Overview
Research is currently underway to develop a sustainable nutrient management (SNM) decision support system (DSS) that will allow farmers to:
(i) optimise spreading when storage is not a limiting factor (built on existing research into maximising N utilisation)
(ii) spread in the ‘safest’ possible location on their farm when storage is limiting (forecast using a soil classification for each parcel of land)
(iii) spread at times that are meteorologically appropriate (i.e. when a transport vector between source and target is not very likely to be present).

Current efforts are focusing on:
(i) integrating the model components
(ii) sourcing spatial data required for site specific implementation
(iii) further developing the soil water deficit model at the heart of the SNM-DSS
(iv) obtaining user input into the system design
(v) testing the quality of systems forecasts with respect to the occurrence of the transport vector.

Statement of objective for SNM-DSS
An advisory system that a farmer and/or agricultural advisor can use in order to:
(i) maximise fertiliser replacement value of the farm’s slurry resource;
(ii) minimise potential for unsafe slurry spreading in the event that storage capacity is near to being exceeded
(iii) indicate when export of slurry is required for safe utilisation

Where:
1. The system is always subservient to national legislation (e.g. SI 101 of 2009)
2. Unsafe refers to conditions when a transport vector may arise assuming a ‘source – vector – target’ model of diffuse pollution.
3. If point source pollution will arise due to flooding storage tanks and diffuse pollution will arise due to the occurrence of a transport vector after spreading, the only safe option is to remove slurry from the farms for either: (i) spreading at an alternative location; or (ii) use in a gasification process.

The project team
Nicholas M. Holden (co-ordinator) University College Dublin (UCD)
Regier Schulte (contributing scientist) Teagasc
Stan Tabor (work package leader) Teagasc
Brendan Moran (contributing scientist) Teagasc
Phil Jordan (work package leader) Univ Ulster / Teagasc
Seamus Walsh (contributing scientist) Met Éireann
Nyncke Hoekstra (post-doctoral researcher) Teagasc
Rachel Cassidy (post-doctoral researcher) Univ Ulster
Marian Hennessy (PhD student) LCD
Pietro Viola (PhD student) LCD
Anthony Kerebel (PhD student) UCD
Stan Lalor (work package leader) Teagasc
Brendan Horan (contributing scientist) Teagasc
Seamus Walsh (contributing scientist) Met Éireann
Marian Hennessy (PhD student) LCD
Phil Jordan (work package leader) Univ Ulster / Teagasc
Regier Schulte (contributing scientist) Teagasc
Nyncke Hoekstra (post-doctoral researcher) Teagasc
Rachel Cassidy (post-doctoral researcher) Univ Ulster
Marian Hennessy (PhD student) LCD
Pietro Viola (PhD student) LCD
Anthony Kerebel (PhD student) UCD