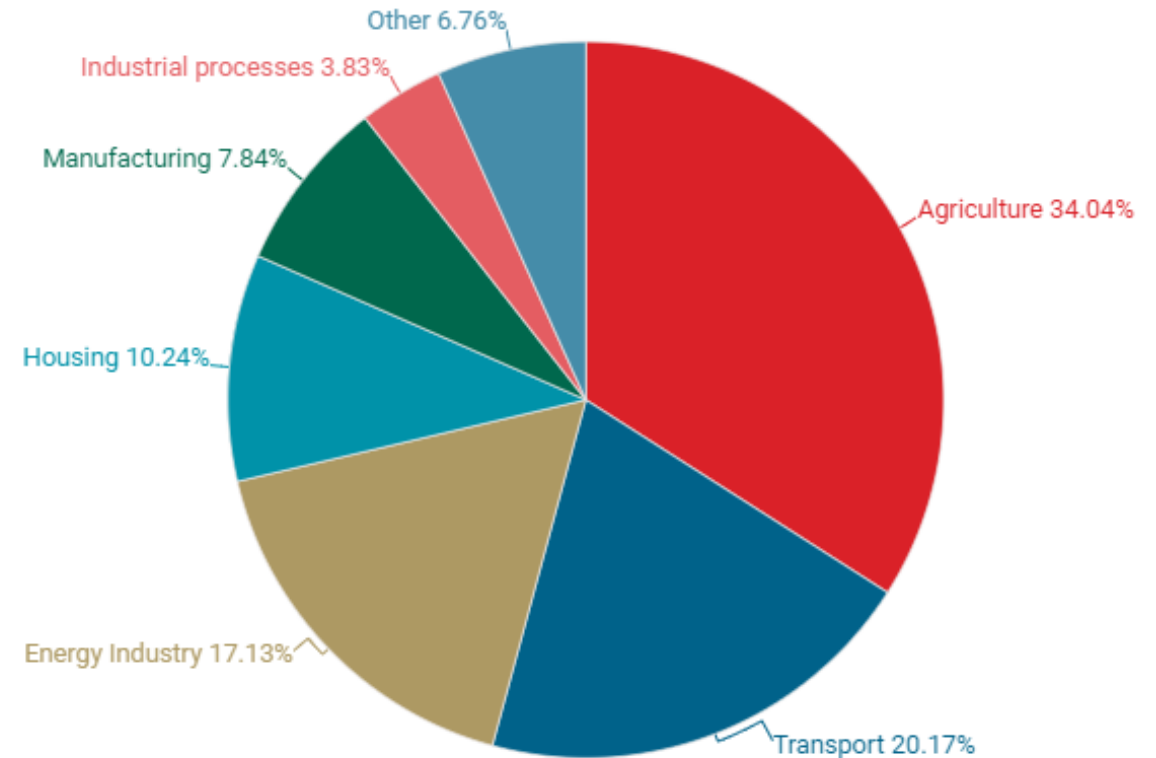
[#TellOurStory](#)



# CLIMATE CHANGE - IRELAND

- Ireland is the only country in Europe where agriculture accounts for the largest share of GHG emissions ahead of any other sector. However, this isn't because Irish agriculture is some enormous emitter of greenhouse gases. Instead, it merely reflects the **absence of any significant heavy industry in this country, such as mining, steel, chemical or car manufacturing.** – IFJ 2019

Figure 1: Greenhouse gas emissions in Ireland in 2018



# IRELAND COMPARED TO OTHER EU COUNTRIES

## Greenhouse gas emissions by economic activity, 2016

(thousand tonnes of CO<sub>2</sub> equivalents)

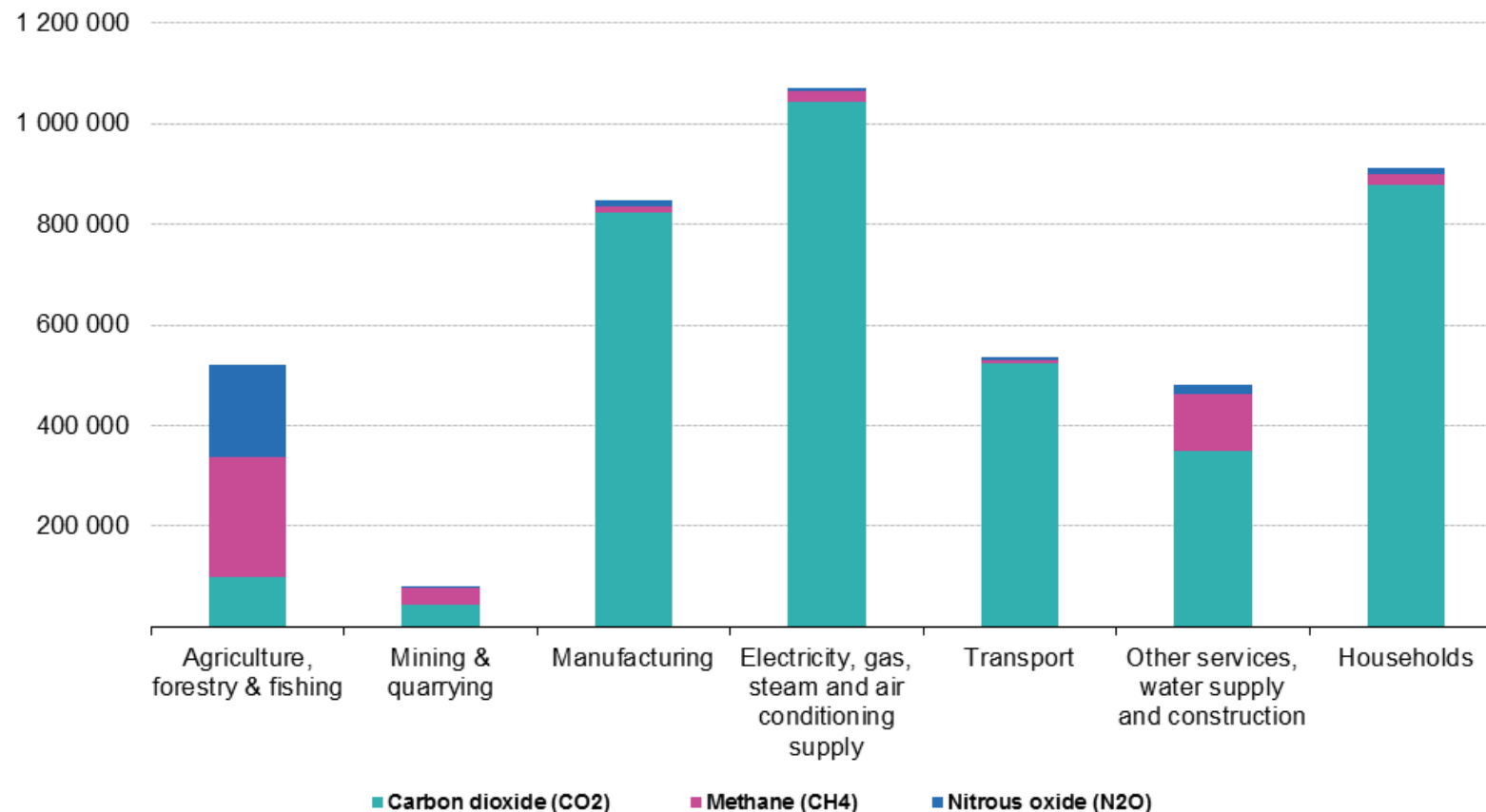
|                | ★ Agriculture, forestry and fishing | Mining and quarrying | Manufacturing | Electricity, gas, steam and air conditioning supply | Transportation and storage | Other services, water supply and construction | Total production activities | Households | Production activities plus households |
|----------------|-------------------------------------|----------------------|---------------|---|----------------------------|---|-----------------------------|------------|---------------------------------------|
| <b>EU-28</b>   | 521 418                             | 79 449               | 831 884       | 1 083 723   | 525 315                    | 477 940                                       | 3 519 730                   | 903 699    | 4 423 429                             |
| Belgium        | 12 428                              | 466                  | 34 356        | 15 638  | 10 045                     | 13 302  | 86 233                      | 28 778     | 115 011                               |
| Bulgaria       | 4 271                               | 372                  | 6 839         | 28 555  | 6 227                      | 1 496   | 47 760                      | 9 881      | 57 641                                |
| Czechia        | 8 807                               | 7 935                | 18 089        | 49 515  | 6 323                      | 10 540  | 101 208                     | 15 990     | 117 198                               |
| Denmark        | 12 312                              | 1 785                | 5 821         | 11 085  | 43 428                     | 6 517   | 80 950                      | 8 305      | 89 254                                |
| Germany        | 72 612                              | 6 089                | ★171 685      | 337 909   | 87 566                     | 89 637  | 765 498                     | 193 082    | 958 579                               |
| Estonia        | 1 394                               | 91                   | 2 467         | 11 892  | 1 936                      | 1 285   | 19 065                      | 1 142      | 20 207                                |
| → Ireland      | 20 004                              | 331                  | 6 526         | 12 000  | 13 734                     | 4 430   | 57 026                      | 12 420     | 69 446                                |
| Greece         | 8 330                               | 404                  | 13 373        | 31 415  | 6 973                      | 9 597   | 70 092                      | 15 308     | 85 400                                |
| Spain          | 46 777                              | 1 634                | 77 570        | 58 039  | 46 986                     | 28 470  | 259 476                     | 68 677     | 328 154                               |
| France         | 90 694                              | 1 187                | 87 532        | 29 889  | 42 721                     | 68 289  | 320 313                     | 127 890    | 448 202                               |
| Croatia        | 3 723                               | 641                  | 4 137         | 4 113   | 1 138                      | 4 519   | 18 273                      | 5 605      | 23 878                                |
| Italy          | 39 109                              | 2 986                | 89 565        | 94 432  | 47 145                     | 43 662  | 316 897                     | 103 010    | 419 907                               |
| Cyprus         | 572                                 | 15                   | 1 565         | 3 313   | 263                        | 958   | 6 686                       | 1 862      | 8 548                                 |
| Latvia         | 3 228                               | 49                   | 1 184         | 1 967   | 2 575                      | 1 498   | 10 501                      | 2 079      | 12 581                                |
| Lithuania      | 4 953                               | 11                   | 5 255         | 1 813   | 9 369                      | 1 457   | 22 859                      | 4 541      | 27 399                                |
| Luxembourg     | 804                                 | 7                    | 1 496         | 319   | 4 702                      | 1 028   | 8 356                       | 1 718      | 10 074                                |
| Hungary        | 9 040                               | 753                  | 10 588        | 12 419  | 4 285                      | 10 301  | 47 386                      | 15 640     | 63 025                                |
| Malta          | 63                                  | 3                    | 24            | 307   | 2 397                      | 238   | 3 031                       | 197        | 3 228                                 |
| Netherlands    | 29 272                              | 2 507                | 44 970        | 52 155  | 25 911                     | 22 516  | 177 331                     | 36 406     | 213 737                               |
| Austria        | 8 835                               | 891                  | 26 597        | 7 684   | 5 106                      | 5 980   | 55 093                      | 14 743     | 69 835                                |
| Poland         | 45 813                              | ★21 456              | 61 649        | 152 175   | 27 194                     | 36 291  | 344 578                     | 53 319     | 397 897                               |
| Portugal       | 8 890                               | 249                  | 16 099        | 14 676  | 6 452                      | 11 116  | 57 482                      | 8 232      | 65 714                                |
| Romania        | 19 730                              | 5 230                | 23 455        | 28 941  | 7 296                      | 13 589  | 98 240                      | 16 521     | 114 761                               |
| Slovenia       | 2 019                               | 315                  | 2 209         | 5 034   | 4 151                      | 1 124   | 14 851                      | 3 315      | 18 166                                |
| Slovakia       | 2 290                               | 557                  | 16 691        | 6 158   | 3 724                      | 5 428   | 34 848                      | 5 503      | 40 351                                |
| Finland        | 8 131                               | 423                  | 12 466        | 17 246  | 10 237                     | 5 972   | 54 474                      | 6 810      | 61 284                                |
| Sweden         | 9 047                               | 1 517                | 14 149        | 6 963   | 13 286                     | 7 056   | 52 017                      | 9 252      | 61 269                                |
| United Kingdom | 48 269                              | 21 546               | 75 528        | 88 072  | ★84 148                    | 71 644  | 389 208                     | 133 474    | 522 681                               |
| Iceland        | 871                                 | 1                    | 1 944         | 5   | 2 408                      | 501   | 5 731                       | 584        | 6 315                                 |
| Norway         | 6 127                               | 15 314               | 11 776        | 1 733   | 15 079                     | 3 098   | 53 126                      | 4 883      | 58 010                                |
| Switzerland    | 6 861                               | 74                   | 7 210         | 793   | 7 922                      | 10 306  | 33 165                      | 19 135     | 52 301                                |
| Turkey         | 66 896                              | 6 241                | 123 544       | 139 692   | 28 014                     | 45 880  | 410 267                     | 79 232     | 489 499                               |

Source: Eurostat (online data code: env\_ac\_ainah\_r2)

# COLLECTIVE EUROPEAN UNION EMISSIONS

- It is important to note that overall, manufacturing, electricity/gas/etc., transport and households produce more CO<sub>2</sub> than Agriculture, forestry and fishing.

**Greenhouse gas emissions by economic activity and by pollutant, EU-28, 2017**  
(thousand tonnes of CO<sub>2</sub> equivalents)



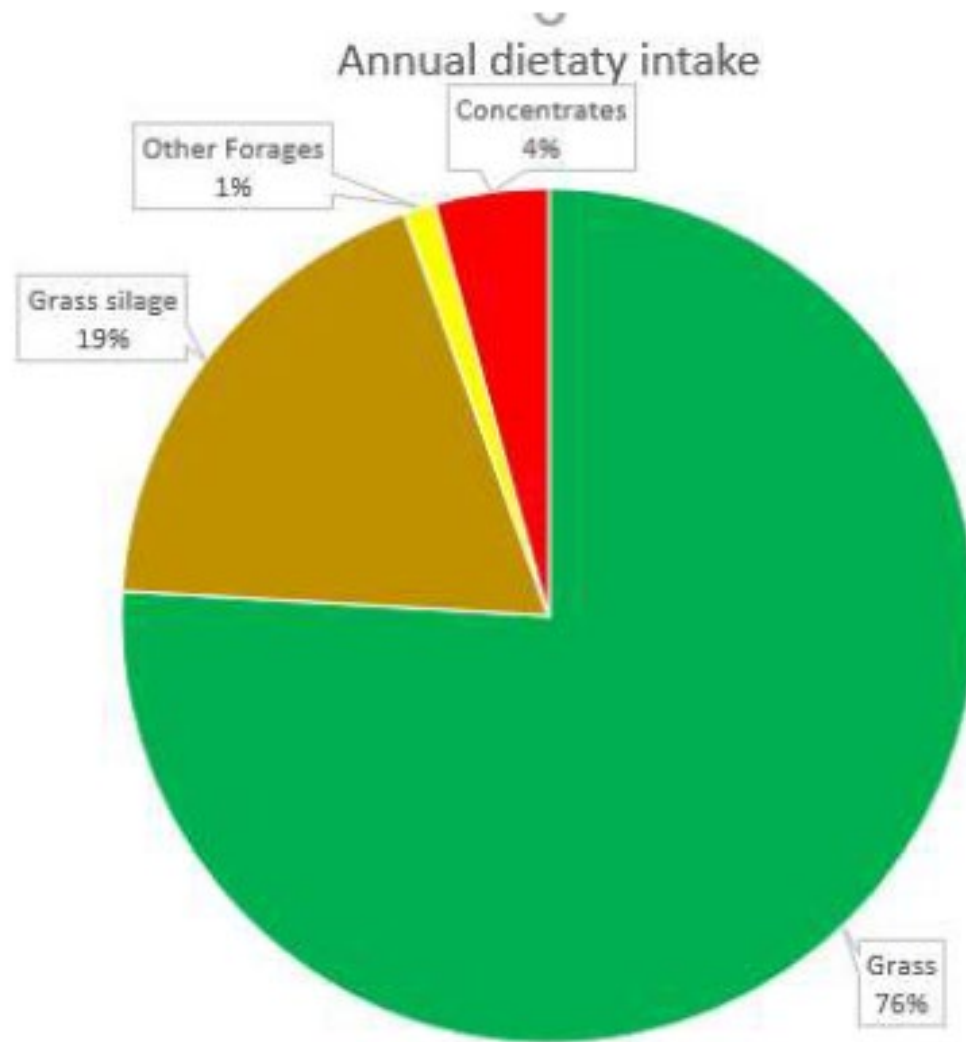
Source: Eurostat (online data code: env\_ac\_ainah\_r2)

# CHANGE IN IRISH CATTLE POPULATIONS & OUTPUTS

|                                  | 2008      | 2018      | % Change |
|----------------------------------|-----------|-----------|----------|
| Total cattle (head)              | 6,390,200 | 6,593,500 | +3.18 %  |
| Dairy Cow (head)                 | 995,800   | 1,369,100 | +27.26 % |
| Beef cows (head)                 | 1,113,700 | 982,300   | -11.79 % |
| Milk Output (liters)             | 4,943,300 | 7,585,100 | +53.44 % |
| Beef Output (tons)               | 536,000   | 640,000   | +19.4 %  |
| Enteric fermentation (kt CO2 Eq) | 10539.1   | 11543.2   | +9.5 %   |

Agri-Food exports value has increased by 66% in the same period

# WHAT DO COWS EAT?



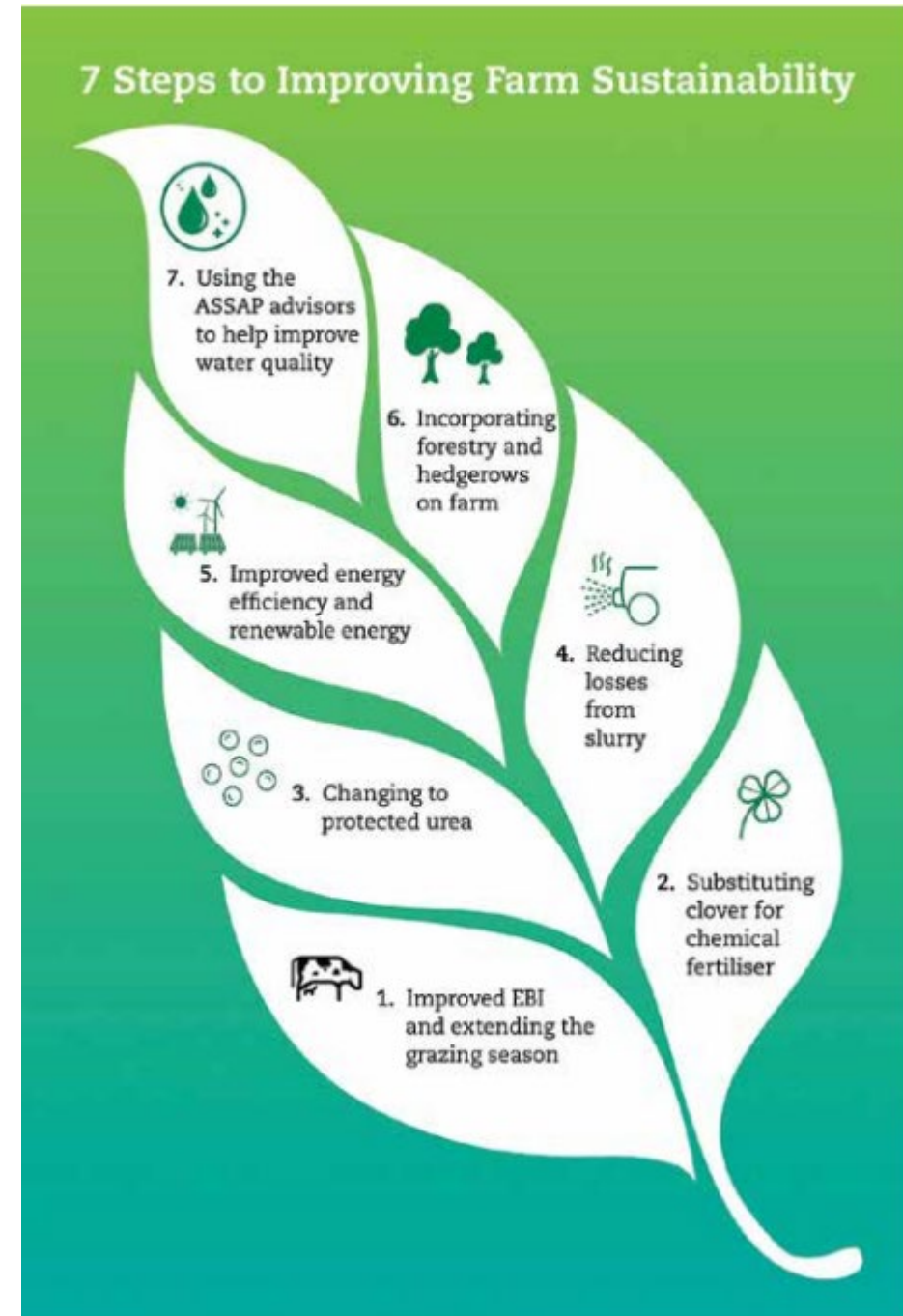
O'Brien et al., 2019



# SUSTAINABILITY

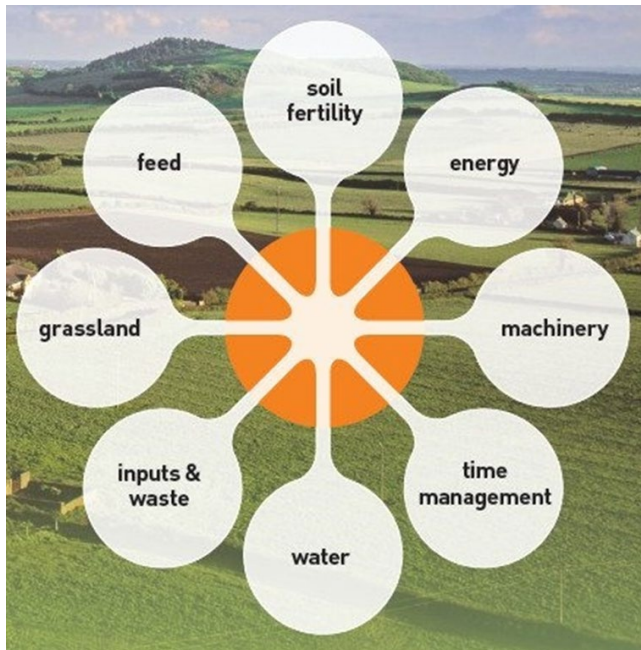
## Programmes and Resources for Farmers:

- Bord Bia Sustainable and Quality Assurance Scheme
- Teagasc Improving Farm Sustainability
  - <https://www.teagasc.ie/media/website/publications/2019/WEB-Improving-Farm-Sustainability---A5---12pp.pdf>
- Smart Farming
  - Resource efficiency programme run by the Irish Farmers Association in partnership with the Environmental Protection Agency.



# SMART FARMING EXAMPLE

- The Smart Farming programme looks at 8 areas on the farm and provides ways to become more efficient.
- The Smart Farming programme is also a champion of the Global Sustainable Development Goals.



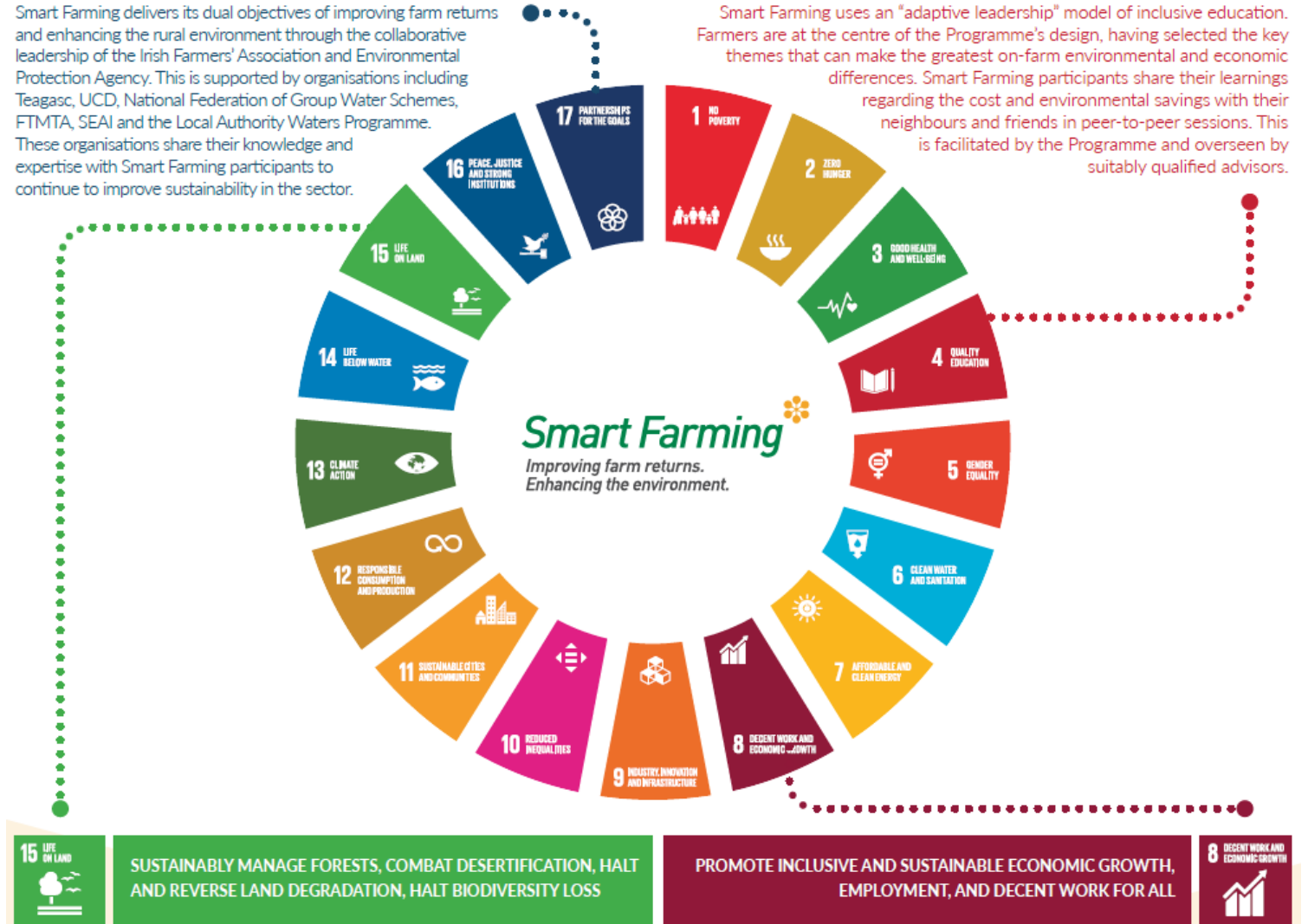
REVITALIZE THE GLOBAL PARTNERSHIP FOR SUSTAINABLE DEVELOPMENT

ENSURE INCLUSIVE AND EQUITABLE QUALITY EDUCATION AND PROMOTE LIFELONG LEARNING OPPORTUNITIES FOR ALL



Smart Farming delivers its dual objectives of improving farm returns and enhancing the rural environment through the collaborative leadership of the Irish Farmers' Association and Environmental Protection Agency. This is supported by organisations including Teagasc, UCD, National Federation of Group Water Schemes, FTMTA, SEAI and the Local Authority Waters Programme. These organisations share their knowledge and expertise with Smart Farming participants to continue to improve sustainability in the sector.

Smart Farming uses an "adaptive leadership" model of inclusive education. Farmers are at the centre of the Programme's design, having selected the key themes that can make the greatest on-farm environmental and economic differences. Smart Farming participants share their learnings regarding the cost and environmental savings with their neighbours and friends in peer-to-peer sessions. This is facilitated by the Programme and overseen by suitably qualified advisors.



SUSTAINABLY MANAGE FORESTS, COMBAT DESERTIFICATION, HALT AND REVERSE LAND DEGRADATION, HALT BIODIVERSITY LOSS

PROMOTE INCLUSIVE AND SUSTAINABLE ECONOMIC GROWTH, EMPLOYMENT, AND DECENT WORK FOR ALL



Smart Farming works to identify cost savings of at least €5,000 on each participating farm and ways to reduce greenhouse gas emissions by 5-7%. The Programme focuses on eight key areas on farms to deliver these savings: soil fertility; energy use; inputs and waste; as well as machinery, time, water (conservation and quality), grassland and feed management.

In addition to the focus on improving environmental performance, Smart Farming endeavours to enhance the economic sustainability of participating farms. Savings that can be achieved through better resource management are highlighted.

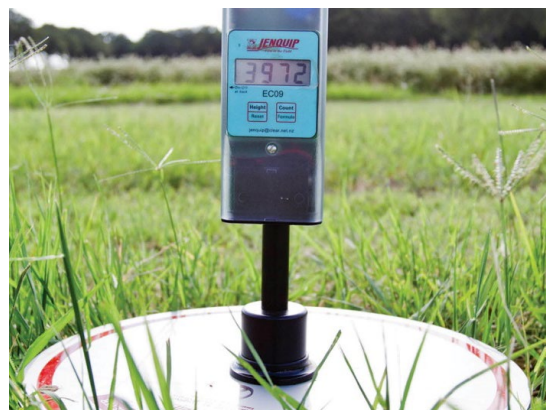
# TELL OUR STORY

- Good story to tell
- High standards
- Producing top quality food
- Educated farmers
- Teagasc



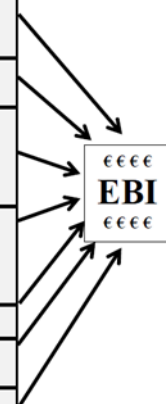
# WHAT'S HAPPENING ON OUR FARMS

## On-Farm Environmental Practices



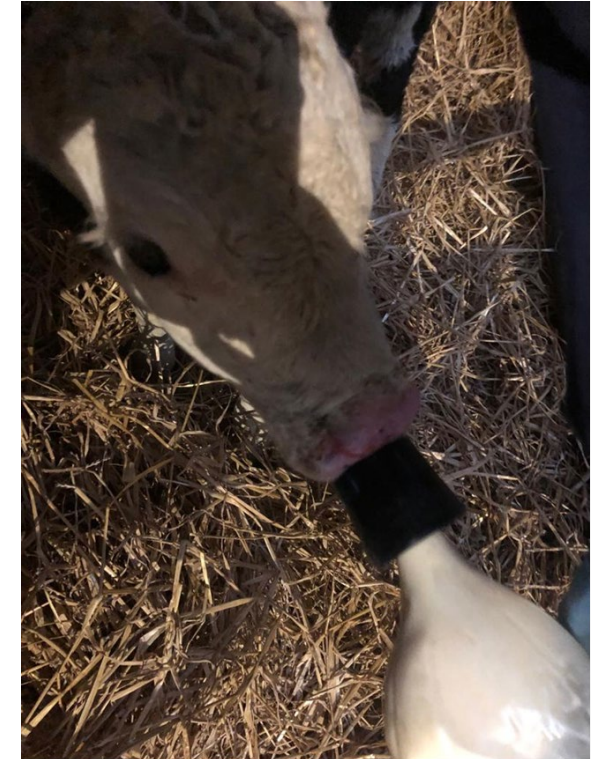
**2017 Economic values and % emphasis for traits in the EBI**

| Sub-Index   | Trait                       | Economic Weight | Trait Emphasis | Overall Emphasis |
|-------------|-----------------------------|-----------------|----------------|------------------|
| Production  | Milk                        | -€0.09          | 9.9%           | 32%              |
|             | Fat                         | €1.04           | 3.5%           |                  |
|             | Protein                     | €6.64           | 18.6%          |                  |
| Fertility   | Calving Interval            | -€12.43         | 23.5%          | 35%              |
|             | Survival                    | €12.01          | 11.6%          |                  |
| Calving     | Direct Calving Difficulty   | -€3.52          | 3.4%           | 10%              |
|             | Maternal Calving Difficulty | -€1.73          | 1.5%           |                  |
|             | Gestation Length            | -€7.49          | 4.5%           |                  |
|             | Calf Mortality              | -€2.85          | 0.6%           |                  |
| Beef        | Cull Cow Weight             | €0.15           | 0.7%           | 8%               |
|             | Carcass Weight              | €1.38           | 4.1%           |                  |
|             | Carcass Conformation        | €10.32          | 1.7%           |                  |
|             | Carcass Fat                 | -€11.71         | 1.5%           |                  |
| Maintenance | Cull Cow Weight             | -€1.65          | 7.0%           | 7%               |
| Management  | Milking Time                | -€0.25          | 2.1%           | 4%               |
|             | Milking Temperament         | €33.69          | 1.9%           |                  |
| Health      | Lameness                    | -€54.26         | 0.7%           | 4%               |
|             | SCC                         | -€43.49         | 2.4%           |                  |
|             | Mastitis                    | -€77.10         | 0.9%           |                  |



# WHAT'S HAPPENING ON OUR FARMS

## On-Farm Animal Welfare Practices



Healthy Animal = Happy Animal = Productive Animal

*It's the right thing to do!*

# PRIMARY SCHOOLS



- **Dig In!**

- 20 Lesson Plans linked to Irish Primary School Curriculum - Learning about Life on the Farm and Countryside Resource

- **Incredible Edibles**

- Free project that gets primary school teachers and their students out of the classroom and growing their own Irish herbs, fruits and vegetables.
- Over 1,300 Schools participated in 2019

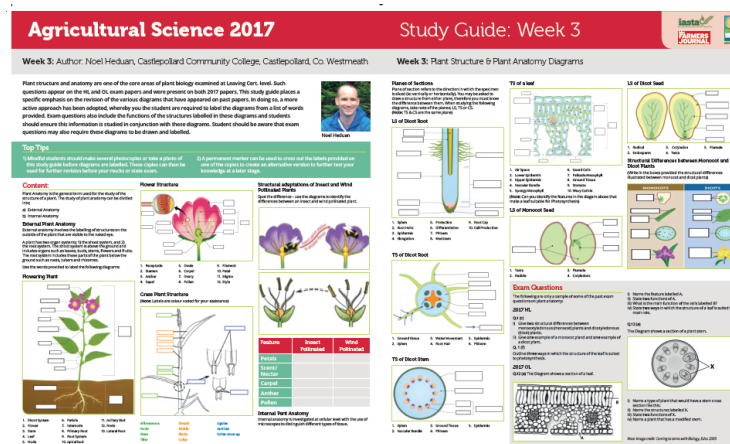
- **Pasture to Plate**

- Recipe challenge aimed at promoting healthy eating as well as seasonal cooking as part of a healthy and balanced diet



# SECONDARY SCHOOLS

- Farm Walk & Talk
  - 3,000+ Agricultural Science Students
  - Real-life experiences on working farms
- Educational Resources
  - IASTA, Agri Aware, IFJ
  - NEW Agricultural Science Teacher Resource
    - Teacher Guide to the Mandatory Investigations
  - NEW Monthly Webinar
- Study Guides
  - 28 Weeks of Academic Year
  - Over 14,000 Agricultural Science Students



# PUBLIC AWARENESS

- **Mobile Farm**

- The Mobile Farm is a unique outdoor classroom that is used to educate children and adults via a hands-on learning experience. It visits a host of regional and national events as well as schools from all across Ireland.



- **Family Farm**

- .1.2 Million Visitors per year
- Daily Milking Demonstrations
- Yearly events (Open Farm Weekends, etc.)
- Farmhouse Classroom



family farm  
[www.thefamilyfarm.ie](http://www.thefamilyfarm.ie)

- **National Open Farm Day**

- 3 Farm Locations
- 10,000 visitors
- Engaging Farm Zones





# COMMUNICATIONS CAMPAIGNS

## Many Hats, One CAP

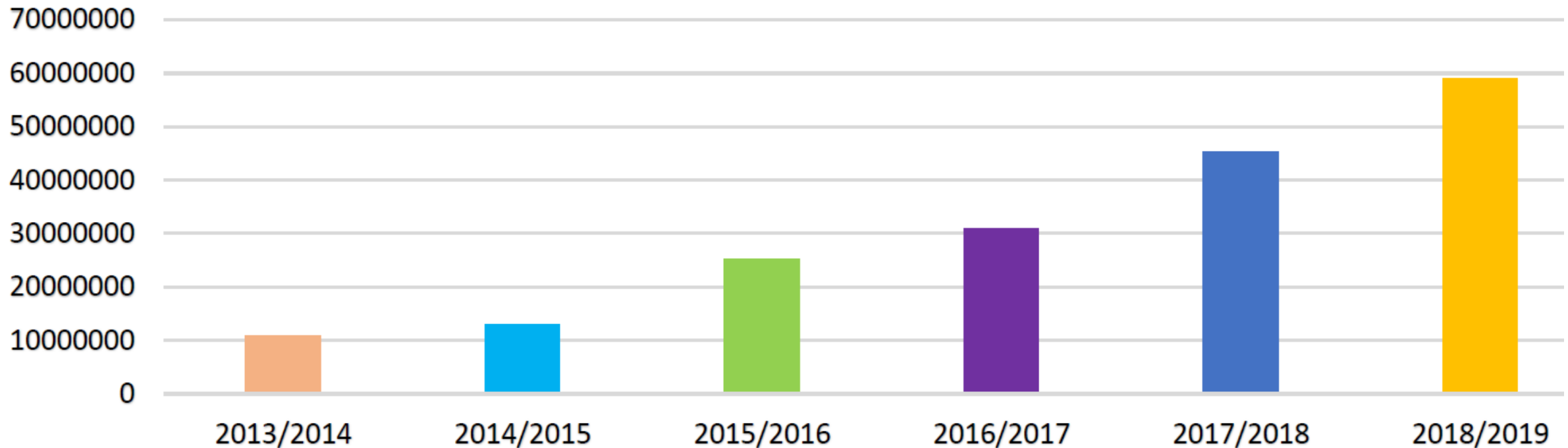
- Engage general public and farmer in CAP
- A series of educational and interactive initiatives
- May 2018 – April 2019
- Total estimated reach of the campaign
  - >58 Million Impacts
- CAP exhibits at national agricultural shows
- Mobile Farm visits to national shows and schools
- Radio, TV and cinema advertisements
- Advertorials in national magazines and newspapers
- Summer event series at the Family Farm in Dublin Zoo

MANY HATS  
*One Cap*



# CAP CAMPAIGN REACH 2013-2019

Reach of Agri Aware CAP campaigns 2013 - 2019



- Reach has increased 436%



**THANK YOU** |