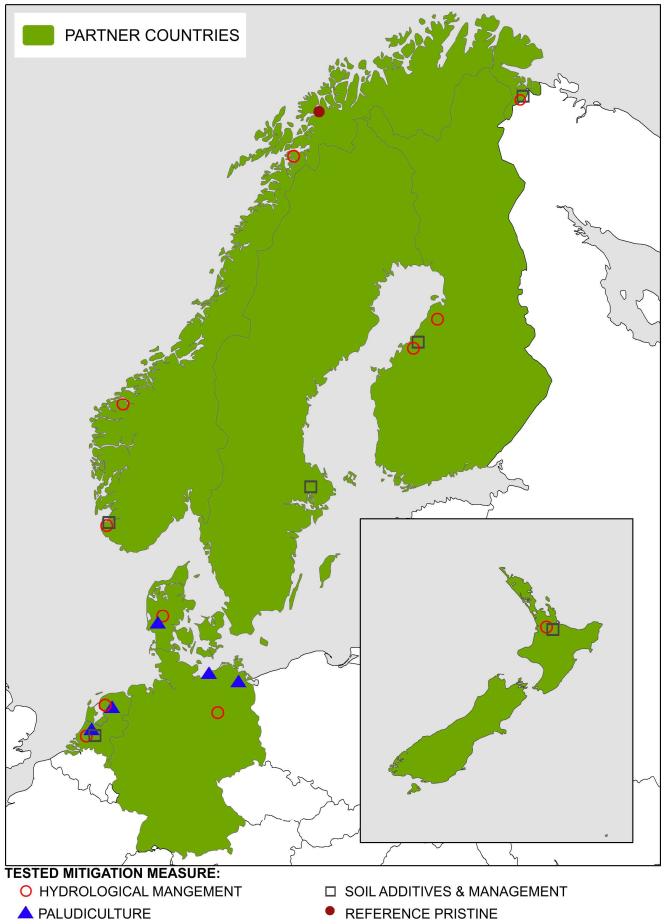
FACCE ERA-GAS

MONITORING & MITIGATION OF GREENHOUSE GASES FROM AGRI- AND SILVI-CULTURE

PEATWISE

Case study, New Zealand



NIBIO NORSK INSTITUTT FOR BIOØKONOMI

SLU

zalf

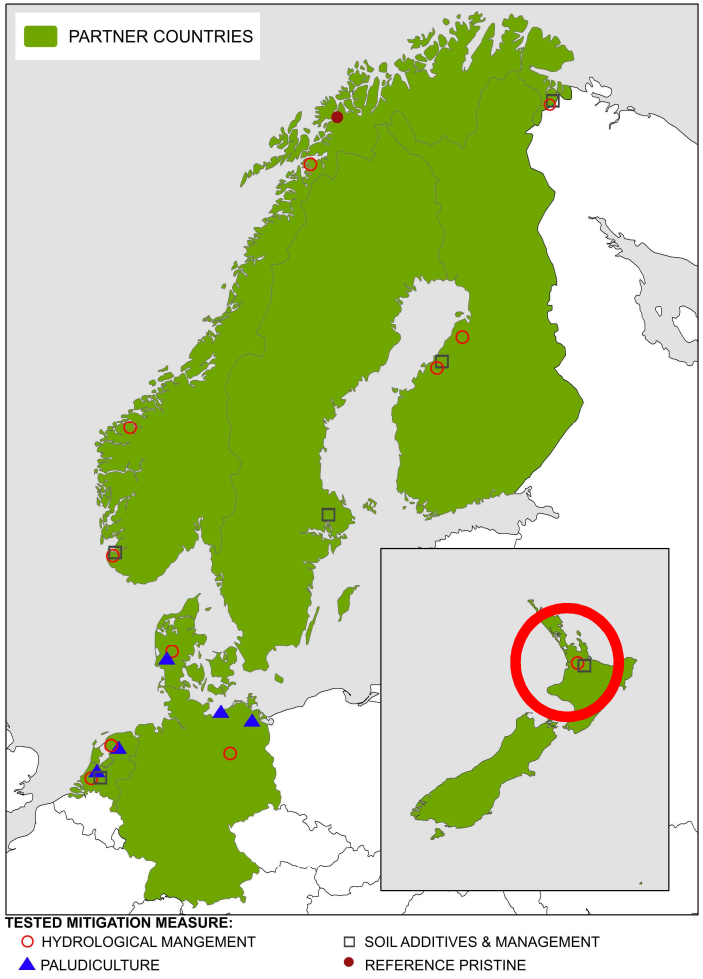
AARHUS UNIVERSITY

UNIVERSITY OF OULU

UNIVERSITY OF EASTERN FINLAND

Radboud Universiteit Nijmegen

THE UNIVERSITY OF WAIKATO
Te Whare Wānanga o Waikato



Moanatuatua, New Zealand

Site type:
Dairy farming – year-round outdoor grazing on deep peat soil

Mitigation measure tested:
WTL elevation and farm management practices

Gamma Farm, New Zealand

Contact person: Dave Campbell (davec@waikato.ac.nz)

Description, land use history: Dairy farm, Year-round rotational grazing, 3×300 cow herds

Climate		Soil quality and agronomy		Hydrology and drainage	
Location	37°57'16.10"S, 175°23‘07.39" E	**Peat depth**	7 m	**Drainage started**	1970s
Mean annual precipitation (mm y^{-1})	1200	**Underlying soil**	Hinuera formation (sand/gravel)	**Drain depth past (cm)**	Main drains 100 cm In-field "spinner" drains 30 cm
Mean annual T (°C)	14	**Crops**	Ryegrass/clover permanent Fodder beet/rape summer crop	**Drain depth present (cm)**	Main drains 100 cm In-field "spinner" drains 30 cm
AET	~780 mm	**Rotation**	7 years pasture then summer crop back to pasture	**Drain spacing (m)**	200 m (main drains) 30 m ("spinner" drains)
PET	n/a	**Fertilization Kg N ha y^{-1}**	390		
Mean length of growing season	12 months	**Harvests**	0		

Moanaleas Farm, New Zealand

Contact persons: Dave Campbell (davec@waikato.ac.nz)

Description, land use history: Dairy farm, Year-round rotational grazing, 3×300 cow herds

Climate		Soil quality and agronomy		Hydrology and drainage	
Location	37°57'58.90"S 175°22'39.76" E	**Peat depth**	6 m	**Drainage started**	1970s
Mean annual precipitation (mm y^{-1})	1200	**Underlying soil**	Hinuera formation (sand/gravel)	**Drain depth past (cm)**	Main drains 100 cm In-field "spinner" drains 30 cm
Mean annual T (° C)	14	**Crops**	Ryegrass/clover permanent Fodder beet/rape summer crop	**Drain depth present (cm)**	100 cm
AET	~780 mm	**Rotation**	7 years pasture then summer crop back to pasture	**Drain spacing (m)**	90
PET	n/a	**Fertilization Kg N ha y^{-1}**	390		
Mean length of growing season	12 months	**Harvests**	0		

Methods – eddy covariance

Gamma Farm: CO_2, CH_4, N_2O, H_2O fluxes

Moanaleas Farm: CO_2, H_2O fluxes

Methods – hydrology and peat subsidence

Laser surveying peat and drain levels

Water table level monitoring

Peat coring

Methods – methane emissions hotspots