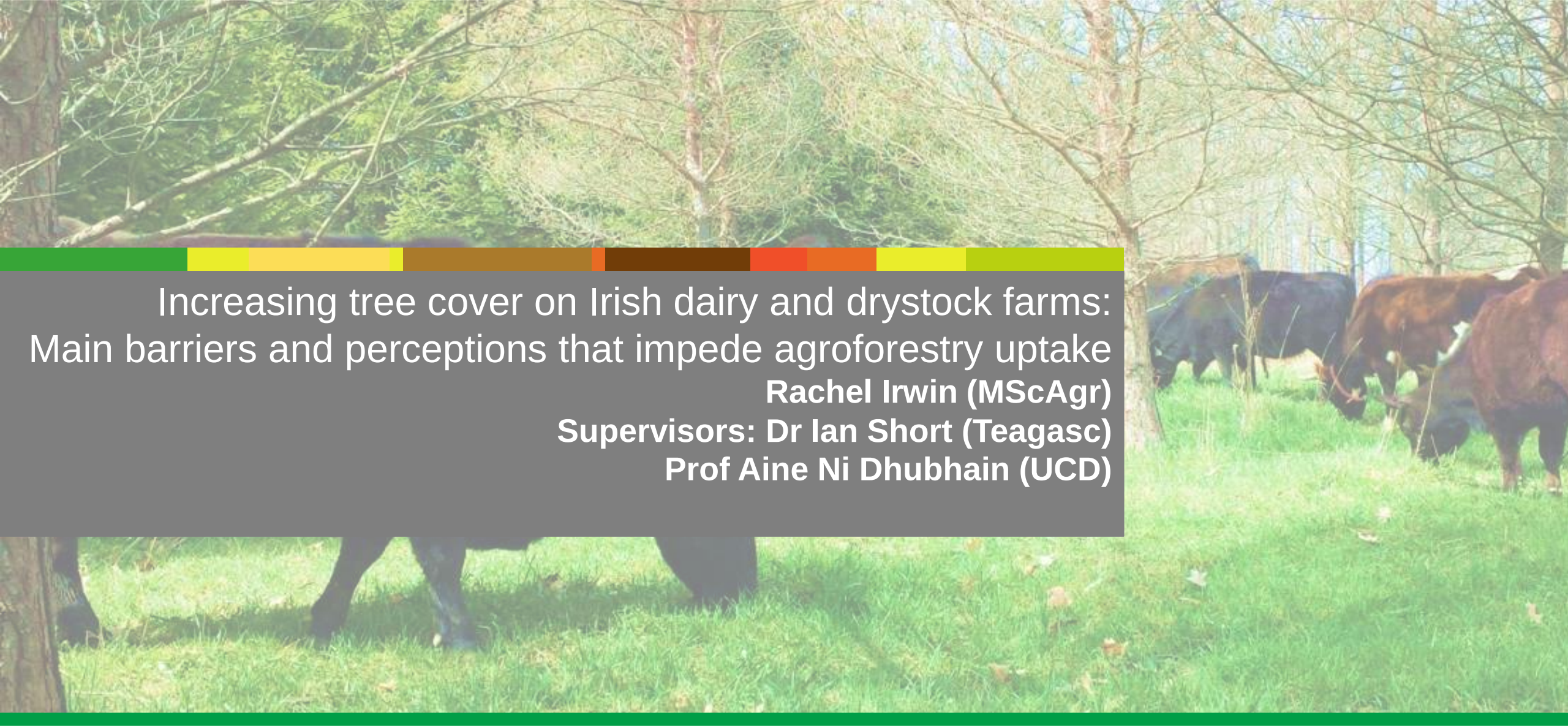

Increasing tree cover on Irish dairy and drystock farms: Main barriers and perceptions that impede agroforestry uptake

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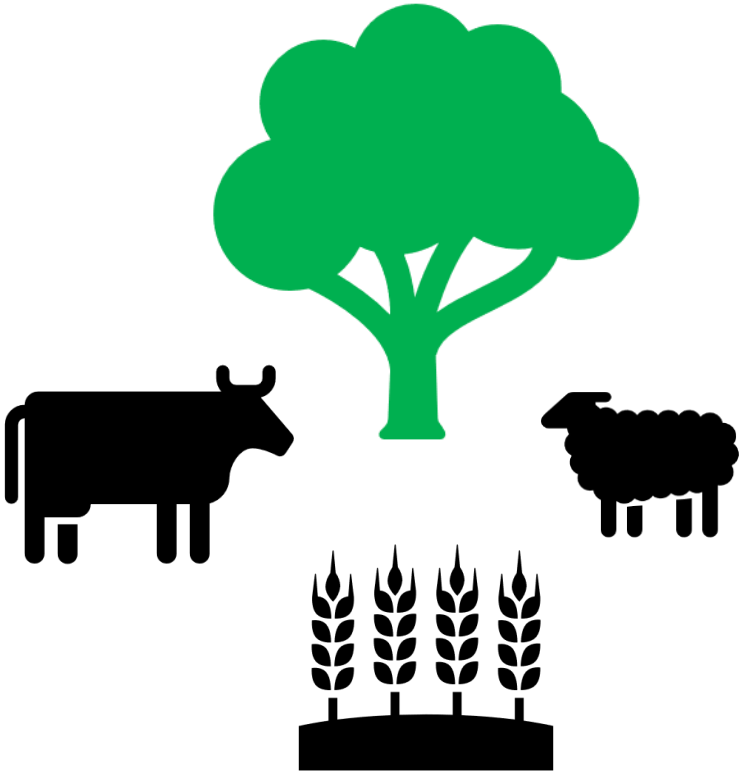
WALSH SCHOLARSHIPS PROGRAMME

Overview

- Introduction to Agroforestry
- Impacts of trees on farms
- Importance of the research
- Methodology
- Findings to date
- Future research

What is Agroforestry?

Not Agroforestry

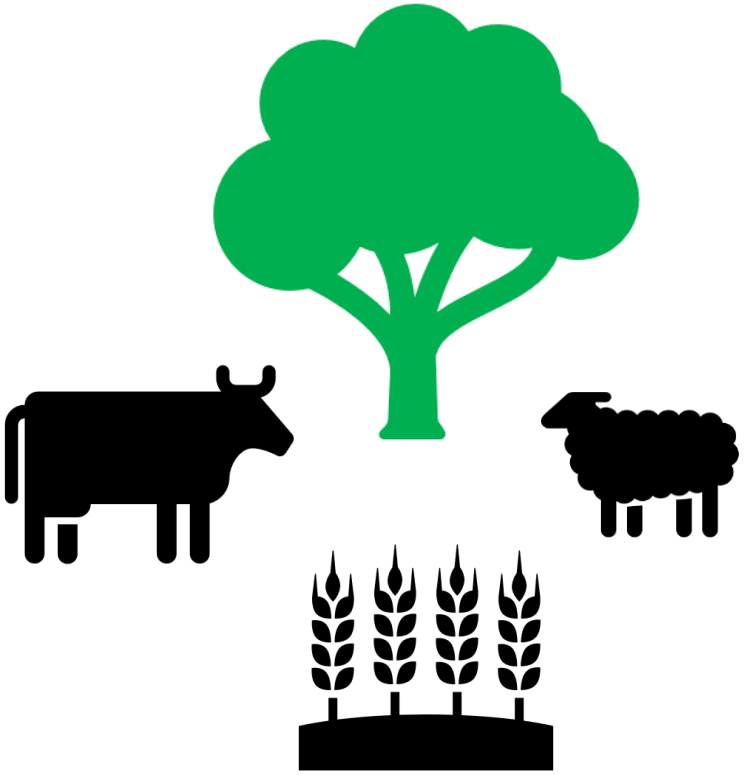


Agroforestry – integration of managed trees on farms

Not a new phenomenon in Europe -> 52 million ha[3]

What is Agroforestry?

Not Agroforestry



Agroforestry – integration of managed trees on farms

Impacts of trees on farms

Environmental impacts

Increased biodiversity

Pollution abatement

Flood mitigation

Landscape aesthetics

Soil stabilisation

Carbon sequestration

+

Farm-based impacts

Diversity in incomes

Increased grass growth of up to 16%

Decreased pathogens and temperature related stressors

Reduced fertiliser input requirements

Tree fodder

Microclimate regulation

Climate change adaptation

Offset N_2O, NH_3 and CH_4 emissions

10% tree cover on farms = 1.3 x annual fossil fuel emissions[1]

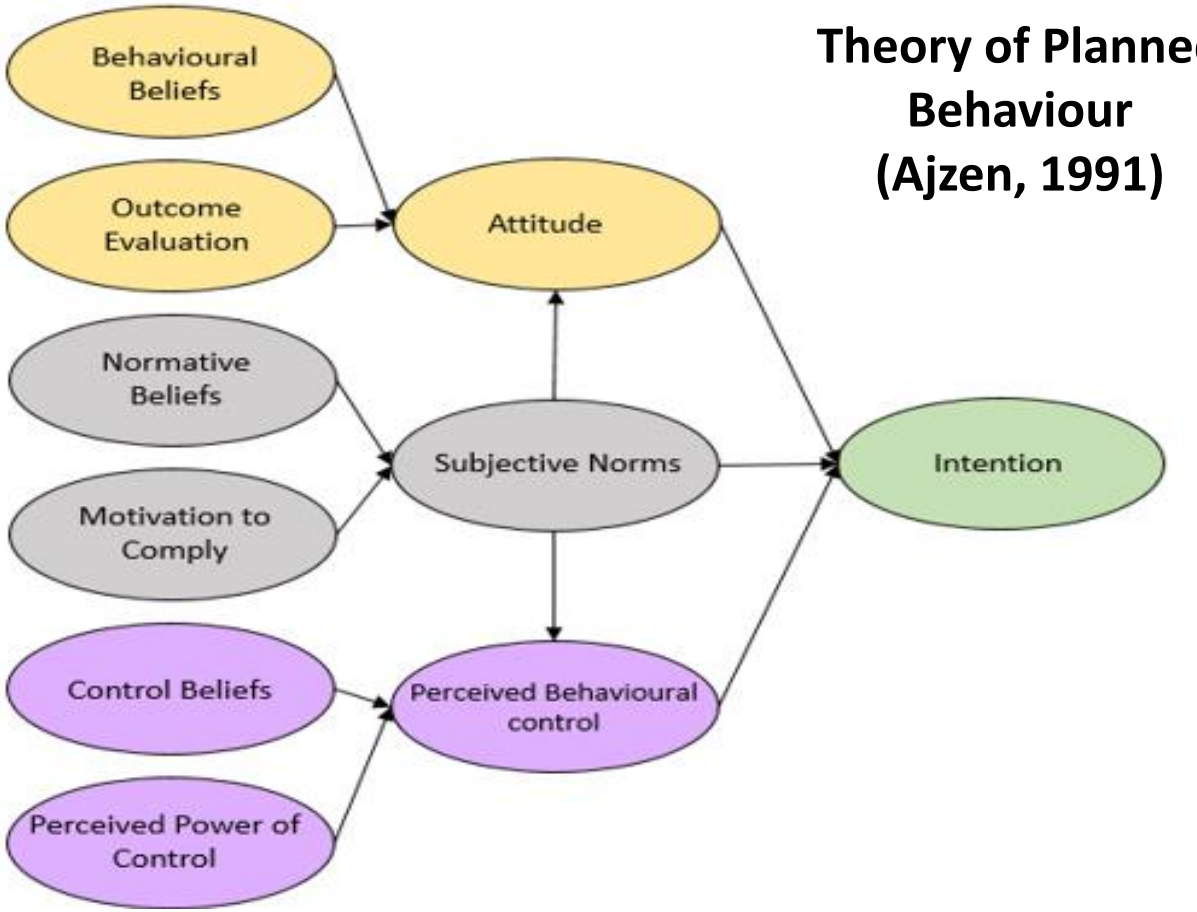
1 = Ma *et al*. (2020)

Importance of Study

- Ireland has a forestry cover of 11% (target = 18%) -> ~ **half is on farms**
- ⬆ Sustainable Agricultural Systems
- 1 ha of trees would be required on every EU farm as a potential initiative of the Post-2020 CAP.… **agroforestry**
- Eco-schemes

€€€€€ ✕ uptake

Methodology – Theoretical framework



Theory of Planned Behaviour (Ajzen, 1991)

<u>Qualitative Elicitation Study: Interviews</u>

- Farmers from 6 out of the 12 advisory regions (n = 33)
- Open-ended questions based on the Theory of Planned Behaviour
- Zoom
- Recorded and transcribed
- NVivo

Methodology

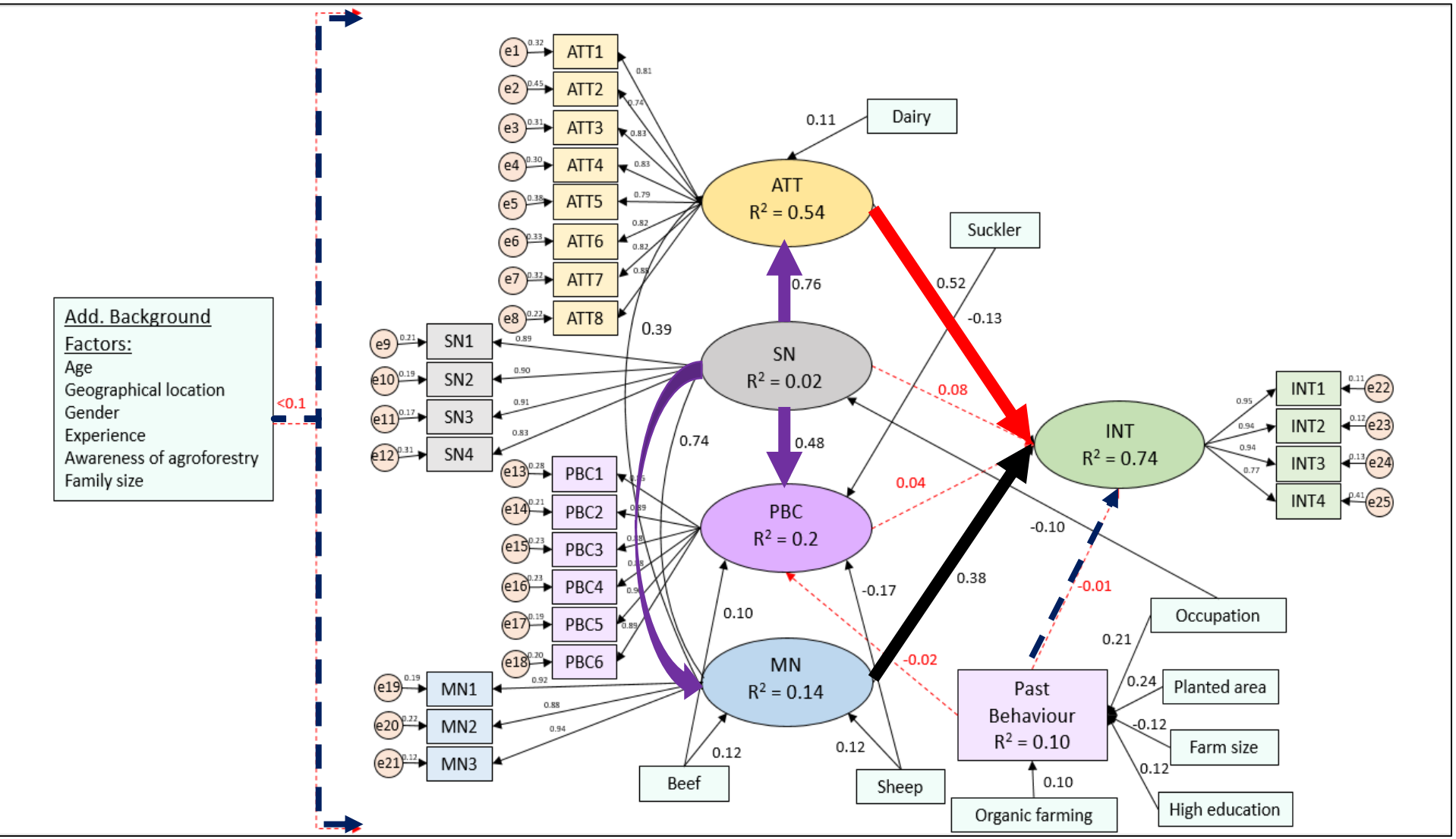
Quantitative Study: Online questionnaire

- Advertised via a number of publications and at the Moorepark Open Day
- Dairy and drystock farmers (n = 415)
- SPSS and SmartPLS

PÚCA Intelligent Mobile Solutions

Results to Date – PLS SEM

Intentions to plant trees on own farm in next five years



Attitude had greatest direct effect on Intention (β = 0.52)

Moral norms (β = 0.38)

Subjective norms had greatest total effect (β = 0.78) through directly impacting Attitude (β = 0.76) , Perceived Behavioural Control (β = 0.48) and Moral Norms (β = 0.74)

No significant effect of Background Factors nor Past Behaviour on Intention

Results to Date

Subjective Norms - Influential People (Likert scale)

1. Family -> 79% (n = 314)
2. Teagasc -> 68% (n = 268)
3. Other farmers -> 59% (n = 234)

Intentions – Locations of trees (Likert scale)

1. Along field boundaries -> 71% (n = 281)
2. On marginal land -> 39% (n = 156)
3. Along watercourses -> 27% (n = 107)

Table 1: Influential person or organisations scored 5 and above.

Influential person or organisation	Frequency (n)	Percentage (%)
Family	314	79
Teagasc	268	68
Other farmers	234	59
Close friends	212	54
Policy makers	160	41
Forestry company	158	40
Newspaper articles	116	29
Neighbours	104	26
Vet	55	14
Social media	53	13

Note: Participants could select one or more options.

Table 2: Intention to plant trees

Intention to plant trees	Frequency (n)	Percentage (%)
Along field boundaries	281	71
On marginal land	156	39
Along watercourses	107	27
In a block plantation	86	22
Scattered in pasture	83	21
Around houses or sheds	77	19
No intention to plant trees on my farm in the next five years	42	11

Notes: Participants could select one or more options.

Overview of Main Findings to Date

- Farmers are mainly driven by their attitude and moral norms -> **Shaped by the views of their influential people**
- Farmer demographics such as enterprise type, farm size or age has little effect on intentions
- Past behaviour has a negative effect on Intention, albeit at an insignificant level

- Current method:
  - Mainly top-down driven
  - Focused on economic incentives

The creation of new financial incentives for tree planting alone will not prove sufficient in increasing agroforestry uptake

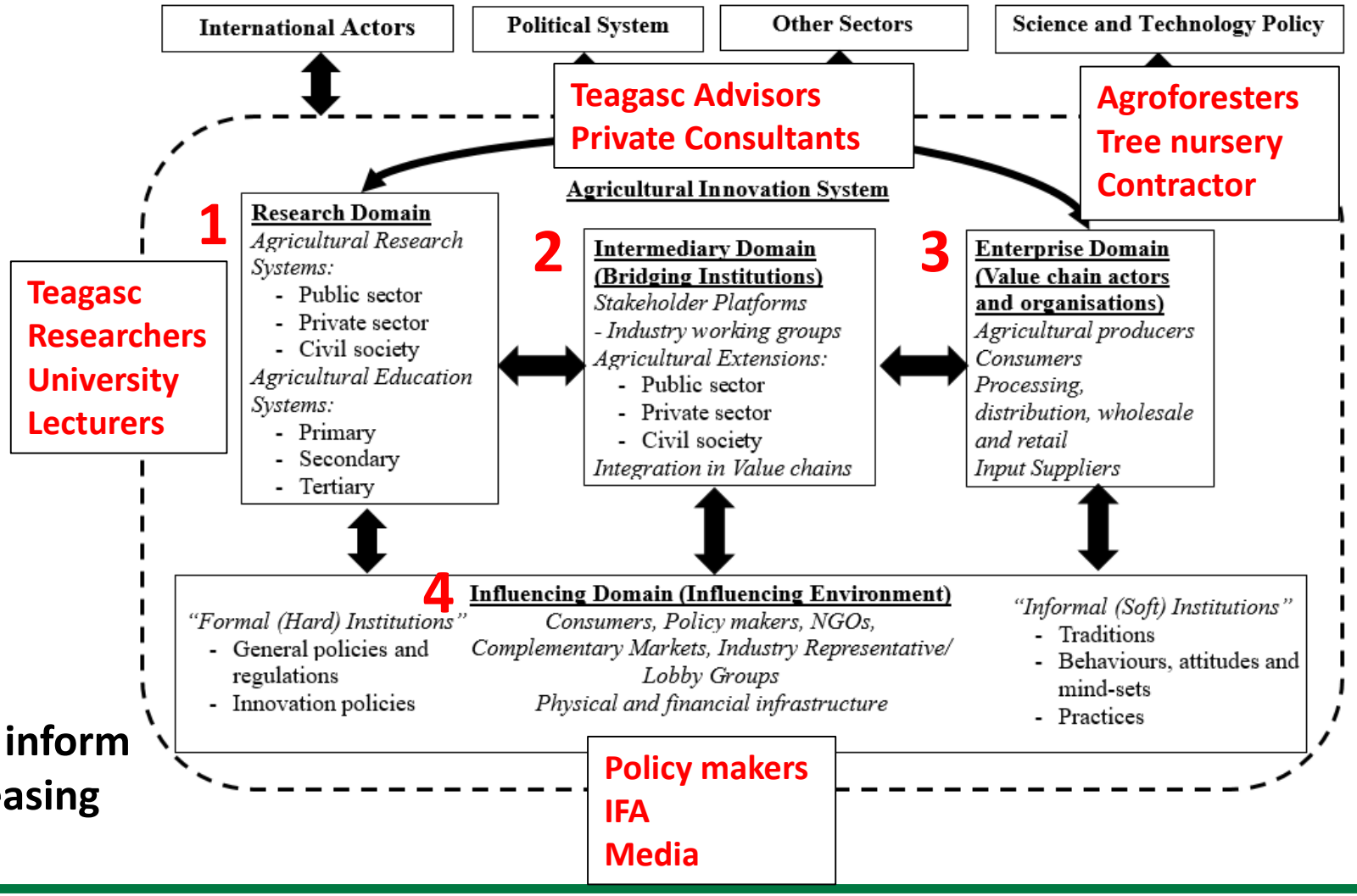
- **New methods:**
  - **Encouraging people of influential status within the farming community to promote agroforestry**
  - **Co-design and co-creative systems**

Future Research

KNOWLEDGE AND INNOVATION
CAP OBJECTIVES

Agricultural Innovation System (AIS) Approach

- Wider Agricultural Sector
- Failures within the innovation system = blocking mechanisms
- Qualitative analysis: interviews with key actors within each of the four domains:
  - Research Domain
  - Intermediary Domain
  - Enterprise Domain
  - Influencing Domain



Results of the research will be used to inform policy and create guidelines for increasing agroforestry within Ireland.

Thank You

- Link to project website:
  - https://www.teagasc.ie/crops/forestry/research/small-woodlands-on-farms/
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