# Low carbon projects developed in the LIFE Carbon Farming project

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# Project LIFE Carbon Farming

700 Pilot farms in 6 EU Countries

Objective: decrease by 15% GHG emissions from pilot farms in 2027


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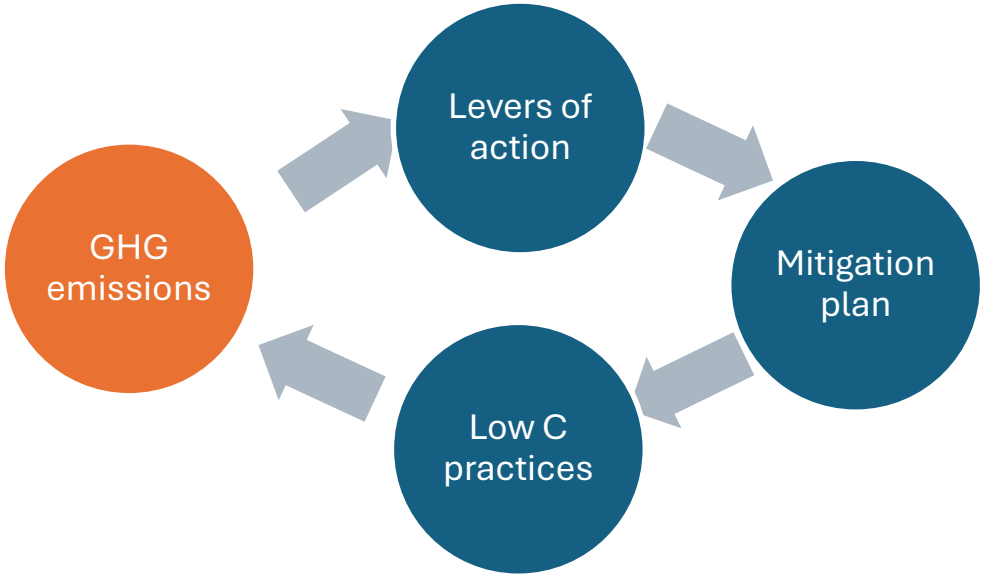



www.lifecarbonfarming.eu

# Low Carbon Farming projects

Discussion with the farmer = make a choice

Action levers

↘ **GHG**

**CH4**  Herd management

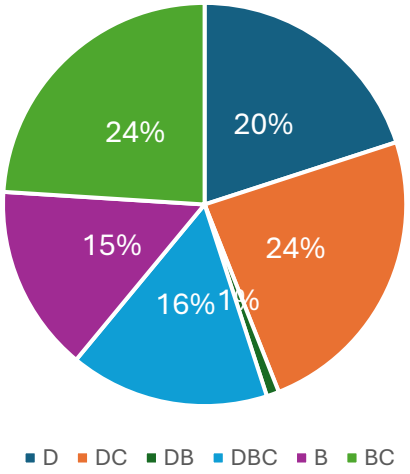
**N2O**  Feed management

**CO2**  Soil management

 Energy management

↗ **CO2 sequestration**

# Presentation of the pilot farms




| | Nb farms | D | DC | DB | DBC | B | BC | Transition |
|---|---|---|---|---|---|---|---|---|
| BE | 40 | 10 | 11 | 1 | 5 | 3 | 10 | - |
| FR | 324 | 25 | 107 | 7 | 80 | 19 | 77 | 9 |
| GE | 16 | 6 | 10 | - | - | - | - | - |
| IRL | 26 | 2 | - | - | - | 24 | - | - |
| IT | 33 | - | - | | | 7 | 26 | - |
| SP | 108 | 63 | 1 | - | - | 28 | 16 | - |
| Total | 547 | 106 | 129 | 8 | 85 | 81 | 129 | 9 |

**D: Dairy**
**DC: Dairy+crops**
**DB: Dairy+Beef**
**DBC: Dairy+Beef+crops**
**B: Beef**
**BC: Beef+crops**

# Levers of Action

- In total: 31 levers proposed
  - ✓ Herd management: 8
  - ✓ Feed management: 6
  - ✓ Soil management: 9
  - ✓ Energy use: 5
  - ✓ Carbon sequestration: 3

- More than one choice possible
- Carbon gains estimated by simulation

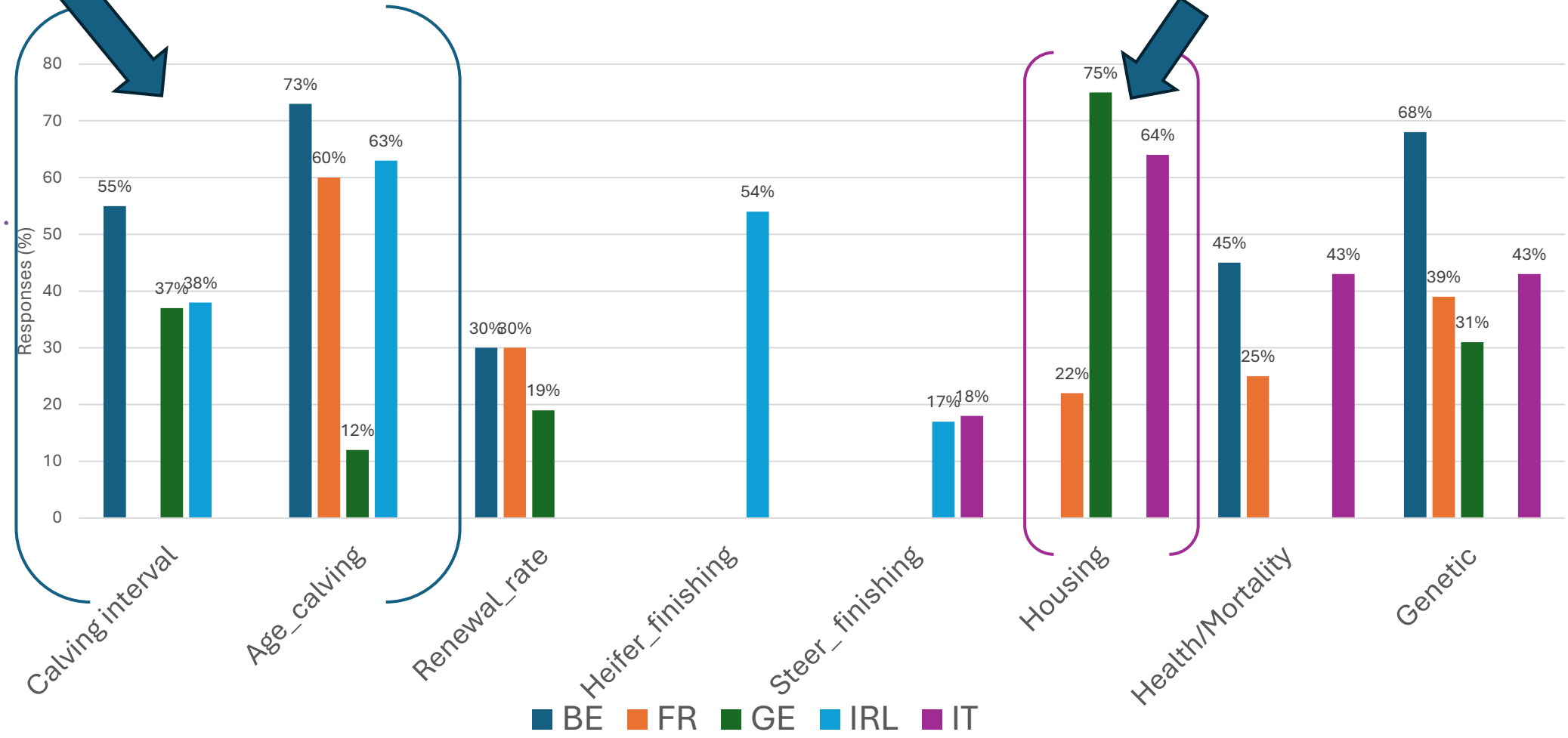
# Herd management

## Differences between countries

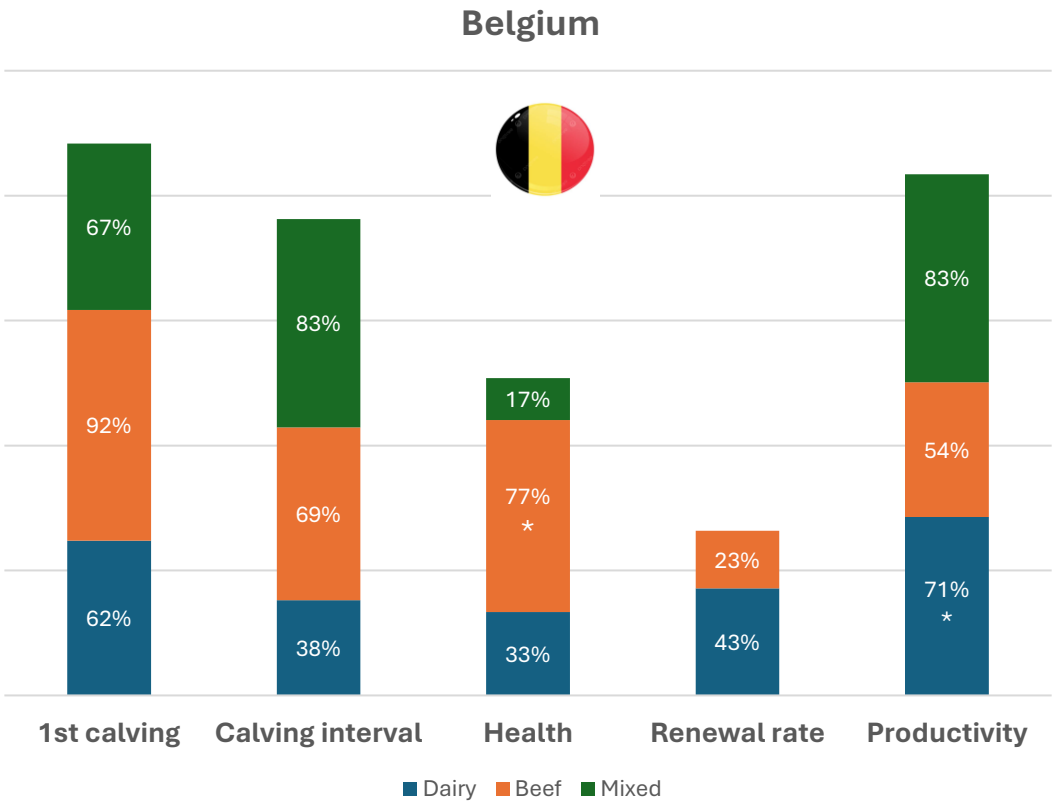
**Reproduction**

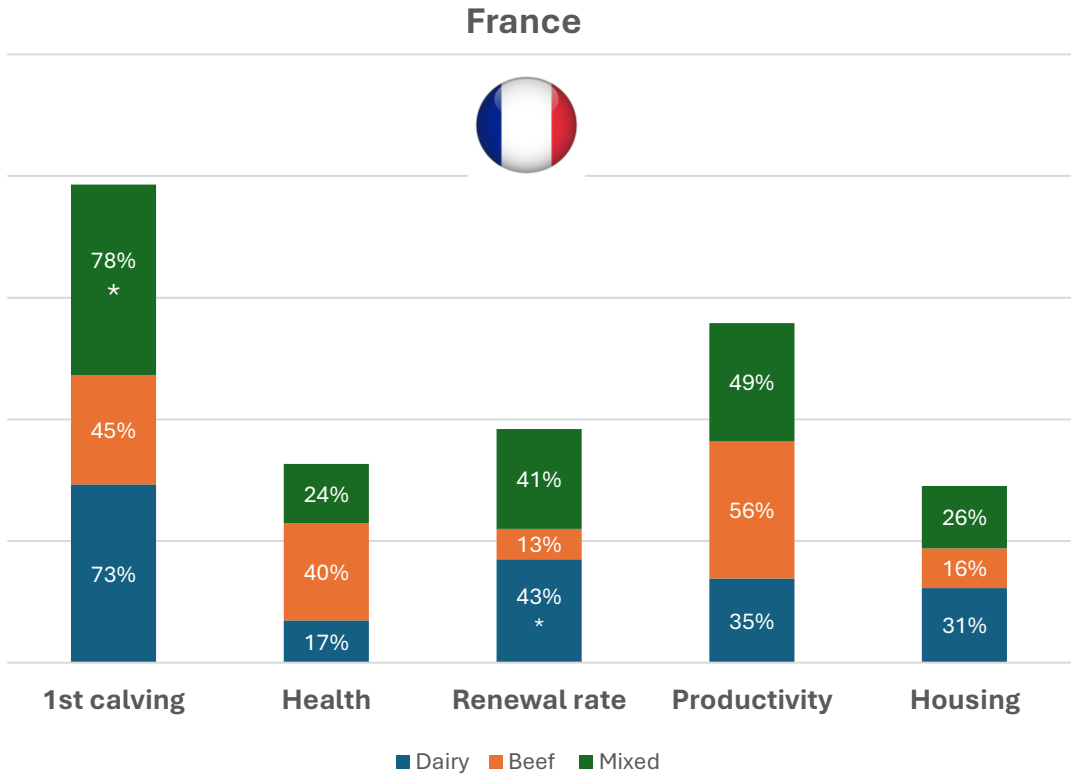
**Housing**

IT: smart farming



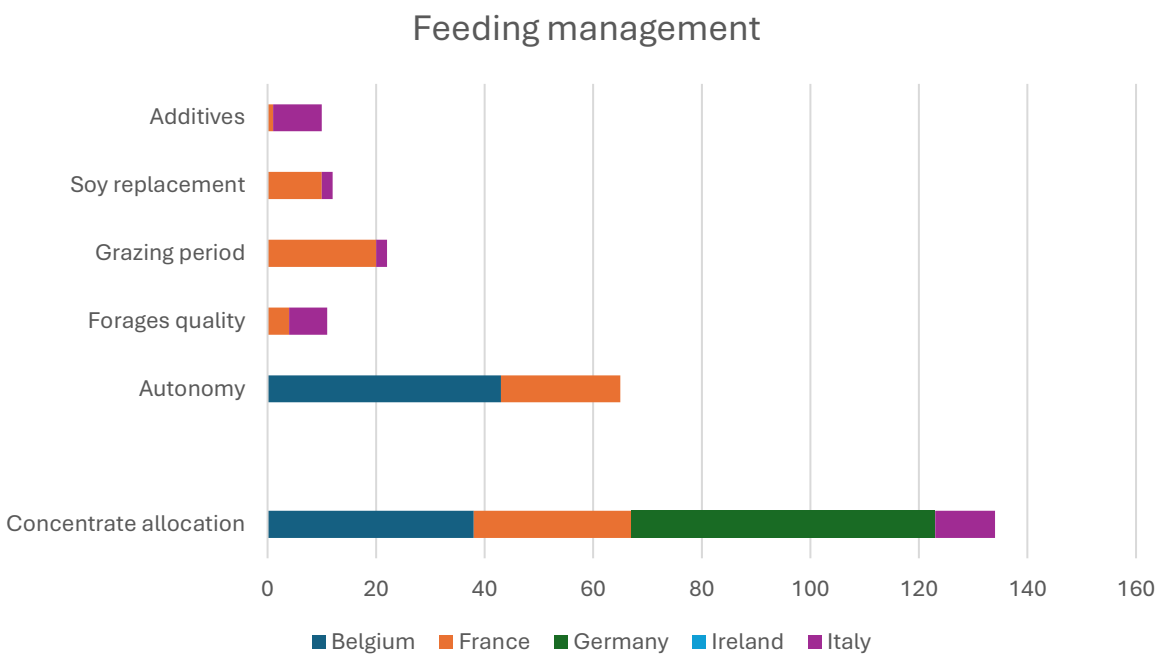
# Choices of action levers in the different production systems




Statistic analysis: $X^2$ - residual analysis
Differences between countries – production system

# Feeding management




*Additives:*

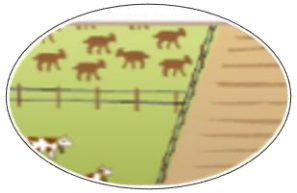
Italy: 3-NOP, yeast, nitrates

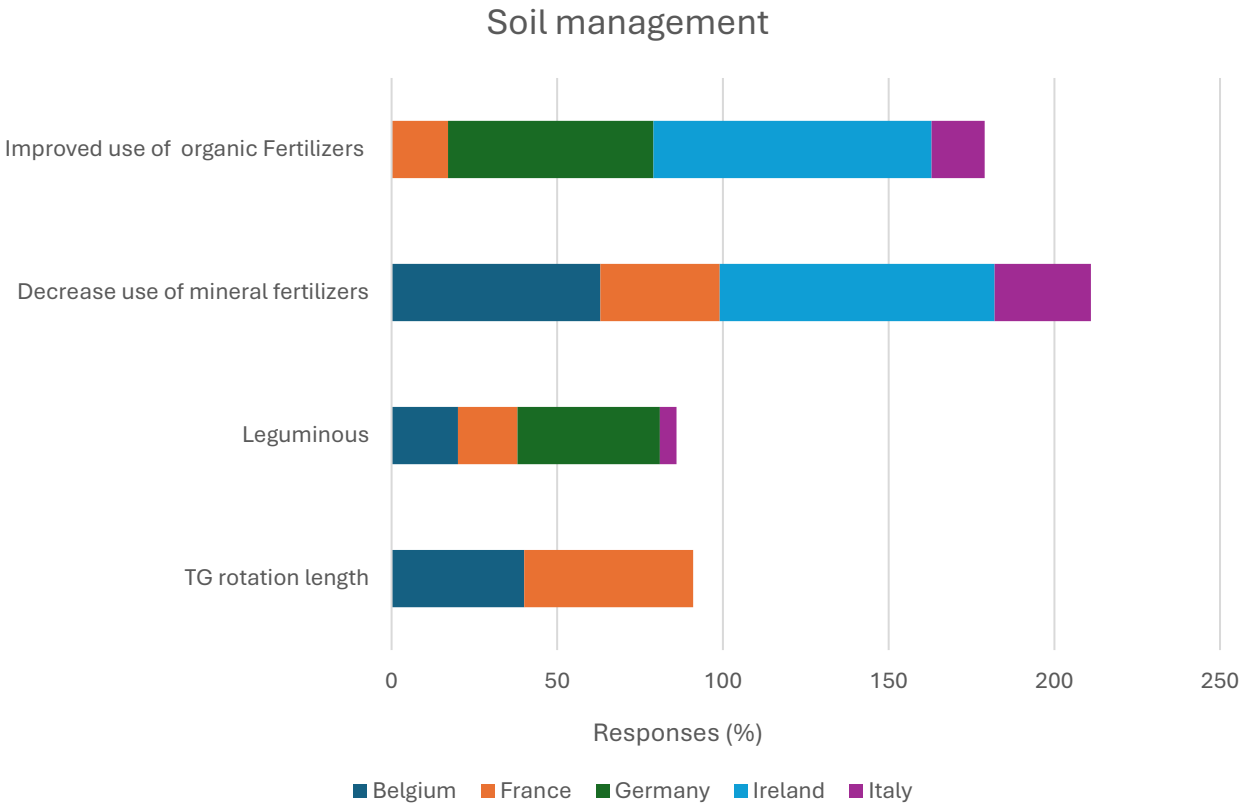
France: increased fat % in the diet

Spain: Dairy: 3-NOP

Ireland: no lever

# Soil management






*Organic fertilizers*

Changes in spreading methods

Slurry tank cover (FR -IT)

**Ireland**

*Mineral fertilizers*

Soil phosphorus index (75%)

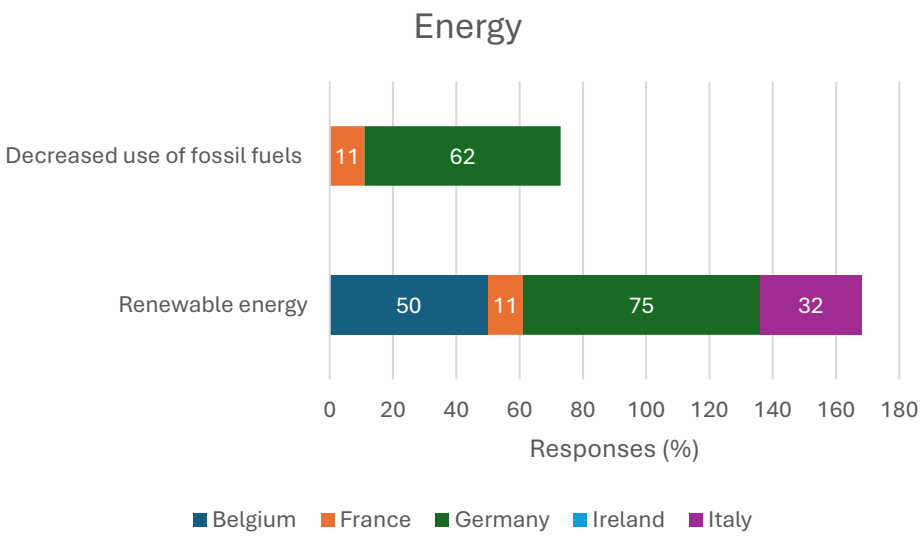
Protected urea (83%)

*Organic fertilizers*

Low emissions slurry spreading (38%)

Slurry timing (46%)

# Energy



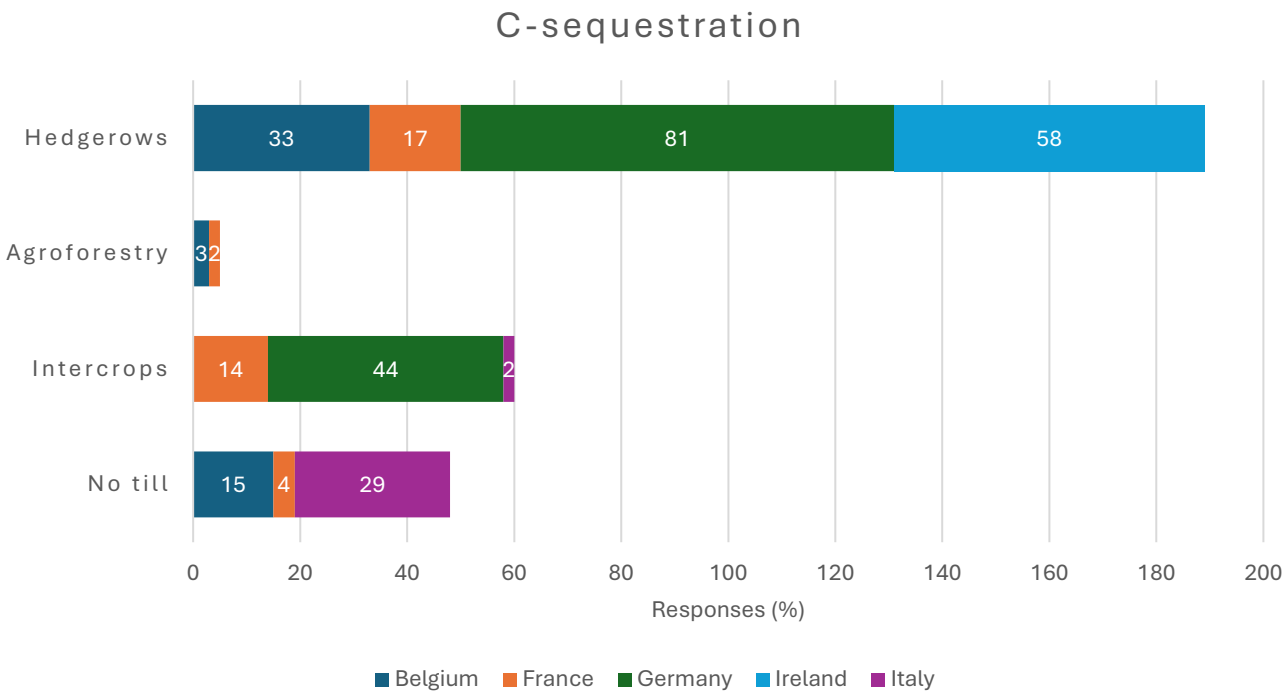

*Renewable energy*

Solar pannels:  BE: 45%  - GE: 25%

Biogas: BE: 5% - FR: 11% - GE: 50%

No precision: Italy

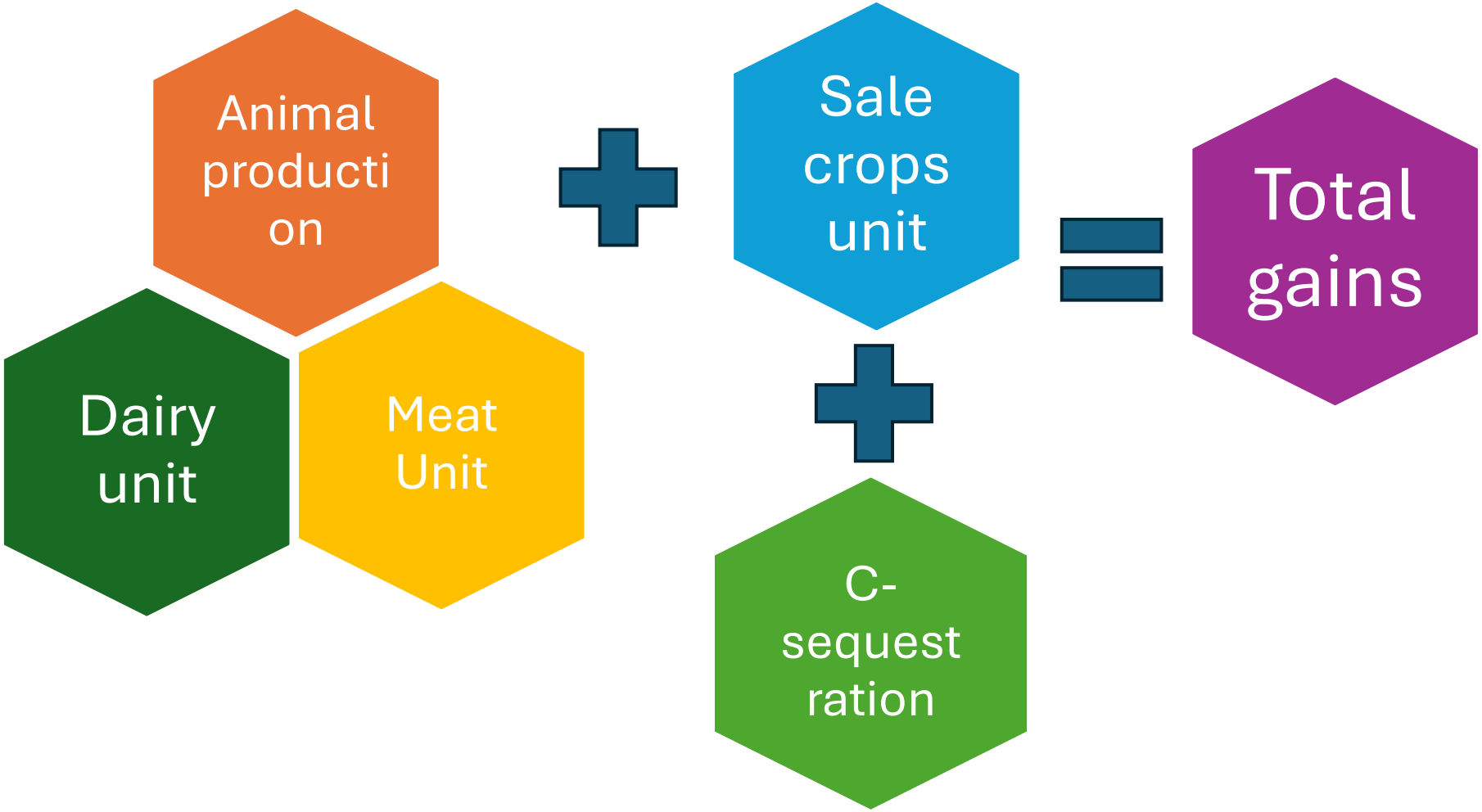
# C-sequestration




*Intercrops*

BE: mandatory practice - not listed

# Carbon gains
# Calculation by production unit



# Carbon gains

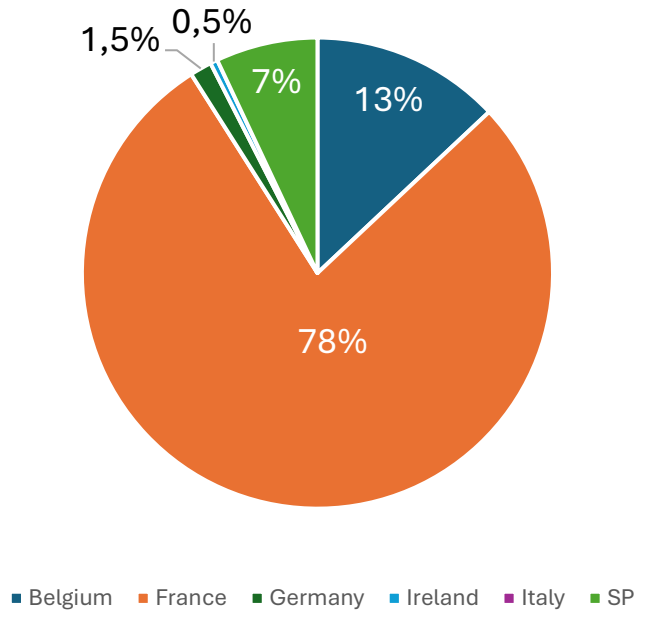
Most carbon gains from animal production

| | | Dairy | Meat | Crops unit | C- storage | Carbon gain (t eq. CO2) |
|---|---|---|---|---|---|---|
| Belgium | Dairy (n=21) | 91% | - | -1% | 10% | 720 ± 640 (median: 451) |
| | Beef (n=13) | - | 83% | 13% | 6% | 768 ± 479 (median: 729) |
| | Mixed (n=6) | 42% | 55% | 1% | 11% | 1772 ± 1227 (median: 1502) |
| France | Dairy (n=132) | 94% | - | 2% | 4% | 636 ± 975 (median : 405) |
| | Beef (n=97) | - | 96% | 4% | - | 558 ± 490 (median: 441) |
| | Mixed (n=79) | 80% | 12% | 6% | 2% | 895 ± 827 (median: 750) |
| Germany | Dairy (n=16) | 69% | - | 14% | 17% | 257 ± 325 (median: 157) |

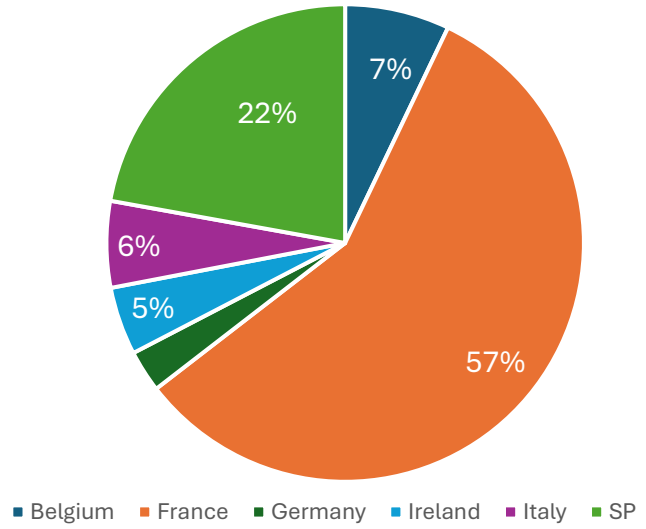
# Contributions of all the partners

- Total carbon gains: 281 624 t eq. CO2

Contribution of each country to the total carbon gain*




Contribution (%) in network of pilot farms




* SP: estimation of carbon gains – Italy: action plans are not finalised.

# Conclusions

- More than **1 lever** must be activated to reach **15%** decrease
- Most of the action plans have a **positive economic** impact

- Implementation of levers can generate **costs**
  (technical & investment,…)
- Completion of action plans depends also on **external factors**
  (e.g weather conditions, Blue Tongue,…) → **RISKS!**

# Thank you for your attention!