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NATIONAL FARMERS FEDERATION LTD

SUBMISSION TO THE

JOINT STANDING COMMITTEE ON TREATIES

REVIEW OF THE KYOTO PROTOCOL

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Introduction

The National Farmers' Federation (NFF) welcomes the opportunity to provide input into the Joint Standing Committee on Treaties and their review of the Kyoto Protocol.

The emissions accounting framework established under the Kyoto protocol is a determining factor in the domestic climate change policy and carbon markets of signatory nations. Nations such as Australia intend to ensure that their commitments to targets and their domestic emissions trading schemes are compliant with the global policy regime and a future global carbon market.

Despite the importance of the Kyoto carbon accounting construct to economic and environmental outcomes, few stakeholders understand the principles behind the rules and the implications for their sector. This is particularly the case for agriculture.

The NFF is concerned that the current Kyoto accounting rules both misrepresent agricultural emissions and are a barrier to increasing the carbon storage potential of agricultural lands.

The NFF is deeply concerned that the major agricultural nations have so far been relatively minor players in the development of Kyoto accounting policy and that as a result, the accounting construct does not accommodate the special characteristics and needs of agriculture.

The Australian context

Action on climate change has been a core focus of the new Rudd Government, which has been keen to demonstrate an urgent and strong response to the issue. This was demonstrated by the first action of the new Australian Government being to ratify the Kyoto Protocol during the 13th meeting of the United Nations Coalition of Parties (COP 13) in Bali, Indonesia. In conjunction with the Kyoto Protocol ratification, a number of domestic policy responses have since been initiated to help mitigate Australian emissions and to assist Australia to meet its international greenhouse commitments.

The key domestic policy response by the Australian Government to combat climate change is the commitment to implement an Australian Emissions Trading Scheme (ETS) by 2010. The Government intends for the coverage of the ETS to be as broad as possible while acknowledging that sectors including agriculture face a range of complexities that must be considered in this context. The Government has committed to working with the agriculture sector on a suitable timeframe for the sector to be covered by an ETS. To this end, in the Green Paper on the Carbon Pollution Reduction Scheme (CPRS) released in July 2008 the Australian

Government, prudently recognised the unique complexities that would impede agriculture's coverage when the scheme is scheduled to commence in 2010. NFF is therefore pleased the Government has not moved to impose an arbitrary date for covering agriculture, but instead identified a target date of 2015 – pending the need to first overcome practical impediments of measuring, monitoring and verification of carbon emissions – with a decision on inclusion or exclusion to be considered in 2013.

With one of the core aims of the Government being to meet its Kyoto obligations, clearly there is pressure for the rules of the Australian ETS to be underpinned by the international carbon accounting rules framing the global Kyoto obligations. Policies adopted by Governments around the world to mitigate emissions will be influenced by these same Kyoto accounting rules, which poses a risk for farmers everywhere.

It is undeniable that agriculture is a significant source of greenhouse gas emissions in developed and developing countries. The Intergovernmental Panel on Climate Change (IPCC) Fourth Assessment Report has emissions from the Agriculture sector at 13.5% of global anthropogenic greenhouse gas emissions. It is also true that of all sectors of the global economy, agriculture is potentially the sector that will be impacted most by an increasingly variable climate. Therefore, agriculture must play a role in mitigating greenhouse gas emissions and cannot shy away from its responsibility to act on this issue. However, opportunities for emissions reductions by the agriculture sector must be balanced against the potential for gains in productivity and sustainability, so that agriculture can meet the world's food and fibre needs under future climates.

This paper looks to outline the problems with the Kyoto accounting rules for agriculture and to identify what changes could be made to the rules to ensure that agriculture is treated equitably against other sectors of industry.

Principles for effective greenhouse accounting frameworks

When considering an accounting framework that appropriately recognises the specific needs of agriculture, a number of principles must be outlined. These principles include the following:

The rules must acknowledge features specifically relating to agricultural production.

There are particular characteristics associated with greenhouse gas emissions from agricultural production activities. These include the following:

- Farmers do not directly control the emissions from the land systems they manage. Emission from soil and ground cover are largely driven by climate factors which, in a country like Australia, are highly variable and moreover, negatively impacted by climate change.

- Agriculture is a source of multiple greenhouse gases yet also provides carbon sinks.
- Extensive agricultural industries, such as livestock grazing and cropping, produce highly geographically diffuse emissions. That is, the emissions profile of extensive agricultural production varies significantly between different regions. Emissions from more intensive production systems are less diffuse.
- Significant heterogeneity exists within production systems. For example, cattle breeds and feed types in tropical/sub-tropical regions differ from those in temperate regions, and have methane conversion rates that are significantly different.
- Emissions from a particular source may not be constant. For example, nitrous oxide emissions from soils vary with soil types, as well as in response to seasonal and even daily variations in nutrient and water availability.
- Agricultural businesses are often diversified, undertaking multiple different activities, and altering the activity mix over time.
- Agriculture requires flexibility in land use, with the need to adapt production to changing environmental and market conditions.

In considering appropriate greenhouse gas accounting frameworks that can reflect these characteristics, questions must therefore be asked about how to:

- Estimate emissions and sequestration in a way that represents the true characteristics of the specific farming operation involved.
- Ensure that greenhouse accounts reflect the effects of different management practices on emissions; and
- Ensure that agricultural industries understand the relationships between management practice and emissions, so that emissions management actions can be integrated with other agricultural production strategies that may also improve productivity.
- Enable farmers to obtain credit for sequestration activities that are an integral part of production farming systems.

The rules must be a reflection of the genuine impact that human actions have on net greenhouse gas emissions.

It is important that the international greenhouse accounting rules do not penalise countries or sectors for an increase in emissions independent of management effects, but rather due to natural variability and climate conditions. Such outcomes are beyond human control and therefore should not be accounted for. This is a particular concern for the agriculture sector which faces extensive variability in natural emissions due to factors such as variable rainfall/drought and bushfires. Countries should not be liable for outcomes that are beyond human control.

The rules must be comprehensive, maximise simplicity, be transparent and be a true reflection of all emissions and sinks.

Greenhouse accounting frameworks should reflect comprehensive and integrated coverage of all emissions where and when they occur, including all pools (e.g. biomass and soils), all gases, and all emissions and sinks. This in turn must be balanced against reducing the transaction costs as much as possible, therefore ensuring that compliance is simple and costs are kept low.

However, it must be noted that by making the approach more comprehensive and integrated, other emission sources and carbon sinks could be included – expanding the framework. This could pose risks for all sectors that may either benefit or be hindered by such an approach. Transparency in the measures reported against is therefore paramount. It must also be considered that this principle can introduce a greater level of uncertainty where data and measurement techniques are not available.

The rules must provide mechanisms to address national circumstances.

Particularly when it comes to the treatment of agriculture and land use within international accounting frameworks, it is important that the variations in national circumstances are taken into account. For example, the provision of 'net net' accounting measures under Article 3.4 of the Kyoto Protocol is a far less risky proposition for those countries facing consistent rainfall and with wetter, cooler climatic conditions, less susceptible to droughts or bushfires. This does not allow provisions for countries such as Australia, which has a far more variable climate and has a greater risk of bushfire and very diverse management practices across the nation within the same Article 3.4 land management category.

In addition, variations in the internal governance capacity of countries to implement measurement processes that meet their international reporting obligations must also be acknowledged. Agriculture should not be penalised in countries that do not have the capacity to implement entity level reporting that in turn, may allow them to be rewarded for improvements in on-farm management practices that reduce the intensity of greenhouse emissions.

Overview of the current Kyoto accounting framework

Parties to the Kyoto Protocol are required to prepare annual emissions inventories under accounting rules applying to the first commitment period (2008 to 2012). Emissions from land-based activities are covered under the categories of Agriculture and Land Use, Land Use Change and Forestry. The inventory reports cover sources of greenhouse gas emissions and removals by sinks resulting from a sub-set of anthropogenic activities for specified greenhouse gases.

There are also annual reporting obligations for parties to the United Nations Framework Convention on Climate Change (UNFCCC). There are some differences between emissions estimates prepared under the UNFCCC and Kyoto Protocol requirements, principally in relation to the accounting of the forestry sink.

Agriculture emissions are accounted for under Article 3.1 of the Kyoto Protocol. The agriculture emissions reported are: methane emissions from livestock; methane and nitrous oxide emissions from manure management; methane from rice; methane, nitrous oxide and other gases from burning of savanna and crop residues; and nitrous oxide emissions from soil.

Article 3.3 of the Kyoto Protocol requires reporting of all emissions and removals from Afforestation and Reforestation (forests established since 1990 on land that was clear of forest on 31 December 1989) and Deforestation (deliberate removal of forest from land that was forest in 1990 and conversion to a non-forest land use).

Article 3.4 of the Kyoto Protocol provides for additional land use activities that countries may elect to count towards their emissions target during the first commitment period. These elective activities are: Forest Management; Cropland Management; Grazing Land Management; and Revegetation (Further information is provided at Attachment A).

Countries conduct estimation and reporting of greenhouse gas emissions according to guidance produced by the Intergovernmental Panel on Climate Change (IPCC). Guidance covers issues such as estimation methods and identification of lands for which emissions are to be estimated. The guidance is designed to allow countries to adopt emissions estimation methods best suited to their national circumstances. It is refined over time in response to scientific developments and review processes.

For some sectors the IPCC provides guidance on options for different levels of complexity (Tiers) in estimation methods that depend on the availability of data and estimation capabilities.¹ The options range from a simple approach using coarse readily available default data, to the use of country or region specific defaults and more disaggregated activity data, and up to detailed modelling or measurement with higher resolution data. Only the latter method provides sufficient detail and resolution to allow for appropriate representation of the effects of management on emissions, although most countries do not possess the data nor the capability needed to adopt this method.

Limitations of current framework for agriculture

¹ NB: Accounting frameworks under the Kyoto Protocol are determined by the Marrakech Accords (2002). Further elaboration of implementation guidelines was subsequently provided in the IPCC Good Practice Guidance report (2003). Together the Marrakech Accords and IPCC Good Practice Guidance provide detailed and specific rules for accounting (the Marrakech Accords) and technical implementation (the IPCC Good Practice Guidance).

Conceptually, the current accounting framework under the Kyoto Protocol provides for tracking of most types of land-based greenhouse gas emissions and sinks, if countries were to elect to include in their accounts the Article 3.4 activities in addition to mandatory reporting under Articles 3.1 and 3.3. However, in practice this framework has limitations when considered against the questions discussed above.

For agricultural industries, in broad terms accounting of net emissions under Articles 3.1, 3.3 and, in the case of Australia in the first commitment period, Article 3.7, reflects their emissions from animal and crop production and conversion of forest land to agriculture, and carbon sequestration in forests established on agricultural land.

However, under the Agriculture category only non-carbon dioxide emissions are accounted for. Accounting for carbon dioxide emissions and carbon sequestration is conducted only under the Land Use, Land Use Change and Forestry category (non-carbon dioxide emissions are also covered).

Article 3.4

Article 3.4 provides options for electing to more comprehensively account for emissions and removals. Decisions by countries on whether to elect these activities are based on consideration of benefits compared to potential negative outcomes.

Article 3.4 accounts for all land affected by the relevant land use activity in the 1990 base year and the 2008-2012 period. If the area allocated to the particular activity in 2008-2012 is higher, there is a risk that even if emissions per hectare are reduced, the total emissions reported increase solely due to an increase in land area.

Article 3.4 activities may be subject to considerable variability over time, for example due to fire in Grazing Land Management and changes in soil and biomass carbon stocks in Grazing Land Management. Natural emissions and annual variability on all relevant lands are included in the account. There may be risks that emissions outcomes could increase or decrease regardless of management effects, but rather due to the effects of natural variability and the effects of climate conditions in the 1990 base year relative to the 2008-2012 period. The net rate of emissions in 2008-2012 is compared to five times the net rate of emissions in 1990.

For some agricultural production activities, management practices provide the prime driver for patterns and trends in greenhouse gas emissions and sinks. However, in many instances, climate variability becomes the principal driver of emissions trends and sinks, with large inter-annual fluctuations. As a consequence of the climate drivers and the risks arising in terms of projected outcomes in a defined future period, Australia did not elect any Article 3.4 activities.

Only four countries – Spain, Portugal, Denmark and Canada, have elected to include Cropland Management and Grazing Land Management (the key activities relevant to agricultural industries) in their accounts for 2008-12.

Soil carbon offsets.

There is a substantial body of research addressing the role of agricultural soils as a carbon sink. Agriculture could potentially achieve a significant reduction in the risk of climate change by taking CO₂ out of the atmosphere and storing it in the soil².

Globally, approximately half of all soil carbon in farmed land has been lost to the atmosphere during the past two centuries. This loss, however, creates an opportunity for carbon storage. The global additional storage potential in agricultural soils is estimated as being in the order of 80 billion tonnes, or 10% of total atmospheric carbon.

Net sequestration occurs with farming systems that increase plant material being returned to the soil, reduction of carbon loss and/or the introduction of carbon from external sources such as industrial and urban waste streams.³ Achieving this does not require advanced technology, however it does require significant economic incentives to enable farmers and industry partners to implement changes in practice.

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Several challenges face the establishment of a viable market for soil carbon offsets:

- Under Kyoto rules, offsets must be permanent. It is difficult, however, to meet current permanence criteria as soil carbon fluxes can be rapid, with some fractions moving in and out of soil on a daily basis. Potentially, this problem could be addressed by adopting a net balance sheet farm carbon accounting model, with an averaging approach to soil carbon accrual.
- Current Kyoto accounting rules do not allow a distinction to be made between anthropogenic and non-anthropogenic soil carbon losses. This is a major reason why Australia has so far elected not to include soil carbon under Article 3.4. Net soil carbon losses occur in dry, hot periods, irrespective of land-use practices. Under the current 'net net' accounting rules, a farmer could create and sell soil carbon offsets, but a period of extended drought could wipe out the soil carbon

² Rosenberg, N.J. and Izaurralde, R.C (2001), 'Storing carbon in agricultural soils to help head-off a global warming', in J.N. Rosenberg and R.C. Izaurralde (eds.), *Storing Carbon in Agricultural Soils: A Multi-Purpose Environmental Strategy*, Dordrecht, Kluwer Academic Publishers, pp. 1–10.

³ Okimori Y., Makoto Ogawa M, Takahashi F (2003), *Potential Of Co₂ Emission Reductions By Carbonizing Biomasswaste From Industrial Tree Plantation In South Sumatra, Indonesia, Mitigation and Adaptation Strategies for Global Change*, Springer Netherlands ISSN1381-2386

⁴ McCarl B. A., Metting F.B. Rice C., (2007) *Soil carbon sequestration*, *Climatic Change* 80:1–3

⁵ Bruce, J.P., M. Frome, E. Haites, H. Janzen, R. Lal, and K. Paustian. (1999). Carbon sequestration in soils. *J. Soil and Water Conservation.*, 54: 382-389.

⁶ Rosenberg, N.J. and Izaurralde, R.C (2001), 'Storing carbon in agricultural soils to help head-off a global warming', in J.N. Rosenberg and R.C. Izaurralde (eds.), *Storing Carbon in Agricultural Soils: A Multi-Purpose Environmental Strategy*, Dordrecht, Kluwer Academic Publishers, pp. 1–10.

gains, leaving the farmer (and Australia) with an obligation to restore the carbon. This may be difficult to comply with due to natural climatic conditions. This problem applies to any nation where climatic conditions result in high soil carbon mobility.

- Practical measurement and monitoring tools are needed to enable soil carbon accounting.

Conditions for establishing a viable international soil carbon market therefore include:

- Measurement and monitoring techniques that both meet compliance standards and are not prohibitive complex or expensive to implement.
- A net balance sheet approach to permanence rules and carbon accounting.
- Changing Kyoto rules to distinguish between natural and human induced soil carbon losses (i.e. to exclude losses that are out of the farmer's control).
- An accounting construct and policy framework that rewards actions to increase soil carbon rather than the absolute outcomes (since these will partly be determined by factors that are outside of the control of the farmer).
- It is essential that the accounting construct under Kyoto II is modified to recognize that the causality of emissions from agricultural land is inherently different to that associated with fossil fuels and therefore demands a different policy approach. A power station can directly control its emissions. A farmer can only influence the emissions from the land system he manages.

Permanence and 'balance sheet' farm carbon accounting.

The Kyoto permanence principle is a key element in the international carbon market model. It requires that credits created through avoided emissions and sequestration credits used to offset emissions are permanent. In other words, a prevented emission is prevented forever. However, the permanence principle creates significant practical problems for land-based offset schemes. In forestry based schemes, permanence is often defined as greater than 100 years. It is clearly impractical, however, to lock up land for such periods in the context of productive agriculture.

The objective of permanence is to guarantee the validity of the carbon credit (and assign liability for preserving the offset) and thus preserve the integrity of the carbon market. This can be achieved by other means, however, for example by renting, rather than selling credits⁷. A rental contract for emissions credits could establish continuous responsibility for sequestered carbon; credit would be assigned when carbon is sequestered and debits would accrue when carbon is emitted. This would be compatible with a balance sheet approach to farm carbon accounting, whereby farmers maintain a certain net balance across an operation, without having to lock

⁷ Marland, G., Fruit K., Sedjo R. (2001) Accounting for sequestered carbon: the question of permanence, *Environmental Science & Policy* 4 (2001) 259–268

into specific landuses and complex contractual arrangements involving land title, as is currently required under forestry based offset schemes.

Concepts like this need to be explored further and promoted by nations with a major stake in agriculture as well as by the international farm lobby.

Accounting for forestry-based sequestration.

While recognizing the valuable role that trees play in land systems, the NFF is concerned by the current global emphasis on reforestation as the primary tool for achieving sequestration. A number of factors need to be considered in this regard:

- The current 1990 benchmark for Kyoto compliant offsets fail to adequately address the ongoing sequestration provided by older vegetation forests. This devalues pre-1990 forests and creates a disincentive for developing countries and Australia to adequately manage and protect existing vegetation. The Kyoto rules need to reflect the ongoing sequestration value of all standing vegetation regardless of age so as to reward good practice.
- Farming demands flexibility in land-use. Locking up a large proportion of the planet's productive farming land under plantations (which could be a perverse outcome of carbon markets) is not compatible with the need to meet the world's growing demand for food and fibre.
- Plantations have significant impacts on water yield. Unplanned land-use change and increased water scarcity resulting from reforestation incentives can have significant detrimental social and economic impacts.
- Monoculture carbon plantations do not offer the range of environmental values that arise from a mosaic pattern of mixed species plantations within productive farming systems. Integrated plantings that encourage biodiversity values and maintain net agricultural productive are more sustainable.

Rules that encourage offsets that are not dependent on standing vegetation, for example, in soil and pasture, are needed to enable agriculture to participate effectively in the global response to climate change.

Kyoto Protocol accounting framework – where is it heading?

International discussions of possible future accounting frameworks are in their early stages and there is considerable uncertainty about any future directions. International obligations for developed countries may continue to be based on the current Kyoto Protocol framework. However, there is some movement towards more comprehensive land-based accounting of emissions. For example, the IPCC has developed new guidelines – the 2006 IPCC Guidelines for National Greenhouse Gas Inventories. The 2006 Guidelines have not been agreed to by governments for implementation, and it is not yet clear when or to what extent international application of these guidelines will commence.

The 2006 Guidelines integrate the current agriculture and land use change and forestry sectors into one reporting category – Agriculture, Forestry and Other Land Use. The guidelines provide for annual accounting of all greenhouse gas emissions and removals by sinks on all managed lands – forest land, cropland, grassland, wetlands, settlements and other land defined to incorporate all managed land area within a country. This approach does not provide for separation of emissions outcomes due to management actions and natural effects.

For this reason, the proposed changes under the 2006 Guidelines pose significant challenges for agriculture to ensure that countries are able to be credited for on-farm management actions that reduce the global carbon footprint, while allowing for emissions resulting from natural effects. They also greatly increase the need for spatially explicit data on agricultural activities relative to current estimates on an activity basis.

Measurement issues for agriculture

The characteristics of land-based greenhouse gas emissions within the existing Kyoto Protocol introduce complexities in measuring greenhouse gas emissions, particularly for agriculture. In order to inform management decisions and provide incentives for emissions reductions, methods to measure greenhouse gas emissions from agriculture should address the following issues:

- What is the potential/appropriateness of aligning measurement with international accounting frameworks?
- Measurement must adequately represent the variable and heterogeneous nature of agricultural emissions.
- Measurement must be comprehensive to the extent that is practical, ensuring that transaction costs of reporting are minimised.
- Measurement must be simple, cost-effective, accessible, robust, flexible to recognise national circumstances, and be able to build on other relevant reporting and information frameworks.
- Provide for recognition of change in emissions due to management actions be transparent and verifiable.

Conclusion

The international agricultural community has a vested interest in ensuring that the international greenhouse accounting framework appropriately accounts for agriculture. The Kyoto Protocol framework as it stands has significant flaws in its use of 'net net' accounting measures, its penalisation of naturally induced emissions variations and a failure to adequately acknowledge entity level improvements in on-farm practices by all farmers. In addition, the Kyoto Protocol framework does not address the variability in national circumstances, while being selective in the greenhouse emissions and sinks that it accounts for.

While the international accounting framework continues to be skewed against the interests of the agriculture sector, farmers everywhere risk the adoption of domestic greenhouse gas mitigation policies that place inequitable costs on agriculture and limit the sector's ability to engage. The National Farmers' Federation is very conscious of this threat as the Australian Government looks to implement a domestic ETS with a primary aim of helping Australia meet its international greenhouse commitments.

The NFF therefore believes that the Australian Government must act quickly to ensure that the Kyoto Protocol accounting framework is adjusted through upcoming negotiations accordingly for compliance reporting in a second Kyoto commitment period or alternative international agreement, commencing from 2013 to ensure Australian agriculture's global competitiveness is not undermined.

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Attachment A - Background on international greenhouse gas accounting frameworks

Kyoto Protocol

Accounting 'rules' for the period 2008 to 2012 are derived from IPCC Guidelines and Good Practice Guidance and the Marrakech Accords. The Marrakech Accords set out the accounting framework, with detailed and specific rules for accounting.

Article 3.1 - Agriculture

The sources of emissions are:

- Enteric fermentation in livestock – emissions associated with microbial fermentation during digestion of feed by ruminant (e.g. cattle and sheep) and some non-ruminant domestic livestock
- Manure management – emissions associated with the decomposition of animal wastes while held in manure management systems
- Rice cultivation – methane emissions from anaerobic decay of plant and other organic material when rice fields are flooded
- Agricultural soils – emissions associated with the application of fertilisers, crop residues and animal wastes to agricultural lands and the use of biological nitrogen fixing crops and pastures
- Prescribed burning of savannas – emissions associated with the burning of tropical savanna and temperate grasslands for pasture management, fuel reduction and prevention of wildfires
- Field burning of agricultural residues – emissions from field burning of cereal and other crop stubble, and the emissions from burning sugar cane prior to harvest
- Other.

Article 3.3 mandatory activities - Afforestation, Reforestation and Deforestation

- Includes all emissions/ removals (CO₂ and non-CO₂) from all land brought into the national account by an Afforestation, Reforestation or Deforestation activity. All pools (above and below ground biomass, deadwood, litter and soils) included except harvested wood products.
- Afforestation and Reforestation are limited to direct human action (planting or promotion of natural seed stocks) to promote new forest establishment on land that was not forested at the end of 1989.
- Reporting is of net emissions and removals over the 2008-2012 commitment period with no baseline calculation applied. That is, the 'gross' value of the 'net change' is reported (gross-net accounting).
- 'Short rotation' harvest sub-rule protects individual forest stands from returning a negative outcome; any stand that returns a negative outcome over 2008-2012 (e.g. due to harvest) is removed from the account.

- Deforestation refers to non-temporary removal of forest from land that was forest in 1990 that involves a conversion to a non-forest land use.

Article 3.4 - Additional elective activities

- Includes all emissions and removals (CO₂ and non-CO₂) from the following management regimes (where these have not already been accounted for under the compulsory reporting Articles 3.1 and 3.3):
 - Forest Management
 - Cropland Management
 - Grazing Land Management
 - Revegetation
 - A 'net-net' accounting approach is applied to all land use based activities with the exception of Forest Management. The 'net-net' accounting approach compares the net emissions over the first accounting period (the year 1990) multiplied by five with the net emissions over the second accounting period (2008-12).
- If a country chooses to include any of the additional activities, then it must also include, and report on, all emissions from all land on which these activities are undertaken

Article 3.7

- Provides that Parties that had net emissions from Land Use Change and Forestry in 1990 shall include emissions from Land Use Change in 1990 in their estimate of emissions in the base year used for the calculation of their assigned amount (the emissions limitation for a Party for the first commitment period). This is the case for Australia.

UNFCCC

Agriculture

The scope of reporting is essentially the same as under Article 3.1 of the Kyoto Protocol but includes some additional indirect greenhouse gases for which global warming potentials are not currently available.

Land Use Change and Forestry

- A wider range of forest activities than under the Kyoto Protocol. All managed native forests (commercially harvested) and plantations (regardless of establishment date and potentially after clearing of native forests) are included.
- All carbon pools except soil carbon (non-CO₂ gases are not directly estimated but are incorporated in other reporting categories e.g., due to fire), including harvested wood products where a country can document that its long-lived carbon stocks are increasing.

- No 'sub-rule' mechanism is provided to protect individual forest stands from a negative outcome from a reporting period.
- Land Use Change accounting matches that for Deforestation under Kyoto Protocol accounting.

Attachment B - Summary of how the Kyoto carbon accounting rules are inappropriate for agriculture

- Under Article 3.4 if the area allocated to the particular activity in 2008-2012 is higher than the base period, there is a risk that even if emissions per hectare are reduced, the total emissions reported would be increased solely due to an increase in land area.
- Under Article 3.4 there are risks that emissions outcomes could increase or decrease regardless of management effects, but rather due to the effects of natural variability and the effects of climate conditions in the 1990 base year relative to the 2008-2012 period.
- Under Article 3.4, 'net net' accounting rules apply, meaning the risks of carbon emission variability due to natural causes are significant. Meeting obligations under such a mechanism of reporting could leave the farmer (and Australia) with a liability that is impossible to service. A net balance sheet approach to permanence rules and carbon accounting would be a more appropriate measure.
- Because the risks of complying with Article 3.4 are too great for countries such as Australia, we are restricted in our ability to gain credit from farming practices.
- Under Kyoto rules, offsets must be permanent. It is difficult, however, for farmers to meet current permanence criteria with regards to soil carbon as soil carbon fluxes can be rapid and have significant variability.
- The permanence principle also creates significant practical problems for land-based offset schemes. In forestry based schemes, permanence is often defined as greater than 100 years. It is clearly impractical, however, to lock up land for such periods in the context of productive agriculture.
- The current Kyoto accounting rules place an emphasis on reforestation as the primary tool for achieving sequestration. This devalues pre-1990 forests and creates a disincentive for developing countries and Australia to adequately manage and protect existing vegetation. It also has the potential to lead to broader environmental problems.
- Countries that do not have the capacity to implement entity level reporting are unable to be rewarded for improvements in on-farm management practices that reduce the intensity of greenhouse emissions.

