Appendix 1 Expansion and evidence

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Woody debris, sediment and waterways

WOODY DEBRIS

The issues

Travelling around the region, we saw place after place where woody debris had accumulated on both public and private land. During the engagement phase of our review, we heard harrowing stories of woody debris in flood waters greatly increasing the damage to properties, orchards, fences and infrastructure. The combination of sediment and debris in flood flows dramatically increases damage, increasing the volume of material that can be delivered to the point of causing catastrophic effects¹. Given the size of some of the debris, as well as flotsam such as fencing wire and rubbish from the land the debris has flowed over, the clean-up requires specialised equipment beyond the resources of the local community.

What's more, until the clean-up is completed, the woody debris will be mobilised again in future storms, when it will cause more damage. Of greatest concern, the piles of woody debris pose a direct safety hazard to people in the vicinity, particularly to children, who are less able to assess the risks (as has tragically already been shown to be true).

Cleaning up beaches, public spaces and private land removes the immediate and obvious woody debris. However, there are still extensive deposits of woody debris on slopes in cutover forests, in gullies and on the banks of watercourses that are at risk of being mobilised in future storms. We saw this ourselves during our assessment flights over the regions, and submissions from many reinforced this concern. Log jams in streams are at risk of failing and potentially causing flash floods in future rainfall events. In our view, the ongoing presence of this woody debris creates an unacceptable risk to people, properties, and infrastructure. This debris must be stabilised or removed to reduce the risk of future storm events repeating the cycle of erosion, debris mobilisation and downstream devastation.

The make-up of woody debris differs somewhat between catchments (presumably due to differences in the extent of clear-felling and slash management practices, and other factors such slips, gully/river edge erosion and rainfall variability). However, from our observations, and what we have heard, in most cases, the majority of the debris is radiata pine (see Table A1.1 below).

¹ Visser, R. and Harvey, C, 2020, Design of Debris Slash Traps: Considerations for NZ Plantation Forestry Operating. Gisborne: Gisborne Regional Council, pg 18.

What we heard from the community

Three words sum up what we heard: frustration, anger, and fear

Frustration that yet another storm has devastated people's lives, their whenua, their communities and their homes.

Anger that the community is bearing the financial and emotional toll of events they feel are not of their making, are out of their control, and that seem entirely predictable and preventable.

Fear for the next event, for their families, for their community, their way of life, their history and their traditions.

From our engagement and from submitters we heard about the amount of woody debris that still litters the area². We heard the community's frustration and anger that beaches and waterways have been repeatedly smothered by woody debris for many years and the repeating cycle of storm, clean-up, storm. We heard that many beaches and rivers are too dangerous for walking, surfing, or swimming. Heartbreakingly, in Tolaga Bay, we heard of tamariki who have never seen their beaches without slash.³

The community believe strongly that woody debris is the main cause of damage to infrastructure

The community were resolute that the woody debris is the main cause of damage to infrastructure following heavy rain as, unlike silt and sediment, debris can't flow through obstacles such as fences and bridges.

A Tairawhiti resident reflected the views of many when they said:

"forestry debris (slash) continues to add a more distressing element given the sheer volume of mobilised material in rain events which are common to the region, and for which the region has been known for as long as rainfall records exist. The damage from debris flows, and their ability through sheer force to strip riversides of vegetation, dam channels and create 'beaver dams' is increasingly ensuring costs for activities within forests, become a burden for those beyond the forests. These externalities remain absent from any accounting mechanism for ecosystem services and are largely discounted as 'legacy issues' for which no one is held directly accountable provided that resource management conditions have been met." ⁴

For example, the Gisborne District Council submission provides pictorial evidence of woody debris in several sites across Tairawhiti. This includes woody debris from Cyclone Gabrielle and earlier events. The Hawke's Bay Regional Council commissioned report 'Cyclone Gabrielle. Woody Debris Species Composition Assessment' from March 2023 provides pictorial evidence of woody debris at key sites in the Wairoa District following Cyclone Gabrielle.

³ Heard during the Tolaga Bay community hui.

⁴ Allen + Clarke Summary of Submissions report, p.29.

Gisborne District Council emphasised the increased damage from debris, telling us about the impact of woody debris on bridges. It said that since 2017:

"of the 8 bridges destroyed, partially destroyed or severely damaged (11) or adversely affected (41), all but one of those was the result of woody debris becoming wedged up against the bridges." ⁵

Mana Taiao Tairawhiti told us that:

"although similar events occurred prior to forestry, worsening storms and mismanagement during harvesting have significantly increased the impact of these problems."⁶

Residents in the Waimata catchment told of woody debris covering entire properties. In Uawa, farmers said that Cyclone Gabrielle was their tenth "slash" event in the last three years.

Hapu and whanau told us about the effects on their way of life, including:

- being unable to access traditional areas for gathering kai, especially beaches, because of impassable accessways and the danger from woody debris in waterways
- damage to wahi tapu, including urupa
- interruptions to the intergenerational transmission of knowledge because of severe weather events limiting their access to important sites
- the cumulative effect on wairua and waiora (health and wellbeing)
- slash on beaches limiting educational opportunities for local children.

Submitters told us about the significant economic impacts of forestry waste on beaches, particularly in Tolaga Bay, including the impact on tourism⁷.

We heard the communities' anger. Anger that the companies from whose land much of the debris originated are not more active in supporting the clean-up or repairing damage to properties. Anger at forestry companies that have restarted harvesting operations despite logging trucks adding more pressure to as-yet unrepaired, fragile local roads. Anger that forestry companies have not done more to prevent the loss of debris from their land.

⁵ Gisborne District Council, local authority, submission on the Ministerial Inquiry into Land Use.

⁶ Mana Taiao Tairawhiti NGO, submission on the Ministerial Inquiry into Land Use.

⁷ Allen + Clarke summary of submissions report, p.25.

Most people⁸ felt that pine debris made up the majority of the woody debris that accumulated on land, river banks, against bridges and on the foreshore. This estimate was supported by a variety of more formal assessments, but the exact proportions and sources remain subject to debate.

Location	Proportion of Pine
Wairoa River mouth	90% ⁹
Mahia Beach	44% ¹⁰
Tologa Bay	81% ¹¹
Tokomaru Bay and Tikapa	51% ¹²
Waikanae Beach	70% ¹³

Table A1.1 Estimates of pine content of woody debris accumulations following Cyclone Gabrielle

The community told us that they need help with cleaning up debris. Many told us that immediate action is needed. Farmers especially are concerned that their land cannot be returned to productive uses until the debris is removed. For many landowners, the clean-up requires heavy equipment, and specialised skills. The clean-up is beyond their capability.

Many members of the community told us they were feeling especially anxious about future events because of the amount of woody debris remaining in the system.

There was a strongly expressed sentiment across many engagements that forestry companies should be responsible for cleaning up woody debris. In Tairawhiti, the Gisborne District Council agreed with the community on this. Forestry companies agreed that clean-up is required and that they should be partly responsible but want to see what they describe as a more "equitable"¹⁴ model of clean-up.

⁸ Not everyone thought the debris was primarily from forestry in every catchment. One attendee at the Tokomaru Bay hui⁸ thought their catchment was different to the Hikuwai/Uawa and were suprised that 80% of the debris they saw was manuka rather than pine.

⁹ Roper, Mark. (2023). Cyclone Gabrielle – Woody Debris Species Composition Assessment. Developed by Ecological Solutions Limited, Submitted to Hawkes Bay Regional Council, p. 31.

¹⁰ *Ibid* p. 29.

¹¹ Letter from Mayor Rehette Stoltz to Government Ministers in support of an Independent Inquiry 9 February 2023

¹² ibid

¹³ ibid

¹⁴ Eastland Wood Council meeting file note

Detailed findings

The damage caused by woody debris and sediment has created an emergency that requires urgent clean-up action

While many individuals and organisations have already spent substantial time and money¹⁵ cleaning up on their own¹⁶, the job is huge, and people have told us there is a need for greater investment, support and co-ordination to speed up the restoration of community function, and the recovery. The work removing the debris is specialised, potentially dangerous, and requires heavy machinery and skilled operators. That equipment and skills exists in forestry crews, and given many crews are currently out of work, we recommend that local forestry crews should be given the first priority for clean-up work.

And this clean-up will not be a one-off – it is inevitable that until the changes we are recommending for forestry activities take effect, future storms will mobilise more debris. We need to be prepared so that future clean-up operations can be launched quickly, and in a co-ordinated and planned way. This requires key players to work together to develop both a risk-based integrated plan to guide clean-up activities, and a sustainable funding model.

The size and urgency of the problem require a dedicated taskforce to lead and coordinate the clean-up – a Woody Debris Taskforce

We propose that a Woody Debris Taskforce is established to lead and co-ordinate this clean-up work. A dedicated taskforce will provide the sustained focus that is needed for the clean-up. The taskforce can take a strategic, region-wide view, ensuring that the funding is allocated to the most important tasks, and in priority order, and provide people who need clean-up support with a single point of contact.

All debris needs to be removed from the forestry system

Reducing the risk of debris mobilisation requires the debris not be left in vulnerable locations ^{17,18}. Debris traps, either natural (such as trees planted in the riverbed) or engineered structures, may in some circumstances be effective, but the design, catchment size, location, and access for

¹⁵ For example, one grower estimated "he had spent \$12,000–\$15,000 on diggers and labour to move silt just in his first day after the cyclone passed" - from the Horticulture New Zealand submission.

¹⁶ Several submissions and speakers at public hui and drop-in sessions discussed their own clean-up efforts including sharing costs of clean up.

¹⁷ The Forest Practice Guide version 2 (2020) states that "A key way to reduce risk is to reduce the amount of cutover slash left on the slope, particularly at places where it is evident that the slope is susceptible to slope failure".

¹⁸ A report prepared by Prof. Rien Visser for GDC in 2018 states that in steep terrain "clearing this debris and placing it in a safe location as harvesting progresses is the most logical mitigation method" (p. 3) and that either during or post-harvesting "a preferred solution will be the recovery and or utilisation of residues during harvesting. This can include simply moving the material off-site to a stable location using bins, or developing an integrated biomass strategy". (p. 3). Visser, R. 2018. Best practices for reducing harvest residues and mitigating mobilisation of harvest residues in steepland plantation forests. Envirolink.

removing accumulated debris are critical to their success¹⁹. We are unconvinced that debris traps will sufficiently mitigate the ongoing risk to the community from accumulated debris. We conclude that the only credible way of reducing the mobilisation risk from debris already in the system is to remove it.

We propose that the removal work be done on a risk-priority basis. The Woody Debris Taskforce would lead the risk-assessment process and ensure that the highest-risk material is removed first, and that the clean-up is comprehensive enough to mitigate the mobilisation risk.

What is done with the debris is important. Given the purpose of removal is to mitigate the mobilisation risk, the first and most important consideration is secure placement of the debris into secure locations to avoid remobilisation from either flood inundation or slope failure. If the material is to be mulched (or hogged) the wood chips must be removed wherever practical, and at a minimum not be left where they can be mobilised and end up in waterways.

Debris dams pose a risk of debris flash floods, and need to be removed

A specific form of debris risk is the presence of debris dams, which we are told have accumulated in numerous places around the region. Debris dams can fail without warning in future flood flows, posing a risk of debris flash floods, which are considerably more damaging than flood flows alone¹⁴. The de-risking of catchments therefore needs to include identifying and removing debris dams in the system.

The forestry sector should fund most of the Taskforce's work

Our view is that the forestry sector should fund most of the taskforce's work. Forestry practice, both historic locations of forests and harvest practice is, in our view, largely responsible for the volume of woody debris that is mobilised in severe weather, which assessments show is up to 80% pine in Tairawhiti (see table A1.1 above).

It is true that the increasing scale and frequency of extreme weather²⁰ and the susceptibility of the land to erosion both play a part. But those are known factors, and the forestry sector seems to have failed to adjust their activities to take account of the nature of the land and the climate. The current harvest methods of clear felling, cable hauling, and leaving slash on the hillslopes seems incompatible with the industry's responsibilities – both legal and moral – as environmental stewards.

In our view, the forestry sector is not paying the full cost of its activities. Not cleaning up their woody debris and shifting the cost to the community is untenable. Given that assessments of

¹⁹ R. Visser, C. Harvey, 2020, Design of Debris Slash Traps: Considerations for NZ Plantation Forestry Operating, Gisborne District Council, pg 18.

²⁰ PR Chappell, 2016, The Climate and Weather of the Gisborne District, Wellington: NIWA.

woody debris in Tairawhiti show that the majority is pine²¹, it follows that the forestry sector should bear most of the costs. We accept there is debate around the methods for calculating the pine forest contribution to the woody debris accumulations, and how much of the woody debris is harvest residue as opposed to from erosion losses of whole trees, or other pine debris. In our view the argument is somewhat irrelevant. In both Wairoa and in Tairawhiti, the compositional assessments and the feedback from the community showed that in most cases, the majority of the woody debris was pine (table A1.1 above).

It is important to acknowledge that some forestry companies have been proactive in supporting clean-up activities²². However, one-off, ad-hoc clean-up activities from a few companies are not going to be enough. Coordinated, sustained, and planned contribution is required. Ultimately, it is up to the forestry sector as a whole to decide how to pay their share, but one option the sector should consider is to use the Forest Owners Association's levy on all log sales. We hope the forestry sector sees such a contribution as part of earning back its social licence to operate in the region, which they have acknowledged has been seriously damaged²³. It would be hard for the community to swallow the sector's stated commitment to improving its practices if it required regulation to contribute financially to the clean-up.

SEDIMENT AND WATERWAYS

The issues

The series of storms in Tairawhiti and Wairoa have cumulatively caused severe damage and destruction in the regions' waterways. Sediment, eroded from vulnerable fragile soils from hills that have been denuded of the vegetation that holds them together, has been carried into waterways, and then out to sea, causing significant harm to marine habitats.^{24,25,26} The sediment has affected the ability of whanau to collect kaimoana, to access river-based food sources, and carry out other tikanga practices that rely on access to a safe natural environment²⁷.

For example, the North Tolaga Bay woody debris assessments done by the community according to a methodology developed by GDC showed between 82% and 92% of woody debris was of pine origin. The woody debris assessment done by Ecological Consultants for HBRC estimated the composition of woody debris at the mouth of the Wairoa River was 90% pine.

²² For example, companies associated with the Eastland Wood Council (Aratu Forests Ltd, Ernslaw One Limited, and PF Olsen Limited) have resourced three beach clean-ups at Tolaga Bay beach.

²³ Eastland Wood Council, NGO, submission on the Ministerial Inquiry into Land Use.

²⁴ Ministry for the Environment and Stats NZ, 2022, *Our marine environment 2022*, Wellington: Ministry for the Environment, p. 15.

²⁵ Submission of EDS and Pure Advantage, Appendix A, by Professor Simon Thrush

²⁶ NZ Rock Lobster Council, Paua Industry Council, and Fisheries Inshore New Zealand, national organisation, submission on the Ministerial Inquiry into Land Use.

²⁷ File notes, Uawa public hui, Ruatorea public hui and several submissions.

Sediment in flood water is in itself a contaminant and is often also contaminated by other material (such as sewage or organic matter). When floodwaters spilled over the riverbanks or, as happened in multiple places, broke through stop banks, the sediment (mainly silt) was left behind on riverbanks, paddocks, properties and beaches.²⁸ The necessary clean-up caused significant economic loss to farmers in the region.²⁹

The lower reaches of some catchments are prone to filling in with the sediment and gravel eroded from the hills. This build-up of sediment in the region's rivers, along with unmanaged obstructions and flood controls, has made flood protections less effective³⁰, and made some areas less safe for housing or less suitable for some crops. Some areas of land are now so flood prone that managed retreat may need to be considered to provide long-term security in the face of the predicted increasing frequency and severity of storms from climate change.

The source of sediment is erosion from the land in the upper catchment. The ultimate solution to maintaining flood protection capacity is to reduce the flow of sediment from the hills. This is discussed further in the land use section below. However, in the short term, given the current state of existing flood protection and waterway management (see later in this section), urgent risk mitigation is needed.

What we heard from the community

At both community meetings and in submissions, we heard that while woody debris had caused most of the damage in Tairawhiti and Wairoa, sediment had also harmed the regions' riverbeds, riparian zones, and marine environment.

We heard of the damage that sediment and woody debris caused to the marine environment and the impact this had on the community. Whanau told us they were unable to collect kaimoana, to access river-based food sources and clean drinking water, and to carry out other tikanga practices that rely on access to a safe natural environment.

"The main damage caused by both Cyclone Hale and Cyclone Gabrielle relates to flooding and slips in the Mangakinoiti Stream. This is situated SE from the marae, flows towards the N-NW and provides the water supply to the marae and six whanau homes nearby. We have a system of hoses running 300-500m to a spring upstream. This feeds the marae water tanks and then are able to be switched to supply the whanau homes. The heavy rain events cause slips in the stream bed, the valley itself and big trees to fall. This impedes access to maintain the hoses and sometimes hoses can be buried under landslides (from the valley) or changes to the water course. This tributary is quite narrow and

²⁸ The volume of sediment, predominantly silt deposits, across the region has not been quantified. However submissions, engagement, public communications from councils following Cyclone Gabrielle, media stories and photographs, the Panel's aerial fly over of the regions and on the ground observations confirm the widespread presence of silt.

²⁹ M Robertson, 2023, Cyclone Gabrielle damage to Tairawhiti farms estimated at \$80m, Gisborne Herald.

³⁰ Gisborne District Council, 2020, Regional Freshwater & Waipaoa Catchment Plan Review, Gisborne: Gisborne District Council.

small - we usually walk in and could get a 4-wheeler bike only so far before having to continue on foot the rest of the way...Usually our marae would be opened in a civil defence emergency. We were unable to though due to there being no water supply in the marae tanks."³¹

Many submitters told us about specific negative effects of sediment (and slash) on habitats of native aquatic species, including eels, rock lobster, paua and kina. A local resident wrote that:

"Slash, silt and cyclone-caused debris (apples, onions, posts, logs) cover our kaimoana beds and beaches around Mahia. Traditional hapu rohe waterways, such as the Mangapoike River which is a tributary of the Wairoa River, are filled with silt and forest slash and logs; bridges are damaged...Since clear-felling of forestry in its headwaters, there is now more than a metre of silt caking the riverbed...Our kokopu and freshwater koura need spaces between rocks as refuge and breeding places... Centuries-old food harvest practice, such as the tuna rere at Whakaki and lwitea, have been disrupted. There is a scarcity of eels. We are concerned about the effect of silt and the thick cover of logs and slash across kaimoana areas such as the pipi beds and kuku rocks."³²

Mana Taiao Taiawhiti said in their submission that:

"Excess sediment is a pollutant in aquatic ecosystems because there are multiple implications of increasing sediment loads to the health and functioning of our freshwater and marine environments. In the marine environment, for example, sediment smothers shellfish, reduces light which reduces seaweed growth which has knock-on effects up the food web, makes it hard for birds and visual predators to hunt and reduce oxygenation, and can lead to toxic algal blooms."

Nga hapu o nga rohe moana o Ngati Porou told us that they saw the debris covering the beach from the mouth of the Waiapu River to Port Awanui and further. They search an area of 50 x 30 square metres, where tragically they found vast amounts of dead kaimoana – 106 spiny red rock lobster of varying sizes but mostly undersize and 42 undersize paua. These observations were supported by the submission of the fishing industry³³, which described the effects of sediment smothering habitat, reducing food sources and increasing stress and therefore vulnerability to freshwater effects. Members reported woody debris deposits up to a metre deep preventing boat launching, along with floating logs posing a hazard to boats, and large amounts of debris entangled in fishing gear.

We also heard how the importance of the Waiapu River and its tributaries are central to Ngati Porou's spiritual identity, and how the health and mauri of their rivers have been badly damaged by accelerated erosion. The land Ngati Porou has retained along the lower parts of these rivers is especially vulnerable to the impacts of erosion, including bank erosion, flood inundation, and sediment accumulation.

³¹ [Name withheld], local resident of Tairawhiti, submission on the Ministerial Inquiry into Land Use.

³² Mere Whaanga PhD, Settlor Trustee for Taipōrutu Trust, Submission on the Ministerial Inquiry into Land Use.

³³ NZ Rock Lobster Council, Paua Industry Council, and Fisheries Inshore New Zealand, national organisation, submission on the Ministerial Inquiry into Land Use.

Across the region people told us about their concerns for river aggradation and its potential future impact on infrastructure. In Wairoa people were concerned for the Wairoa River and its rate of aggradation. People also told us that some damage was made worse by the lack of maintenance of riverbeds, flood banks, and removal of willow and other blockages. We heard about river blockages that caused the river to break out of its banks and flood onto farmland. People were concerned that the council did not manage the waterways as they had in the past. They "believed that we need to bring back catchment boards" where rivers were actively managed. ³⁴

Some submitters went into detail about riparian management and how the design and application of riparian zones may be the key to successfully protecting waterways in future. Many submitters suggested different sizes of riparian zones that should be used. Submitters talked about riparian management being an effective way to stabilise stream banks, reduce runoff, and improve ecosystem health.

Detailed findings

Reducing the damage caused by sediment requires us to change how we use the land

How we use our land contributes to erosion, and the production of sediment then fills in our river channels and reduces water quality and harms habitats both in our rivers and coastal environments. Reducing the damage caused by sediment require us to revisit how we use our land and will require changes to the relevant regional plans to align with the requirements of the National Policy Statement for Freshwater Management (NPS-FM). These issues are discussed further in the section on land use.

We certainly saw examples of rivers bursting their banks, and again through stop banks. The community attributed the failure of the flood infrastructure to a lack of preventive maintenance and allowing sediment and debris to build up in key areas. The community certainly felt that if these issues had been addressed more proactively, the scale and effect of the flooding would have been reduced or potentially avoided in some cases. The desire to reinstate river management bodies such as catchment boards reflects this sentiment.

The lack of effective flood control is a symptom of the need for a sustainable funding model for local government

The river control work done by catchment boards in the past was often supported by considerable centralised funding. Since that work passed to councils following local government amalgamation in the late 1980s, many councils have funded their flood management and river control work through targeted rates on beneficiaries (and in some cases contributors). However,

³⁴ [Name withheld], local resident of Tairawhiti, submission on the Ministerial Inquiry into Land Use.

councils serving smaller communities with higher levels of social deprivation face funding restrictions, requiring the councils to make difficult decisions on spending priorities.

The local regional councils (Gisborne District Council [GDC] and Hawke's Bay Regional Council [HBRC]) need to improve their river and riparian management to enhance the free flow of water, reduce blockages, allow more natural spreading of rivers, and ensure the health of the ecosystem. However, achieving this will require a broader discussion of a long-term sustainable funding model for active waterway management.

There is a case for short-term financial support to assess flood capacity and identify and remove blockages

There is a case for a short-term financial support to address the immediate need to assess flood capacity and to identify and remove blockages that pose a risk in future floods.

Of course, any work programme would need to take account of the direction of the NPS-FM.

Infrastructure

The issues

The communities of Tairawhiti and Wairoa have experienced a wide range of damage and disruption to networks and services. The regions' infrastructure is not resilient³⁵ enough to cope with the increasingly frequent severe weather that's expected, or with the legacy effects we are seeing of the region's unsustainable land use.

As a result, the region is facing a major rebuild of infrastructure after the devastation of Cyclone Gabrielle. The impact of the infrastructure loss has been quite catastrophic, but the silver lining is that it gives us an opportunity to redesign the region's infrastructure so that it is more resilient in the long term.

Transport

Roading, including state highways, plays a critical role in the ongoing sustainability and connectivity of communities and businesses in Tairawhiti and Wairoa. Most people we engaged with had lost trust in Waka Kotahi NZ Transport Agency (NZTA) and GDC to deliver a reliable roading network well before Cyclone Gabrielle. The poor performance of the large contractors (under the Network Outcome Contracts), both in terms of the levels of service and responsiveness under emergencies must be questioned in this region. ³⁶We heard numerous

³⁵ Allen + Clarke Summary of Submissions report, p.40.

³⁶ Filenote MILU meet with NZTA, 11 April 2023.

examples of where local and forestry contractors were much better equipped and responded much faster. ³⁷

Roads across the regions and in Tairawhiti especially are of a poor quality, have unique challenges because of geology and climate (State Highway 35 especially)³⁸, and have been historically underinvested in³⁹. Currently, the One Network Road Classification (ONRC) sets standards for roading infrastructure, based primarily on the usage of the road, such as the type and number of vehicles. The ONRC is used to support funding bids for roading improvement. It does not include any consideration of the road's regional importance, or its lifeline status. As a result, there are no major or extreme risks captured associated with SH35, which deprioritises the allocation of funding for improvements.

Roads have been severely impacted by weather events in the last decade and remain extremely vulnerable to further weather events.

Examples of the vulnerability of the roading network include:

- Forty road closures in 2016 due to flooding and landslides⁴⁰
- 630km of local roads and 29km of state highways closed in 2018 due to storms⁴¹
- both State Highways 35 and 2 (north and south of Wairoa) being closed for several days, and stretching to weeks or months in some sections, following Cyclone Gabrielle.

NZTA is still working to fix state highways months after Cyclone Gabrielle, and this work is likely to continue for some time. Currently, NZTA tells us that they have the money for like-for-like repairs to the state highway network, but not to address longer term resilience issues (which would require additional funding). They also said that s35 had suffered from historical underinvestment and NLTP currently struggled to fund even the basic maintenance and renewals and that the tight activity class constraints under the GPS limited their ability to transfer funding into this work. They have previously begun the development of a 10-year resilience plan and estimate that the first stage (involving standard engineering approaches including two bridges within the corridor) in Tairawhiti would cost around \$400 million⁴². The 10-year resilience plan and detailed design needs to be completed urgently and will involve much more innovative engineering and stabilisation works adjacent to corridor.

³⁷ Filenote, MILU meet with NZTA, 30 March 2023. Filenote MILU met with Gisborne forestry contractors, 28 March 2023. Filenote MILU meet with NZTA, 11 April 2023.

³⁸ Gisborne District Council, Te Mahere Waka Whenua o Te Tairawhiti 2021-2031 Te Tairawhiti Regional Land Transport Plan 2021-2031, Gisborne: Gisborne District Council, p. 28

³⁹ Underinvestment is acknowledged in the Cabinet paper, Unlocking Tairawhiti's economic potential - Tairawhiti roading package, paragraph 20.

⁴⁰ Kõrero Tairawhiti, 2019, Tairawhiti 2050 Gisborne's Spatial Plan Factsheet, Gisborne District Council, p. 3–5.

⁴¹ Meetings with NZTA on 30 March 2023, and 11 April 2023.

⁴² From discussion with NZTA Executive Brett Gliddon, 11 April 2023.

In many communities, there are few if any alternatives to road-based transport for both people and goods. Roading issues and the lack of clear timeframes for creating a resilient network is a major hand brake on development and business confidence – especially in Tairawhiti⁴³.

Te Runanganui o Ngati Porou (TRONPnui) raised in their submission, Te Ara Tipuna, a proposed 657km network of continuous tracks and trails from Gisborne to Opotiki that will help offset the complete reliance on SH35. They told us that Te Ara Tipuna was presented at the Ngati Porou Crown Taumata in 2022, to a receptive former Prime Minister Ardern and her ministerial colleagues. Since, TRONPnui have continued to progress this kaupapa with support from Te Puni Kokiri. We heard that a key function of Te Ara Tipuna will be to provide a civil emergency route enabling connection between communities frequently cut-off due to roading infrastructure damage and fragility. The tracks between Tokomaru Bay and Ruatoria, in particular, will be constructed to withstand severe weather events given the significant and severe damage those communities have suffered. TRONPnui shared that they are critically aware of establishing self-sufficiency due to their isolation and increasing frequency and impact of weather events.

We also heard that given the latest vulnerabilities of sH35 exposed by Cyclone Gabrielle, and that Te Ara Tipuna is mapped in a number of parts alongside SH35, the project has produced examples of how SH35 could be strengthened and rerouted. Finally, we heard that Te Ara Tipuna has the potential to enable land-use outcomes for over 350 land blocks along its journey. The biodiversity opportunities, including eco-tourism is another lever, that will open economic, cultural and social value on land blocks that may currently be under realised.

Another exciting alternative route proposal we heard about was the proposed Te Araroa Kahui Kupenga Marine Access Facility development which has the potential to be both an alternative route for freight, but could also take heavy traffic off State Highway 35. The Government Policy Statement on land transport (GPS) 2021 introduced coastal shipping as a new activity class. New Zealand's coastal shipping sector fulfils a critical role in New Zealand's freight system. It provides a safe and sustainable mode for transporting large, heavy cargo.⁴⁴ The Government's response to Te Rautaki Hanganga o Aotearoa New Zealand Infrastructure Strategy, indicated Government support to improve efficiency and security of freight and the national supply chain (including coastal shipping).⁴⁵ Regionally, Gisborne District Council's Tairawhiti 2050 Spatial Plan supports the development of a blue highway as a key element of connecting the region.⁴⁶

⁴³ Gisborne District Council, 2021, *Te Mahere Waka Whenua o Te Tairawhiti 2021-2031 Te Tairawhiti Regional Land Transport Plan 2021-2031, Gisborne: Gisborne District Council, p. 28.*

⁴⁴ Coastal shipping, Waka Kotahi NZ Transport Agency (nzta.govt.nz), retrieved May 2023.

⁴⁵ The Treasury, 2022, Government response to Rautaki Hanganga o Aotearoa New Zealand Infrastructure Strategy -September 2022 (treasury.govt.nz), retrieved May 2023.

⁴⁶ Gisborne District Council, 2019, tairawhiti-2050-spatial-plan-shaping-the-future-of-our-region.pdf (gdc.govt.nz), retrieved May 2023.

Three Waters

The Tairawhiti and Wairoa water supply infrastructure is extremely vulnerable. Storm and wastewater systems are regularly overwhelmed during extreme weather events resulting in significant impacts on water quality in local rivers and beaches⁴⁷.

Gisborne's main supply infrastructure is extremely vulnerable to severe weather impacts such as landslides and the mobilisation of woody debris. We heard from the owners of the land that the water pipeline crosses to the city that there has been little to no pipeline maintenance over the past eight to ten years or work to prevent trees falling and damaging the pipeline.⁴⁸ There were multiple breaks in the main water supply pipeline because of Gabrielle and, at the time of writing, GDC was unable to commit to a timeframe for fortifying the pipeline.⁴⁹ The GDC has confirmed that woody debris was a critical factor in the damage.⁵⁰ The GDC had developed a resilience plan for the water supply, and even had materials to build it, but the Cyclone intervened. These plans need to be revisited in light of Gabrielle to ensure whatever is not vulnerable to woody debris flow and there is some redundancy in the system to ensure safe water supply.

We heard many instances of the desperate need for water supply resilience. In the Wairoa District, ageing water infrastructure is an issue⁵¹ and the Tuai water treatment plant is still facing issues with a precautionary boil water notice still in place for the Tuai community.⁵² The Raupunga Water Supply treatment plant, which is supplied from the Mangawharangi Stream and supplies water to households, marae, kaumatua flats and kohanga, was affected by heavy sedimentation and forestry slash. We heard there was up to 6 to 7 metres of debris blocking the gully and stream, and silt in the water supply affecting pumping. This contamination of the water supply was estimated to last for years to come.⁵³ We heard, too, about flooding and slips in a stream which provides the water supply to a local marae and whanau homes.⁵⁴ The rain caused slips in the stream bed and valley, and caused big trees to fall which meant that water could not be transported to the tanks. The marae, which would usually be opened in a civil defence emergency, was unable to open its doors due to the water supply being impacted.

⁴⁷ For example, emergency sewage release valves were opened in Gisborne from 13-20 Feb and again from 27 Feb – 6 March resulting in sewage being released into local rivers. Opening of these valves is not uncommon during periods of heavy rain. During heavy rain events in Wairoa, wastewater can overflow into the Wairoa River and it can also become necessary to discharge wastewater to the outfall for longer durations that specified in the discharge consent – from information available on GDC and WDC websites.

⁴⁸ [Name withheld], local resident of Tairawhiti, submission on the Ministerial Inquiry into Land Use.

⁴⁹ Matthew Rosenberg, 2023, Fortifying Gisborne's main water pipeline (gisborneherald.co.nz)., The Gisborne Herald, retrieved May 2023.

⁵⁰ M.Rosenberg, 2023, Cyclone Gabrielle: Forest waste 'critical factor' in rupture of Gisborne water pipe, New Zealand Herald, retrieved 2 March 2023.

⁵¹ Wairoa District Council, 2023, *Wastewater*, retrieved May 2023.

⁵² Wairoa District Council, *Wastewater*.

⁵³ [Name withheld], local resident of Tairawhiti, submission on the Ministerial Inquiry into Land Use.

⁵⁴ [Name withheld], local resident of Tairawhiti, submission on the Ministerial Inquiry into Land Use.

We also heard about the Waingake transformation programme, a partnership between GDC and Maraetaha Incorporation supported by Ngai Tamanuhiri, which is transitioning pine to indigenous forest with an aim of ensuring the protection and resilience of the Gisborne municipal water supply. However, the pipe in this area was smashed, impacting the water supply to Gisborne city.⁵⁵

Power and communications

Key communications and power supply infrastructure is vulnerable, especially to the impacts of flooding. The impact of storm damage on power and communications lines was significant and added to the isolation of communities.⁵⁶

Both Gisborne and Wairoa spent several days after Gabrielle with telecommunications limited to satellite internet in select places after the main network cables were severed.⁵⁷ Both regions also spent periods of time without power, with some isolated households spending several weeks without power after the Redclyffe sub-station in Hawke's Bay was flooded.⁵⁸ People said they felt abandoned, and in some cases, they couldn't reach emergency services or had no power for days and weeks.

While reinstatement of power and communications was relatively rapid, people are looking for more resilience or redundancy in the system so it can survive more frequent and severe cyclones.

We heard in engagement that this was a \$6 million event for the Eastland Network.⁵⁹ We recognise that the costs of providing a resilient power network will come back to the users through user-pays funding of the network. However, it is also important that power and telecommunications companies review their resilience plans and risk appetite.

Ngati Porou Holding Company enthusiastically presented E Tipu, E Rea – Food and Fibre Hub to the Panel in their stakeholder engagement hui. The concept includes the development of hubs that will support current and future industries to be built throughout Tairawhiti. The main focus for this project includes a solar farm to provide sustainable energy and secure water infrastructure to support economic, social and cultural developments. Communities in Tairawhiti have realised that they must provide for their own response to any future weather events. With the right investment and innovation, E Tipu, E Rea have an opportunity to expand back better as we move into a post-Cyclone Gabrielle environment.

⁵⁵ Mana Taiao hui Thursday 9 March 2023

⁵⁶ Allen + Clarke Summary of Submissions report, p.23.

⁵⁷ T. Pullar-Strecker, T. Hunt, C. Knell, 2023, Gisborne and Hawke's Bay are mostly without phone and internet communication Stuff, 14 February 2023.

⁵⁸ Transpower, 2023. Hawke's Bay and Gisborne power outage. Accessed May 2023.

⁵⁹ Jarred Moroney, Gisborne community hui, Waikanae Surf Club, retrieved 23 March 2023.

What we heard from the community

Wide-ranging impacts of infrastructure failure

The impacts of infrastructure failure have been wide-ranging, including economic, access, and physical and psychological health.⁶⁰ We heard that in the cyclones:

"A concern for our children travelling via rural school bus had families scrambling to collect children from schools, with knowledge of restricted road thoroughfare for many areas of Tairawhiti our people kicked into emergency mode.

Access to the closest shop being 15kms away, you needed to be mindful of having cash, due to power outages, one could not use eftpos and fuel pumps were unable to pump gas.

Many of those who needed these resourses fell into a state of emotional turmoil, stressed with no knowledge of when we were to return to a state of order again."⁶¹

Essential transport issues impacting on basic needs

Communities were left isolated and blocked from essential transport routes following Cyclone Gabrielle but also in previous weather events. One local resident submitter stated, "our access to food became non-functional overnight"⁶². Others talked about the negative social impacts on children from missing school or having to attend a different school due to infrastructure failure.⁶³

Access to emergency services was interrupted by the infrastructure failure, which affected people's ability to get to hospitals and to get other timely assistance⁶⁴. People said they felt abandoned, and in some cases, they couldn't reach emergency services or had no power for days and weeks. One local said:

"The loss of power, landline and cellphone took away our link to emergency services and them us. We were rendered helpless and if our fate was in the hands of a bomb or a breech, we waited in fear of the unknown"⁶⁵

⁶⁰ Allen + Clarke Summary of Submissions report, p. 22-23.

⁶¹ [Name withheld], local resident of Tairawhiti, submission on the Ministerial Inquiry into Land Use.

⁶² Karen Eddy, local resident of Tairawhiti, submission on the Ministerial Inquiry into Land Use.

⁶³ [Name withheld], submission on the Ministerial Inquiry into Land Use.

⁶⁴ Ruatoria community hui, 20 March 2023.

⁶⁵ [Name withheld], submission on the Ministerial Inquiry into Land Use.

Need for a holistic approach

The community wants to see a holistic approach to the recovery and to investment into SH35 that takes into account whanau development, housing, whenua and hauora, rather than sector-led approaches⁶⁶.

Sustainability of communities

People expressed concerns that damage to infrastructure will drive people from their homes and whenua. People also had concerns about rising costs of power and other critical infrastructure – if people leave, it will become even more expensive to provide infrastructure in the region. The community has put forward some options to enhance sustainability of local communities, such as self-sustaining localised hubs for productions (eg, wood processing for local uses, a "forest to whare" model).⁶⁷

Communities have lost trust in institutions

Most people we engaged with had lost trust in NZTA and GDC to deliver a reliable roading network well before Cyclone Gabrielle. People said they felt abandoned, and in some cases, they couldn't reach emergency services or had no power for days and weeks.

'We live in Tokomaru Bay, however, we have become accustomed to being isolated away from supplies every time there is heavy rain.' 68

One hui attendee spoke of their experience surviving Cyclone Bola with two children. When Cyclone Gabrielle hit 35 years later, nothing had changed and whanau were left stranded.⁶⁹ We heard of examples where local contractors regularly clear roads, and where NZTA and GDC contractors were nowhere to be seen.⁷⁰

Need for alternative options (infrastructure and infrastructure maintenance)

The community is clear that the communications network and access needs to be resilient, with alternatives available. They want to see an investigation into alternative transport options, eg, blue highway, barge, rail. Submitters in Te Araroa⁷¹ saw this as an opportunity, saying that alternative access schemes such as the Te Araroa Kahui Kupenga Marine Facility proposal may also bring in other opportunities such as native planting opportunities for whanau and learning

⁶⁶ Willie Te Aho, Tairawhiti Whenua Charitable Trust and Te Aitanga a Mahaki hui, 10 March 2023.

⁶⁷ Allen + Clarke Summary of Submissions report, pp 24-23.

⁶⁸ Regan Fairlie, local resident of Tairawhiti, submission on the Ministerial Inquiry into Land Use.

⁶⁹ Patricia Fleming, Te Aitanga a Mahaki hui, 29 March 2023.

⁷⁰ Maree Pethybridge, local resident of Te Wairoa, submission on the Ministerial Inquiry into Land Use.

⁷¹ Filenote, Te Araroa community hui, Awatere Marae 20 March 2023.

environments for tamariki⁷². Hapu should be enabled to do infrastructure maintenance and development⁷³.

We heard from Eastland Group Limited⁷⁴, the previous owner of the region's transmission lines, that an alternative 'off grid' self-sufficient approach to electricity supply has been piloted with the Tairawhiti community. The concept is that micro-grid electricity systems could be set up locally to provide a resilient supply of electricity to individual communities as opposed to distant generation and power provision via networks of transmission lines. Transmission lines are vulnerable, as a disruption to them affects power supply to all users beyond the point of disruption. Eastland Group Limited told us that the pilot was successful, and the micro-grid approach offers a viable alternative to the current arrangements by providing bespoke self-sufficient energy at a community level. Transitioning to such an approach is likely to improve the resilience of electricity infrastructure for Tairawhiti, and as a result, we think it warrants support from the Government to make it a reality.

New engineering standards required

It's not just about replacing existing damaged infrastructure with like for like, it's about making sure the replacement infrastructure is fit for purpose in today's, and the future's, climate. Pan Pac Products Limited made this point in their submission:

"In some cases, bridges and civil infrastructure that failed had been in service for 100+ years. These assets were designed based on the standard at that time. Design standards must be set more appropriately to account for these extreme weather events and the added intensity that comes with them due to climate change."⁷⁵

We need to find new designs for culverts and bridges that recognise the greater frequency of severe weather, and the greater force associated with debris flows. Designing infrastructure that is less vulnerable to damage from debris and extreme flood flows will improve the resilience of the network and reduce the costs of infrastructure repairs after future events.

Need for a visible plan for infrastructure resilience

We heard that during the recovery phase, we should be building back and upgrading resilience⁷⁶. People want to know the timeframes for access improvements – there is real frustration at how long it is taking. Infrastructure needs long-term resilience including planning for climate change, for mokopuna.

⁷² Wi Wanoa, Te Araroa community hui, 20 March 2023.

⁷³ Rarawa Kohere, Te Araroa community hui, 20 March 2023.

⁷⁴ Via a late verbal submission to the Chair of the Inquiry panel.

⁷⁵ Pan Pac Products Ltd, industry body, submission on the Ministerial Inquiry into Land Use.

⁷⁶ Tanith Wirihana, Ngai Tamanuhiri hui, 28 March 2023.

Increased investment needed

The community is clear that we need higher investment in roading to access markets and get future benefits. This includes a committed priority find for SH35 based on geology and the ECFP⁷⁷. Another priority for the community is fair investment in Civil Defence responses⁷⁸.

Detailed findings

General

There is a need to redesign and rebuild infrastructure with increased resilience for the long-term, including:

- Greater recognition of the importance of connectivity and lifelines into the region physical and for communications.
- Involving local communities, mana whenua, producers and businesses, to understand their needs, strengthen local hubs and enable transition to future industries.
- Innovative engineering approaches (that can either survive or very quickly recover from extreme whether events and debris flows) and solutions that consider how to manage wider catchment, slips and other instability that threatens assets.
- Short- and long-term investment in resilience improvements.
- Greater flexibility to move funding in emergency and recovery situations.

Transport

SH35 and SH2 are the main arteries of Tairawhiti and Wairoa, and local roads are the capillaries that support many farms, marae, and communities.

Our key findings are that:

- The scope and scale of transport issues and vulnerabilities, especially roading, are significant, and without increased investment, almost insurmountable.
- The unique challenges to SH35, because of geology and climate, and their role as lifelines to the community, are poorly accounted for in decision-making and investment. There has

⁷⁷ Marjike Warmenhoven, Ruatoria community hui, 20 March 2023.

⁷⁸ Nori Parata, Uawa community hui, 23 March 2023.

been historic underinvestment in SH35 especially, and the inability of existing revenue streams to fund required maintenance and ongoing resilience is troubling.⁷⁹

- Roading is the main or only form of transport of people and goods from some communities.
- There will be ongoing work to get state highways up to even a minimum standard, however engineering standards need to be urgently reviewed to account for increased frequency of cyclones, and the destructive nature of debris flows.
- The National Land Transport Programme (NLTP) is underfunded, and NZTA are struggling to keep up with maintenance and renewals of the existing assets across New Zealand.
- The Government Policy Statement on Land Transport (GPS) allocation to activities classes is very tightly constrained. There is limited ability to move money between activity classes to address emergency and recovery situations⁸⁰.
- Resilience improvements that have been scoped by NZTA are unlikely to go ahead unless additional funding is allocated. Immediate resilience work that can be done using standard engineering approaches within the corridor need to be funded now (estimate cost of \$400 million), while longer-term work which will need innovative design and stabilisation of surrounding land needs to get underway as soon as possible.
- "Redundancy in the system" needs to be provided for through alternative forms of transport (such as Te Araroa Kahui Kupenga Marine Facility as an alternative to transporting logs to Gisborne port).

Three Waters

The water supply and treatment systems were severely impacted⁸¹ in Gisborne, Wairoa and other small towns and rural water supplies (such as Raupunga) creating health risks. In many cases these resilience problems had been understood for some time and while plans and materials were in place to fix them, the cyclone intervened.⁸² These plans need to be revisited in light of Cyclone Gabrielle to ensure infrastructure is not vulnerable to woody debris flow and there is some redundancy in the system to ensure safe water supply.

Our key findings are that:

⁷⁹ Meetings with NZTA Thursday 30 March 2023 and Tuesday 11 April 2023; meeting with Tairawhiti Whenua Charitable Trust and Te Aitanga a Mahaki Iwi Trust Friday 10 March 2023; and Ruatoria community hui Monday 20 March 2023.

⁸⁰ Meeting with NZTA, Tuesday 11 April 2023

⁸¹ Allen + Clarke Summary of Submissions report, p.23.

⁸² Filenote Gisborne community hui 23 March 2023 (verbal submission from member of the Raupunga Water Supply Committee), Submission to MILU Wayne T. Taylor.

- The quality of, access to and protection of water supplies is vital. Resilient access for iwi, hapu and marae, particularly in rural areas, needs to be supported and enabled.
- Redundancy and interaction between catchment and bores needs to be resilient, with alternative access.
- Improved planning and investment is required.

Power and communications

The impact of storm damage on power and communications lines was significant and added to the isolation. While reinstatement was relatively rapid, more resilience and/or redundancy in the system is needed and the power and communications companies need to review their standards so they can survive more frequent and severe cyclones.

Our key findings are that:

- Resilience of power supply needs to be ensured.
- Available and feasible energy supply must be identified.
- Alternative power generation options for the region should be investigated (eg, woody biomass, cogeneration system for heat and electricity, solar, and hydroelectricity)
- Reliability and access to communications technology in the region is critical.

Land use

The issues

The vulnerability of the land in Tairawhiti to erosion has been well recognised for more than a century, since native bush was cleared in the late 1800s, leading to substantial erosion problems, aggradation of rivers, flooding, and a loss of soil fertility on the hills. Efforts to resolve the erosion problems have been largely framed in a productive paradigm, with maintaining a profitable return from the land central to land use decisions, reflecting the export-driven reality of New Zealand's economy. Government policies, seeking economic growth, have supported land-use change to follow export-market demands. However, this approach has left us exposed to swings in commodity prices and boom-and-bust cycles⁸³ that in turn further influence our choices for how land is used to generate income and wealth.

In Tairawhiti, as in the rest of New Zealand, the ebb and flow of various export markets and economic returns has prompted changes in land uses over time. Early uses such as crops and flax gave way to the initial establishment of the pastoral livestock farming industry (mostly meat and wool for export to the United Kingdom). Later years saw the planting of pine trees (which are mostly exported to China as logs) on some of the steeper slopes to try and control erosion, and most recently, carbon farming, the economic benefits of which are seen both domestically and offshore.

However, our failure to recognise and account for the inherent values and limitations of the land means our previous economically driven land-use choices are having unintended consequences. Clearing native bush for livestock farming led to erosion, infilling of rivers, flooding, and ecological effects on our rivers and coasts. Planting exotic forests to stabilise the hills and reduce erosion is quite effective once the trees have established and before they get too big. However, subsequent wide-scale clear-felling of large areas re-exposes the land to erosion, and adds woody debris to the soil losses, greatly increasing the downstream effects of floods. When the land is exposed again, erosion takes more valuable soil, further reducing its fertility, to the point that in some areas re-establishing vegetation may soon not be possible. Carbon farming, while offering a permanent forest, is sometimes planted on land more suitable for livestock farming, and concerns remain about land stability of steeper slopes when unharvested exotics reach maturity, due to their weight.

These factors indicate that our current land use is not sustainable, and to reduce the devastating effects from severe weather, we need to change how we use our land to a mix of both productive and protective uses.

⁸³ P. Conway P, A. Orr, 2001, The Process of Economic Growth in NZ, Reserve Bank Bulletin, 63(1), 4–20, retrieved April 2023.

Tairāwhiti Illustrative Trends in Land Use



Figure A1.1 A stylised illustration of land-use change over time in Tairawhiti

The solution for the future, in our view, is to pursue policies that support a more nuanced vision of a mosaic of sustainable land uses, both productive and protective, that are more appropriate to their place in the landform. The right land use in the right place that considers not just the productive value of the use, but also the downstream effects on people and communities, and on future generations.

This means establishing high-value uses such as horticulture on suitable productive lowlands, while transitioning the steepest, most extremely erodible land to permanent forests. In between, careful farming, using intensive soil conservation approaches, and cautious forestry, that uses international best practices to minimise between-crop slope failure and losses of harvest residues. We need wider buffers around our streams to insulate and protect them from the effects of how we use our land.

Profitability for cropping and horticulture is higher than livestock-based pastoral agriculture and forestry. However, cropping and horticultural expansion on suitable land has been limited. Plant and Food (2017) consider this is due to infrastructural inertia, conservative investment, and a lack of human capital. Although, in the case of viticulture since 1980 there has been a dramatic increase in the area under vineyards. So, where opportunities are seen, rapid changes can occur. However, financial returns by land use are limited by land use suitability as described below.

Land use	Estimated earnings before interest and tax (EBIT) per hectare
Sheep and beef North Island hard hill and hill country farming	\$247 to \$268
Sheep and beef finishing	\$457
Exotic forests (returns from NZ ETS)*	\$1400 to \$2,000
Dairy (25 th to 75 th percentile)	\$2,000 to \$3,000
Grapes	\$5,000 to \$10,000
Kiwifruit	\$15,000 to \$18,000
Apples	\$20,000

Table A1.2: Economic returns from competing land uses

*Only returns for exotic forests in the NZ ETS are provided due to the timing of harvest returns from forestry being incompatible with EBITs from other land uses (e.g., 25 to 28 years from planting). Returns for the sale of NZUs in the NZ ETS are time limited under some accounting and management approaches (e.g., under averaging and stock change with harvesting). A \$60 NZU price is used.

In the Panel's view the development of regional spatial strategies (RSS) under the new SPA legislation the best way of achieving this mosaic. The development of the RSS needs to be based solid land use science and research, and those scientists need to be involved in its development alongside industry, iwi, wider community and professional planners.

What we heard from the community

Gully erosion

We heard about the importance of controlling gully erosion if we are to reduce the sediment loads to our rivers and coasts. A submission from Dr Mike Marden and Colin Mazengarb was most helpful in understanding this issue. They explained that sediment in Tairawhiti is generated by soil erosion, predominantly gullies, earthflows and shallow landslides.⁸⁴ Gullies are the single largest contributor of sediment to the rivers and marine environment of Tairawhiti. For example, research published in 2008⁸⁵ found that gullies in the Waipaoa, Waiapu and Uawa catchments contributed 43 per cent, 49 per cent and 54 per cent of the average annual sediment load, despite representing just 0.8 per cent, 2.4 per cent and 1.7 per cent of the hill country areas in those respective catchments. However, even after decades of government funding pursuing erosion restoration targets, restoration efforts have barely kept up with the formation of new gullies and the expansion of uncontrolled gullies.⁸⁶ A gully inventory showed that the area of hill country affected by gully erosion in 2017 was only 5 per cent less than 60 years ago, and that 1,864 gullies remained untreated or ineffectively treated (Marden and Seymour). We suspect this number is likely to be higher today, given the severe weather events of the last five years.

Dr Marden also highlighted some of the implications for the future: "The sustainability of both forestry and pastoral activities is reliant on the preservation of soil. Without this, the rate of productivity decline will likely increase exponentially with each successive storm event. On failed pastured slopes it requires approximately 60 years to attain 80% of the amount of dry matter produced before landslide failure (Rosser & Ross 2011). A similar loss in productivity can be expected for plantings on failed slopes within forests."

High-risk areas should be restored to (natural or permanent) forest?

Almost everyone's views were clear that certain land types of Tairawhiti and Wairoa are unsuitable for any production forestry operations or livestock farming uses. The forestry sector itself acknowledges this:

"With the benefit of hindsight, it is clear that some areas should not have been established in commercial exotic forestry. Consequently, some areas that were planted should not be harvested

⁸⁴ Dr. Mike Marden and Colin Mazengarb, academic or subject matter expert, Submission on the Ministerial Inquiry into Land Use.

⁸⁵ M. Marden, H. Betts, G. Arnold G, Hambling R, 2008, Gully erosion and sediment load: Waipaoa, Waiapu and Uawa rivers, eastern North Island, New Zealand. In: Sediment dynamics in changing environments 2008. pp.339-350 ref.28, Proceedings of the 2008 Symposium of the International Commission on Continental Erosion, Christchurch, New Zealand, 1-5 December 2008, retrieved May 2023.

⁸⁶ M. Marden, A. Seymour, 2022, Effectiveness of vegetation mitigation strategies in the restoration of fluvial and fluvio-mass movement gully complexes over 60-years, East coast region, North Island, New Zealand, New Zealand Journal of Forestry Science, 52:19, retrieved May 2023.

and some areas that have been harvested should not be re-established in commercial exotic forestry."⁸⁷

The current regulatory environment is out of date

Submitters expressed the view that poor land-use practice comes from the cumulative effects of several policy and regulation gaps in the system.

The Eastland Wood Council expressed their concerns over the lack of monitoring of forestry companies' activities for compliance with regulations.

"There is limited capacity and industry experience of the GDC to undertake compliance monitoring. Monitoring visits are sporadic and compliance reports can take in excess of one month to receive post visit."⁸⁸

The Eastland Wood Council also noted that the relationship between the sector and councils needs to be strengthened to return to a sustainable operating environment.

"The relationship between the plantation forest industry and GDC does not allow open discussion around challenges and solutions. Experience and understanding of forestry activities by local regulators is currently poor and regulations are not fit for purpose."

There were other comments about the councils' communication affecting relationships with the community. Many Maori submitters felt that the lack of communication between the council and tangata whenua in decision making has fractured this relationship.

Some submitters noted that Gisborne District consent conditions and Tairawhiti Resource Management Plan (TRMP) should be updated to reflect the unique operating environment and climate change. Many provisions in the TRMP have gone more than 10 years without a review, exceeding the requirements in the RMA for local authorities to review provisions at least once every 10 years. One submitter also suggested:

"GDC need to timetable the review of the plantation forestry provisions in the Tairawhiti Resource Management Plan (TRMP) earlier in the review of the TRMP"⁸⁹.

Submitters identified that the NES-PF one-size-fits-all regulatory framework is not suitable for the Tairawhiti and Wairoa landscape. People acknowledge that while the NES-PF allows councils to apply stringency to these baseline rules, these are difficult to implement and take time to establish.

⁸⁷ Aratu Forests Limited, industry body, submission on the Ministerial Inquiry into Land Use.

⁸⁸ Eastland Wood Council, NGO, submission on the Ministerial Inquiry into Land Use.

⁸⁹ PF Olsen, industry body, submission on the Ministerial Inquiry into Land Use.

Many people, community organisations and councils want to see the NES-PF strengthened to reduce the burden on councils, including:

- re-evaluating the permitted activity status of green/yellow and orange zone Erosion Susceptibility Class land
- consent requirements or restriction of harvesting on orange zone land
- reviewing and strengthening slash management regulations. GDC as the regulator also felt the regulations needed strengthening:

"To complement controls via the NES PF, a slash management plan (within Forest Environment Plans) should be required as part of the permitted activity in Green/ Yellow/Orange (most), and for a resource consent application for harvesting on Orange/Red Zone land.⁹⁰"

Detailed findings

A new 'extreme' erosion susceptibility category

The highest risk classification in the Erosion Susceptibility Classification (ESC) is "very high risk" (often referred to as 'red-zone land'). Outside of Department of Conservation land, nationally just over 590,000 hectares of land is classified as being of very-high-erosion risk, and nearly half of that land (287,000 hectares or 48 per cent) is in the Gisborne region⁹¹. Approximately 104,000 hectares (around 36 per cent) of the very-high-erosion-risk land is in plantation forestry, representing around 5 per cent of the plantation forestry in New Zealand. We don't have precise data on what the remaining 63 per cent (183,000 hectares) of very-high-erosion-risk land is used for, but the predominance of livestock farming in the region suggests that much of it is used for hill-country farming.

We are convinced that within the land currently zoned very high risk, some land has extreme erosion susceptibility, and using that land for plantation forestry (or farming for that matter) is not compatible with the goals of reducing soil erosion and woody debris mobilisation, and adapting to climate change. We propose that this land be identified as a new "extreme" erosion susceptibility layer in the ESC, which many we spoke to have started referring to as a 'purple zone'.

We heard above that the forestry sector have recognised that some land used for plantation forestry in the past is, in hindsight, unsuitable for that use. This land needs to be identified and

⁹⁰ Gisborne District Council, local authority submission on the Ministerial Inquiry into Land Use.

⁹¹ Ministry for Primary Industries, Erosion Susceptibility Classification by class & area of plantation forestry. Wellington: Ministry for Primary Industries, retrieved April 2023.

mapped in the region at a much higher resolution than the current mapping, so that land managers can identify it and manage it more appropriately.

High-risk areas to be transitioned to permanent forest

We conclude that the most practical way of addressing the inherent instability of this 'purplezone' land is to transition it to permanent forest cover. The type of tree is important: the weight per hectare of high densities of mature exotic trees such as pines⁹² can overcome the stabilising effects of the roots, causing land sliding. This land needs permanent tree cover⁹³, perhaps exotic, but preferably native, which has the advantage of biodiversity co-benefits. 'Purple-zone' land that is currently in pasture needs to be prioritised for retirement and reestablishment of forest cover. However, it is important to note that 'purple-zone' land which currently has exotic plantation trees on it can't simply be harvested and left alone. These areas will need a period of supported transition, where the exotics are progressively removed in a staged manner, avoiding the instability of clear felling, while allowing and encouraging the establishment of alternative species. During the establishment period in both forests and on farms, pest and weed control will be essential to ensure a timely and successful transition to the new forest cover.

Focus on gully erosion and land management

We were struck by the expertise of Dr Mike Marden in his submission. His findings that around 50 per cent of the sediment comes from around 2 per cent of the land in the region, and that despite 60 years of efforts to control erosion, the extent of gullies was only 5 per cent less than it was 60 years ago were sobering. We were left with a clear impression that there needs to be a laser-like focus on healing the existing gullies and acting quickly to respond when new gullies form. This will require a combination of targeted funding, aligned with changes to land management policy in the region, for a sustained period.

Of course, if 50 per cent of the sediment is coming from gullies, the other 50 per cent must be coming from everywhere else. Our recommendations for forestry in the following section aim to reduce sediment loss from forestry. However, given around 60 per cent of the catchment is in livestock farming, which doesn't have the stabilising benefits provided by trees, livestock farming must also look to transition away from the highest-risk land.

The government intends to introduce the Freshwater Farm Plan (FWFP) regulations later this year, to require farmers to develop bespoke freshwater farm plans to reduce their environmental footprint. Freshwater farm plans will be rolled out in a staged approach across the country. We think the FWFP process offers an opportunity for the farmers of Wairoa and Tairawhiti to develop comprehensive sediment management strategies, including identifying land that may require a

⁹² Dr. Mike Marden and Colin Mazengarb, academic or subject matter expert, Submission on the Ministerial Inquiry into Land Use.

⁹³ M. Marden, A. Seymour, 2022, Effectiveness of vegetative mitigation strategies in the restoration of fluvial and fluviomass movement gully complexes over 60 years, East Coast region, North Island, New Zealand. New Zealand Journal of Forestry Science, 52(19), 23, retrieved May 2023.

transition away from pasture for soil-conservation purposes. Farm planning as a way of reducing contaminant loss is not new for farmers in the Gisborne region. There has already been a successful farm planning initiative in the region to reduce faecal contamination at the Rere rockslide in the Wharekopae River, part of the Waipaoa Catchment. We have suggested that roll out of the FWFP regulations could be prioritised in the Wairoa and Gisborne districts, to support farmers efforts to reduce sediment loss from pastoral land, especially from the highly erodible gullies.

The regulatory environment

We have already commented above that the current Tairawhiti Resource Management Plan (TRMP) is now as much as 20 years out of date. The Council is currently focused on preparing a plan review required to implement the National Policy Statement for Freshwater, which requires councils to adopt a range of measures to improve water quality in the region. However, a broader review of the plan is required to ensure it is consistent with the recommendations of this report, and any revisions to the NES-PF that may eventuate from the current review, and from the recommendations we make further on in this report. Changes are also required to the TRMP to implement a number of specific controls, particularly policies and land-use rules to control the types of activities that can occur on extreme erosion risk ('purple-zone') land, introducing more stringent rules related to riparian management on farms and in plantation forests, and managing the currently uncontrolled proliferation of permanent exotic monoculture forests established for carbon mining. The TRMP is discussed further in the section on Leadership and Governance later in this appendix.

We heard some concerns about the regulatory environment related to water that was impeding the establishment of high-value horticulture further up the coast. The issue was that the first-infirst-served water allocation principle of the Resource Management Act 1991 meant that there was no further water available to allocate in some areas. Given horticulture can have high-water needs, the inability to access water for irrigation was yet another barrier to land-use intensification, improved economic return, and the flow-on effects to the local community by way of jobs and spending in the local economy. We are aware that resource management reforms are considering changes to the first-in-first-served allocation principle, and we encourage a resolution that will remove that barrier for communities on the Coast.

Legal frameworks to recognise the Waipaoa and Waiapu Rivers

The iwi and hapu of the Turanga area (Rongowhakaata including Nga Uri o Te Kooti Rikirangi, Ngai Tamanuhiri, and Te Aitanga a Mahaki, Te Whanau a Kai and Nga Ariki Kaiputahi) describe ancestral and customary connections with the Waipaoa River.⁹⁴ Rongowhakaata Iwi Trust⁹⁵ spoke deeply about their connection to Te Arai and the Waipaoa River, and their relationship to their

⁹⁴ 'Historical Account', Attachment 2, Agreement in Principle for the Settlement of the Historical Claims of Tūranganui-a-Kiwa, 29 August 2008.

⁹⁵ Rongowhakaata Iwi Trust Filenote of meeting with Ministerial inquiry Panel.

whenua and wetlands. Pakowhai⁹⁶ Incorporation talked about their whenua, which sustains the people, from the hills down into Te Wherowhero. Mahaki Mahinga Kai, spoke ardently about their work to restore the awa and eradicate invasive and exotic fish. We heard from all of the Turanga iwi, the disheartening quality and health of their waters, and the degradation of the Waipaoa river. The Waimata catchment is in the same state of agony, with pockets of our communities leading much of this work, on their own.

The Waiapu River and its tributaries have been recognised as 'central to Ngati Porou's spiritual identity'.⁹⁷ The community emphasised this and the impact of erosion on the health and mauri of their rivers. As part of the Ngati Porou settlement, Te Runanganui a Ngati Porou, Ministry of Primary Industries and Gisborne District Council established a working partnership for parties to exercise their individual responsibilities for the restoration of the Waiapu Catchment.⁹⁸ This acknowledged deforestation, exclusion of Ngati Porou from historical erosion control and catchment management decision-making, and the resulting damage to Ngati Porou cultural, social and economic resources. Additionally there is a joint management agreement over the Waiapu Catchment, enabling Council and Te Runanganui o Ngati Porou to jointly carry out the functions and duties under S36B of the Resource Management Act and other legislation relating to all land and water resources within or affecting the Waiapu catchment. However, these arrangements have not yet achieved the outcomes required to improve the health and wellbeing of the Waiapu River.

Legislation that provides tailor-made legal frameworks for the restoration and maintenance of the environmental health of the Waiapu and Waipaoa Rivers could considerably speed improvements to the health and wellbeing of the rivers. This could include conferring legal personality on the rivers, in conjunction with establishing a governance entity empowered and resourced to act and speak on the rivers' behalf.

Bespoke legal frameworks already exist in New Zealand and may inform how similar approaches could be developed for the Waiapu and Waipaoa rivers. Te Pa Auroa na Te Awa Tupua provides a legal framework for the Whanganui River, which is a relevant consideration for any person making statutory decisions relating to the river or activities in the catchment involving the river.⁹⁹ Te Pa Auroa includes legal recognition of the river (as an indivisible and living whole and a legal person), enabling appointees to speak on the river's behalf, and provision for strategy development, implementation and funding. The Waikato/Waipa River co-governance and co-management arrangements may also provide a precedent. Those mechanisms enable the Crown and river iwi to make governance decisions on behalf of the wellbeing of the rivers and include the creation of an independent statutory body, with functions including oversight of the vision

⁹⁶ Ngai Tāmanuhiri Filenote of meeting with Ministerial inquiry Panel.

⁹⁷ Ngati Porou and Te Runanganui o Ngati Porou Trustee Limited as trustee of Te Runanganui o Ngati Porou and the Crown, Deed of Settlement of Historical Claim, 2010, Ngāti Porou Deed of Settlement 22 Dec 2010, p. 26.

⁹⁸ Te Rūnanganui o Ngāti Porou, Ministry for Primary Industries, Gisborne District Council, , Memorandum of Understanding in relation to the Restoration of the Waiapu Catchment, Memorandum of Understanding in relation to the Restoration of the Waiapu Catchment (mpi.govt.nz), retrieved May 2023.

⁹⁹ New Zealand Government, Whanganui Iwi (Whanganui River) Deed of Settlement Summary, retrieved May 2023.

and strategy and trustee for funding. The vision and strategy is part of the Waikato Regional Policy Statement and must be 'given effect to' in Resource Management Act planning documents.

We think legislation that recognises the inherent mana and kaitiaki responsibilities of iwi and hapu over respective catchments will considerably speed up improvement in the health and wellbeing of both rivers. We think this will be helpful to achieve Te Mana o te Wai.

Long-term funding for long-term environmental care

In addition to the need for greater support for GDC (and Wairoa/HBRC) to undertake there environmental management functions, there also a strong case for greater/ongoing support for community and iwi led initiatives. The Government's investment in Jobs for Nature has seen almost \$90million invested in up to 33 projects in Tairawhiti and Waiora. These include just under 300 FTEs undertaking freshwater and biodiversity restoration, weed and pest control and building capability and capacity to make decisions for Te Mana o te Wai and in the freshwater management system. This is having a significant environmental and community impact in the region. This cohort of kaimahi are a strong foundation for further nature-based work and capability for other environmental management action. For example, Ngati Pahauwera shared: "Through Jobs for Nature/Te Mana o te Wai Ngati Pahauwera has capacity to protect waterways and is planning for more riparian plantings."¹⁰⁰

However, this funding is due to end in 2024, and there is real risk in short-term environmental projects that actually need longer-term support to achieve the environmental and people outcomes required.

¹⁰⁰ Ngati Pahauwera Development Trust, Filenote of meeting with Ministerial inquiry Panel, 16 March 2023.

Forestry

The issues

More than 100,000 hectares or around 55 per cent of the production forests in Tairawhiti¹⁰¹ are located on some of the most fragile and challenging soils in the world¹⁰². No other region in New Zealand has such a large area of plantation forests on very-high-erosion-risk soils. In fact, the closest region is the neighbouring Hawke's Bay, where fewer than 10,000 hectares or around 6 per cent of the region's production forests are located on soils with a very-high-erosion risk.

Many of the forests in Tairawhiti were initially planted to control severe erosion. Harvesting these areas removes the canopy and root protection, once again exposing the hyper-fragile land to erosion. There is evidence to suggest that landslide densities are much higher in recently harvested pine forests than on pasture.¹⁰³ In that study, of the Uawa catchment following the 2018 severe weather, about half of the landslides on recently harvested pine forest were associated with forestry infrastructure such as haul roads, haul sites, and landings. These types of infrastructure were also associated with around a third of landslides in established forests.

Put simply, the current forestry practices in Tairawhiti are not compatible with the highly erodible soils present in much of the region. Even if local forestry practices were to adopt international best practice, there is still likely to be some land where unacceptable levels of soil loss and unavoidable debris flows will occur. The inherent geological risk of this area is well documented, but that knowledge has not translated into land use or forestry practices that mitigate that risk.¹⁰⁴

An added issue for Tairawhiti is harvest residues. The Tairawhiti region has a lot of slash left on site compared to other regions, as there are no market opportunities to utilise harvest residues and pulp logs.¹⁰⁵ Being meticulous with removing harvest residue simply adds cost with no return. Typically, a regulator would counterbalance the lack of a financial incentive to act responsibly by applying a robust precautionary regulatory regime coupled with strong monitoring and prompt enforcement for breaches. In this case, those counter-balancing features have been insufficient to prevent the harm to the community from occurring.

¹⁰¹ Ministry for Primary Industries, Erosion Susceptibility Classification by class & area of plantation forestry, Wellington: Ministry for Primary Industries, retrieved May 2023.

¹⁰² Manaaki Whenua Landcare Research, National Organisation,

¹⁰³ BJ. Rosser BJ, S. Dellow, S Ashraf 2019, . GNS Science Consultancy Report, Envirolink. Assessment of the use of differencing satellite imagery as a tool for quantifying landslide impacts from significant storms – a case study in the Uawa catchment, Tolaga Bay. GNS Science Consultancy Report, Envirolink.

¹⁰⁴ Allen + Clarke Summary of Submissions report.

¹⁰⁵ Eastland Wood Council submission NGO, Submission on the Ministerial Inquiry into Land Use.

What we heard from the community

The forest industry has lost its social licence to operate

The forestry industry has lost its social licence to operate in the East Coast¹⁰⁶. Communities of Tairawhiti and Wairoa want to see urgent change to future land-use practice to prevent damage to the taiao and the people.

"With the increasing frequency and intensity of severe weather events and social trust in the forestry industry tenuous, it is essential that this inquiry marks a clear turning point for the future of forestry in Aotearoa New Zealand."¹⁰⁷

We heard from communities across the Coast that there has been a history of bad forestry practice. With a common theme of pines before people, the Tokomaru Bay community noted with frustration that logging functions were able to restart before the community access was restored . 108

There was a broad feeling across the community hui that forestry was no longer welcome in the region. While people recognised the benefits that had provided for them individually – "for 45 years, pine forests put bread and butter on the table"¹⁰⁹ – they also felt that the whenua was now being hurt. Given much of the forestry in Tairawhiti is on Maori-owned land, but under long-term leases, some felt they no longer had control over their land, and the effects that it was causing on them.

Many people felt the rules were too permissive, weren't monitored closely enough nor enforced. Some people blamed the Council for this¹¹⁰, while another commented that GDC was not adequately funded to carry out their enforcement functions under the Resource Management Act.

Harvesting practices must adapt to the fragile landscape

A few people wanted an outright ban on forestry in the region. However, we more commonly heard that forestry practices needed to improve, particularly on the more vulnerable land.

Many people told us that lower-impact harvesting methods should be adopted for steep slopes and erodible areas, with a transition away from clear felling. We heard recommendations for harvesting over longer timeframes to reduce the vulnerability of slopes; people suggested this could be done through selective harvesting, coupe (mosaic) harvesting, or strip harvesting.

¹⁰⁶ Eastland Wood Council submission NGO, Submission on the Ministerial Inquiry into Land Use, p. 12.

¹⁰⁷ Environmental Defence Society and Pure Advantage, NGO, Submission on the Ministerial Inquiry into Land Use.

¹⁰⁸ Tokomaru Bay file notes.

¹⁰⁹ Attendee at Tologa Bay Hui 22 March, file note p. 5.

¹¹⁰ Allen + Clarke Summary of Submissions report.

We also heard that onsite slash control needed to be stricter. A common suggestion was that forestry companies should be required to remove all slash from the hillside or from the site entirely. Other suggestions included:

- requiring stable skid sites for slash storage
- disposing of woody debris on-site
- increasing the size of riparian margins (unharvested areas around creeks).

Riparian zones are needed to protect our waterways

Many submitters said the councils and forestry companies need to be more actively involved in managing rivers and streams and in managing riparian areas and weeds, in order to enhance the free flow of water and debris and to allow more natural spreading of rivers and ensure the health of the ecosystem.

"Harvesting in riparian zones exposes these areas to increased erosion risk for a period of time. Riparian vegetation may also act as a filter, preventing the movement of materials into the watercourse. Future management could require that vegetation in the riparian area should be under permanent forest cover."¹¹¹

Detailed findings

Social license

Many in the community have had enough of the debris associated with pine forests ending up in rivers, on coasts, and spread across their land. They are demanding change. Current practice is not good enough to protect the community.

A reset for regulatory controls on forestry

The regulatory system has failed miserably to prevent predictable and significant off-site effects arising from forestry land uses in the Tairawhiti region. The NES-PF is too permissive, the Council plan is out of date, resource consents have been ineffective, and compliance monitoring activities have been insufficient for the scale of the task at hand (refer to Leadership and Governance). Prosecutions for poor performance have been made, but have been after the fact, and only once the community have already had to suffer the consequences of the offending. Collectively, the regulatory system has failed to prevent the harm from woody debris and sediment from occurring in the first place.

¹¹¹ Scion New Zealand Crown Agency, Submission on the Ministerial Inquiry into Land Use.

We consider a fundamental reset of the national and regional regulatory system is required.

Immediate harvesting restrictions

In our view, there needs to be an immediate halt to wide-scale harvesting in the Tairawhiti and Wairoa districts. With more than 55 per cent of the region's forests on soils with very-high-erosion susceptibility, the clearance of large areas of forest at one time is simply untenable. We propose the following controls¹¹² to improve practice and outcomes.

• Adopt staged coupe harvesting and replanting.

Overall, we recommend that staged harvesting and replanting be adopted for all forestry land on red and orange zones in Tairawhiti and Wairoa. The harvesting stages should not exceed 5 per cent of the catchment in any given year, allowing 100 per cent of the catchment to be harvested over a 20-year period. The aim of staged harvesting is to spread the harvest coupes across the landscape, rather than concentrating them all in one sub catchment. We therefore suggest the 5 per cent threshold should be applied to catchments of up to around 5,000 hectares, meaning larger catchments would need to be divided into smaller 'management catchments' where the 5 per cent rule then applies. This is to avoid a situation where a 50,000-hectare catchment ends up with 2,500 hectares of coupe harvesting occurring in one sub-catchment, which greatly increases the risk again. The net effect of this recommendation would be a requirement to 'allocate' harvest windows between different forestry operators within a catchment to schedule harvesting activities consistently each year.

• Impose maximum coupe sizes and minimum green-up periods.

Our view is that coupe harvesting at a compartment or sub-compartment level offers a good balance between maintaining economically viable harvesting areas, while minimising the risk of erosion, landslides and woody debris mobilisation. The Panel proposes that a coupe size of up to approximately 40 hectares is appropriate, noting that stands or settings within a compartment are typically smaller than this.

The advantages of coupe harvesting are realised by spreading harvesting coupes evenly around the catchment, so existing mature forest around a harvested area offers soil stability, debris capture and runoff mitigation. For this reason, we are proposing that stands or settings adjacent to a harvested coupe must not themselves be harvested for at least five years after a coupe has been cut and replanted. This allows sufficient time for replanted trees to re-establish and provide some land stability and mitigation for debris mobilisation.

• Commence a transition away from the riskiest land.

¹¹² In addition to the submissions from the community and forestry experts, these recommendations are based on the observations of the Panel, and the expertise of Mr Matt McCloy in particular.
We need to identify and start transitioning our plantation forests away from the most erosion-prone land. In the land-use section of this report, we have already recommended that a fifth erosion category be added to the ESC, representing extreme erosion susceptibility land, or a 'purple zone'. We propose that this land is transitioned into permanent forest cover. We note that this land may currently be in plantation forestry, approaching harvest. We think that some of this land may be too vulnerable to be clear felled, even using 40-hectare coupes. However, it can't be abandoned either. Leaving the current exotic forest to continue to grow is likely to result in the trees getting too heavy for the thin soils, and eventually causing landslides. The process to transition this land to permanent forest will likely require the staged removal of the exotic trees over time, coupled with pest and weed control required to allow the new vegetation to take hold. These areas should be protected from damage (associated with harvesting in the adjacent blocks) that risks further erosion. The removal of the plantation trees will need to be managed via a specific harvest management plan that sets out how the transition away from plantation forest will be achieved.

• Harvest plans to require review and approval for adequacy before an activity can be considered as permitted under the NES-PF. Currently harvest plans must be submitted in order to gain permitted activity status. However, there is no ability to deny permitted activity status if the harvest plan is not considered to be adequate for managing the specific risks of the harvest location. We think this is unhelpful and limits the ability of a regulator to fulfil its core purpose, which is to minimise the risk of harm to the community.

Stricter forestry slash management regimes across the region

We consider that slash management practices and regulation need immediate strengthening to require much stronger harvest residue control, particularly in red zones with very high erosion susceptibility. The current practice of leaving slash on the cutover slopes must change, to the point that harvest practices are designed to minimise slash deposition, and slash generated on landings is appropriately dealt with.

We can incentivise forestry companies to collect more slash if we can create a financial incentive to do so. In the Financial drivers and incentives section below, we discuss the recently announced Wood Processing Growth fund, and the potential to investigate creating economically viable uses for the waste wood locally, which would reduce the transport distance (and therefore pressure on the roads), provide a value for what is currently a waste product, and potentially provide jobs for local people, as well as economic contribution to the local economy.

Review of the NES-PF and the TRMP

The tighter controls on harvesting proposed above will require that changes are made to both the NES-PF and the TRMP.

The NES-PF and the TRMP must have consequential changes that introduce:

- The restrictions that we set out related to forestry management above
- Prohibit planting of future plantation forests on purple zones.
- Strong controls on transition from existing plantation forest to more appropriate permanent forest.

Other regulatory changes

A common theme among submitters was the need for a stronger compliance monitoring regime. We have not made any recommendations for increased penalties as some submitters requested because we are aware that changes to compliance monitoring and enforcement (CME) are already underway in the Governments work programme. There is a significant strengthening of the CME regime proposed in the draft NBE Bill currently before parliament. These changes propose to increase the maximum fines from the current \$600k under the RMA, to \$10M under the RMA. The NBE bill also proposes a range of new enforcement powers including enforceable undertakings, an improved ability to require bonds or liability insurance, the ability to cancel consents for poor performance, and a civil penalty regime. In addition, the Minister for the Environment has also recently consulted on increasing resource management infringement fines significantly (from a maximum of \$1000 up to a maximum of \$4000). We understand that government intends to enacted the new NBA, and introduce the increases to infringement fines before the end of the current parliamentary term. Once in place, these amended fines and new tools will add significantly to the arsenal of powers available for the Council to use.

However, to use the CME tools, the Council still needs to undertake its monitoring and enforcement role effectively. In the Governance and Leadership section of this report, we have proposed that the RMA commissioner to be appointed at Gisborne District Council would review the CME strategy and resources of the Council to ensure it is fit for purpose and effective. These resources and capability need to be proportional to the huge land use regulatory challenge faced by GDC and at least comparable with what other regions in NZ are investing. It will, in the Panel's view, require government investment and needs to ensure that staff are appropriately trained and resourced to undertake both compliance monitoring, and enforcement when noncompliance is detected¹¹³.

Overseas Investment Office (OIO) decisions

We received many comments from the community about the foreign ownership of many of the forestry companies that operate in the region, and their focus on the financial returns of their investment over the well-being of the local community. We think this is worth investigating further. We think there is an opportunity to review the criteria used to consider OIO applications to ensure the true value of the benefits and costs are considered in full. We also think that applications that are longer term (at least the length of one rotation) and that include investment in processing plants, should be prioritised. In fact, we are concerned about the risk of short-term

¹¹³ Allen + Clarke Summary of Submissions report.

investments in carbon forests, which have the potential to become a future liability for the local community if the forest was to be abandoned in future by overseas owners.

Another issue that was brought to our attention was some recent OIO decisions. We understand that the OIO decided not to carry over the requirement to build a processing plan as a condition of the purchase of Hikurangi Forest Farms. This seemed to us to have been an excellent opportunity to develop local markets for wood processing, which would have significant positive flow on effects for the local community.

Forest stewardship certification

We were appalled to hear that the three FSC certified forestry companies that were convicted of environmental offending following the 2018 severe weather events still have their certification. It seems extraordinary to us that a stewardship certification such as FSC, which includes a considerable environmental stewardship element, would not be withdrawn following a conviction for a criminal environmental offence, and the wide spread environmental damage over the last few years. In our view this significantly undermines the credibility of the certification system. We acknowledge that the FSC is an international not for profit certification system, we still think this situation requires an explanation. We have recommended the Minister write to the Council expressing his concerns and seeking an explanation from the Council.

Whenua Maori

The issues

When we speak of Tairawhiti, and in particular the East Coast, we are speaking of a large portion of whenua Maori, Maori landowners and Maori communities. For decades these Maori landowners have been at the beck and call of successive governments, they have given land for development and they have participated in government policies as prescribed. With very few resources but large tracts of whenua Maori, it is imperative that government ensures that the journey to biodiversity includes these landowners.

Whenua Maori is a taonga tuku iho, of special significance to Māori passed from generation to generation. An interest in whenua Māori is also considered a tangible whakapapa (genealogical) link for owners connecting their past and present, and to whanau, hapu and iwi, whether they live on or close to the land or not.¹¹⁴ The preamble of Te Ture Whenua Maori Act 1993 (TTWMA), incorporates two principles of **retention** of land in the hands of its owners, to **facilitate** the occupation, development, and utilisation of that land. Furthermore, TTWMA recognises the importance of the Maori Land Court to uphold the legislation with resourced mechanisms to achieve the implementation of these principles.

TTWMA was a watershed moment in the history of Maori land law, taking two decades to pass into legislation by the (then) National government in 1993, led by the Honourable Doug Kidd, who was the Minister of Māori Affairs at the time. It marked the first time that retention, rather than alienation, was a central objective of the legislation governing Maori freehold land.¹¹⁵ There were two main purposes in passing the nineteenth-century native land laws; one was to give Maori land a form of title thus making it usable in the colonial economy and the other was to facilitate large-scale transfer from Maori to settlers or the Crown.¹¹⁶ A Supreme Court judge in 1873 stated that the legislation impacted hapu like breaking a band holding a bundle of sticks together, enabling each individual stick to be snapped one by one.¹¹⁷ The Waitangi Tribunal¹¹⁸ notes the Crown did not alter the fundamental purpose of the native land laws until the 1950s, thus taking advantage of it to obtain as much Māori land as possible, and as cheaply as possible during this time.

It is no wonder that the land tenure system continues to plague Maori landowners in their endeavours to facilitate and utilise their whenua and create opportunities, that would normally come from individualised property title, with such a prolonged history of alienation. In addition to

¹¹⁴ Maori Land Court, 2022, Your Maori Land, retrieved May 2023.

¹¹⁵ Waitangi Tribunal, 1993, *He Kura Whenua Ka Rokohanga: A Report on Claims about the Reform of Te Ture Whenua Māori Act 1993, Wellington: Waitangi Tribunal.*

¹¹⁶ M.Courtney, 2022, What role does the Māori Land Court have in modern Aotearoa New Zealand's legal system? (Thesis, Master of Laws), University of Otago, http://hdl.handle.net/10523/12965

¹¹⁷ Waitangi Tribunal, 1993, He Kura Whenua Ka Rokohanga: A Report on Claims about the Reform of Te Ture Whenua Māori Act 1993, Wellington: Waitangi Tribunal.

¹¹⁸ Waitangi Tribunal, He Kura Whenua Ka Rokohanga: A Report on Claims about the Reform of Te Ture Whenua Māori Act 1993.

how we got here, Maori landowners in Wairoa and Tairawhiti have the added issue of the relatively small size of Maori land blocks and their unique and complex soils. Submitters highlighted that a proportion of Maori land is underutilised, fragmented due to multiple ownership and lack of succession, landlocked, highly erosion-prone, ungoverned, has limited access to capital, unfairly treated by the New Zealand Emissions Trading Scheme, has ongoing issues with the rating system, and has limited access to reliable infrastructure.¹¹⁹ This means that Maori land does not have the same opportunities as other land types.¹²⁰

There are extensive reports and findings that delve into much of the history of whenua Maori and the barriers and limitations that Maori landowners face, which we need not reiterate here.

What we heard

Landowners actively engaged across the entire process of the Inquiry. They were invited to stakeholder hui, they participated in community hui, they attended the drop-in sessions at EIT and they made submissions. We heard the thoughts of many Maori landowners, each of their issues, challenges, barriers, and opportunities consistent. It is fair to say that Maori landowners were well represented through their individual land blocks, trusts, incorporations, iwi and their asset holding companies; they were trustees, committee members, landowners, and beneficiaries. Some were new to whenua Maori, while others were pivotal in the crafting of TTWMA; we gained immensely from their participation in our engagement.

We were disheartened (although unsurprised) to hear and read consistently from Maori landowners about issues that have been enduring barriers since the Native Lands Act 1862. In Te Araroa, we heard that Maori landowners have consistently been the first to follow government policies: when the government has said do something, they have done so. Maori landowners need to be well resourced if they are to continue to do this in the future.¹²¹ Maori landowners are pivotal in the reshaping of a biodiverse Aotearoa New Zealand; let's start in Tairawhiti with a mosaic of high-value land-use. The Government must work to ensure that policies and legislation give more attention to how they co-design that mosaic with Maori landowners.

We heard from Maori landowners and their trustees that the lack of efficiency from the Maori Land Court was a barrier; Trusts are still waiting for new trustees to be appointed many months after the Court hearing. This was a consistent theme across engagements, with the lack of resources and staffing the main sticking point. The administration of Maori land has not received the necessary resources, techniques and technology that have been applied to general freehold tenure, and accordingly its use and enjoyment by its beneficial owners has been, and continues to

¹¹⁹ Antoine Coffin, 2016, Barriers to the Development of Maori Freehold Land, prepared for the CSG Māori Land Sub-Group 2016, Coffin-A-2016.-Barriers-to-the-Development-of-Maori-Freehold-Land.-Prepared-for-the-Maori-land-subgroup.-Provided-to-CSG-at-workshop-25-4-5-April-2016.-Document-3751561.pdf (waikatoregion.govt.nz), retrieved May 2023.

¹²⁰ Antoine Coffin, Barriers to the Development of Maori Freehold Land, prepared for the CSG Māori Land Sub-Group 2016, Coffin-A-2016.-Barriers-to-the-Development-of-Maori-Freehold-Land.-.

¹²¹ Te Araroa Community Hui.

be, significantly disadvantaged.¹²² Proper resourcing is required for the Maori Land Court registry to support landowners to achieve the principles of TTWMA.

The Panel heard from Maori landowners, and in some cases the managers of their farms, that Maori land will be in Maori ownership forever. There are no options to sell whenua Maori, and because of this they do not reap the benefits like other landowners who can, and do, sell their land.¹²³ There needs to be assistance and funding support for Maori landowners who remain, restore and develop their whenua into the environment the government seeks.¹²⁴ We heard from another Maori incorporation who were pivotal in the restoration of the main water supply into Gisborne.¹²⁵ During the immediate aftermath of Cyclone Gabrielle, the Incorporation supported contractors to repair the water pipes which traverse their farm. They, like many other Maori landowners, continue to provide their whenua for public use. In some cases this has been through a coordinated process, however in the majority of cases this has been through the compulsory acquisition process through the Public Works Act 1981. Based on several examples of development for the social good, amplified by Cyclone Gabrielle, we would be remiss if we didn't make reference to potential recovery projects that will certainly lean on Maori landowners and into their whenua. The Government must take this into account when respective agencies are developing plans for recovery, particularly on SH35.

Detailed findings

Whenua Maori amounts to approximately 5 per cent of land in Aotearoa New Zealand¹²⁶ of which 234,290 hectares is in Tairawhiti and 53,235 hectares in Wairoa districts, most of which is in landuse classes 6, 7 and 8. Options for this type of land are narrow, making it suitable for forestry and some livestock farming but when added to other deficiencies such as unreliable infrastructure and lack of investment capital, it becomes more economic and less burdensome to simply lease whenua Maori out.¹²⁷ This is not an unfamiliar state of whenua Maori development and underutilisation in Tairawhiti. Government agencies, particularly Te Puni Kokiri, Ministry for Primary Industries and Ministry for the Environment have collaborated with Maori land owners. Funding from each of these agencies has supported positive initiatives for land blocks within Tairawhiti and Wairoa through the production of feasibility reports, with some ad hoc capital investment contributions.¹²⁸ We heard from many of these landowners and incorporations during our engagements and they made submissions to this point. What has been the issue, is that

¹²² New Zealand Institute of Surveyors, 2009, Maori Land Committee Report, Attachment (surveyspatialnz.org), retrieved May 2023.

¹²³ Gisborne engagement hui, Waikanae Surf Club.

¹²⁴ Tokomaru Bay engagement hui, Zoom hui.

¹²⁵ Maraetaha Incorporation – Ngai Tamanuhiri iwi engagement

¹²⁶ https://www.tupu.nz/en/tuhono/about-maori-land-in-new-zealand/what-is-maori-land Tupu.NZ, What is Māori land, retrieved May 2023.

¹²⁷ Ministry for the Environment, 2021, Te hau mārohi ki anamata Transitioning to a low-emissions and climateresilient future, Emissions-reduction-plan-discussion-document.pdf (environment.govt.nz), retrieved May 2023.

¹²⁸ Provincial Growth Fund Tairawhiti/Wairoa

funding ceases at the feasibility point, and landowners are left with investment-ready projects but no capital investment to enable them. What investment there has been by government has been episodic, temporary and in many cases reactive. There are mechanisms that could encourage more sustainable co-investment opportunities, from both the private and philanthropic sectors, from iwi and the public, alongside the government. These need to be encouraged with an initial upfront investment of funding from the government, which will help to be the catalyst for others. A recent Te Puni Kokiri programme which provided capital investment into Whenua Maori, Te Ringa Hapai, was over-subscribed with investment ready projects still waiting to be funded.

In order for Maori landowners to develop and utilise their whenua, they must get sign-off from the Maori Land Court. In order to do this in a efficient manner, the Maori Land Court must be fully resourced and staffed appropriately. Without them, Maori landowners will continue to be excluded from participating in any type of land development to the degree that they aspire to. With a wealth of institutional knowledge within the Maori Land Court registry, it is a privilege that Maori landowners, government agencies and the public are still able to readily seek advice from their local Maori land experts of the Court. As part of the Ministry of Justice, Maori Land Court resources are required that directly support them, rather than those resources being diverted elsewhere in the Ministry. The sooner that this happens, the sooner Maori landowners can reap those benefits and advance adequately and efficiently on the road to biodiversity and economic gain.

We have heard direct from landowners and trustees; their issues were more illuminated than their opportunities, although we know those opportunities exist. They are innovative, they include biodiverse responses to their whenua, they take on a whole-of-community approach and they are high value. The government must now respond to those opportunities and the vision that Maori landowners have – to change the present and the future.

Economic incentives and financial constraints

The issues

Financial and government incentives have driven land use change in Tairawhiti and Wairoa for many decades, chasing a cycle of export-driven boom and bust industries. Indigenous forests were developed into farmland for livestock, with the support of Government incentives from around the late 1960s.¹²⁹ These came to an end around 1984 when the policies became unaffordable.¹³⁰ Between 1992 and 1995, over 100,000 hectares of exotic forestry¹³¹ (predominantly radiata pine) was planted in Tairawhiti and Wairoa for erosion control and in response to favourable forestry markets.

These forests are now reaching harvest age and although financial incentives exist to support forestry, the East Coast region lacks the wood processing infrastructure to elevate the industry from an export-driven market to a more sustainable and circular bioeconomy. The East Coast region has limited value-add processing facilities to enable use of harvest residues, and the majority of logs are sold to China.¹³²

It is clear that the way we use land in the region, and the economic drivers that have influenced land use from the late 1800's, requires a reset, with better incentives that return high value to the community in line with their sustainability goals.

Land use change will be expensive for landowners in the steeper country that makes up more than 70 per cent of Tairawhiti– whether it is changing from livestock farming to forestry, or transitioning existing radiata pine forests to more resilient vegetative cover that may be permanent or indigenous or both.¹³³ Natural regeneration may be a cheaper alternative to afforestation but establishing a canopy can be very slow and only works in optimal locations.

Recently, with rising carbon prices and changes to the NZ ETS to incentivise afforestation, radiata pine became more attractive to private investors as the "tree of choice" in Tairawhiti. The popularity of pine is due to the lower costs of forest establishment, faster growth rates, and higher carbon sequestration.¹³⁴ The economic returns available in the ETS are highest for exotic

¹²⁹ N. Gow, 2007, New Zealand Government's Involvement in Agriculture: The Road to Non-Sustainability, IFMA 16 Theme 1 – The role of agriculture in the rural economy, retrieved May 2023.

¹³⁰ Convention on Biological Diversity, New Zealand. Removal of agricultural and fisheries subsidies, retrieved May 2023.

¹³¹ Ministry for Primary Industries, 2021, Wood Availability Forecast – East Coast 2021, Wellington: Ministry for Primary Industries; M. Marden, 012, . New Zealand Geographer. 68(1), 24–35. Effectiveness of reforestation in erosion mitigation and implications for future sediment yields, East Coast catchments, New Zealand: A review. New Zealand Geographer. 68(1), 24–35, retrieved May 2023.

¹³² World Bank, 2020, New Zealand Wood Exports by country, World Bank, Washington, D.C, retrieved May 2023.

¹³³ Te Uru Rakau New Zealand Forestry Service, 2022, *Review of Actual Forest Restoration Costs, 2021,* Wellington: Ministry for Primary Industries, retrieved May 2023.

¹³⁴ Pine trees sequester carbon at nearly double the rate of a native forest.

species, as these are fast-growing relative to indigenous species and easy to realise at scale due to lower costs of establishment. The upfront costs of establishing a forest relative to the rate of return influence what type of forest is planted, who has kaitiakitanga of it, and also determines who benefits from those forests over a longer period of time. For indigenous forests, establishment costs are even higher and returns even longer term and more uncertain than radiata pine.¹³⁵

We need to adapt economic incentives and drivers so they are not taking a one-size fits all approach. Submitters expressed a clear community desire towards restoring erodible land to indigenous forests for catchment protection and recreation¹³⁶. Restoration initiatives should consider the barriers that Maori landowners may experience around access to resources and capital, to ensure implementation is successful for the significant amount of Maori land that is erosion prone in the region.

The upfront establishment costs are one of the main barriers to investment in indigenous afforestation for all landowners, and indigenous species simply do not sequester carbon as quickly as exotics ¹³⁷. Many Maori landowners in particular are unable to raise capital for afforestation,¹³⁸ even with reimbursement through grants: upfront costs for are too high, and Maori landowners are generally not able to borrow from commercial banks.¹³⁹

Registering with the ETS is often considered too risky and onerous for some landowners, including Maori landowners.¹⁴⁰ The lag in revenue from carbon credits (especially on slower growing trees) is also a critical gap for all landowners that needs to be addressed to improve the incentives associated with afforestation. As well, nearly half of Maori land in the area is ineligible for the NZ ETS,¹⁴¹ so solutions around economic levers that drive good land-use decisions on pre-1990 planted forest land as well as opportunities for pre-1990 natural forest should also be considered.

There is significant scope and potential for enhancing investment in wood processing on the East Coast, as most logs are destined for the raw log market. This means there are limited opportunities for landowners in the region to tap into the values generated from the emerging

¹³⁵ Ministry for Primary Industries, 2022, Carbon tables for calculating carbon, retrieved May 2023.

¹³⁶ Ministry for Primary Industries, 2013, Target Land and Land Use Capability Classes, Wellington: Ministry for Primary Industries, retrieved May 2023.

¹³⁷ S. Weaver, 2022, Carbon forestry Investment barriers to indigenous forest climate solutions. New Zealand Journal of Forestry, 67(1): 3–11, retrieved May 2023.

¹³⁸ Pia Pohatu, Sophie O'Brien and Leo Mercer December, 2020, Challenges and opportunities with native forestry on Maori land, retrieved May 2023.

¹³⁹ This relates to the ownership structure and the inability for banks to be able to sell Māori land if a landowner falls behind in payments.

¹⁴⁰ L. Mercer, 2021,., PhD thesis. Victoria University of Wellington. Beyond the dollar: Carbon farming and its alternatives for Tairāwhiti Māori landowners, PhD thesis, Victoria University of Wellington, retrieved May 2023.

¹⁴¹ Data compiled for this report is from the Land-Use Map and the Maori Land Court. A total of 167,027 hectares of a total land area of 364,159 is not eligible and a further 26,326 hectares is potentially ineligible due to the presence of woody biomass in 1990.

bioeconomy in wood residues, or primary processing and secondary processing of a more refined timber products. The establishment of infrastructure to support this, as well as the processing facilities themselves, will require significant investment and deliberate shifting of resources to this region. This will support a more sustainable and value-driven model of the forestry industry we know in the East Coast.

What we heard from the community

Communities were clear they wanted a change to the incentives that have encouraged land to be swallowed up in radiata pine, ahead of forests that are more enduring with wider better environmental and sustainability outcomes including permanent indigenous forests. In their written submission, the QEII National Trust emphasised that the current policy settings and market drivers overwhelmingly encouraged land-use conversion to exotic forestry.¹⁴² Many submitters wanted the Government to know that pine trees are not ideal for long-term carbon sequestration and wanted incentives that provided for these to be checked. Trust Tairawhiti wanted to see a moratorium on radiata pine carbon farming in the NZ ETS.¹⁴³

The Environmental Defence Society, Pure Advantage and Trust Tairawhiti¹⁴⁴ submissions emphasised the importance of indigenous forests for removing emissions at scale over time, and also identified co-benefits available in these forests in the areas of erosion control, water purification, and provision of climate regulation for the habitats of endemic flora and fauna. Currently, the contributions provided from indigenous forests are not valued and submitters wanted to see landowners rewarded for these forests, including greater incentives within the NZ ETS for indigenous forests as well as biodiversity payments to help with cashflow.¹⁴⁵ In their submission, Toha saw a direct payment for biodiversity to landowners as providing co-benefits such as: "stimulat(ing) the regional economy, while also contributing to policy objectives for climate change adaptation and biodiversity..."¹⁴⁶

Trust Tairawhiti also wanted to see better recognition of ecosystem services provided by indigenous forests, and these forests to be valued and funded at the national level:

"...a significant proportion of the carbon sequestration of ngahere will be attributed to our national emissions accounts; the benefits are felt and accounted for at a national level. Accordingly, the costs of establishing the ngahere and the ongoing maintenance of it - through effective pest management

¹⁴² Queen Elizabeth the Second Trust, national organisation, submission on the Ministerial Inquiry into Land Use, p. 3.

¹⁴³ Trust Tairawhiti submission, NGO, submission on the Ministerial Inquiry into Land Use, p. 22.

¹⁴⁴ Trust Tairawhiti submission, p. 9.

¹⁴⁵ Environmental Defence Society and Pure Advantage submission, p.38.

¹⁴⁶ Toha, national organisation, submission on the Ministerial Inquiry into Land Use, p. 10.

for instance- should be funded at a national level. In other words, the sources of funding should match where the benefits are being realised."¹⁴⁷

Mana Taiao was concerned about the impact of the value of carbon and the existing incentives for permanent exotic forests and said:

"For local communities, pest and weed ridden plantations of ageing and dying pine trees across vast parts of most catchments are the most likely legacy of this latest central government policy, conceived at a distance from the region but impacting local landscapes throughout Tairāwhiti and beyond."¹⁴⁸

Submitters were also realistic about the role of farming and forestry in the community – they clearly understood the importance of the economic contribution these industries have provided – they just wanted to see more sustainable practices and for sustainability to be better rewarded, through incentives and payments for indigenous forests especially.

For the existing radiata pine forests, submitters wanted to see better processing of logs in Tairawhiti, particularly to reduce waste.¹⁴⁹ This would improve the value of the forests by increasing the value of the residue from processing logs in Tairawhiti and from residue left on the forest floor, be converted to biofuels to support our transition to a low carbon economy.¹⁵⁰ Ngati Porou Holding Company mentioned the need for reconsidering how we invest across the value chain, in particular wood processing, and wanted to see more support for the initiatives underway in the Forestry and Wood Processing Industry Transformation Plan, especially how it relates to woody biomass.¹⁵¹

Many submitters described how for the most part, Maori landowners supported Governmentbacked policies for land use, and in many cases this did not always play out well for them. Other submitters pointed out the limitations of the NZ ETS for Maori land owners, saying that the ways in which carbon sequestration is rewarded in the NZ ETS is insufficient: Much Maori land does not meet the definition of a post-1989 forest (because it is either in mature bush, planted pre-1990 production forest, or was predominantly made up of slow growing regenerating native bush in 1990). We also heard about the barriers to the NZ ETS for Māori land owners. There was a concern that the NZ ETS is not fit for purpose for Māori landowners as forest establishment costs are high and require upfront investment.

¹⁴⁷ Trust Tairawhiti submission, p. 22.

¹⁴⁸ Mana Taiao submission, p. 14.

¹⁴⁹ Wairoa Community hui file note, 23 March 2023.

¹⁵⁰ Ngati Porou Holding Co Ltd; Mitchpine Products Ltd; Ernslaw One Ltd, industry body, submission on the Ministerial Inquiry into Land Use.

¹⁵¹ Ngati Porou Holding Co Ltd submission.

Detailed findings

Land-use patterns

As identified in the section above on land use, our land use today can be attributed to practices and incentives that have developed over the last 150 years. This has been in part shaped by Government and council policies that have supported market development and New Zealand's export-based primary production and processing. As we look to the future, we need to learn from the lessons of the past. Relying on monocultural land uses has not served Tairawhiti and Wairoa well. We need to invest in value add to support this region to transition to more sustainable economic practices.

As we consider constructing a mosaic of future land uses, we need to build and amend economic levers to drive more diversity in land use to include (refer table A1.2)

- high-value crops on suitable valley soils
- more sustainable forestry and pasture practice on erodible hill country
- the retirement of the extremely erodible land and gullies.

This can only be achieved through the right combination of planning controls, economic incentives and investment. We need to start by prioritising and rewarding indigenous afforestation and reforestation on our most erodible and vulnerable soils to prevent erosion and protect our water, and by enabling more high value land uses (such as horticulture) on suitable land. This is a greater role for MPI and GDC in promoting the uptake of such more productive land uses.

Financial instruments and the Emissions Trading Scheme

While the NZ ETS has created benefits in terms of supplementary income for production forests and permanent exotic carbon forests, it has also:

- incentivised monoculture radiata pine as the dominant species for new planting
- encouraged planting of trees in the wrong places (eg, permanent carbon forest on productive soils rather than more erodible land)
- contributed to major problems with woody debris and sediment runoff.

These harmful practices are effectively being rewarded because the NZ ETS does not link the value awarded for the carbon to the environmental management of the forest. As a rules-based market, there needs to be an ETS sanction for noncompliance within resource management legislation. Furthermore, as the major government economic instrument influencing forestry and land use in region, the NZ ETS is contributing to net carbon reduction, but it is not delivering the biodiversity or sustainability outcomes the community desires and the environment requires.

Therefore, indigenous afforestation needs to be better rewarded through the NZ ETS where this is consistent with its purpose of reducing carbon emissions. This can happen through a review of the NZ ETS that investigates the different rates of sequestration of different native plant species based on age and location and a revision of the carbon look-up tables and their contribution to carbon sequestration over a longer period. A review can also examine how land that was already had immature forest or scrub in 1990 can be awarded credits for sequestration since then. The Panel is of the view that the "additionality" argument for not including them in the ETS is difficult to justify in the Tairawhiti context, especially on landlocked Māori land where there are few if any other land use opportunities activities.

Pathways to participate in the NZ ETS could be improved for Maori landowners. Research has shown that Maori decision-makers in Tairawhiti may also lack information around the NZ ETS, including around determining eligibility and navigating the registration process. One way we can help to simplify the NZ ETS is to further extend the option for averaging to forests registered in the NZ ETS prior to 2019. Furthermore, there is opportunity to better align government grants schemes with the NZ ETS in order to reduce capital and Maori land tenure barriers by improving access to capital (eg through the issuing of green bonds or easier access to private and philanthropic investment).

To make better decisions around land use that can benefit future generations and help heal the whenua and the awa, we need to better integrate how the NZ ETS incentivises different types of forests and how other tools such as grants, plans and regulations and complementary incentives can support desirable land-use change.

Biodiversity market

The development of a New Zealand biodiversity credit scheme can work as a complementary measure to the NZ ETS (carbon) market. It would provide further financial support for landowners to derive value from their whenua as they transition to permanent indigenous forests. This can work when land is unsuitable for livestock farming or production forestry, or when indigenous forestry better matches landowner values or aspirations. These credits effectively reward land uses that deliver multiple ecosystem benefits that include soil stabilisation and carbon sequestration but extend to whole-of-ecosystem health and help to counteract the impact of climate change.

"A biodiversity credit is a tradeable unit which represents a standardised improvement to biodiversity. Through the issuance of biodiversity credits, there is an opportunity to create biodiversity markets that serve to complement and counterbalance existing markets for carbon credits."¹⁵²

Submitters wanted to see more native trees planted in the forestry landscape to support indigenous biodiversity.¹⁵³ A reward scheme can also support Maori landowners and other

¹⁵² Toha submission, pg 8

¹⁵³ Allen + Clarke Summary of Submissions report, p.41.

farmers who look to make changes to land use in response to changing climate and environmental regulations. A credit scheme can also help to support the objectives of Te Mana o Te Taiao – Aotearoa New Zealand Biodiversity Strategy 2020¹⁵⁴. Recently, a voluntary (and privatesector-led) biodiversity market was launched in New Zealand ¹⁵⁵. Internationally, the Australian Government recently consulted on developing a legislated framework to underpin a voluntary national biodiversity market.¹⁵⁶ Tairawhiti and Wairoa are well placed to pilot such a scheme in the region.

Despite our growing awareness about the crucial life giving role of biodiversity, biodiversity markets (biodiversity credits, environmental markets) are currently hamstrung by three key challenges:

- Uncertainty about the demand
- Standardising measures to confirm value
- Acknowledging the role of indigenous people and their relationship with biodiversity.¹⁵⁷

There is a local opportunity to test and respond to these international challenges by communities such as Maori landowners working with Tairawhiti based company Toha.

Toha have spent the last three years in Tairawhiti in research and development creating the platform for an incentive system for climate and nature work.¹⁵⁸ In response to Cyclone Gabrielle, East Coast Exchange, a shop front for the Toha Platform was developed.¹⁵⁹ Through the East Coast Exchange there is the potential to leverage existing Government investment to co-opt other and further investment, using new organising models to develop new nature-based infrastructure at catchment and regional scales.¹⁶⁰

"The service is designed to measure, account for, and value community contributions in a way that can stimulate funding innovation. The ECX is an open public record of the activities taken in response and recovery, resilience building and in the regeneration of the East Coast. The ECX also provides a mechanism for funding to be distributed directly to these frontline activities, enabling resources to flow based on the activities and aspirations of East Coast communities."¹⁶¹

In new and emerging markets such as this, conditions for success are integrity and inclusion to ensure "that biodiversity credits markets deliver just and equitable benefits for the stewards of

¹⁵⁴ Department of Conservation, 2020, *Te Mana o te Taiao – The Aotearoa New Zealand Biodiversity Strategy.* Wellington: Department of Conservation, retrieved May 2023.

¹⁵⁵ K. Jones, 2022, New market to help restore and protect natural ecosystems. Stuff. 6 July, 2023.

¹⁵⁶ Australian Government, 2022, A National Biodiversity Market, retrieved May 2023.

¹⁵⁷ A. Ducros, P. Steele, 2022, IIED, London Biocredits to finance nature and people: emerging lessons IIED, London

¹⁵⁸ Toha Meeting Fllenote, 21 March 2023.

¹⁵⁹ Toha submission.

¹⁶⁰ Toha Meeting Filenote.

¹⁶¹ Toha submission.

biodiversity." ¹⁶² For Maori landowners, there is an opportunity to co-design such an investment framework ensuring governance and integrity issues are assured.

Value-added wood processing

While the area of forest has grown exponentially in the post-Bola period and forest harvest volumes have doubled since 2000¹⁶³, wood processing capacity has remained roughly constant. Tairawhiti alone exports a net 96 per cent of what its forests yield as raw logs.¹⁶⁴ Currently there are over 50 million cubic metres of radiata pine in the Tairawhiti and Wairoa region, which is expected to rise by over 3.5 million cubic metres per year for the next 15 years¹⁶⁵. This scenario provides scope for establishing a wood processing and value-add opportunity for the region. It can also help support the region's recovery by providing higher-wage employment and economic diversification, while helping Aotearoa New Zealand reach its decarbonisation goals.

Establishing a local processing capacity for sawn timber or other high-value wood products that also promote the utilisation of woody biomass will add value to the existing forests. This will support land and forest owners to meet the costs of a more sustainable harvest model. As the Government, forestry and wood processing industry and organisations that represent Maori and workers have developed and the Government has committed funding to Te Ara Whakahou-Ahumahi Ngahere – the Forestry and Wood Processing Industry Transformation Plan, we see this as an opportunity to consider Tairawhiti as a priority region for investment under this funding stream.

Furthermore, there is a strong linkage to the discussion in the Infrastructure chapter about the need for more investment in resilient infrastructure, including the "blue highway".

¹⁶² World Economic Forum, 2022, Biodiversity Credits: Unlocking Financial Markets for Nature-Positive Outcomes Briefing paper September 2022 retrieved May 2023.

¹⁶³ Ministry for Primary Industries, 2022, Forestry and Wood Processing Industry Transformation Plan, Wellington: Ministry for Primary Industries, p. 40, retrieved May 2023.

¹⁶⁴ Trust Tairawhiti, 2020, Wood Processing in Tairawhiti, Gisborne, Tairawhiti Trust, p. 9. retrieved May 2023.

¹⁶⁵ Trust Tairawhiti, Wood Processing in Tairawhiti, p. 15.

People and transition

The issues

Our current and former land uses in the region have put food on the tables of many Tairawhiti whanau across multiple generations. However, the impact of land use in the region has also had dire impacts on local communities as evidenced by the recent severe weather events such as Cyclones Hale and Gabrielle.

We know that changes to the way we use land are needed and that with this will come changes to our economy, employment and investment opportunities and even the places we live. Such change will come with both costs and opportunities.

If we want to maximise the opportunities and ensure the costs do not fall disproportionately to our local people, short-term thinking must be abandoned, and the community given an opportunity to articulate values and a long-term strategy. Future employment opportunities need to be compatible with community skillsets, values, and visions for the future. The local workforce needs to be supported to transition with the local economy. Tangata whenua must be supported to stay on their whenua.

Local people and communities have the ideas and the capability to lead this change. Now is the time to move forward.

Cyclone Gabrielle has devastated many people's lives in the region. Communities are facing huge challenges around housing, business and farming, insurance and in some cases the likelihood that that they may have to move to avoid future damage.¹⁶⁶ Experience from other comparable disasters, and the imminent threat of similar events, shows that people's mental health and wellbeing can be severely affected, and not only in the short term.¹⁶⁷

The Tairawhiti region is already fragile economically. The regional economy has a high reliance on primary industry¹⁶⁸ which is vulnerable to severe weather events including a heavy reliance on the roading network and other vulnerable infrastructure.¹⁶⁹ In the forestry sector especially, businesses have made investments based in a highly permissive regulatory regime and stand to lose if this regime is changed. (More detail on the regulatory regime for forestry can be found in

¹⁶⁶ Allen + Clarke Summary of Submissions report, pp. 22–25.

¹⁶⁷ Australian Institute for Disaster Resilience, 2018, *Community Recovery Handbook*, Melbourne: Australian Institute for Disaster Resilience, retrieved May 2023.

¹⁶⁸ Ministry for Business, Innovation and Employment, *Regional economic activity report*, retrieved May 2023.

¹⁶⁹ "For the population of Gisborne/Tairāwhiti, having a resilient transport network is crucial. The region's relative isolation means it relies on the state highway network and local roads to connect its communities, to get goods from farm gates and forests to markets, and to support growth in tourism." NZTA. 2023, Gisborne/Tairāwhiti region, retrieved May 2023.

the Forestry section). Changing land-use and land-use practice in the ways proposed in this report will come at a cost to established industry and notably to the workforce of established industry.

Transitioning land use will come with both costs and opportunities for Maori land and it will be critical to ensure that Maori land is not once again "left behind" in the transition. ¹⁷⁰

What we heard from the community

Impacts on people and communities of Cyclone Gabrielle

Cyclone Gabrielle has devastated many people's lives. The submission from Trust Tairawhiti paints a compelling overall picture of the situation when they say, "the depth and breadth of the trauma inflicted upon our communities is profound, and recovery in both economic and wellbeing terms will take years"¹⁷¹.

At the whanau and community level people graciously shared highly personal stories. In discussing impacts for their whanau, one submitter stated that in the immediate aftermath of Cyclone Gabrielle:

"it became even more stressful figuring out how we were going to [ration] food, water and gas with all 12 of us whilst we had no power for almost a week. From then on, each day has been challenging not knowing when [we] will next be able to return to our own home"¹⁷².

The clean-up has taken a heavy physical and emotional toll on the community. People reported increased anxiety and depression, fear and paranoia, and feeling overwhelmed and stressed.¹⁷³ Some were affected by being cut off from medical services and health issues worsening due to silt and lower water quality.¹⁷⁴

Most local submitters noted physical (home and land, and physical health) and mental healthrelated impacts.¹⁷⁵ Others discussed impacts on taonga such as wai tai, wai Maori, kaimoana, pa, and the knock-on effects this has on the community, including the intergenerational transmission of knowledge.¹⁷⁶

One submitter specifically highlighted the impact on the local Maori community, stating that

¹⁷⁰ Ministry of Business, Innovation and Employment, Provincial Growth Fund - Unlocking Underutilised Whenua Maori, retrieved May 2023.

¹⁷¹ Trust Tairawhiti submission, page 2.

¹⁷² Individual submitter.

¹⁷³ Allen + Clarke Summary of submissions report, p. 22.

¹⁷⁴ Allen + Clarke Summary of submissions report p. 22.

¹⁷⁵ Allen + Clarke Summary of submissions report p.22.

¹⁷⁶ Tokomaru Bay Community hui Filenote, 29 March 2023

"the impact on our [Maori] community was overwhelming. For two weeks we ran [our] Marae as [an] emergency response centre for our community which was isolated due to the flooding."¹⁷⁷

Across all our engagements we got the strong sense that people and communities are tired and frustrated, and at the end of their capacity to continue responding to severe weather events.

Immediate response

We heard that the immediate response to Cyclone Gabrielle was patchy, and people felt abandoned (as highlighted by the submissions above):

"we required fuel for health needs. Didn't receive fuel until day 7."¹⁷⁸

In some communities, those providing primary support after the cyclones were all or predominantly volunteers with one submitter stating that:

"All voluntary work. No pay, just manaakitanga."¹⁷⁹

At the Wairoa public hui, one resident talked about feeling let down by Hawke's Bay Regional Council and Waka Kotahi after the Waikare River Bridge at Putorino was blown out, feeling that the agencies' thinking was that "you fellas can walk". Another Wairoa resident expressed anger at what they felt was the government not listening or taking action after several years of slash impacts in the district and Wairoa effectively being side-lined.¹⁸⁰

The Uawa community talked about the experience for the community in leading the civil defence response after severe weather events. A civil defence volunteer co-ordinator shared that volunteer work is becoming more than voluntary and that resilience has reached its maximum after six events in the last 12 months. The community wants to see a fair investment in civil defence responses. A key example that was that no food supplies were provided until six days after Cyclone Gabrielle.¹⁸¹

In Tokomaru Bay, the community highlighted what they saw as a lack of action around the Mangahauini River and alternative road access for the township. One resident noted that no work had been done in the five weeks prior to the hui and wanted to know how the inquiry could help the community to get action from the council and government.¹⁸² The Ruatoria community also

¹⁷⁷ Individual submitter [name withheld], Submission on the Ministerial Inquiry into Land Use.

¹⁷⁸ Wairoa Maori landowners hui Filenote, 14 March 2023.

¹⁷⁹ Stafanos Panou Destounis, individual, Submission on the Ministerial Inquiry into Land Use.

¹⁸⁰ Wairoa Community hui Filenote, 27 March 2023.

¹⁸¹ Uawa community hui Filenote, 23 March 2023.

¹⁸² Tokomaru Bay community hui, Filenote, 29 March 2023.

felt that there was a lack of priority given to needed road access so that emergency services could operate effectively. ¹⁸³

This sense of abandonment is not only about the response to Cyclone Gabrielle but also about what people feel is the inaction and lack of engagement of public institutions over years of events. Across several public hui, including in Tokomaru Bay, Ruatoria, Uawa and Patutahi people expressed what they felt was a lack of concern, accountability and action from council and the government over time. In small communities especially, the sense of neglect was strongly felt.

Commitment to the region

The people of Tairawhiti, especially tangata whenua, are committed to living here. At the Ruatoria hui, it was expressed that iwi, hapu and whanau will stay here no matter what happens and there need to be packages for them to stay.¹⁸⁴ At the Uawa hui, it was expressed that living here is a unique birthright that cannot be expressed elsewhere.¹⁸⁵

People are committed to the region and don't want to have to move away to enjoy the economic future they want. Maintaining or redeveloping connection with the whenua is important, particularly to tangata whenua.¹⁸⁶

More community involvement in decision-making

Local people told us that they haven't had enough of a voice in decisions that affect land use. Concerns have been repeatedly raised but people report the issues have not been addressed and the community has not been involved in decision-making. We heard that kaitiaki have felt like they are unable to fulfil their role properly.¹⁸⁷ There is a concern that legislation is developed outside the region by people without a connection to the whenua. The community wants an opportunity to influence the strategic direction of land use in the region and make long-term intergenerational decisions.¹⁸⁸ The community wants the decision-making framework in the regions to be based on science, tikanga Maori and matauranga Maori.¹⁸⁹ Communities, local whanau, hapu, iwi, and tangata whenua want to be involved in developing and implementing solutions, with support for iwi to undertake kaitiaki roles.¹⁹⁰

¹⁸³ Ruatoria community hui Filenote 20 March 2023.

¹⁸⁴ Ruatoria community hui Filenote, 20 March 2023.

¹⁸⁵ Tolaga Bay community hui Filenote, 23 March 2023.

¹⁸⁶ Allen + Clarke Summary of Submissions report, p.39.

¹⁸⁷ Mana Taiao Tairawhiti hui Filenote, 9 March 2023.

¹⁸⁸ Allen + Clarke Summary of Submissions report, p.33.

¹⁸⁹ Mana Taiao Tairawhiti submission.

¹⁹⁰ Ngati Pahauwera Development Trust hui Filenote, 16 March 2023.

A prosperous, resilient economy

Many organisations and individuals have put forward ideas for changing and transforming the regional economy to better support sustainable land-use. This includes region-wide economic diversification plans, becoming a "just transition" region and investigating new and developing economic opportunities that would have co-benefits for land-use management and land-use change.¹⁹¹

People expressed a need for decent work opportunities so whanau can make a living and can get home safe at the end of the day. Local government, Maori landowners, and other members of the community requested greater investment in research and development for transitioning towards sustainable land use outcomes and so people can continue to live here.¹⁹² Some said foreign-owned forestry companies were not acting in the interests of the community and that locals reaped limited, short-term benefits from the industry.¹⁹³

Detailed findings

There is an urgent need to protect and enhance our current assets, and to invest in a future where our communities can live productive, satisfying and safe lives here.

Recovery

In our engagements, people graciously shared the personal and financial impacts and costs of the damage to them. We understand that work is ongoing on recovery planning and action, including plans for community-level resilience and recovery planning.¹⁹⁴ Planning needs to be tangible and visible and developed with local community leadership and input. A coordinated recovery effort is required to assuage fears within the community and demonstrate that a safe and more resilient future lies ahead.

We also need to learn from other comparable disaster recovery efforts about how to best meet people's mental health and wellbeing needs. As highlighted in the engagement section, beyond current needs, many communities feel close to the end of their capacity to respond to further events.

Just transition

Tairawhiti and its people aspire to a lifestyle befitting a first world economy. There are huge opportunities for people and businesses that will arise from the recovery effort and from climate adaptation. New economic opportunities that can and should be invested in to ensure we can

¹⁹¹ Tairawhiti Whenua Ltd and Te Aitanga a Mahaki Iwi Trust hui Filenote, 10 March 2023.

¹⁹² GDC hui Filenote, 9 March 2023; Rongowhakaata Iwi Trust hui Filenote, 20 March 2023

¹⁹³ Allen + Clarke Summary of Submissions report, p. 37.

¹⁹⁴ Gisborne District Council, 2023, Our Road to Recovery | Gisborne District Council, retrieved May 2023.

attain the vision for the region. The question is how to galvanise, coordinate and maximise the opportunities people to maintain and improve their livelihoods and wellbeing?

This region is already fragile economically and in terms of the levels of deprivation. There are unique challenges around Maori land which have led to the historical exclusion of Maori land owners from many economic opportunities. The policies and decisions made as a result of the recovery effort (Taskforce) and this Inquiry will likely impact unevenly across demographics, incomes, and business sectors. We need to understand these impacts and manage and mitigate the adverse impacts and ensure the benefits are fairly and equitably distributed.

A coordinated approach for a "just transition" needs to include the whole community – business, iwi, Maori businesses, workers, education institutions, local government, and community. The government has a critical role to lead this transition and invest appropriately to make it a reality. Enduring and sustained government support is required to create the appropriate strategic policy and investment conditions for a climate transition process.

Investment in alternative land use and local industries is needed, with the community playing a key role in direction-setting and decision-making (supported by research and implementation fund).¹⁹⁵ Evidence-based alternative land-use options and alternative futures for the regional economy have not been properly explored or implemented.

There is also a need for specific investment in workforce development and transition to ensure that local people, especially those employed in industries that will require transformation or transition, stand to benefit from transition opportunities rather than shoulder the burden of transition costs.¹⁹⁶

Local communities need to be a part of the solution, with their aspirations and expertise forming the basis for change. Quality governance needs to be based on a foundation of iwi and Crown partnership. There need to be opportunities for community-wide involvement in land-use planning in regions within a climate adaptation or Treaty framework.

Ministry of Business, Innovation and Employment has a Just Transitions unit and framework that has already been applied in Taranaki and Southland.¹⁹⁷ We believe this should also happen here.

¹⁹⁵ Mana Taiao submission, p. 36.

¹⁹⁶ Mana Taiao submission, p. 40.

¹⁹⁷ Ministry of Business, Innovation and Employment, 2023, The Just Transition Partnership team | Ministry of Business, Innovation & Employment, retrieved May 2023.



Figure A1:2 : Support options for Just Transition planning in New Zealand

Leadership and governance

Issues

The purpose of local government¹⁹⁸ is two-fold, both to enable democratic local decision making, and promote the four well beings (social, economic, environmental and cultural) of the community in the present and for the future.

For small councils with impoverished communities, fulfilling this purpose is a difficult and expensive exercise. Today's communities face a host of challenges – climate change, pandemics, biodiversity loss and growing social and economic inequity¹⁹⁹. The GDC can add extremely erodible soils, long-term mismatch of land use to landform and land type to the list of challenges; and shares with WDC the risks from poor infrastructure, and intensifying weather. While WDC, as a territorial authority, sits with the Hawkes Bay Region, meaning HBRC is charged with delivering the regional council functions in the Wairoa District, GDC as a unitary authority has sole responsibility for both territorial and regional functions.

Perhaps most relevant to this Inquiry is the delivery of regional council functions under the RMA intended to promote the sustainable management of natural and physical resources²⁰⁰. These functions include the establishment, implementation and review of objectives, policies and methods to achieve integrated management of the natural and physical resources in a region, as well as the control of the use of land for soil conservation, for maintaining and enhancing water quality, and for avoidance or mitigation of natural hazards, as well as the control of discharges of contaminants into water, and into the coastal marine area.

WDC expressed concerns about the visibility of Wairoa to the HBRC, and that they are overlooked and of the lowest priority in the region. The issues identified in Wairoa are in our view less systemic than in Gisborne. The Wairoa district has suffered significant damage as a result of severe weather (and recognising the even more devastating impact of Cyclone Gabrielle on parts of the wider southern Hawkes Bay Region) but the scale and impact was significantly less than in Tairawhiti. We are less concerned about systemic issues in Wairoa and recommend that HBRC and Wairoa work more closely together to address the land use issues.

This contrasts with what we saw in Tairawhiti. From our observation of the devastation of the communities around Tairawhiti, the only possible conclusion we can draw is that the resource management system has failed – what we see on the hills, and in the rivers and on the beaches is not sustainable management – it is the opposite, an environmental disaster unfolding in plain sight. To get to this point, there has been a fundamental failure of the resource management system – the interventions, systems, policies, rules, and their implementation have not worked.

¹⁹⁸ Local Government Act 2022, s10.

¹⁹⁹ Future for Local Government Review Panel, 2022, *He mata whāriki, he matawhānui: Draft report,* Wellington: New Zealand, retrieved May 2023.

²⁰⁰ Resource Management Act 1991, s30.

Submitters themselves identified a range of concerns regarding the resource management failures they witnessed at a local level.²⁰¹ Although faced with challenges, and limitations, we cannot ignore the fact that GDC holds the statutory accountability for efficiently and effectively delivering its resource management functions within the Tairawhiti/Gisborne region.

Planning

In 2016-17 the GDC developed the Tairawhiti Resource Management Plan (TRMP), merging multiple existing resource management plans into one document to provide a clear and easy to use document.²⁰² It appears the driver of this was a regional economic development objective to support efficiency for consent applicants navigating the GDC's planning documents. The creation of the Plan did not follow a Schedule 1 process and therefore is not considered a formal plan review. In our view this was a missed opportunity. Aside from the freshwater provisions, and a small number of rules, the balance of the TRMP provisions (including the Regional Policy Statement) have been in place more than 10 years, and in some cases more than 20 years²⁰³. The development of the TRMP could have provided the opportunity to identify that the plan was due for a review as required by s79 of the RMA. At a minimum, it was an opportunity to identify some key resource management issues that the plan was no longer responding to.

In 2018 the Council initiated the development of a Spatial Plan, Tairawhiti 2050, focused on priority projects.²⁰⁴ The Plan was consulted and engaged on in 2019, and approved in January 2020. Aspirations and feedback from the Tairawhiti 2050 process have been used by Council staff to inform the TRMP review.²⁰⁵

In June 2020 the Council agreed to initiate their comprehensive plan review and, in recognition that this was overdue and much needed, discussed seeking the support of the Minister for the Environment to support a Streamlined Planning Process under the RMA for the review. Seeking a streamlined approach with additional central government support was recommended to councillors by staff and endorsed by the committee.²⁰⁶

In 2021 the Council started to progress a full review of the TRMP. The planning tools and consideration of options were overdue, so using the streamlined planning process on balance was seen as the best approach for the review. In recognition of the importance of this work the

²⁰¹ Allen + Clarke Summary of Submissions report, pg 38

²⁰² Gisborne District Council, Annual Plan 2016/2017, 2016/17 Annual Report (gdc.govt.nz), retrieved May 2023.

²⁰³ Gisborne District Council, Tairāwhiti Resource Management Plan, Tairawhiti Resource Management Plan (TRMP) (gdc.govt.nz), retrieved May 2023.

²⁰⁴ Priority Projects include; reviewing zones of urban areas where development should occur, catchment planning for the Motu and Waiapu catchments, updating the plan to recognise and provide for tangata whenua values and the role of Māori in plan and decision-making and updating natural hazards information and how we manage hazards to create a more resilient community. FINAL 2018-2028 LTP (gdc.govt.nz)

²⁰⁵ Gisborne District Council, 2019, TAIRĀWHITI 2050, tairawhiti-2050-spatial-plan-shaping-the-future-of-our-region.pdf (gdc.govt.nz), retrieved May 2023.

²⁰⁶ Gisborne District Council, 2020, MINUTES of the SUSTAINABLE TAIRĀWHITI Committee, Microsoft Word - Sustainable Tairawhiti Minutes 11 June 2020.docx (gdc.govt.nz), retrieved May 2023.

Long-Term Plan included investment of \$25.9m (including \$7m for freshwater) over 10 years to support the review of the TRMP and deliver Council's freshwater planning programme.²⁰⁷

We were surprised that despite the Council being aware of and responding to issues associated with woody debris for more than 10 years, the Council had not seemed to apply more urgency to completing a plan review to address the issues, which they quite clearly understood. Alternatively, they could have introduced a plan change to address the issue (see below).

In their 2015 submission to the proposed NES-PF²⁰⁸, the Council provided detailed commentary on the issues they were seeing associated with the harvesting of plantation forestry in their region, including numerous photos of accumulations of debris in streams, rivers and on beaches in the region. The Council made submissions about the risk associated with permitting plantation forestry as proposed by the NES-PF and advocated strongly for the Council to retaining local control over regulatory measures necessary to manage the adverse effects of forestry in the region. It was notable that the issues with woody debris identified in GDC's submission were clearly occurring before the NES-PF came into force, which by implication, indicates that the introduction of NES-PF regime cannot be the (sole) cause of the woody debris issue.

When the NES-PF was gazetted in 2018, it did provide for some limited opportunities for Councils Plan rules to be more stringent than the regulations²⁰⁹. We acknowledge that the opportunities to introduce more stringent rules were constrained post the NES-PF introduction, and in GDC's situation, the most viable path for introducing more stringent rules was in association with giving effect to national direction in either the NPS-FM, or the NZCPS.

Policy 22 of the NZCPS gives GDC a clear path to introducing more stringent rules. However, the current coastal provisions of the TRMP were written prior to the introduction of the NZCPS in 2010. The Council has indicated the review of the Coastal policy of the TRMP to ensure consistency with the NZCPS is scheduled for 2024 – 2028,²¹⁰ which is an astonishing 14 – 18 years after the NZCPS was originally introduced, despite a statutory obligation to amend its regional policy and planning documents to give effect to national direction (s55 RMA). A review of the TRMP to give effect to the NZCPS would have provided an opportunity to introduce more stringent rules than those introduced by the NES-PF, and where appropriate, adopt a more precautionary approach.

Giving effect to the NPS-FM appears to offer another path to introducing more stringent rules. The NPS-FM 2020 imposes a statutory deadline on Councils to notify any plan changes required to give effect to the NPS-FM by December 2024, which the GDC proposes to meet through its review of the TRMP. However, we understand that the catchment management plan approach

²⁰⁷ Gisborne District Council, MINUTES of the SUSTAINABLE TAIRĀWHITI Committee.

²⁰⁸ Gisborne District Council, 2023, Council Meeting Minutes, Petition - Land Use Planning and Regulations (gdc.govt.nz), retrieved May 2023.

²⁰⁹ National Environmental Standard for Plantation Forestry, Regulation 6.

²¹⁰ Gisborne District Council, Review of the Tairāwhiti Resource Management Plan, Review of the Tairāwhiti Resource Management Plan | Gisborne District Council (gdc.govt.nz), retrieved May 2023.

proposed by the Council is initially being focused on the Motu and Waiapu Catchments, with the Waipaoa and Uawa catchments to follow later. Again, the extended timeline to complete plan reviews has limited the Council's ability to introduce more stringent rules and a more precautionary approach.

We are puzzled by the fact that the regulatory agency with the statutory responsibility for managing this issue doesn't appear to have placed any urgency on taking key regulatory steps available to it to help control the problem. Nor, to the best of our investigations, has the Council escalated any concerns about their legal powers to intervene (other than making submissions to the NES-PF process), such as by writing to the Minister for the Environment about the NES-PF constraining their ability to deliver on their statutory functions. We are left with the strong view that the Council, having failed to make traction in its submissions on the NES – PF, simply resigned itself to working within the permissive framework of the NES-PF and has 'done the best it can' within its inherent limitations, despite the opportunities available to it (as above).

Consenting

We heard that GDC issues consents with standard 'cut and paste' conditions, that are not specific to the particular effects and location of the activity being consented. We saw consents with up to 70 of these standard conditions. There was significant frustration within the forestry sector that conditions often duplicate the NES-PF and concerns that many conditions have been ultra vires and out of scope for the consent application. We also heard some suggestions that junior planners were doing consenting work, possibly above their skill and experience level, and about a high turnover of staff in consenting roles.

We were incredulous that the Council consented 4,500ha of clear felling in the Hikuwai Valley over a 3-to-5 year period. It is unclear to us how this could have been allowed to happen as part of the consenting process. Whether because of an activity status under the NES-PF, limitations of the current rule framework under the TRMP, or a failure to recognise the adverse effects that were inevitable in the event of extreme rainfall in the period as part of the consenting process. There appears to have been no risk assessment done of the cumulative impact of after clear-felling at this scale, nor consideration of alternatives, such as staged coupe harvesting – it shows a complete disregard for the environment and removal of slash. As noted in the forestry section, harvest plans need to be developed at a much more granular scale in order to manage these risks to the health and safety of the proximate community.

We have also been advised of the outsourcing of consenting to processing planners. We wondered who meets the statutory requirement of site visits if processing planners are located out of region.²¹¹ Anecdotally, the foresters told us they hardly ever saw council staff on site²¹². We know that many consenting departments nationally are challenged but we consider the

²¹¹ Eastland Wood Council Submission, Appendix 5.

²¹² Filenote MILU met with Gisborne forestry contractors, 28 March 2023

combination of an out-of-date plan compounds the challenges we heard about the region's consenting regime.

Compliance Monitoring and Enforcement

We heard from many people in submissions and during hui expressing concerns about the Council's monitoring of forestry company activities²¹³. Some expressed concern that Council's monitoring was inadequate, leading to widespread non-compliance and subsequently to woody debris mobilisation. The Council has previously been subject to judicial criticism for its failure to monitor effectively between 2016 and 2018²¹⁴, but has reported improving its monitoring activity since that time.

We acknowledge that many councils, particularly smaller, more isolated councils like GDC, struggle to recruit and retain the specialist staff required to maintain a credible CME capacity. Despite this, GDC staff numbers are average or slightly above average in terms of the number of compliance officers (between 0.13 and 0.18 officers per 1000 residents between 2017 and 2021²¹⁵). During our meeting with GDC staff, they advised us there were currently 8 CME staff, with two focused on forestry. Given the enormous challenges with erodible soils the Council, in our view, needs a greater number of highly-capable staff to do its job.

GDC reports its CME staff as generalists, covering both compliance and enforcement activities, with no dedicated investigator or enforcement specialist recorded in either 2020 or 2021.²¹⁶ Enforcement activity resulting from those staff appeared to be around average across the regional sector,¹¹ but the Council's consent monitoring activity is lower than all but one other Council, with only 60% of the resource consents that required monitoring in 2021 being subject to a monitoring inspection²¹⁷. Of concern, the Council reported having the worst non-compliance with resource consents in the regional sector in 2021, with 20% of consents being significantly non-compliant, and another 22% having moderate non-compliance²¹⁸. We accept the need to interpret these results with caution, as increasing the amount of monitoring can initially result in higher rates of non-compliance being identified before the effect of the monitoring then shows in improved compliance rates. However, the low rate of consents being monitored, coupled with the high rates of non-compliance, are worrying, despite staff numbers and enforcement activity.

²¹³ Allen + Clarke Summary of Submissions report, p. 5.

²¹⁴ Gisborne District Council, 2020, Notes of Judge B P Dwyer on Sentencing: Gisborne District Council v PF Olsen, Sentencing decision GDC v PF Olsen Ltd, retrieved May 2023.

²¹⁵ Local Government New Zealand, 2021, 2020/2021 Compliance Monitoring and Enforcement Metrics, CME-Metrics-Report-2020-21.pdf, retrieved May 2023, p. 27.

²¹⁶ Local Government New Zealand, 2021, 2020/2021 Compliance Monitoring and Enforcement Metrics, p. 26.

²¹⁷ *ibid,* p. 16.

²¹⁸ *ibid,* p. 20.

We remain concerned that the Council's CME activity is still not sufficient to achieve the level of compliance needed to prevent the woody debris mobilisation that has caused so much devastation for the community.

We heard ongoing concern from some forestry companies about the difficulty in establishing a productive working relationship. GDC's more coercive approach to compliance in recent years has soured those relationships even more between the Council and the forestry companies. However, our concern has been tempered by the egregious actions of the companies that were prosecuted since 2018, and the resulting convictions and significant penalties imposed by the Courts. The Council's action to undertake their prosecutorial role firmly and without compromise is proportionate and appropriate.

We do also note, however, that there is an important balance that a credible regulator must maintain, and too heavy a reliance on coercive powers can damage the effectiveness of the regulator in achieving its overall objectives. Compliance monitoring is not just enforcement after the fact - it is also pro-actively monitoring activities and identify problems before they cause damage (and intervening through education, and abatement notices if necessary).

"The enforcement challenge is striking the right balance between persuasion and coercion in securing regulatory compliance. This balance may differ between regulatory regimes. Similarly, the ideal balance of persuasion and coercion may differ between local authorities due to differences in the populations being regulated."²¹⁹

Forestry companies described the relationship with HBRC as being in stark contrast to that with the GDC.²²⁰ Notable differences were the depth of the relationships and a focus on nurturing to solve complex problems on the bespoke nature of different land blocks preparing for harvest. HBRC has developed a 'Land for Life' programme, backed up with investment by HBRC to support the improvement of practice. We understand that GDC does not have a similar initiative.

The Eastland Wood Council and workers we engaged with told us monitoring visits are sporadic and compliance reports can take over a month to receive after a visit. We also heard that feedback in compliance reports add little value to improving performance outcomes and is reflective of the limited capacity and industry experience of the GDC.

We understand there is a risk-based approach to monitoring and compliance, yet we note we have not seen a Council decision supporting this approach, nor an interrogation of this approach as decision makers.

We also note the distinction between different types of Council monitoring which are often confused. Here we have talked about compliance monitoring, but we recognise councils are also obliged to do state of the environment monitoring, and plan effectiveness monitoring. Of course,

²¹⁹ New Zealand Productivity Commission, 2013, *Towards Better Local Regulation*, Wellington: Productivity Commission, retrieved May 2023.

²²⁰ Hawkes Bay Regional Council and Hawke's Bay Forest Managers Meeting Filenote.

the ability to successfully promulgate more stringent policy and rules is dependent on being able to construct a coherent evidence base that relies on the combined information arising from effective strategic monitoring programme that includes all three.

Relationships

We understand that until the uneven emergency responses to Cyclone Gabrielle, Iwi and the GDC had provided an outstanding model of shared leadership through the covid pandemic – known as Rau Tipu Rau Ora. Unfortunately, that partnering approach foundered in the immediate post-cyclone phase and fractured when it was announced that GDC would no longer take this coordinated approach²²¹, which has led to what appears to be another less than optimum relationship of Council that is critical to it fulfilling its purpose.

At a policy development phase and in some instances, there have been some significant advances in resource management responsiveness to Maori nationally. We acknowledge attempts have been made and would have liked more time to understand what had led to what appears to be a potentially unhealthy relationship of Council that is critical to it fulfilling its purpose. There are some strong national examples of regional authorities developing policy positions together with Maori and we think the 54 per cent Maori composition of this community²²² makes for an even more compelling reason to have good strong relationships with local iwi and hapu.

We heard some disparaging remarks about the working relationship between iwi and the GDC, and also at the leadership level. For the benefits of the new system to be realised, this region needs to resolve these issues urgently given the significant adverse effects on values that the activities of forestry and harvesting have had on the perception of tribal territories and the inherent kaitiakitanga rights of those located within the GDC boundary.

In anticipation of the resource management legislative reform, ushering in the Regional Policy Committee and the articulation of the Regional Spatial Strategy, it is critical that the GDC restore their willingness and capacity to work together with Māori for the benefit of the region. Not doing so lacks practicality, respect, and common-sense.

The benefits of the new system are many and long term, and can, and must, be realised in and for Tairawhiti. United leadership developing a common vision, based on the complementary capabilities of the Council, Mana Whenua, and other communities of interest is critical. Taking this approach will be essential to successful consideration for a Tranche 1 entry into the process. It is in the vital interests of all who call Tairawhiti home.

²²¹Matai O'Connor, 2023, GDC Pulls out of Rau Tipu Rau Ora: Iwi leaders say decision impacts cyclone recovery, The Gisborne Herald, retrieved May 2023, GDC pulls out of Rau Tipu Rau Ora: iwi leaders say decision impacts cyclone recovery (gisborneherald.co.nz)

²²² Stats NZ, 2022, Māori population share projected to grow in all regions, retrieved May 2023.

Findings

The view we have reached is that GDC is working hard to respond to the complex issues they face. However, we could not see a comprehensive strategic package of interventions based on an appropriate evidence base, to drive the policy amendments required for more stringent rules.

The combination of planning, consenting, compliance and relationship issues identified indicate the Council is struggling to deliver on its statutory obligations and community leadership. A sense of urgency and innovative thinking, along with effective advocacy to central government is required to deliver the regulatory oversight and framework necessary to effect the changes outlined in our report. We think the Council needs help, with backing and support from central government to get back in front of the issues, and on to a better future for all.

However, we do not think more help from central government is sufficient in itself to solve the whole problem. The council cannot be effective without mending the relationships with Iwi and the industry, and in turn regaining the trust of the community. This goes to the overall leadership and decision making for these RMA functions – the track record of delay in planning, avoiding stricter consent conditions and harvest plans and only re-active compliance monitoring and intervention – needs stronger leadership and evidence-based decision-making over a concerted period to right the ship. We therefore recommend that a person or persons be appointed to assume and lead the RMA functions of GDC.²²³

The new planning process under the SPA offers both a timely process to set a strategic direction for the Tairawhiti Region, incorporate the land use mosaic approach into regional planning documents, and to guide regional infrastructure investment. It also provides an ideal opportunity to model a new governance structure that more closely involves Treaty partners in decision making related to local resource management.

The development of an effective relationship between post settlement governance entities and the Council is essential to ensuring the new planning processes under the NBA and SPA are successful.

²²³ Referred to in recommendation 42 as an 'RMA Commissioner'.