

CONTEXT PROFILE



FARMER

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- Monteforte



INNOVATION

No-till seeding of forage mixtures in hilly
pastures to control soil erosion



[Video](#)



MAIN DOMAIN OF THE INNOVATION

Improvement of grassland management



SOIL TYPE

Sand



FINANCE/INVESTMENT

Low



AGROCLIMATIC AREA

Mediterranean South



MANAGEMENT

Pasture Dairy



MARKET

Local-rural



CLIMATE

Mild winter



TECHNICAL

Easy



SOCIAL

Full-time farmer

CONTEXT PROFILE

ITALY

Case Study: IT_10	Agroclimatic Zone								
Item (Key Innovation Elements)	Alpine	Atlantic Central	Atlantic North	Atlantic South	Boreal	Continental North	Continental South	Mediterranean North	Mediterranean South
No till grass sowing	++	+++	++	++	++	+++	+++	+++	+++
Pre sowing weed control	++	+++	+++	+++	+++	+++	+++	+++	+++
Mixed species swards with adapted species and varieties	++	+++	+++	+++	+++	+++	+++	+++	+++
Reduce soil eroision	++	++	++	++	++	++	++	+++	+++

+++ Strong transferability ++ Slightly limited transferability + Very limited transferability ✕ Generic information/not relevant

Implementation Gaps

- Availability of the right type of seeder
- Weed burden
- Farm knowledge and know how
- Contractor knowledge and know how
- Need some rainfall for establishment
- Farm knowledge and know-how (mind-set)
- Weed management options

Research Gaps

- Seeding rate
- Weed control
- Yield comparison
- Benefits for soil structure

Suggestions to Adapt

- Examine if seeders can be adapted
- Group purchase of seeder (i.e. a group of farmers buy the seeder and share it's use)
- Demonstration
- Be partner in OGs working on conservative soils technique
- Effective weeding methods without chemicals

COST-BENEFIT ANALYSIS

INVESTMENT COSTS

Total initial investment costs at start up:	low
• Initial authorisation costs (e.g. sanitary, veterinary, etc.)	not applicable/not known
• Initial advisory costs	mid
• Initial buildings and machineries	mid
• Initial certification costs	not applicable/not known
• Initial working capital (personal qualification, marketing and promotion, etc.)	low

ON-GOING COSTS

On-going advisory costs	mid
On-going certification costs	not applicable/not known
On-going buildings and machinery costs	low
On-going working capital	mid

BENEFITS RELATIVE TO ORIGINAL SYSTEM

◦ Economic

Reduction in energy consumption (electricity; fuel consumption)	not applicable/not known
Reduction in input use (fertilizers; pesticides; feed) etc.	mid
Payback period	high
Product value added	mid
Additional farm income through agroecological/agri-environmental payment schemes	not applicable/not known

◦ Environmental

Animal feed self-sufficiency increase	none or low
Biodiversity increase	mid
Improved nitrogen cycling	mid
Soil regeneration	mid
Animal health and welfare improvement	high

◦ Social

Workload reduction	high
Engagement of young generation	not applicable/not known

Literature

English

- Gabriel Minea, Oana Mititelu-Ionuș, Yeboah Gyasi-Agyei, Nicu Ciobotaru, Jesús Rodrigo-Comino, 2022. Impacts of Grazing by Small Ruminants on Hillslope Hydrological Processes: A Review of European Current Understanding . Water Resource Research. <https://doi.org/10.33584/rps.17.2021.3487>
- Book. Yash P. Dang, Ram C. Dalal, Neal W. Menzies (Editors), 2020. No-till Farming Systems for Sustainable Agriculture. Challenges and Opportunities. Springer
- L. K. Öttl, F. Wilken, A. Hupfer, M. Sommer & P. Fiener. Non-inversion conservation tillage as an underestimated driver of tillage erosion. Sci Rep 12, 20704 (2022). <https://biblioproxy.cnr.it:2481/10.1038/s41598-022-24749-7>
- Giller, K. E., Hijbeek, R., Andersson, J. A., & Sumberg, J. (2021). Regenerative Agriculture: An agronomic perspective. Outlook on Agriculture, 50(1), 13-25. <https://biblioproxy.cnr.it:2481/10.1177/0030727021998063>
- Van Oost, K., Govers, G., De Alba, S., & Quine, T. A. (2006). Tillage erosion: a review of controlling factors and implications for soil quality. Progress in Physical Geography: Earth and Environment, 30(4), 443-466.
- <https://biblioproxy.cnr.it:2481/10.1191/0309133306pp487ra>
- <https://doi.org/10.1016/j.eja.2016.02.011>
- <https://doi.org/10.1016/j.still.2009.10.009>
- <https://doi.org/10.1016/j.eja.2012.02.002>
- <https://doi.org/10.1016/j.catena.2020.104972>
- <https://link.springer.com/article/10.1007/s12155-015-9690-2>

Video

- Video (English) and text: <https://www.climatehubs.usda.gov/hubs/international/topic/no-till-farming-climate-resilience>
- <https://www.youtube.com/watch?v=DBYeb66dN80>
- <https://www.bing.com/videos/riverview/relatedvideo?q=use+of+no+tillage+erosion&&mid=301FDABE25274E3FC958301FDABE25274E3FC958&&FORM=VRDGAR>