TEST VARIOUS STRATEGIES TO REDUCE NITROGEN (N) PHOSPHORUS (P) AND CARBON (C) LOSSES IN MIXED FARMS

INTRODUCTION
The Framework 7 European Project Cantogether (2012-2015) hypothesized that complementarity between animals and crops can reinforce sustainability of agricultural systems at farm and territory levels. http://www.fp7cantogether.eu

WHAT’S GOING ON?
- A participatory approach was developed to enhance the degree of mixing in farming systems
- New practices, techniques, work organization were implemented in farms which resulted in more interactions within farms enterprises, diversification in farm outputs, more exchanges between farms.

> 24 case studies included in Cantogether*

NPC RESULTS AT FARM LEVEL AFTER MFS IMPLEMENTATION
- On average stable primary production: -0.1 TDM/ha AA,
- Less mineral fertilizer used per TDM produced: -42% N min., -84% P,
- 56% of farms decreased nitrate leaching and 78% lowered direct contribution to climate warming per hectare AA.

> Lower N losses in high mixing farms (NO₃ NH₃ N₂O NO)

DISCUSSION
- Loss in farms production in 33% of CS: impacts per unit of outputs are less contrasted.
- Reduction in GHG emission but less permanent grassland in AA (C soil storage).

CONCLUSION
- MFS is an opportunity for environmental friendly systems development in divers European situations.
- Different pathways to optimize MFS: options taken are related to farm strategy.

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Lower nitrogen losses in innovative MFS (i) than in baseline situation (b).
CADIS score increase with diversification and crop/livestock integration. (Chambaut et al, 2015. in Renc.Rech.Rum.)