EVIDENCE IN SUPPORT OF THE PETITION TO PARLIAMENT

03 February 2020

Aaron Williams
Clerk of the Environment Committee
New Zealand House of Representatives

To the Chairman and members of the Environment Committee

I thank you for the opportunity to provide evidence in support of my petition to the House of Representatives, asking that the house not support any provisions in the Climate Change Response (Emissions Trading Reform) Bill that would incentivise the large scale afforestation of farmland.

The following pages contain the evidence on which my petition is based. The evidence consists of independent economic analysis undertaken by a reputable accounting firm who deals in both carbon units, forestry and farm businesses, a case study of farm sales, excerpts from reports and cabinet papers relating to the incentives being offered, and lastly real world experience of the impact carbon markets are having on rural communities.

The nature of a petition is that it is simplistic and brief in order to be manageable across the platforms on which it is shared (physical and electronic) and through which people engage with the issue. This means unfortunately that much of the context in which support for the petition has evolved is unable to form part of the petition itself. In providing the committee with evidence I hope to also provide the appropriate context, in order to ensure the voices of those supporting this petition are clearly understood.

This petition is not intended to denounce the planting of trees, the legitimacy of the plantation forestry industry or the intentions of the Government in seeking to mitigate elevated levels of atmospheric CO2. The intention is merely to illustrate that a broad-brush approach has many unintended consequences, the results of which will extend across industries, through society and over generations.

If you have any further questions, please feel free to contact me.

Kind regards
Yours sincerely
Kerry Worsnop

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LAND USE CHANGE

Land use change has been a significant factor of the New Zealand primary sector for well over 100 years and is arguably one of the strengths of the (primary industry) sector, whereby land use can readily change to a more profitable/sustainable use. (*Phil Journeaux, Erica van Reenen, Tafi Manjala Sam Pike, Ian Hanmore, Sally Millar (AUGUST 2017) ANALYSIS OF DRIVERS AND BARRIERS TO LAND USE CHANGE A Report prepared for the Ministry for Primary Industries AGFIRST*)

Gisborne (ha)

	LUC													
Land cover	1	2	3	4	5	6	7	8	Lake	Estuary	Urban	Quarry	River	Total
[no land use data]	0	0	5	0	0	19	50	112	0	0	6	0	0	192
Cropland	2,119	2,834	5,963	176	0	308	42	52	0	0	1	0	0	11,494
Exotic forest	26	325	2,628	2,309	0	54,762	125,593	2,381	0	0	21	5	0	188,051
Grass and scrub	152	501	1,931	943	0	13,073	25,275	2,021	5	0	54	7	0	43,961
Grassland	1,305	9,589	31,763	15,917	0	150,835	134,036	6,854	2	0	133	8	0	350,442
Horticulture	1,871	696	2,477	5	0	57	12	2	0	0	0	0	0	5,121
Natural forest	14	1,173	3,849	5,327	0	52,980	108,594	57,152	1	0	26	0	0	229,115
Other	40	174	822	440	0	528	1,059	4,025	123	0	40	14	0	7,266
Urban	125	103	512	124	0	107	11	26	0	0	1,835	0	0	2,841
Total	5,653	15,395	49,950	25,241	0	272,669	394,672	72,623	130	0	2,116	34	0	838,483

Table 1: Land use in the Gisborne Region

P. Journeaux et al. conclude in their 2017 report 'Analysis of drivers and barriers to land use change' that the primary driver of land use change is economic. That is to say, the relative profitability of an enterprise supports its ability to access capital and to become established and grow.

The report underscores the move by government in recent years to influence market factors by driving behavior change through legislation which effects profitability, access to resources (such as water or land) and provides for greater control over the use of natural resources.

The Emissions Trading Scheme and its use of carbon units represents a market in and of itself. However while land use change and flexibility has historically been leveraged as a means to respond to international market demands and to insulate the new Zealand economy from changes in commodity market demands, the influence of the carbon market will create a significant barrier to land use change, economic responsiveness and will prohibit further land based diversification options in future.

These combined factors will limit the ability of rural and provincial economies to adapt to changes in consumer preferences and expectations thereby risking both economic sustainability and the social wellbeing that healthy economies support.

Regions such as Gisborne (shown in Table 1 above) who are highly dependent on forest exports currently, stand to have considerably more of their eggs in a single economic basket. Already the most dependent on forestry of any region in New Zealand, the Tairawhiti region is vulnerable to downturns in the export log price, weather related phenomenon (2019 saw ships unable to berth

because of persistently high seas) and access to infrastructure and labour in times of high demand.

The Tairawhiti Spatial Plan recognizes a diverse economy as being critical to the wellbeing of the local economy, it notes that an over reliance on any one industry creates vulnerabilities and places a burden of risk on the local population.

This risk is exacerbated when there is growth in an industry, driving changing land use to one which does not require labour beyond planting (in the case of Carbon farming) and whose investment is intended to provide returns for entities who do not reside locally, transact locally and for whom extraction of value (Carbon units) is the sole measure of success.

The graph in figure 1 illustrates the rapid increase in carbon price towards the end of 2016 and the beginning of 2017. The trend stabilised through 2018 and lifted again toward the beginning of 2019.

Uncertainty remained in the carbon market until the amended Climate Change Response Bill was formally introduced and passed its first reading, at which point interest in carbon units began to more significantly effect real estate enquiries based on carbon income alone.

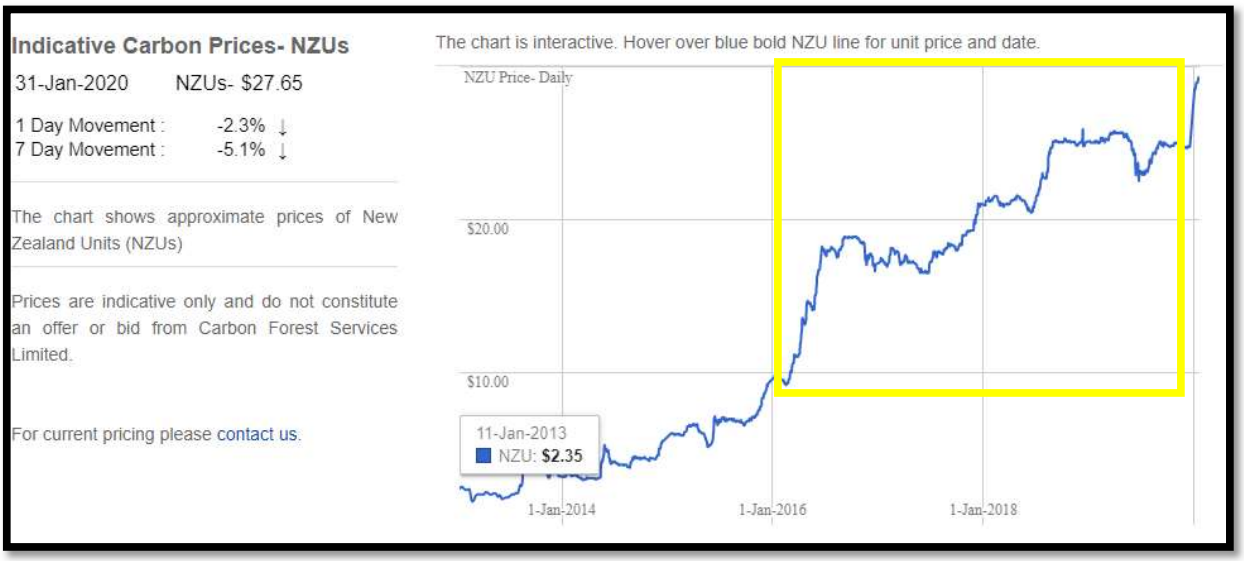


Figure 1: Carbon prices 2013-2020
***(Source:** https://www.carbonforestservices.co.nz/carbon-prices.html)*

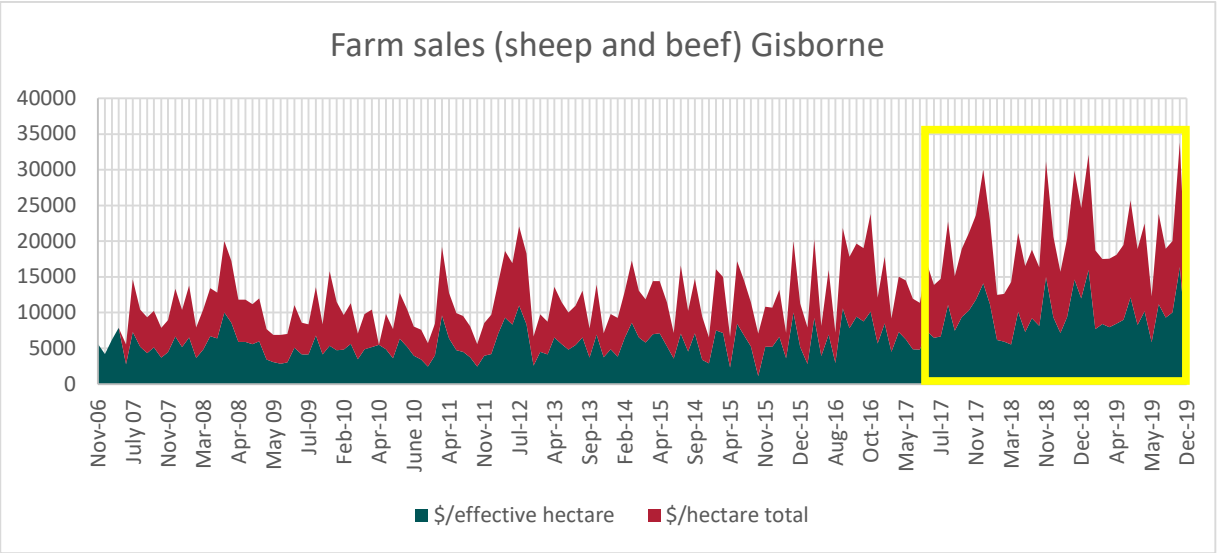


Figure 2: Sheep and beef hill country farm sales – Gisborne and northern Wairoa
Source: *Westpac and REINZ data – this list is not exhaustive and excludes properties awaiting OIO approval, and those with limited information available which are not added to the database by REINZ. (non-typical properties were removed for consistency)*

HOW MUCH DOES THE CARBON PRICE IMPACT LAND ACQUISITION DECISIONS FOR FORESTERS?

There are two dominant agencies who provide Estate Agent services to the rural sector in the Gisborne/East Coast region. These agencies employ several agents. A survey of these agencies provided confirmation that the carbon price played a significant part in land purchase and pasture to forest conversion decisions. There was some difference in opinion in the degree to which the carbon price effected production (plantation) forestry decision making, with some feeling the influence was very high, and another feeling it was more moderate. The explanation given by the outlying view was that farms above a certain altitude and beyond a certain distance from port are not yet attracting the attention of production foresters.

An example given in support of the higher influence carbon prices have, was in the sale of Rolling Downs Station two years ago, when the price returned approximately $8,500 /ha with minimal forestry interest. The Hawkes Bay agent felt that if the same property were to be marketed again now, that it would return significantly more and that forestry interest would be very high, despite the log price being lower.

Agents were asked to rank the influence of the carbon price between 1 and 5 (1 being no influence, and 5 being to an extreme extent) for property enquiries for A) carbon farming and B) production forest conversions. The responses are shown below. In all cases it was acknowledged that the carbon price was materially significant, with most commenting on this being a recent phenomenon only observed over the past 12 to 18 months.

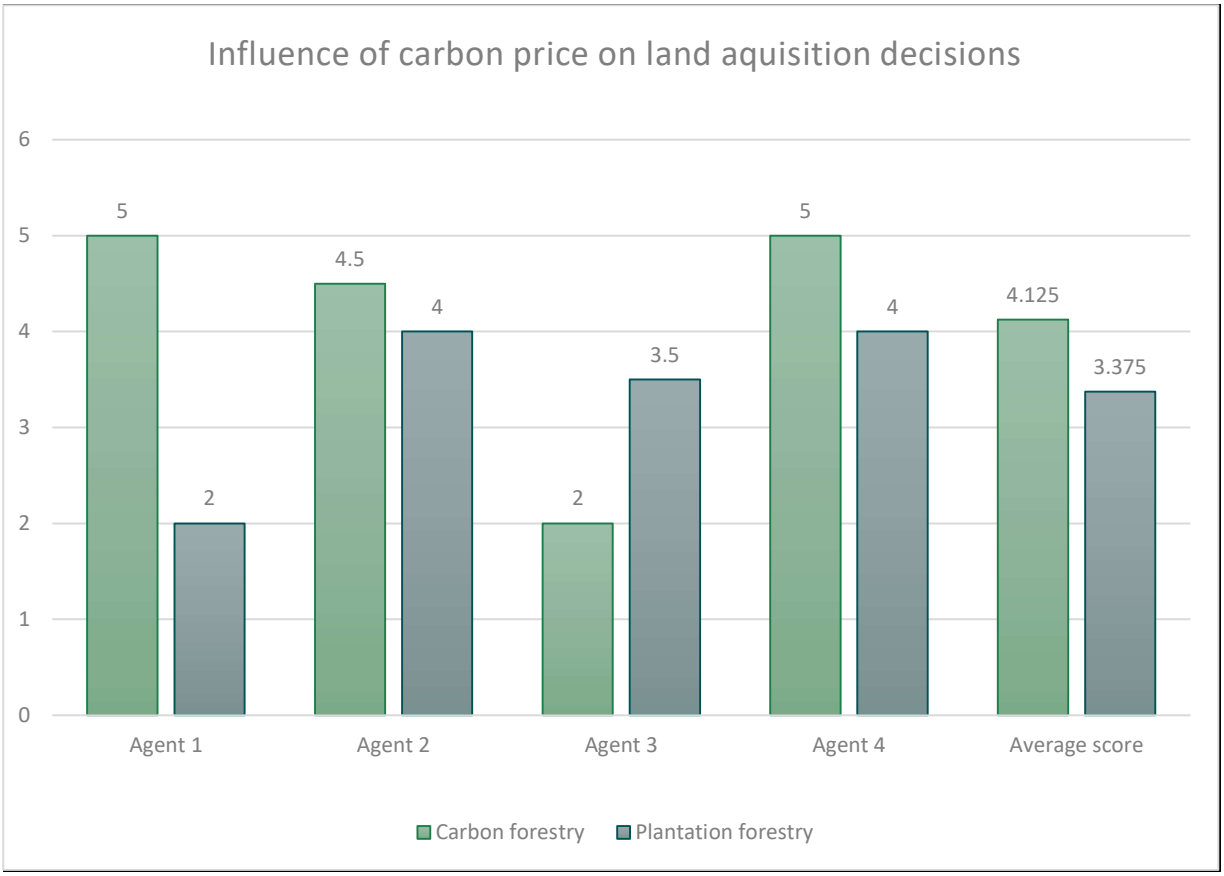


Figure 3: ***Relative influence of carbon price 1= low, 5=high***

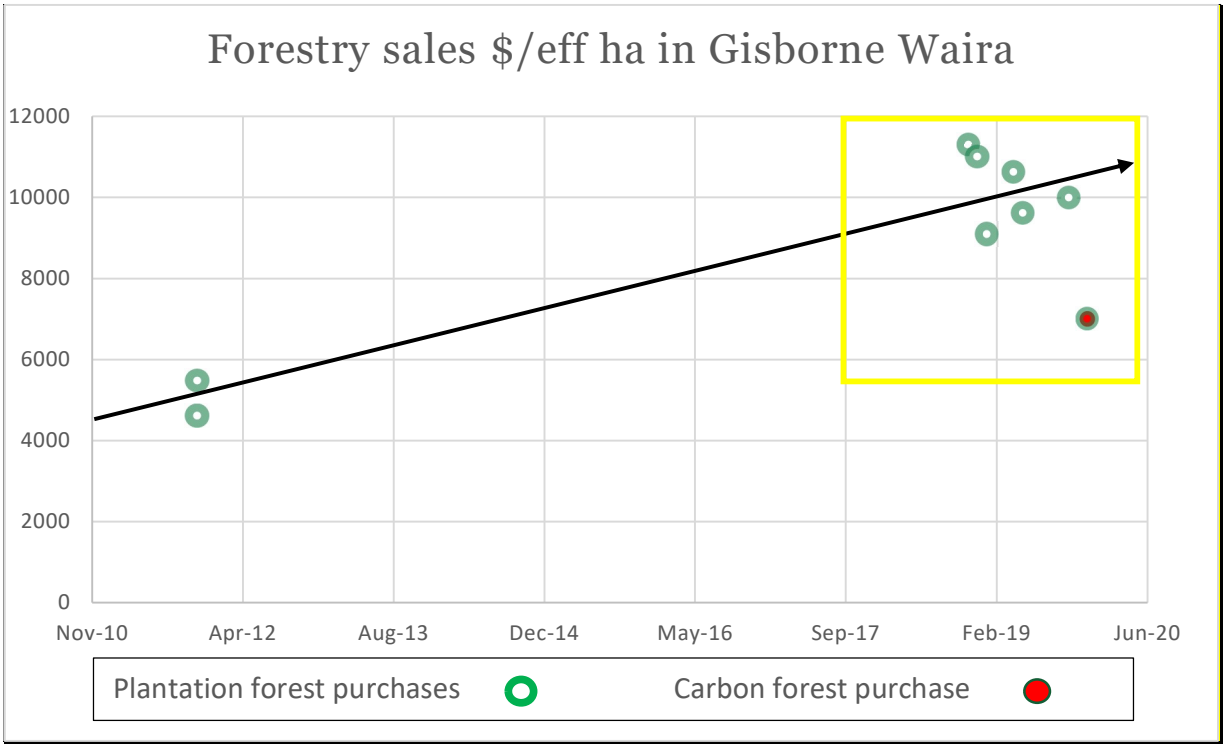


Figure 4: ***Sales of pastureland to forestry. Source: Westpac and REINZ data (not exhaustive)***

THE CARBON MARKET

Two Carbon Farming companies have been operating in the east coast real estate market since the start of 2019.

- New Zealand Carbon Farming states that is vision is that 'By planting new forests and never harvesting them, we are actively contributing to climate change mitigation'. They claim to have planted 20,000 hectares of land and to be the largest provider of carbon credits in Australasia. (*https://nzcarbonfarming.co.nz/about/*)
  Their recent farm purchase in the Gisborne region was the first purchased for permanent carbon forestry.

- Dryland carbon is 'a partnership of four iconic kiwi companies that have committed a significant amount of capital to the establishment of a large geographically diversified forest portfolio for the primary purpose of securing a long-term cost-effective supply of carbon credits New Zealand Units (NZUs). These will generally be used to meet the carbon liabilities of the four companies under the Emissions Trading Scheme (ETS).'
  Dryland Carbon purchased Te Puna station in Wairoa in 2019.

(Source: https://www.drylandcarbon.co.nz/about)

CASE STUDY: XXXXX STATION

Size: 1354ha
Area in pasture: 1100ha
Area in bush: 254 ha
Altitude: 400 to 900m
Rainfall: 1800mm
Houses: 3

Stock carrying capacity:

Sheep: 7076 Cattle: 537
Total stock units: 9,299
Stocking rate: 8.5su/ha

The first property in the Gisborne region has sold to Carbon Forestry, the trees are not intended for harvest. This sale took place in early December and the property is yet to be planted.

Sale process:
The farm was sold by tender. Of the offers received, three were from farming buyers and two were from carbon forestry investors. No offers were received from production (plantation) forestry interests due to the farm's distance to port and attitude.

The purchaser did not require OIO approval, being a New Zealand company.

The farm does not have detailed financial accounts available for the 2019 year however the Agfirst database provides the following information from which a comparison can be made with the 'average' hill country farm in the region.

At 1100 hectares effective, the case farm is almost the same size as the average Gisborne hill country farm. The property is higher altitude than most comparable properties and has fewer paddocks which will result in lower per hectare production and profitability.
Based on the known three-year district average gross farm revenue figure of $964, the case farm is likely to have generated between $850 and $900 per hectare, or approximately $962,500 (assuming GFR of $875/ha).

Generating this revenue incurs operating costs on a continuous seasonal cycle. The farm management and operations are undertaken in a way typical of any hill country farm of its type, requiring inputs and services year-round. The direct and secondary employment generated by the Case farm is illustrated below.

Farm business/employment relationships

The case farm previously employed a farm manager and his family, 5 days shearing per year for approximately 10 shearing gang workers, in addition to part time employment for a casual musterer and a fencer.

The property was serviced by a local farm merchant store, employed the veterinary services of a local vet, scanning services of a sheep scanner and store stock was marketed through a local stock agent and transport was via a local stock trucking company.

The farm was maintained using the services of a nutrient advisor and fertiliser supplier, products delivered by truck drivers included timber, livestock, fertilizers and farm bulk fuel. Tracks were maintained using a local digger operator on an annual or biannual basis.

The farm business was serviced by local postal services, telecommunications providers, electricity providers, plumbers and electricians, in addition to the motorbike and vehicle mechanics responsible for servicing farm vehicles and motorbikes.

The wool produced from shearing was marketed by a wool merchant and transported to the wool-store by the wool-buyers freight driver.

Pest and weed control was carried out by the Farm manager and if needed, by helicopter using an Agricultural Helicopter operator. Pasture improvement was undertaken using local field technician, tractor contractors and seed purchased from local seed suppliers.

Fertiliser was applied using a local aerial topdressing firm, applications require the services of both a pilot and loader operator.

The business also utilised the services of a lawyer, accountant, banker and insurance company.

The primary product produced from the farm was lamb, which, when processed at the local meat processor employed 150 individuals for 2.5 shifts (at a processing speed of 2000 lambs per shift). The products themselves are then trucked to port (Napier) for export and by-products (offal and pelts) are transported to Fielding for further processing.

Additional production from the property included store cattle, aged ewes and aged cows and bulls. All of which require processing, transport and marketing in the same way as demonstrated above.

In total this business had regular transactional relationships with over 30 businesses, without including the personal expenditure of the Farm manager and his family.

Business relationships	Pastoral Farm	Carbon Farm
Direct Employment	Farm manager Casual fencer Casual musterer Shearers X 5 (5 days) Presser x1 Wool technicians x 5 (5 days) Contractor -cropping Aerial topdressing pilot Topdressing loader Vet Sheep scanner Helicopter operator Digger operator	Forest manager Planting crew X 100 (20 days) Pest control contractor (2 weeks)
Farm services	Field technician Fertiliser Rep Farm merchandise retailer – account manager Mechanic – tractor & motorbike Mechanic – Farm vehicle Seed/chemical supplier Freight operators - stock trucks - fertiliser delivery - bulk fuel delivery -bulk farm delivery (fencing materials)	
Customers/processors	Ovation meat works – 150 employees for 30 hours (for 4500 lambs and 500 ewes) Affco meat works – information not available	
Professional services	Accountant Lawyer Bank Insurance	Accountant Lawyer Bank Insurance
Service providers	Electricity company Telecommunications and internet Postal services	

Table 2

One off investment

Enterprise profitability – as a driver of land-use change

Status quo	Pastoral Farming	Carbon farming
Gross Farm Income per hectare (status quo)	$875	$500
Farm expenses per hectare	$619	$30
EBIT per hectare	$256	$470

Table 3

Notes:

Carbon income- Assumptions include that tree growth and therefore sequestration will be below the regional average due to altitude – estimated at 20 units per year, and that the price is $25 per unit.
Carbon costs – assumed to be those annually incurred for administration of the ETS account, rates and insurance.

Pastoral Farming income – taken from the district average and revised down to $875 per hectare
Pastoral Farming costs – taken directly from the district average – does not include interest, rent or tax

Case study conclusions:

The revenue generated and cycled through the regional economy under pastoral farming will not occur once the case farm is planted and becomes a carbon farm. Many local businesses will no longer be needed to service, supply or purchase products from this property.

The ongoing costs incurred by the carbon farming enterprise will be limited to rates and insurance, both of which will be substantially reduced as the value of the underlying land asset is reduced by the establishment of untended exotic forest canopy.

The ongoing question as to who will be responsible for this land, its pest control and rates obligations once it reaches maturity and no longer provides income to the landowner remains unknown.

References:

Employment information
-Removed for confidentiality purposes

BIODIVERSITY

There is currently a significant reliance in New Zealand's Climate Change response, on exotic forest species as rapidly maturing species capable of sequestering large amounts of carbon. The commercial nature of the plantation forest industry provides a ready and cheap source of plants, expertise and labour. By comparison native species are slow to sequester carbon, slow to mature and highly susceptible to pest threats and unfavorable conditions at planting. These combined factors ensure that Pinus radiata is both the easiest, cheapest, most reliable and most lucrative tree species to plant.

The additional benefits of harvest income in addition to carbon income, make afforestation highly lucrative when planted onto pasture lands. The environmental impact of this incentive when it results in rapid increases in plantation forestry is not clear.

Early research is beginning to be done, following increasing scrutiny by the community and the Environmental Defense Society, however the incentives for further planting will be in place long before further work can be concluded to understand findings such as those by Russel Death in the Gisborne Region.

As an eminent freshwater ecologist Death has undertaken a great number of habitat assessments through out New Zealand and in the region's most under pressure from intensive farming systems. His research suggests that very fine sediments are highly mobilized by forest activities and that their presence in streams is highly damaging to aquatic life. He states,

"There is a considerable body of research linking high levels of deposited sediment and low ecological integrity (Ryan, 1991; Waters, 1995; Matthaei et al., 2006; Townsend, Uhlmann & Matthaei, 2008; Clapcott et al., 2011; Collins et al., 2011; Burdon, McIntosh & Harding, 2013; Clapcott et al., 2017). Unfortunately, none of this research has been conducted in the waterways of the East Cape where the sediment is quite different in nature to that found elsewhere in New Zealand. However, my personal observations from streams draining forestry (e.g., Weraroa Stream) in the region were surprising. In searching a stream for 30 minutes I could not find any animals. I have never experienced that before even in severely degraded streams. I hypothesise that the very sticky, fine nature of the sediment excludes most aquatic life".

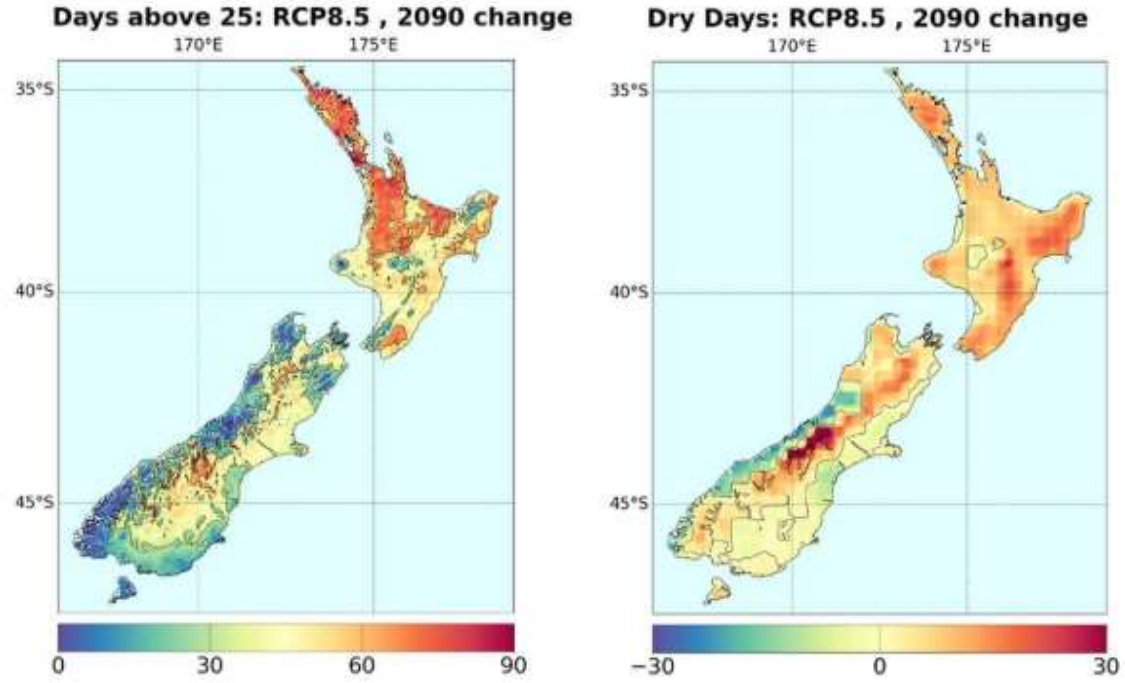
(Death 2018 - The potential impacts of sediment from forest activities on water quality, biodiversity and ecosystem health of Gisborne streams and rivers)

The observation of Mr Death should lead us to more thoroughly consider how land-use changes driven by market factors heavily influenced by Government intervention, may be viewed in future, should the appropriate safeguards and necessary research fail to be implemented in time.

FIRE RISK

The projections for New Zealand under a changing climate are for longer dry periods and significantly more hot days.

Niwa predicts that the number of 'hot days' (those above 25%) will increase significantly in the coming years.



(Source: https://niwa.co.nz/our-science/climate/information-and-resources/clivar/scenarios)
It is worth noting that a number of the areas expected to experience the most severe increases in temperature warming and dry days are also those currently experiencing the most interest in further expansion of the forest estate.

This has the potential to exponentially increase the nations fire risks, particularly in permanent exotic forests planted as carbon sinks, as the high flammability of radiata pine contrasts with the relatively less flammable native species which comprise our existing permanent forest estate.

This problem will be exacerbated by recent changes to the rules under the ETS which provide for a forester to incur no liability if their forest is destroyed by fire, provided replanting takes place. This discourages investment in fire prevention techniques which may be costly, such as the construction of firefighting dams, fire breaks and maintenance of access tracks.

It is even less likely that this fire preventing/fighting infrastructure will be maintained beyond the period where credits are earned, once the forest has reached maturity. This will place a burden of risk and its associated costs on the local community and wider economy, in effect creating an externality.

COMMUNITY

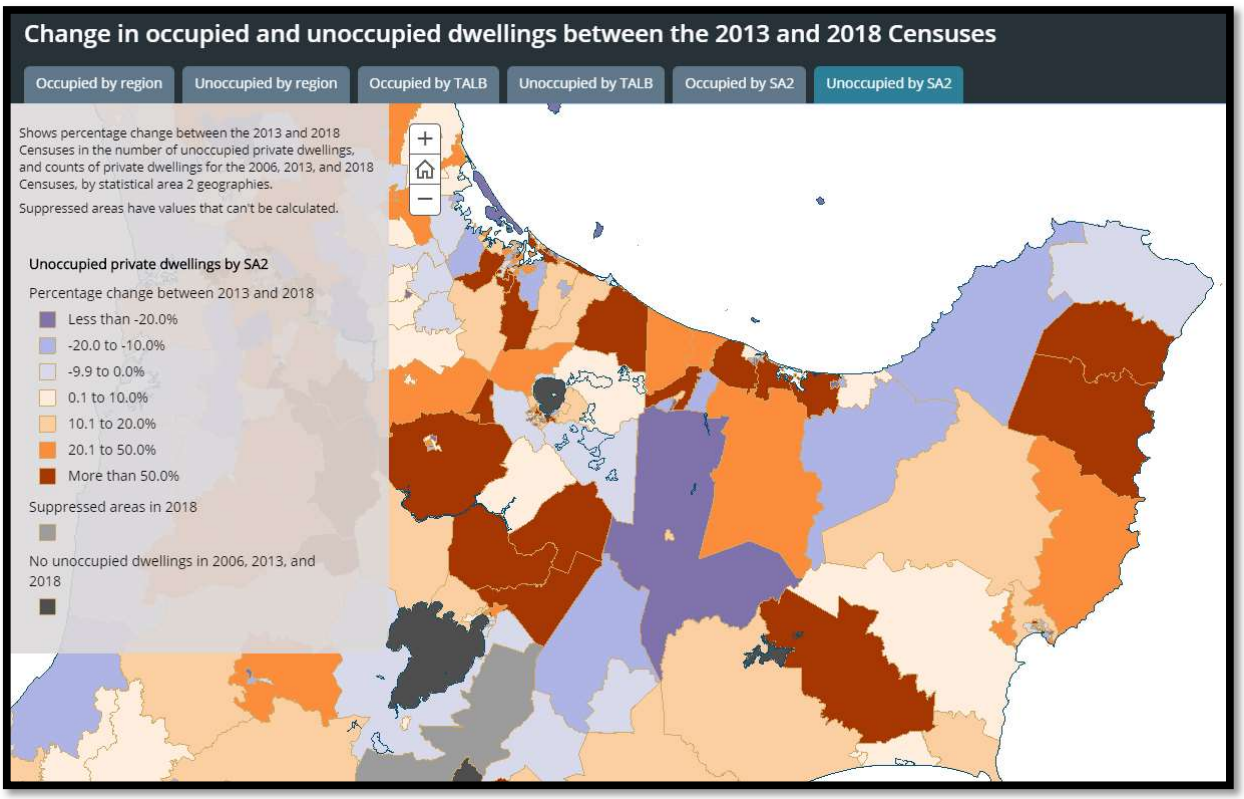


Figure 5 -stats nz

The map in figure 5 illustrates the decreases in occupied dwellings as a proxy for population migration. The regions with the highest number of unoccupied dwellings are those were the land use is predominantly forestry. Those with the slowest decreasing trend are in pastoral farming areas. This trend has been evident for many years.

Craig J. Tomlinson, John R. Fairweather and Simon R. in their 2000 report, researched the attitudes of communities to forest conversions on the East Coast in the 1990's, and found using ethnographic methods that:

> *'The community recognises multiple impediments to the developing forestry industry in Gisborne and the East Coast. Key development issues include:*

- *the region's capacity to adapt to forestry growth*
- *the nature of industry organisation*

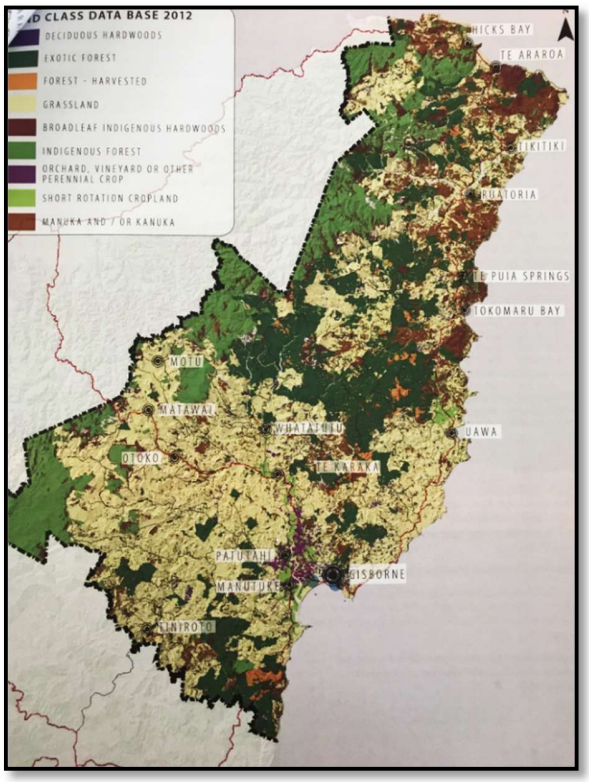


Figure 6- Tairawhiti Spatial Plan maps

- *the level of community participation in development*

- *the image of forestry*
- *and contract and employment conditions. Improved industry and community participation, greater community education, and improved contracts are recommended.'*

The report was compiled in the years following large scale afforestation in the wake of cyclone bola, when the population had recently experienced the widescale devastation of erosion prone land and following a prolonged period of low profitability in the sheep and beef farming sector. Despite these circumstances the report found a deep resistance in the community to forest conversions, with many fearing the community had little ability to adapt to forestry as the dominant sector in the region.

The report observes that,

> *'In August 2000, at a seminar hosted by the East Coast Forestry Industry Group, Gisborne Mayor, John Clarke, opened the discussion by briefly asking whether forestry was an asset or a liability for the region. He highlighted obvious liabilities from the community perspective, including logging trucks, a high degree of rural social dislocation, and the "devouring" of good pastoral land. He then emphasised that forestry was happening and that it needed to be grasped as an asset for the region. An increase in value added processing occurring in the region is a priority. The Mayor called for the collective responsibility of the community and forestry industry to ensure international owners are convinced that processing can occur in Gisborne and the East Coast. In later presentations at the same seminar, forest industry representatives talked about the issues they saw as impeding forest sector development. These issues included infrastructure concerns, the shortage of skilled workers and the environmental policy concerns.*

The report also noted that,

> *'International interests in forestry are common in the region with several companies investing in forest plantations. Four of the key forestry interests in the region are either internationally owned or have international investors. Log volumes are forecast to triple in the next 15 years. To date, however, only one company has built a processing facility in the region.'*

In the years since this report was compiled very little has changed. The arguments for local processing remain the same, and they continue to prove allusive. The fear and concerns of the community have proved largely well founded, with infrastructure issues continually challenging both residents and businesses, social dislocations gradually eroding the permanent population from east coast settlements and the benefits of afforestation arguably accruing to offshore interests at the expense of local residents.

Concerns for communities have often focused on the issue of employment and debate has raged over the merits of farming relative to forestry for many years. There has been little clarity on this issue primarily because the employment cycle of the forestry sector is distinctly different to that of pastoral farming. In forestry large peaks of employment are followed by troughs and subsequent peaks when harvest ensues. The argument promoted has been that once harvest levels stabilise that employment levels are sustained at higher levels than within the farming sector.

Wairoa and Gisborne combined

year	Agricultural areas (hectares)		Direct employment (wage or salary earners; and self-employed)		Direct employment per 1000ha		% of 2002 Non-Dairy Pasture	% of 2002 Forestry
	Non-Dairy Pasture	Forestry	Non-Dairy Pasture	Forestry	Non-Dairy Pasture	Forestry		
2002	538,415	182,122	3,943	1,350	7.3	7.4	100%	100%
2007	524,681	198,977	4,438	1,206	8.5	6.1	116%	82%
2012	491,566	206,799	3,963	1,209	8.1	5.8	110%	79%
2017	452,044	186,584	4,223	1,218	9.3	6.5	128%	88%
Average					8.3	6.5		

Table 2

1. Statistics about agricultural areas as at 30 June are produced by the 5-yearly Agricultural Census (https://www.stats.govt.nz/information-releases/agricultural-production-statistics-june-2017-final).

2. Non-dairy pasture is represented by: (i) grassland and; (ii) tussock and danthonia used for grazing

3. Forestry is represented by (i) plantations of exotic trees intended for harvest; and (ii) harvested exotic forest areas awaiting restocking

4. Employment corresponds to employed persons in the year ending 31 March. It is a count of persons whose main income source in the year was either from wage or salaries or self-employment. Annual Linked employer-employee data (LEED) is the data source for the employment figures.

5. The industry code assigned to an employed person is based on the main activity of the employer or the business. For a person associated with multiple employers or businesses during the year, the industry code is based on that of the employer or business with the highest annual earnings.

A report commissioned by Statistics NZ (Table 2 above) casts doubt on these long-held assumptions. The report states that *"employment in the forestry industry in Gisborne fell between 2002 and 2017. However, the decline hasn't been rapid between the two years because we have seen a 268% increase in the annual area harvested between 2007 and 2017. Forestry and logging, which make up a large part of total employment in the industry, increased over this time as a result. This has off-set a sharp fall of employment in the rest of the Industry. This is reflected below by a graph of the employment time series belonging to sub-industries that make up the forestry industry."*

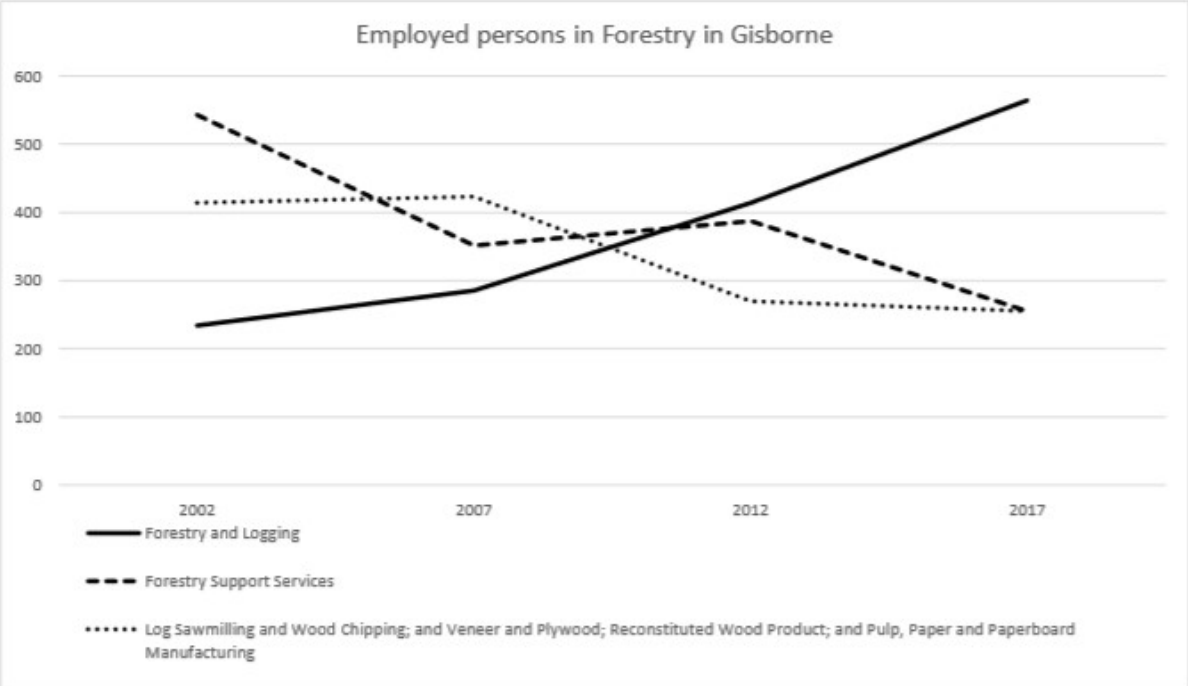


Figure 7: Employment trends in forestry – Gisborne (Source Statistics NZ)

Employed persons in Forestry Industry in Gisborne				
Year	Forestry and Logging	Forestry Support Services	Log Sawmilling and Wood Chipping; and Veneer and Plywood; Reconstituted Wood Product; and Pulp, Paper and Paperboard Manufacturing	Total
2002	234	543	414	1,191
2007	285	351	423	1,059
2012	414	387	270	1,071
2017	564	255	255	1,074

Table 3 Employment in Forestry (Source – Statistics NZ)

The relative employment opportunities between industries is clearly a necessary consideration for policy makers. The trend towards falling, rather than rising wood processing at a local level has been a historic issue and continues to pose a barrier to the realisation of value from forest products. This issue is unlikely to be resolved while New Zealand remains one of very few countries globally whose timber processing industry is not protected by subsidies. To adopt the subsidization model, however, goes counter to our economic strategy which seeks to allow the market to operate freely unencumbered by trade barriers.

A further report (Impacts of Land-Use Change in Wairoa District 1997) undertook a thorough economic analysis of the impacts of land use change from pasture to plantation forestry in the Wairoa region. This report concluded that overall, the benefits of afforestation would be higher than retaining pastureland in the long term, although only substantially so if local wood processing facilities were established. In the absence of local wood processing the report found that as little at 25% of the potential benefits of forestry were being accrued to the Wairoa region (pg5), with remaining revenues being exported from the region through external contractors and non-resident investors.

Analysis of the current employment trend within the district, where forests are now reaching maturity and being harvested, shows that the promise of higher employment and economic benefits foreseen over 20 years ago has not been realized, at least in the local context.

Wairoa

year	Agricultural areas (hectares)		Direct employment (wage or salary earners; and self-employed)		Direct employment per 1000ha		% of 2002 Non-Dairy Pasture	% of 2002 Forestry
	Non-Dairy Pasture	Forestry	Non-Dairy Pasture	Forestry	Non-Dairy Pasture	Forestry		
2002	147,158	45,207	1,470	159	10.0	3.5	100%	100%
2007	154,328	51,991	1,514	147	9.8	2.8	134%	38%
2012	137,007	52,481	1,338	138	9.8	2.6	133%	35%
2017	128,548	48,247	1,356	144	10.6	3.0	144%	40%
Average					10.0	3.0		

Table 4: Employment in Forestry vs Farming Wairoa (Source -Statistics NZ)

No analysis is available in either of the historic reports, or in any report found since, which assesses the social and economic impacts of converting pastureland for permanent forest sinks.

This is an oversight which has the potential to cause profound damage to rural and provincial regions, as direct employment in maintaining permanent forests will be comparable with that of undeveloped scrub country – essentially none.

References:

Craig J. Tomlinson, John R. Fairweather and Simon R. Swaffield (December, 2000) Gisborne/East Coast Field Research on Attitudes to Land Use Change: An Analysis of Impediments to Forest Sector Development. Agribusiness and Economics Research Unit P O Box 84 Lincoln

MAF (1997) Impacts of Land-Use Change in Wairoa District – resource document

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GOVERNMENT INCENTIVES FOR AFFORESTATION

In October 2018 Climate Change Minister James Shaw presented a cabinet paper entitled 'PUBLIC CONSULTATION ON THE ZERO CARBON BILL.' This document outlined why the Net Zero Carbon Bill was considered necessary and what its purpose would be and how consultation would be carried out. Its central premise was stated to be resting on three central commitments:

1 - Leadership at home and internationally – domestic action that has a clear and ambitious goal will send a strong signal to stimulate innovation and investment, and will be a key way for New Zealand to influence the global response

2 - This gives effect to Government commitments under both the coalition agreement between the New Zealand Labour Party and New Zealand First, and the Government's confidence and supply agreement between the New Zealand Labour Party and the Green Party of Aotearoa New Zealand.

3 - A productive, sustainable and climate-resilient economy – understanding the benefits and trade-offs of the transition, and identifying ***the best-value opportunities to encourage innovation, de-couple emissions from growth, and diversify our economy; and a just and inclusive society*** – managing the pace and nature of the transition, and supporting affected regions, sectors, and communities (including iwi/hapū/Māori) to adjust to the transition and adapt to climate change impacts

In the remaining pages of the cabinet paper the means of achieving Net Zero Carbon are discussed and point 36 states *'It is likely that land use changes will be among the most complex and substantial involved in the transition. In order to meet any of the 2050 targets, for example, the forestry estate will need to expand substantially.'*

Point 37 goes on to say ***'The most ambitious target proposed is net zero emissions. To achieve this target by 2050, the modelling suggests that up to 2.8 million hectares of new forest planting might be needed. This represents 10 per cent of New Zealand's land area. To ensure***

that the transition is just, the plans that we make will need to ensure rural households and communities are well-prepared for any changes in land use that occur.'

There is little evidence to suggest that the third central commitment, to *'identify the best value opportunities to encourage innovation, de-coupling emissions from growth and diversifying the economy'* is served at all by the simplistic idea of planting permanent exotic forest estate to offset emissions. There is even less evidence to suggest that rural households and communities are being '*well prepared for any land-use changes that occur'.*

The PCE report '*Farms, forests and fossil fuels: The next great landscape transformation'* repeatedly highlights the inequalities that the simplistic objective of widescale afforestation is likely to achieve, it is also difficult to see (based on the case study illustration and the current regional distribution of wealth) such a transition being 'just'.

Figure 8: Regional GDP (Source – Statistics NZ)

Figure: 8, released by Statistics NZ clearly shows the disparity of wealth by region. There is a disturbing irony in that those regions with the lowest economic resilience (measured in GDP per capita) are those most likely to be colonized by permanent carbon sinks due to comparatively lower land values and remoteness which limits viable production forestry. The PCE report also observed that the distributional impact of reforestation is skewed towards three regions, projected to be concentrated in Canterbury, Otago and Manawatū-Whanganui under the current approach. This observation can be coupled with the focus on Northland and Tairawhiti by the Regional Economic Development Ministry, which has sought to expand forest planting in both regions preferentially under the 1BT scheme and joint venture arrangements with iwi.

The narrow focus on large scale afforestation as the central solution to the nation's climate change obligations so far ignores the core issue of sustainability. The PCE report states '*Fossil emissions need to be reduced to zero by the second half of the century. That should be the aim.*

Reducing them by only half that and claiming to have managed the problem by planting forest sinks to cover the rest is a poor alternative. Not only would the sinks need to be maintained in perpetuity, planting would have to continue as long as there were any residual emissions.'

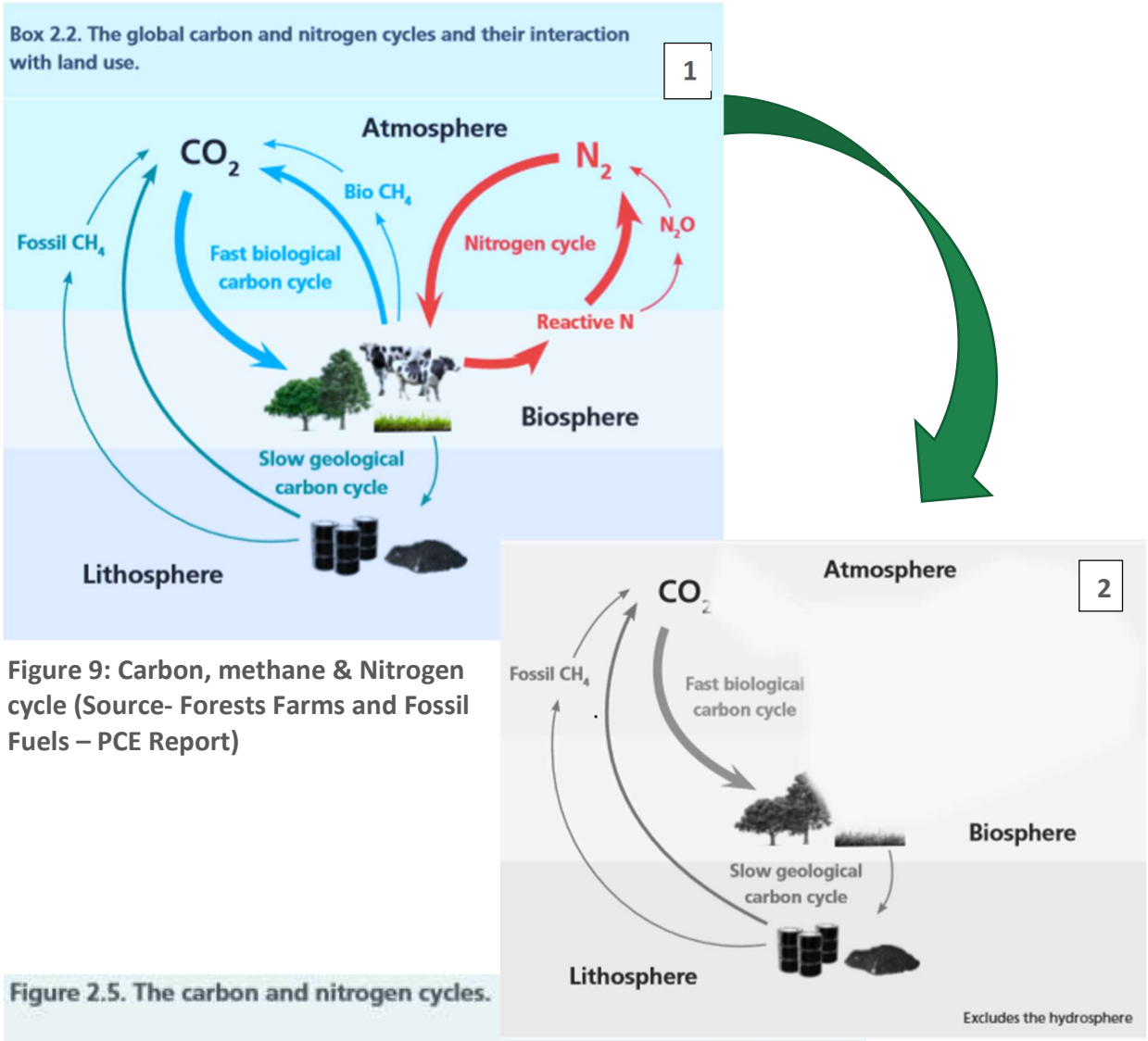

Figure 9: Carbon, methane & Nitrogen cycle (Source- Forests Farms and Fossil Fuels – PCE Report)

Figure 2.5. The carbon and nitrogen cycles.

- Fossil carbon dioxide, biological methane and sequestration of carbon are parts of the global carbon cycle.
- Fossil fuels are part of the slow geological carbon cycle.
- Carbon dioxide emissions and removals by forests and land use change are part of the fast biological carbon cycle.
- Biological methane is part of a loop within the fast biological carbon cycle.
- Nitrous oxide comes from the nitrogen cycle.
- Combustion of fossil fuels injects carbon from the slow carbon cycle into the fast carbon cycle.
- The nitrogen and carbon cycles are further linked because fossil methane is used as a feedstock in the manufacture of ammonia fertiliser.

The diagram above illustrates the Commissioners point. The current carbon and nitrogen cycles are comprised of both a slow carbon cycle (carbon in fossil fuels or buried in the earth) and the rapid carbon and nitrogen cycle, where cycling occurs on the surface of the earth and is essentially cyclical within limits which are determined by the biomass on the earth's surface, the oceans, temperature and other variables. The second diagram illustrates that current strategy under the Net Zero Carbon bill.

The natural world and particularly domestic farmed animals will become the mitigator for continued use of fossil fuels from the slow carbon cycle. The length of the arrows demonstrates that this exchange is futile as the ability for the fast carbon cycle to permanently offset the release of earth-bound carbon is insufficient, risky and ultimately unsustainable.

The Government has consistently denied that they have intentions of widescale afforestation across New Zealand, and yet many cabinet papers refer to the incentivization of forest planting, including that of permanent forests.

A cabinet paper released by the Office of the Minister for Climate Change, seeking Cabinet approval to publicly consult on a package of proposed changes to the NZ Emissions Trading Scheme (NZ ETS) in August and September 2018 included the following statements.

'Forestry is an important source of emissions abatement for New Zealand and how we transition to a net zero emissions economy. For this reason, Hon Jones and I are also proposing a package of improvements related to forestry in the NZ ETS. These proposals aim to improve NZ ETS ***incentives*** *for new forest planting, including* ***permanent forests****. These proposals are set out in an accompanying Cabinet paper and discussion document, to be considered in conjunction with this paper [New Zealand Emissions Trading Scheme (ETS) Review: Improving the ETS for forestry refers]'*

The paper goes on to highlight that *'The NZ ETS is the only emissions trading scheme in the world that includes the forestry sector'.* Which is true. This country is the only one to engineer a commodity market with no export value, producing a finite product which devalues its underlying capital asset rapidly. It is difficult to see how this model could be considered 'diversification' or 'innovative'. A better definition might be 'expedient'.

The clarity of purpose within the Government's published papers is not difficult to confirm and can be summarised by the paragraph found on page 4, point 24.

'It is expected that ***at these higher price levels, the cost of carbon will start being factored into business decisions. There is evidence that the higher carbon price is promoting increased investment in forestry****, which is considered one of New Zealand's most cost-effective abatement options in the short to medium term.'*

It is the scale and the transparency of the proposed incentives which should alarm ordinary New Zealanders, as there has yet to be any consultation on whether they consider 2.8 million hectares of forestry the best use of this country's finite land resources. The purpose of the Net Zero Carbon bill and its use of the ETS as a mechanism for incentivising largescale afforestation is not in question, as the above statements clearly show, however the degree to which communities and

regional economies will be impacted is still dangerously unclear. It is for this reason that the petition to Parliament was initiated, and it is for this reason that so many have signed in support of it.

HOW INCENTIVES WORK IN PRACTICE

The higher ETS price levels being deliberated on currently are directly influencing land use changes – as they were intended to do by Government policy. This has been shown above.
For clarity, and for the avoidance of doubt a basic series of carbon budget comparisons are provided below.
They demonstrate that because carbon sequestration is a byproduct of tree growth, regardless of silvicultural practices, the revenue earned can be considered virtually net of costs.

Therefore, every scenario will result in a higher per hectare EFS than pastoral farming on hill country, based on the assumptions provided below.
This fails to account for the GDP contributions of farming businesses, whose products are largely exported at high values, typically between 30 and 40% above the farmgate value. This compares unfavorably with carbon units which are only tradable within New Zealand and represent an 'offset' rather than genuine growth, sales or economic activity.

At $964 per hectare of Gross Farm Income on average, Gisborne hill country farms represent almost $289 million dollars in revenue generated behind the farm gate assuming 300,000 effective hectares (from the total of 366,000), a further 30% (value added beyond the farm gate) takes that figure to $375 million contributed the local and wider New Zealand economy.

If the carbon forestry sector establishes itself on as little as 10 percent of the remote hill country of the Gisborne region, the local economy will forgo an estimated $28.9 million dollars in revenue generated by farms directly, and in addition forgo the revenue generated from further steps in the supply chain.

The amount of revenue generated by sequestered carbon may approach these levels should the carbon price rise high enough, but as the enterprise incurs no costs, this revenue is retained almost entirely by the investor/carbon farmer.

The total retained earnings kept by pastoral land users represents a relatively small proportion of total revenue earned when costs are considered, and when compared with the cost-free returns from carbon farming. An additional point to note is that retained farm earnings form the basis of personal expenditure, which occurs in the local economy or is used to fund development.

For the reasons outline above, the economic rationale for carbon farming is hugely problematic. It encourages behavior which starves regional economies of productivity and diverts resources towards wherever the carbon liability has been generated or the carbon investment vehicle is based.
Those most likely to feel the impact of these changes are those in first and second tier agricultural businesses, those in manual work directly relating to farming (shearers, fencers etc) and those SME's for whom farming provides a significant customer base.

THE ECONOMIC RATIONALE FOR LAND USE -SCENARIOS

- 1: Current dominant model, plantation model, earn and then repay credits on harvest
- 2: Proposed plantation model under new averaging rules
- 3: Proposed model under averaging with no harvest

First scenario assumes:

1 hectare Auckland region

Planted 2020 under current/old rules

28 year harvest

Carbon price of $28.70

Sell up to low risk carbon amount of 239 units (amount not required to be paid back)

Total return = $6,859.3 per ha
Annual return = $244 per ha

Second scenario:

The same except under new rules yet to be passed by regulation (averaging approach)

28 year harvest

Carbon price of $28.70

Average carbon (amount not required to be paid back) = 741 units

Total return: $21,266
Annual return = $759

Third scenario:

Same forest but the owner decides to not harvest and let it grow until maturity (see graph below)

Total carbon not required to be paid back (until forest falls down) = 1928 (at year 2069)

Total return: $55,321
Annual return = $1,129

Figure 10

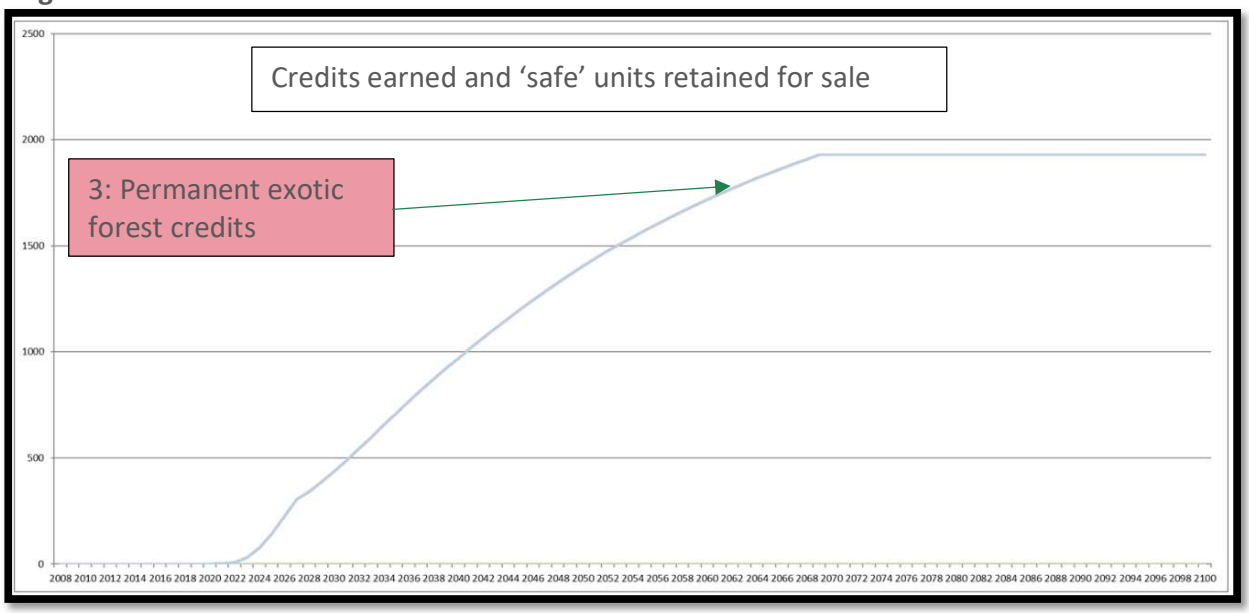

Figure 11

The graphs in figure 10 & 11 illustrate the financial rewards of using exotic forests to earn carbon units. Overhead costs incurred over and above the costs of maintaining a forest for harvest relate only to the administration of the carbon accounting. This means that almost every dollar earned sequestering carbon is reflected as an additional dollar of net profit.

The discounted rate of return for harvested forests is vastly improved by the ability to extract cashflow early in the plantation cycle.

The amount of jobs the third scenario would create from the land forever is nil. The amount of food it would produce is nil. The amount of timber able to be harvested is nil. The amount of biodiversity will be limited in the absence of ongoing pest control and management.

Comment provided by the author of the above analysis:

> *"The ETS encourages emitters to increase emissions while planting good farmland in permanent trees. Those that are profiting from it are taking a short-term view to the detriment of future generations while the marketing spin says they are doing future generations a favour." – removed for confidentiality purposes -Chartered Accountant BDO – member of Chartered Accountants Australia New Zealand Rural Sector Committee*

SAMPLE OF COMMENTS MADE BY SIGNATORIES TO THE PETITION:

Gisborne, New Zealand
"Im signing for so many reasons, my main reason...Forestry threatens the "WELL-BEING" OF OUR COMMUNITIES!!! Forestry kills communities....look at the Beautiful East Coast, once Bustling - employment rich region, with thriving Communities, Businesses and Schools...now a Sunday Drive full of ghost towns. The East Coast have some of the worst stats in our country when it comes to health and Well-being. Forestry is a contributor, lets learn from the past, this is not our future. Lets find another way to plant a billion trees...." Casey Maddock

TAUMARUNUI, New Zealand
2019-06-06 "We are farming in Taumarunui, this kind of change of land use is going to destroy a town we are working so hard to rebuild. The farms that have already been sold and are to be destroyed are an absolute tragedy." Johanna Street

Rachel Cashin Taumarunui, New Zealand
2019-06-06 "This is going to be the end of some community's forever"

Duncan Humm New Zealand
2019-06-06 "Outdated science, poor foreign investment rules and ill-conceived policy that's creating this disturbing distortion of land use that will have grave consequences for the environment, rural communities and the wider country."

Ali Matthews Pongaroa, New Zealand
2019-06-06 "Trees are destroying my community, we're up to 10H already! What will happen next year!?"

Hesta CUDBY Waimiha, New Zealand
2019-06-06 "We live in a small Community. We have 2 young boys and it takes 40 minutes to get go town. We are already surrounded by pine trees if more farms were brought to be planted we would have no neighbours for kilometers. Which would make us even more isolated"

Richard Thomas Devlin

Oamaru, New Zealand
2019-06-06 "I am signing because I am watching good farmland in South Otago being planted in pine trees."
Brent Fisher New Zealand 2019-06-06 "This will destroy provincial New Zealand. Our country's standard of living will be compromised for generations to come if we don't stop this short sighted land grab."

Sarah Gordon Morrinsville, New Zealand
2019-06-06 "I am worried about the impact on provincial towns & country schools, many of which are already struggling, I am also concerned about the economic impacts - it would be much more sensible to allow existing plantings on farms to be counted."

Duncan Searle Australia 2019-06-06 "Because I'm a kiwi and I don't want to see communitys destroyed by forestry for big companys"

Carl Forrester Waiau, New Zealand
2019-06-06 "There is thousands of ha of rubbish noxious weed covered hill country that could be planted in trees especially in the SI but they are planting all the most productive sheep and beef breeding and finishing country we have. Ridiculous and the fact that overseas corporates are doing it to offset emissions and they won't let us as farmers offset ours with our own tree plantings. Ludicrous really.

Lucy Teutenberg Gisborne, New Zealand
2019-06-06 "The death of communities , job opportunities - this is criminal - ruining our livelihoods, family life and our specialness which is the essence of New Zealand"

Margaret Brain New Zealand 2019-06-06 "We need a continued balance for the future. More farmlands than industrial is needed to create an even balance to sustain our future."

James williams Auckland, New Zealand
2019-06-06 "I totally agree with the cause. With urban sprawl taking away market garden lands around our cities and afforestation in the rural sector, our existence will become more dependent on others"

Craig Douglas Whangarei, New Zealand
2019-06-06 "I have seen the devastating effects forestry has on small rural communities. The Mangakahia valley in Northland.Pakotai. Where farms or orchards employed people who kept the community going, forestry employs no one and those communities die. Rural NZ deserves better than being suffocated by exotic forests. Don't repeat the mistakes of the '80s

Sarah smith Te Karaka, New Zealand
2019-06-06 "Trees don't keep absorbing carbon forever (the policy makers forget to mention that fact) but they ruin communities forever

Sarah Strawbridge Rotorua, New Zealand

2019-06-06 "I have absolutely nothing against planting trees. I do have a problem with foresters being able to buy good strong arable land over livestock/cropping farmers. Pine trees are not ecologically friendly either."

Micha Johansen Palmerston North, New Zealand
2019-06-06 "I am tired of ideas/legislation being pushed through, without any thought of the consequences to people, and their communities. Especially green policies, that often end up worse environmentally."

Paula Moore Wellington, New Zealand
2019-06-06 "The consequences of these ideologically-driven policies will result in a rural sector downturn far worse than that experienced in the 1980s-90s, and threatens our viability as a food producing nation. NZ can't survive on tourism alone."

Harriet Gibbs New Plymouth, New Zealand
2019-06-07 "Farmers care for the land, and want to pass it on to their children. Forestry is an industry, big business, with KPIs and bottom lines."

William Taylor Auckland, New Zealand
2019-06-07 "No thought given to future infrastructure costs. Rural areas being depopulated."

Liam Hickman Invercargill, New Zealand
2019-06-07 "Farming is important for NZ, Planting a forest is just a political stunt to pretend the government is doing something about climate change. We will never get this land back into farmland if we do this."

Duncan Brown Te Uri, New Zealand
2019-06-07 "Believe there's a place for forestry just not blanket planting of farms, many of which are suitable first farms for young farmers who are getting outbid on farms thanks to government subsidies"

Claire Fahey Wanganui, New Zealand
2019-06-07 "This is going to take employment from small communities, take children from those schools. Forestry is highly technical with robots and automation. It will not create employment"

Delia Bellaby Te Anau, New Zealand
2019-06-07 "The unsustainable actions of industry cannot be offset by enforced use of the countryside. All parties must adopt sustainable practices in unison"

Ali McDougal Waipawa, New Zealand
2019-06-07 "I see the negative impact it is having on some communities and hope it won't do the same for my own

Barbara Farr Ashburton, New Zealand
2019-06-07 "By allowing overseas investors to buy sheep and beef farms to convert to forestry will totally destroy provincial N.Z. Why are these investors able to claim carbon credits for

planting trees when farmers can't claim for their trees. This has to be the most ignorant anti farming government that N.Z. has ever had. They also clearly do not understand the carbon cycle.