

# Evaluating the role of precision nutrient management in sustainable intensification of dairy farms

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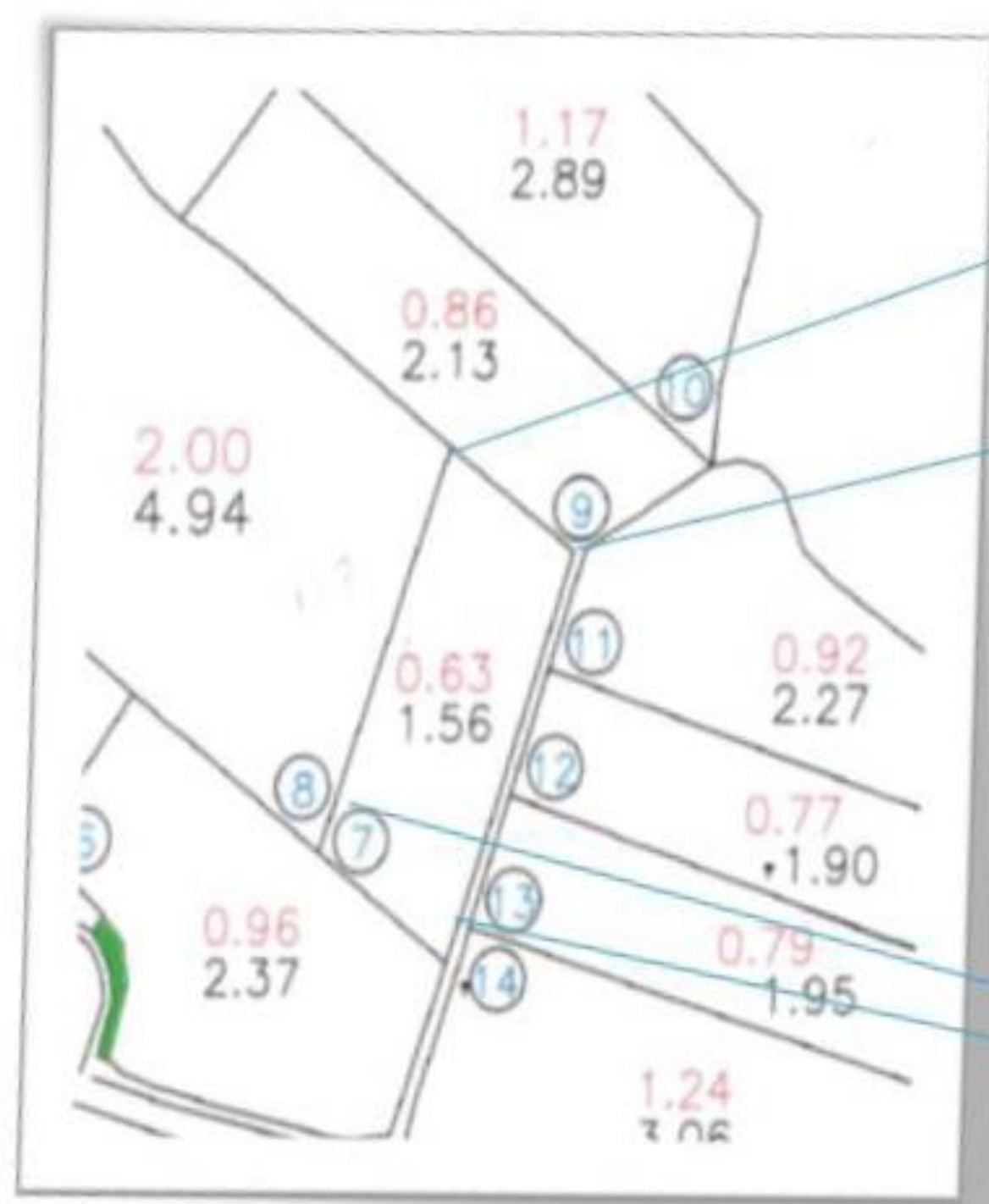
## INTRODUCTION

This project aims to investigate the effects of more precision nutrient management on production, environmental and economic sustainability on intensive grass based Irish dairy. In addition, the effectiveness and likely adoption of nutrient management practices and technologies by the farmers will be explored.

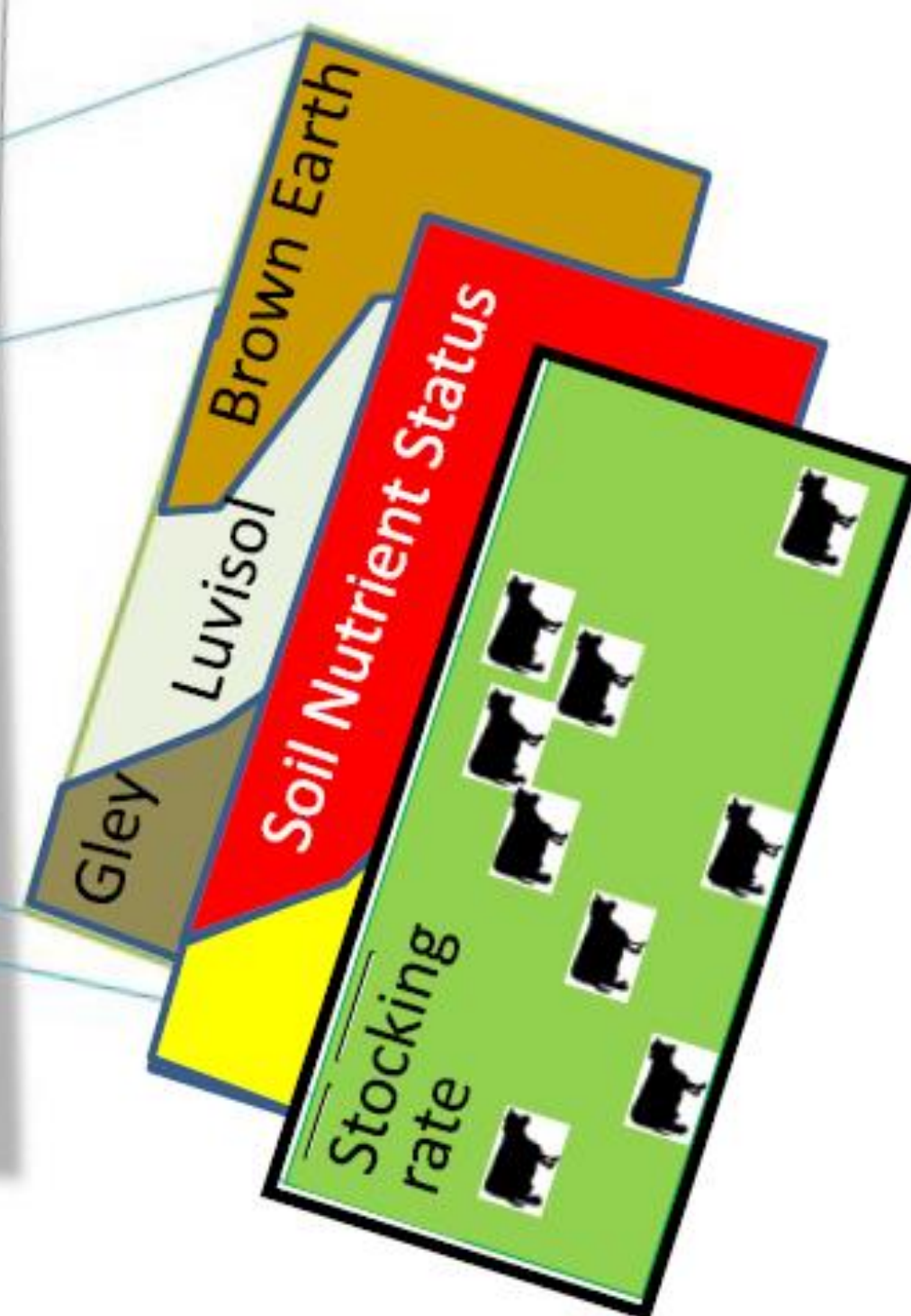
## METHODS & DATA COLLECTION

- Spatially detailed (paddock scale) soil, nutrient production and environmental data will be collected from 25 Irish dairy farms.
- Farms will be characterised according to biophysical, climatic, nutrient status and production intensity criteria.

Farm Scale Data



Paddock Scale Data



- Spatially specific nutrient management plans (NMPs) will be developed for each farm.
- Farm infrastructure will also be assessed (slurry storage, roadways, water access, etc.)
- Effectiveness of these NMP's will be investigated and barriers to adoption will be identified.
- Measurements of production, environment, and economic performance will be taken.

## EXPECTED RESULTS

- A number of different farm and within farm (paddocks) management categories will be identified according to bio-geophysical factors.
- Specific best management practices (BMP) concerning production, environment and economics will be implemented for each farm and sub-farm area.
- Effective knowledge transfer strategies will identified to achieve BMP adoption.
- Development of a practical set of indicators to measure nutrient sustainability.
- New data on capacity to sustainably intensify milk production on dairy farms and the bio-geophysical, management and economic factors constraining this.

## CONCLUSION

This research will provided new knowledge and methodologies for sustainable intensification of Irish dairy farming systems