AGRICULTURAL GREENHOUSE GAS EMISSIONS AUDITS

EXECUTIVE SUMMARY

Prepared for: **Private Forests Tasmania Project:**
"*Carbon Plantations – Extending R&D to best management practices for carbon sequestration, wood production and new investment opportunities on private land in Tasmania"*

Prepared by: **Ruth Hall**
Agricultural Consultant
AK Consultants
40 Tamar St
Launceston, Tas 7250

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AK Consultants
AGRICULTURAL & NATURAL RESOURCE MANAGEMENT CONSULTANTS

Tasmania
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The *Carbon Plantations –Extending R&D to best management practices for carbon sequestration, wood production and new investment opportunities on private land in Tasmania project* is supported by funding from the Australian Government Department of Agriculture, Fisheries and Forestry under the Forest Industries Climate Change Research Fund program.

Private Forests Tasmania is the Project Manager.

Project partners include:

CSIRO Forestry and Forest Products
Rural Development Services
Livingston Natural Resource Services
AK Consultants

PURPOSE:

AK Consultants' role within this project is to conduct an audit of the existing agricultural enterprises on each of four demonstration farms to calculate current "*Kyoto-compliant"* greenhouse gas emissions and carbon sequestrations. This will then provide a base line to determine what level of carbon storage is required to offset emissions from the farming businesses.

SCOPE:

The demonstration farms consisted of a range of farming enterprises including:

- intensive irrigated cropping (with some livestock),
- mixed irrigated cropping and livestock,
- dryland grazing, and
- an irrigated dairy.

This mix was selected in order to gain an understanding of the emissions profiles from different agricultural operations.

The audits in this report cover only those emissions that Australia has agreed to report internationally under the Kyoto protocol. They have been compiled using publically available farm greenhouse gas calculators developed by Melbourne University in conjunction with the Victorian Department of Primary Industries. The accounting methodology used is detailed in the National Greenhouse Gas Inventory which has been approved by the Intergovernmental Panel on Climate Change (IPCC).

Emissions and sequestrations from farming enterprises are calculated under three different reporting sectors as shown in the table below:

Reporting Sector	**Substance measured**
Agriculture	Methane and nitrous oxide emissions
Energy (including Stationary and Transport)	Carbon dioxide emissions
Land Use, Land Use Change and Forestry	Carbon sequestration

RESULTS:

Key findings from the farm audits are:

1. On all farms, enteric methane (a natural by-product of ruminant digestion) was the main contributor to greenhouse gas emissions accounting for over 50% of emissions even on the intensive cropping farm. On the two properties running livestock only; namely the dryland grazing property and the irrigated dairy; enteric methane contributed 83% and 73% of the total GHG emissions respectively.

2. Only one farm sequestered enough carbon to fully offset all greenhouse gas emissions from the farming enterprise. This appears to be due to this farm achieving a balance of farming activities resulting in relatively fewer emissions (3.3 tCO2e / ha) combined with a significant proportion (12%) of the farm planted with eligible plantation trees

3. If emissions from the Agricultural Sector are excluded, as proposed in the Australian Government's Carbon Pollution Reduction Scheme, then all farms in this trial are able to offset all eligible carbon emissions (ie emissions from the Energy Sector) due to the amount of carbon sequestered by eligible tree plantings (ie the Land Use, Land Use Change and Forestry Sector).

For a copy of the full report:

"*Agricultural Greenhouse Gas Emissions Audits"*
Report for Private Forests Tasmania Carbon Plantations Project

Please contact:

Ruth Hall
Agricultural Consultant
AK Consultants
40 Tamar St
Launceston, Tas 7250

Ph: 6334 1033
Mobile: 0409 213 756

Email: ruth@akconsultants.com.au