He Pou a Rangi
Climate Change Commission

Progress towards agricultural emissions pricing

Assessing how ready farmers and the agriculture sector are for emissions pricing, and advice on what work still needs to be done

June 2022

This advice is required under s220 of the Climate Change Response Act 2002.

Disclosure statement

As anticipated by the appointment criteria, the Climate Change Commissioners come from varying fields such as adaptation, agriculture, economics, te ao Māori and the Māori-Crown relationship. While a number of board members continue to hold roles within these fields, our advice is independent and evidence-based. The Commission operates under its Interests Policy, which is derived from the Crown Entities Act 2004. You can read more about our board members on the Climate Change Commission website. The Commission regularly updates and publishes on its website a register of relevant board interests.

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Te karere a te tumu

E whai mana ana ā mātou mahi i Aotearoa nei. Ka noho hei whenua tuatahi ki te hanga i tētahi utu whakaheke tukuwaro ki ngā mahi ahuwhenua, ā, ka kaikanohi mai te ao ki tōna āhua me ōna whakaritenga. Ko te utu tētahi wāhanga o te whakaheke tukuwaro a te ahuwhenua, engari he aho matua, ka mutu, me tika tōna ahunga.

Mā tatou tonu te ahunga tika o ngā mahi whakatika āhuarangi. Mā ngā kōwhiringa o nāianei e ora ai tā tatou noho hei whenua whakapau tika i ngā hua o te ahuwhenua ā ngā rā kei tua. Mā te utu tukuwaro a te ahuwhenua, ka takahi hoki i tētahi huarahi hou.

Inā rā 'te toa tuatahi' o te ao ki te hanga mai i tētahi tukanga utu tukuwaro ahuwhenua, ka noho hei tauira pakari, hei tauira whai take hoki ki ētahi atu whenua. Ā, ka ākina te whakapūmau i tā tātou rongonui mō te toa hangarau me te toa anga whakamua.

Inā te whakawhiti atu ki tētahi kaupapa whakaheke tukuwaro ā haere ake nei, me rerekē te āhua o ngā rāngai katoa. Mō te ahuwhenua, ka tuku i a te Kāwanatanga tētahi rautaki utu tukuwaro e ākina ai te rāngai nei ki te whakawhiti atu ki tētahi kaupapa whakaheke tukuwaro mā ngā kaipāmu.

Tuia ki tētahi tākai tukanga whānui, me hāngai ngā utu ki te whakahekenga tukuwaro e tika ana ki te ahuwhenua, me te mea nei, me whakapau kaha ki te tutuki i ngā ahunga kua whakaritea mai e Aotearoa. Mā te aro ki ngā utu e tika ana ki te kaipāmu, ka tika hoki ngā mahi.

Ka nui hoki ko ngā wero mō te whai i tētahi kaupapa e whakarārangi nei i ngā ahua o te pāmu, e nui ai ngā kōwhiringa whakaheke tukuwaro mō te 1 o Hanuere 2025 – nā reira, kia kaua tātou e whakatōmuri noa.

> *Ko tā te rāngai nei he neke whakamua ki te arotake me te whai kōrero ki ngā tukuwaro ahuwhenua, arā hoki ko te whai a ngā pāmu i ētahi mahere hei whakahaere i ōna tukuwaro.*

Ahakoa rā te pai o te rārangi whakareanga pāmu o waho atu o te Kaupapa Hokohoko Tukunga (NZ ETS) ki te ahunga roa, me whakauru e te Kāwanatanga tētahi rārangi whakareanga pāmu māmā mō te wā nei – e taea nei te whakakaha ake i ngā mahi.

Kua tīmata kē te nunui o ngā kaipāmu ki te whakamahi i ētahi tikanga whakaheke tukuwaro ki ō rātou pāmu. Ko tā te rāngai nei he neke whakamua ki te arotake me te whai kōrero ki ngā tukuwaro ahuwhenua, arā hoki ko te whai a ngā pāmu i ētahi mahere hei whakahaere i ōna tukuwaro.

Mā te mōhio ki hea haere mai nei ngā tukuwaro, me te mahi a ngā kaipāmu ki te whakaheke i ngā tukuwaro - tētahi tino kaupapa e rite mai ai te Kāwanatanga me tōna mahere utu tukuwaro. Ko tā ngā kaipāmu hoki te hiahia ,kia māmā te aronga ki ngā tohutohu a te utu nei – e rongo ai te whakanui me ētahi painga ki o rātou whakapau kaha ki te whakaheke tukuwaro.

Inā te mārama, te pai hoki o tētahi mahere tukanga utu, ka mārama hoki ko ngā kaipāmu - he aha rā ētahi mahi hangareka, whai utu hoki e tika ana ki a rātou me ō rātou pāmu. Ko tā te tukanga a te Kāwanatanga mahi, he ngana ki te whai i ngā whakaheke tukuwaro e tika ana ki a Aotearoa, tuia ake, ko te iti o ngā whiunga kino ki ngā iwi, ki te taiao me te ōhanga.

Ahakoa nei anō te pai o ngā mahi kua tutuki nei e ngā kaipāmu, e te kaupapa He Waka Eke Noa, e te rāngai ahuwhenua whānui hoki – he nui tonu ngā mahi kei mua kei te aroaro. Ināianei, mā te Kāwanatanga anō te arotake i ngā kōrero taunaki me te whai whakaaro ki tētahi mahere utu e tika ana mō te 1 o Hanuere 2025.

Hei te 2025 me whai tētahi mahere utu tukuwaro mā te ahuwhenua. Me kaua rā e tatari noa – mā te tatari ka tōmuri iho tā tātou ahunga ki te tutuki i ngā whāinga mō te 2030 me te 2050.

Ā te Tīhema ka aro te katoa ki ngā whakataunga a te Kāwanatanga. Heoi anō, mō ināianei tonu nei te mahi nui.

Dr Rod Carr
Chair

Chair's message

Our actions here in Aotearoa New Zealand matter. We will be the first country to design agricultural emissions pricing, and globally all eyes will be on what that looks like and how it works. Pricing is one part of the puzzle for reducing agricultural emissions, but it is a crucial part to get right.

Effective action on climate change is in our best interests. The choices we make now will preserve our status as an efficient producer of agricultural products in the future. By pricing emissions from agriculture, we are charting a new path.

Being a 'first mover' globally, with a well-designed agricultural pricing policy, will provide a strong, credible example to other countries and help maintain our reputation for innovation and progress.

To transition to a low emissions future, we need change across all sectors. For agriculture, the Government will be implementing an emissions pricing system to help the sector to transition to low emissions farming.

Alongside a broader policy package, pricing must deliver the emissions reductions needed for agriculture to contribute to meeting the emissions reduction targets set for our country. A farmer-focused and cost-effective pricing system is the best way to deliver that.

It will be challenging to get a detailed farm-level system that gives farmers more options to reduce their emissions in place by 1 January 2025 – but there is no time to delay.

> *The sector has made progress towards measuring and reporting on-farm agricultural emissions.*

While a detailed farm-level system outside the New Zealand Emissions Trading Scheme would be the best approach in the long term, the Government will need to implement a basic farm-level system in the time it has – which can be rapidly scaled up.

Many farmers have already started moving to lower emissions practices on farm. The sector has made progress towards measuring and reporting on-farm agricultural emissions, and making sure farms have plans in place to manage their emissions.

Knowing where emissions are coming from, and what actions farmers can take to reduce them, is a key part of getting ready to participate in the emissions pricing system the Government puts in place. Farmers also want to ensure that the price signal is one they can respond to – where they can be recognised and rewarded for their efforts to reduce emissions.

A smart, well-designed pricing policy should provide certainty for farmers, so they can be innovative and find solutions that work for them and their farms. The Government's policy should drive the emissions reductions our country needs, while limiting negative knock-on impacts to our people, environment, and economy.

And while good progress has been made – by farmers, the He Waka Eke Noa Partnership, and by the agriculture sector more broadly – there is still work to be done. Now it is over to the Government to review the evidence and step up to make sure a pricing system that delivers what is needed will be ready by 1 January 2025.

A pricing system for agriculture must be in place by 2025. We cannot afford to wait – any delay will only set us back further from getting to where we need to be in 2030 and 2050.

All eyes will be on the decisions the Government makes in December. The time for action is now.

Dr Rod Carr
Chair

Te whakarākei matua

He herenga nui te ahuwhenua ki tō tātou ōhanga me tō tātou taiao, nā whai anō te haepapa nui kia hangaia tētahi ao pakari, tētahi ao āhuarangi māia me tētahi ao whakaiti tukuwaro mā Aotearoa.

I a tātou e ahu atu ana hei whenua tuatahi i te ao kia hanga i tētahi utu tukuwaro mā te ahuwhenua me te urunga mai o tētahi whakatakotoranga utu pai – ka noho tēnei hei tauira mā ētahi atu whenua ki te ako, ka mutu, ka whakaatu hoki ki o mātou hoa hokohoko he tino kaupapa te āhuarangi ki a mātou.

Rawa atu ki tēnei ko te tākai tukanga utu – anō o te utu ki ngā rangahau me ngā whanaketanga e noho tonu ai hei toa auaha – ko tā ngā utu tukuwaro he whakapau kaha ki te whakaheke tukuwaro i te rāngai ahuwhenua.

Te Utu Tukuwaro a Te Ahuwhenua – he ahunga nui te whakatenatena i te rāngai nei kia whakahekea ai ngā tukuwaro kei ngā pāmu

Kei raro mai i te Ture Whakautu Hurirangi tētahi pūnaha mō te utu tukuwaro ki te rāngai ahuwhenua, ā, me rite mai mō te 1 o Hanuere.

He nui tonu ngā ara e taea ai e te Kāwanatanga te whakarite i ōna utu whakaheke tukuwaro ki te ahuwhenua.

Hei whakatauira ake, ka āhei te Kāwanatanga ki te whakauru i te rāngai ahuwhenua ki ngā pūnaha utu matua kua whakaritea kētia e Kaupapa Hokohoko Tukunga o Aotearoa (NZ ETS). Māna, ka āhei te Kāwanatanga ki te whakarite i tētahi rāngai utu anō mā te whakaheke tukuwaro a te ahuwhenua. Kia tae mai te mutunga o te 2022, me whai waahi atu te Kāwanatanga ki te aromatawaia tētahi pūnaha anō, me te aha, ka pēhea nei te āhua o tētahi utu tukuwaro o waho atu i a NZ ETS.

I te marama o Mei 2022 ka tukuna mai a He Waka Eke Noa i tōna tono kia motuhake tētahi utu tukuwaro ahuwhenua, ā, kia noho ngā utu nei ki waho atu o te Kaupapa Hokohoko Tukunga o Aotearoa (NZ ETS).

I konei ka tukuna hoki e mātou ngā kupu akiaki mō te taha hāpai, ā, he aha rā ngā pūtea tautoko e āhei ai e ngā kaipāmu ki tētahi mahere utu tukuwaro rerekē.

> *Kei raro mai i te Ture Whakautu Hurirangi tētahi pūnaha mō te utu tukuwaro ki te rāngai ahuwhenua, ā, me rite mai mō te 1 o Hanuere.*

Ko tā te Komihana mahi he hoatu i ētahi kupu akiaki me te mea nei he motuhake, ā, he kōrero taunaki whai mana mō te āheinga o ngā utu tukuwaro ki ngā kaipāmu me tēnei rāngai. Ā, he aha rā ētahi kupu akiaki ki ngā mahi hei whakaoti.

Me whai waahi tonu te Kāwanatanga ki te whakarite i tēnei rīpoata me ngā kōrero taunaki kua tae atu ki a rātou, e puta ai ōna whakatau ki te āhua o ngā utu tukuwaro ki te rāngai ahuwhenua.

He pēhea nei te rite a ngā kaipāmu ki te rāngai whānui mō te utu tukuwaro ki te ahuwhenua?

Kua roa nei te whakaheke tōtā – a ngā kaipāmu, a He Waka Eke Noa, ka mutu, ko te rāngai whānui – e neke ai ki rāngai nei ki te tutuki i ōna ahunga whakatika āhuarangi.

Ahakoa kāhore anō ngā ahumahi kia tutuki i ōna whāinga whakatika āhuarangi, ā, kāhore hoki ngā mahi kua tutuki kia whai take ki ngā te ahunga matua, anō o te whakatūria i tētahi mahere utu pāmu mō te tau 2025.

He tokomaha ngā kaipāmu kua tīmata ki te ine me te arotake i ngā tukuwaro ahuwhenua ki ngā pāmu, ā, kua whai rautaki whakahaere i ēnei tukuwaro. Ko tā mātou arotake he whakaatu atu i ngā mahi a ngā kaipāmu me tōna rite ki ngā utu pāmu. Heoi anō, he nui tonu ngā mahi.

Kua kitea e mātou kua rite ki ngā utu tukuwaro e toru a te ahuwhenua – ko te utu pāmu a He Waka Eke Noa, ko te utu pāmu a NZ ETS, me te mea nei, ko ngā pūnaha utu kei raro iho i a NZ ETS. E ārahi ake i a mātou aromatawai, kua whakarite i ngā pātai e toru:

- He pēhea te rite a te pūnaha nei?
- He pēhea nei te rite a ngā kaipāmu me te urunga mai o te rāngai?
- Kua rite ngā kaipāmu ki te whai i ngā tūtohu whakaheke tukuwaro me tōna noho ki te pūnaha?

I kōrerotia tā mātou aromatawai – mā te whakaheke werawera pau te kaha – arā te urunga o tētahi pūnaha tiketike kei ngā tono a He Waka Eke Noa ka āhei tōna urunga mō te 2025.

Kua kitea ētahi tino wāhanga – ko te āhua o ngā kōtukutuku me te hanganga o tētahi pūnaha rorohiko, e tū ai ētahi whakahaerenga, tūtohinga me ētahi mana tūtohu, me te whakatū tika i ētahi tūtohinga.

Me whai waahi hoki ētahi atu mahi hei ārahi i ngā kaipāmu ki te whakautu tika mai i ngā tūtohu utu, te ārai i ngā wero, te kaupare i ngā taimahatanga, me te whai mana taurite – te whai utu ki ngā whiunga kino ki ngā whenua Māori, ka mutu, ngā whenua whai taitara maha.

Te āhua o ngā pūnaha pāmu – te whakanui i ngā kōwhiringa a ngā kaipāmu e whakahekea ana te tukuwaro.

Ko tā te āhua o tētahi pūnaha utu pāmu o waho atu o NZ ETS te rautaki roa pai mā te utu tukuwaro ki te ahuwhenua.

Kei o mātou aromatawai ētahi kōwhiringa utu maha e taea ai te kite i te pūnaha me ōna taipitopito, me te aha, he mea whakanui tēnei i ngā kaipāmu me ōna kōwhiringa whakaheke tukuwaro.

Ko te tikanga o tētahi pūnaha pāmu he whakamana me te utu tika i ngā kaipāmu ki te whakaheke i ōna tukuwaro.

Ko te pūnaha utu pāmu o waho atu i a NZ ETS te rautaki roa pai hei utu i ngā tukuwaro ahuwhenua.

Ko tā o mātou aromatawai ki ngā utu maha he whakaatu atu i te pai o ngā pūnaha me te kite ake i ngā hua ka taea e ngā kaipāmu i a rātou mahi whakaheke tukuwaro. Ko tā te pūnaha pāmu he whakamana, he whakanui hoki i te whānuitanga o ngā mahi kaupare, me te whakawhānui ake i ngā kōwhiringa pai; he pēhea nei te utu I ngā tūtohu, e whai māramatanga ki ō rātou pakihi.

Heoi anō, he tino take kia kaua e takaroa mai te utu tukuwaro ki te ahuwhenua – ki te tōmuri, ka uaua ake mā Aotearoa ki te tutuki i ōna whāinga āhuarangi.

Mō te wā nei, mā tētahi pūnaha pāmu māmā me te whai i ngā tūtohu a He Waka Eke Noa ka taea tētahi huarahi ki tētahi pūnaha pakari, utu tika, whai mana hoki.

Kei ā mātou aromatawai hoki, kua āhei te nuinga o ngā kaipāmu kia uru ki tētahi pūnaha pāmu māmā ā te 1 o Hanuere 2025. Kei roto hoki ko te whai waahi ki ngā nama a te pūnaha pāmu me ngā pūnaha tautoko a ngā ratonga tohutohu.

Ko tā te pūnaha pāmu māmā he hoatu kōrero akiaki ki ngā reanga whakaheke tukuwaro a ngā pāmu; te whakaiti hua, te whakarerekē ahuwhenua me ētahi mahi kaupare – inā rā te pai o tētahi pūnaha taipitopito maha he whakanui, he whakamana hoki i ngā mahi whakatupu hua, he whakaheke tukuwaro hoki.

E āwangawanga ana ki ētahi o ngā wāhanga kua homai e He Waka Eke Noa

I whakatauria e mātou kia whai a He Waka Eke Noa i ētahi tino whakarerekētanga, ki te aro mai te Kāwanatanga ki te whai i ā rātou kōrero.

Ko ētahi wāhanga – te tango waro i ngā huawhenua – he mea whāia e Kaupapa Hokohoko Tukunga (NZ ETS). He whakamana tētahi i ngā wāhi kāore i a NZ ETS, mā roto tonu i ngā mahinga a te pāmu, i kīa mai nei e He Waka Eke Noa. Arā, kia wāwāhi mai ki tētahi kaupapa anō, i konā te āheinga kia whakamana anō i te whānuitanga o ngā hua, pēnei i te ao rauropi me te mana o te wai.

> *Ko te pūnaha utu pāmu o waho atu i a NZ ETS te rautaki roa pai hei utu i ngā tukuwaro ahuwhenua.*

Mā te mau mai i ngā mahinga pāmu ki ngā pūnaha utu pāmu ka kōraruraru, ā, ka kitea te weherua o ngā kaipāmu ki ētahi atu rāngai, ā, kua kore hoki e kitea ētahi tino hua.

Me whai te utu ki te Haumako Rehuota ki ngā utu a ngā hunga waihanga me ngā tangata hokohoko e ai tā te NZ ETS, ā, mō ināianei tonu nei. I konā ka kite te whānuitanga me te taurite hoki o ngā tukuwaro a ngā Haumako Rehuota huri i a Aotearoa.

Te Utu Tukuwaro a Te Ahuwhenua – He tino rauemi mō te whakaheke tukuwaro

Kei ā mātou kōrero akiaki mō te mahere utu pāmu, me tika te hāpai a ngā kōtukutuku, me tika hoki te tūkanga, ā, ka noho ki te ahunga whakaheke tukuwaro me te noho hoki ki ngā tahua pūtea, ahunga hoki mā Aotearoa.

Me anga a Aotearoa ki te whakawhiti i ōna rāngai katoa hei rāngai whakaheke tukuwaro, ā, mā te utu tukuwaro ka taea e te rāngai ahuwhenua ki te mahi i āna mahi. Nā te tukanga utu a te Kāwanatanga kua taea te utu tika ki te hāpai i ngā tahua pūtea, ngā ahunga me ngā takohanga ki te ao. Mā tētahi tukanga utu whai tikanga ka āhei te anga whakamua o Aotearoa ki te noho tika ki ngā mākete whai mana, inā rā te whakaheke tonu i ana tukuwaro ki te ahuwhenua. E tūmanako nei ka whai ā mātou mākete i ngā hua pai, me te mea nei, he whakaheke tukuwaro. Mā konei anō ka kaupare i ngā whiunga kino ka pāngia e Aotearoa, ā, e neke whakamua ai a Aotearoa te pupuri i mana auaha me tōna mana ki te ahuwhenua.

I mārama katoa ā mātou kōrero ki Ināia tonu nei, me tautika te whakawhitianga o Aotearoa. Me tautika te utu ki te rāngai whānui – ā, mō te taha ki ngā whenua Māori taitara maha, o roto hoki i te rāngai ahuwhenua, mā roto hoki i te ahuwhenua me ērā atu rāngai, o te ao, o ngā whakareanga, o te arawhiti tāngata, o te taiao, o te ōhanga hoki. Me anga ngā ahunga āhuarangi ki te whakaheke tukuwwaro, engari mā ngā kauneke tata ka rangona ngā painga.

Ko tā ngā whakatau a te Kāwanatanga ā te Tīhema, me whai māramatanga ki te wā me te āhua o te utu ki ngā tukuwaro a te ahuwhenua, ā, he aha hoki ngā kaupapa hei tautoko i a rātou. Mā konā, ka kitea te rarata mai o ngā kaipāmu ki whakarite i ōna rautaki whakaheke tukuwaro.

Executive summary

Agriculture is a major part of our economy and landscape, which means it has a key role in creating a thriving, climate-resilient and low emissions future for Aotearoa New Zealand.

As the first country in the world to price agricultural emissions, implementing a well-designed pricing system will provide an example that other countries can learn from and show our trading partners that we are taking climate action seriously.

Alongside a broader policy package – including investment in research and development to keep our position at the forefront of innovation – emissions pricing will contribute towards reducing emissions from agriculture.

Agricultural emissions pricing is an important part of enabling the sector to transition to low emissions farming.

Under the Climate Change Response Act, a system for pricing agricultural emissions needs to be in place by 1 January 2025.

There are many ways the Government could price agricultural emissions. For example, the Government could bring the agriculture sector into the already established pricing system – the New Zealand Emissions Trading Scheme (NZ ETS), or the Government could establish an alternative pricing system for agricultural emissions. By the end of 2022, the Government will need to report on what an alternative system for pricing emissions outside the NZ ETS looks like.

The He Waka Eke Noa Partnership delivered its proposals for an alternative agricultural emissions pricing system outside the NZ ETS in May 2022. At the same time, we delivered advice on whether and how financial assistance could be provided to farmers in an alternate emissions pricing system.

The Commission has also been tasked with providing this independent and evidence-based report on how ready farmers and the sector are for emissions pricing, and advice on what work still needs to be done. The Government will need to consider this report along with all the other evidence it has received to make its decisions on what emissions pricing will look like for the agriculture sector.

> *Under the Climate Change Response Act, a system for pricing agricultural emissions needs to be in place by 1 January 2025.*

How ready are farmers and the wider sector for agricultural emissions pricing?

A lot of hard work has been put in – by farmers, He Waka Eke Noa, and the broader sector – to progress towards meeting the primary sector climate change commitments.

While not all the primary sector climate change commitments have been met, the steps that have been taken are enough to keep the sector on track for a basic farm-level pricing system by 2025.

Many farmers have taken steps to measure and report on-farm agricultural emissions, and put plans in place to manage emissions. Our assessment shows that good progress has been made towards farmers being ready for farm-level pricing, but there is still work to be done.

We have assessed readiness for three agricultural emissions pricing options – a simplified farm-level levy as proposed by He Waka Eke Noa, farm-level pricing within the NZ ETS, and processor-level pricing within the NZ ETS. To guide our assessment, we used three questions:

- How ready is the system to be implemented?
- How ready are farmers and the sector to participate?
- Will farmers be able to identify emissions reduction actions in response to the system?

Our assessment has told us that – with significant effort – implementing a streamlined version of the He Waka Eke Noa proposals would be possible by 2025. We have identified key factors that are critical to this being possible – including designing and building the necessary IT systems, establishing administrative, compliance and enforcement functions, and putting regulations in place.

Other efforts will also be needed to enable farmers to respond effectively to price signals, overcome barriers, avoid negative knock-on impacts, and minimise inequities – including addressing impacts for Iwi/Māori and Māori collectively-owned land.

A detailed farm-level system would recognise and reward the choices farmers make to reduce emissions

A detailed farm-level pricing system outside the NZ ETS is the best approach to pricing agricultural emissions in the long term.

Our analysis of the different pricing options shows that a detailed system would incentivise the full range of options for farmers to reduce emissions. A detailed farm-level system would recognise and reward the widest range of mitigation actions, and give farmers greater choice about how to respond to price signals in the way that makes the most sense for their business.

However, the sector would not be ready for a detailed system by 2025, and it is important that pricing agricultural emissions is not delayed. Any delay will make it less likely that Aotearoa New Zealand will meet its climate targets.

In the interim, a basic farm-level system using elements of the He Waka Eke Noa proposal as a stepping stone will provide a path to progress towards a more mature, responsive and effective system.

Our analysis shows that almost all eligible farmers can be ready to effectively participate in a basic farm-level system by 1 January 2025. This includes having access to the necessary farm-level data and support from advisory services.

A basic farm-level system could provide incentives for farm-level emissions reductions through reducing production, changing land use, or some on-farm mitigation actions – while a more detailed system would recognise and reward maintaining production while reducing emissions.

We are concerned about some of the elements in the proposal He Waka Eke Noa has put forward

We have recommended several substantive changes be made to the He Waka Eke Noa proposal should the Government consider adopting elements of it.

Some sequestration – carbon removal through vegetation – is already recognised through the NZ ETS. Recognising non-NZ ETS sequestration through on-farm vegetation as suggested by the He Waka Eke Noa proposal should be progressed in a separate system, which could recognise and reward a wide range of benefits, such as biodiversity and water quality.

Bringing this on-farm vegetation into a farm-level emissions pricing system adds complexity, creates inequity between farmers and other sectors, and would not significantly improve emissions outcomes.

> *A detailed farm-level pricing system outside the NZ ETS is the best approach to pricing agricultural emissions in the long-term.*

Synthetic nitrogen fertiliser should be priced at the manufacturer and importer level in the NZ ETS as soon as practicable. This would achieve a more broad and equitable coverage for emissions from synthetic nitrogen fertiliser across the country.

Agricultural emissions pricing is an important tool to deliver emissions reductions

Our advice is that a farm-level pricing system, supported by well-designed, well-thought-through policy, will be key to achieving emissions reductions in line with the budgets and targets for Aotearoa.

Aotearoa needs to transition all sectors to a low emissions future, and emissions pricing is key for enabling agriculture to play its part. The pricing policy the Government puts in place will determine how effective pricing is at helping us reach our budgets, targets, and international commitments.

A smart, well-designed pricing policy will help Aotearoa maintain access to high value markets while reducing emissions from agriculture. Our markets are increasingly expecting low emissions goods. It will also minimise negative knock-on effects for Aotearoa, and enable us to maintain our status as innovative and progressive in agriculture.

We were clear in *Ināia tonu nei* that the transition has to be an equitable one. Pricing needs to be equitable across the board – with regards to Māori collectively-owned land, within the agriculture sector, between agriculture and other sectors, internationally, intergenerationally, socially, environmentally, and economically. Climate action needs to drive emissions reductions – but steps are needed to make that change and address impacts.

The Government's decisions in December should provide certainty about when and how emissions from agriculture will be priced, and what assistance could be provided. This will give farmers the confidence they need to plan for lower emissions practices.

Context

Scope of this advice

About He Pou a Rangi Climate Change Commission

We are an independent Crown entity set up to provide expert, evidence-based advice to successive governments to help Aotearoa New Zealand transition to a thriving, climate-resilient and low emissions future. We are a small team dedicated to ensuring we can pass a better Aotearoa on to future generations.

We have a range of expertise, including economics, communications and engagement, public policy, land and resource management, Māori sector, climate science, strategy, behavioural sciences, forestry, agriculture, transport, waste and energy. We are supported by a Board of Commissioners from varying fields.

The scope and timeframes for the Commission's advice are set out in the Climate Change Response Act (2002) (the Act). The Minister of Climate Change may also make a specific request to the Commission for advice on any topic.

The Act requires us to draw from the best available evidence and analysis, and think broadly about the impacts of climate change and the implications for Aotearoa over time. In doing so, we take a systems view so we understand what our advice will mean for central and local government, for individuals and households, for business sectors and communities, for Iwi/Māori, and for our economy and our environment now and into the future.

We are committed to taking an inclusive approach and working collaboratively with others so we can grow consensus and inspire action to change.

The Act requires us to consider the Crown-Māori relationship and give specific consideration to impacts for Māori. As an organisation we will endeavour to build meaningful and respectful relationships with Iwi/Māori.

About this advice

Greenhouse gas emissions from our everyday activities are changing the climate and, collectively, we need to make changes across every sector of the economy. We all need to consider how each choice we make increases or decreases greenhouse gas emissions, and every investment, every decision, every action, needs to consider its emissions contribution and impact on our progress towards a climate-resilient society.

Emissions from the agriculture sector include biogenic methane from livestock and nitrous oxide from animal excreta and synthetic nitrogen fertiliser use. In this document, we refer to these gases as 'agricultural emissions.' Agriculture accounts for 91% of biogenic methane emissions in Aotearoa, and 19% of long-lived gases.

The Climate Change Response Act (the Act) sets out the Government's intent to price agricultural emissions, to incentivise the emissions reductions needed in the agriculture sector. The Commission has been tasked with independently assessing the progress the agriculture sector has made in preparing for pricing agricultural emissions and identifying what further preparatory work is necessary.

By the end of 2022, the Government will need to prepare a report on how emissions from agriculture will be priced from 1 January 2025.

The Commission's advice is one of several pieces of work that will help the Government to develop its report. It follows the emissions pricing proposal released by the primary sector climate action partnership, He Waka Eke Noa,[1] and the Commission's earlier advice on what financial assistance, if any, might be necessary to support farmers and processors to face and appropriately respond to a price on their emissions.

1. In October 2019, the Government agreed to a proposal from the primary sector to work together and with iwi/Māori to develop a system for measuring, managing and reducing agricultural greenhouse gas emissions, rather than simply putting farm products in the NZ ETS. Their task is to recommend to the Government a farm-level pricing system building on the principles set out in He Waka Eke Noa to be put in place for 1 January 2025. The Partnership Terms of Reference were agreed in April 2020 are available here https://hewakaekenoa.nz/about.

There are three main parts to this advice

Our task is set out in Section 220 of the Climate Change Response Act 2002 (see Box 1.1). The task can be divided into three main parts:

1. **Progress milestones:** assessing the progress that has been made towards meeting the primary sector climate change commitments recorded in the Climate Change Response Act (Section 220 a)
2. **Farmer readiness and barriers:** assessing the progress that has been made towards farmers being ready to participate in an emissions pricing system for agriculture, including any barriers to progress, and further steps needed for them to be ready (Section 220 b and c)
3. **Further steps:** identifying what further steps (if any) are required by the primary sector or the Government for participants[2] to be ready for a pricing system (Section 220 d).

Box 1.1: Section 220 of the Climate Change Response Act

220 Commission to report on progress towards meeting farm-level obligations

The Commission must, not later than 30 June 2022, provide written advice to the Minister on—

(a) the progress that has been made towards meeting the primary sector climate change commitments set out in Schedule 5; and

(b) the progress that has been made towards participants in an activity listed in subpart 4 of Part 5 of Schedule 3 being ready to start complying with reporting and surrender obligations under this Act in respect of that activity; and

(c) any barriers to those participants being ready to start complying with those obligations; and

(d) what further steps (if any) are required by the primary sector or the Government for those participants to be ready to start complying with those obligations.

2. The Act identifies participants in the agricultural emissions pricing system as people who do farming, raising, growing, or keeping ruminant animals, pigs, horses, or poultry for reward; or the purpose of trade in those animals; or in animal material or animal products taken or derived from those animals (Climate Change Response Act, Subpart 4). In all three parts of our task we have chosen to broaden scope beyond animal farmers to also include other farmers, because an alternative system could include other types of agricultural activities.

Defining readiness, and progress towards it

Assessing progress towards meeting the primary sector climate change commitments set out in the Act, and how ready the sector is to comply with reporting and surrender obligations, requires a clear understanding of what "progress" and "readiness" mean. These are inherently subjective terms.

What do we mean by readiness?

We interpret readiness to mean a state in which the agriculture sector in Aotearoa is prepared to participate in an emissions pricing system for agriculture.

Discussions around readiness largely focus on how practical it is to implement and roll out such a system.

For example, to be ready for a farm-level system, farmers must have the information and capacity to participate, and sufficient professional support services must be available to support their participation.

Broader challenges associated with introducing a pricing system will also affect the ability of farmers to comply. For example, government must be able to effectively implement, monitor and enforce the system.

In this way, readiness is not just a function of one group. In our advice we have considered both farmer readiness to participate in an emissions pricing system, and government readiness to implement it.

What do we mean by progress?

Progress refers to how close to being ready for emissions pricing the sector currently is.

For example, the degree to which farmers have overcome barriers to participation, and government's state of preparation for establishing and running the system.

What readiness looks like will be quite different depending on the design of the pricing system. The assessment of readiness in part three of this report focuses on three different emissions pricing systems, how practical they would be to implement, and what the barriers to participation would be.

Assessing progress milestones

The Act sets out seven milestones to measure progress towards preparing farmers for an agricultural emissions pricing system. These milestones relate to on-farm emissions reporting and farm plans, guidance for farmers, and rolling out a national farm emissions accounting system.

Reporting and planning are important foundations for an agricultural emissions pricing system. They are indicators of progress, providing useful information to support an assessment of how ready farmers are to participate in a pricing system.

Understanding whether the milestones have been met has helped the Commission to assess how ready the agriculture sector is to participate in an emissions pricing system. In addition to reporting on which milestones have been achieved, we have identified whether there are any significant gaps, and whether there are the necessary systems and mechanisms in place to ensure that future milestones can be met.

Our assessment used information provided to us by the He Waka Eke Noa partners responsible for measuring progress towards the milestones for their respective sectors. This included data on the number of farms that have met the requirements, as well as plans from the partners for how the upcoming milestones will be met.

Our assessment of progress towards the milestones is included in part two of this report.

Assessing farmer readiness and barriers

There are many ways that the Government could price agricultural emissions. For example, the Government could bring the agriculture sector into the already established pricing system – the New Zealand Emissions Trading Scheme (NZ ETS), which prices emissions from other sectors as part of a cap and trade system.[3,4] Or, the Government could establish an alternative pricing system for agricultural emissions.

We have assessed readiness and barriers for three different variations of emissions pricing systems:[5]

1. An alternative farm-level system outside the NZ ETS
2. Pricing emissions at the farm level within the NZ ETS
3. Pricing emissions at the processor level within the NZ ETS.

He Waka Eke Noa has developed a proposal for an alternative farm-level system outside the NZ ETS, which we have interpreted to be the alternative pricing option that we are required to assess readiness for. We acknowledge that if farm-level pricing is progressed by the Government, the implemented system may differ from the He Waka Eke Noa proposal. In light of this we have not limited the scope of our overall advice on an alternative farm-level system to the He Waka Eke Noa proposal.

In practice, bringing agriculture into the NZ ETS at a farm level would have many of the same requirements as an alternative farm-level system outside the NZ ETS – for example, data collection and administration requirements for reporting emissions, and monitoring compliance. Therefore, many of the indicators of sector and farmer readiness will be similar between the two. Where appropriate we discuss key differences.

A detailed description of how these potential pricing systems might work is included in part three of this report.

Identifying further steps and issues to consider

Our assessment of what further steps are necessary has been guided by Sections 5B and 5M of the Act.[6] Looking across our responsibilities under the Act, we need to consider the equity implications and effectiveness of the different systems. These are largely discussed separately from our assessment of practical readiness, in part four and part five of this report.

3. The Act provides for biological emissions from agriculture to be priced through the NZ ETS at a farm level from 2025, with reporting starting in 2024 unless delayed by the Minister.
4. The following sectors are covered by the NZ ETS: forestry, liquid fossil fuels, stationary energy, industrial processes, synthetic greenhouse gases, agriculture and waste.
5. The Commission is tasked with assessing readiness for the first two approaches. We have also chosen to assess readiness for pricing emissions at the processor level through the NZ ETS, as it provides important context for discussions around farmer readiness. This is because Ministers can choose to price emissions in this way if readiness for a farm-level system is deemed to be insufficient.
6. As well as assessing different pricing systems to understand how practical they will be to implement, there is broader guidance under the Climate Change Response Act that directs how we shape our advice. These include Sections 5B and 5M of the Act. These have particularly guided our thinking about the further steps that may be required.

We have considered a range of matters in developing our advice

In addition to the tasks as defined in **Section 220 of the Act**, the Commission has other responsibilities in the Act that have guided our analytical approach to this task.

The purpose of the Commission is to:[7]

- provide independent, expert advice to the Government on mitigating climate change (including through reducing emissions of greenhouse gases) and adapting to the effects of climate change
- monitor and review the Government's progress towards its emissions reduction and adaptation goals.[8]

We are also required to consider a range of matters contained in **Section 5M of the Act**, where they are relevant. For this advice, the following matters are relevant and are expanded upon in part four of this report:

- **current available scientific knowledge**

  Relevant when considering what scientific information is available to support implementing different emissions pricing systems, including how those systems support achieving emissions reductions consistent with achieving Aotearoa New Zealand's split-gas targets.
- **existing technology and anticipated technology developments, including the costs and benefits of early adoption of these in Aotearoa**

  Relevant when considering what options are currently available to farmers to reduce their emissions, or may be available in the future. This will impact how farmers can respond to price signals, and the pathways available for achieving emissions reductions and targets.
- **the likely economic effects, and the social, cultural, environmental, and ecological circumstances, including differences between sectors and regions**

  Relevant when understanding the impacts of any decision for different sectors and regions. This is core to assessing the equity of different emissions pricing approaches, and whether other policies or forms of support may be required alongside pricing.
- **the distribution of benefits, costs, and risks between generations**

  Relevant when considering the timing for introducing emissions pricing, and the emissions reductions different pricing approaches are likely to achieve.
- **the Crown-Māori relationship, te ao Māori, and specific effects on Iwi and Māori**

  Relevant when considering the circumstances of Māori collectively-owned land. This is considered in assessing whether those circumstances will be likely to impact the ability of Iwi/Māori to effectively participate in an emissions pricing system.
- **climate change responses taken or planned by parties to the Paris Agreement or to the Convention**

  Relevant when considering the potential impacts of emissions pricing on New Zealand's trading partners that are also signatories to the Paris Agreement, and concerns about potential emissions leakage.

7. The purpose of the Commission, as defined in **Section 5B of the Act**, is relevant for completing this report.
8. Section 5B of the Act.

Under the Act, the Commission must consider the Crown-Māori relationship, te ao Māori, and specific effects on Iwi/Māori in our advice.

In the Commission's advice to Government on the first emissions reduction plan, the Commission identified that Te Tiriti o Waitangi/The Treaty of Waitangi must be at the forefront of the transition to low emissions, and at the core of the work to drive change in Aotearoa. This will help to ensure an equitable transition for Iwi/Māori, mitigate against compounding historic grievances, and set Aotearoa up to achieve success for all its people.

Effective action to price emissions from agriculture must be premised on an equitable Te Tiriti partnership to correct the existing inadequacies. To accomplish this, government must demonstrate a commitment to Te Tiriti o Waitangi/The Treaty of Waitangi that reflects a genuine desire to remove barriers and achieve equitable outcomes.

The Government's approach to pricing emissions from agriculture must recognise the guarantee of rangatiratanga and kaitiakitanga for Iwi/Māori under Te Tiriti o Waitangi/The Treaty of Waitangi.

This can be achieved through supporting Māori representation at all levels of decision-making, and by including strategies to recognise and mitigate the impacts on Iwi/Māori of putting a price on agricultural emissions.

When pricing agricultural emissions, the range of challenges that Māori collectively-owned land faces must also be taken into consideration. These equity considerations are discussed further in part five.

Our approach has been guided by this range of considerations. The analysis that underlies how we have assessed progress has considered the following key criteria:

- How practical the pricing system is to implement. This includes how practical it is for farmers to meet the requirements of a pricing system, the availability of skills to support participation in the system, and the ability of government to implement, monitor and enforce the system.
- The effectiveness of the pricing system. This includes the share of agriculture sector emissions covered, the ability to incentivise on-farm actions to reduce emissions, and its contribution to meeting emissions budgets and targets.
- The equity impacts. This includes considerations for Māori collectively-owned land, and the range of considerations included in section 5M of the Act.

In addition, the advice on further steps contained in part four of this advice also draws on principles for effective emissions pricing, which were recommended by the Commission in our recent advice on Agricultural Assistance.

The He Waka Eke Noa Partnership

In 2019, advice from the Interim Climate Change Committee emphasised the need to price agricultural emissions.[9] They recommended that for livestock farming this should happen through a farm-level levy/rebate system, using an interim processor-level levy if necessary. They also recommended that synthetic nitrogen fertiliser should be brought into the NZ ETS at the processor level.

Also in 2019, the Food and Fibre Leaders Forum released the Primary Sector Climate Change Commitment – called He Waka Eke Noa.[10] In it, they expressed a commitment to working with government and Iwi/Māori to reduce agricultural emissions.

The Government agreed to work with the primary sector and Iwi/Māori, and the He Waka Eke Noa Partnership was established to deliver on a five-year workplan to implement a farm-level emissions pricing system by 2025.

The Government's commitment to the Partnership was reflected in amendments to the Climate Change Response Act (the Act) made in 2020. Schedule 5 of the Act now defines milestones for the primary sector for on-farm emissions reporting and farm plans, developing guidance, and rolling out a national farm emissions accounting system.

A He Waka Eke Noa steering group was created to help drive forward the work of the Partnership. In February 2022, the Partnership released a consultation document with two pricing option concepts on which to engage with stakeholders.[11] After refinement through consultation, the Partnership released its final recommendations to Ministers for a farm-level levy system on 31 May 2022.

Limitation of our assessment of the He Waka Eke Noa proposal

Our assessment of the He Waka Eke Noa proposal has been compressed due to delays to He Waka Eke Noa delivering their recommendations. The He Waka Eke Noa programme office met with the Commission regularly to update us on the Steering Group's progress finalising the recommendations, although material changes continued to be made to the proposal until it was delivered to Ministers on 31 May 2022.

9. (Interim Climate Change Committee, 2019)
10. (Primary Sector Leaders' Forum, 2019) (He Waka Eke Noa, 2022a)
11. (He Waka Eke Noa, 2022a)

The evidence base underpinning this advice

In developing our advice, we have drawn on information, data and evidence provided to us by the He Waka Eke Noa partners, who are the industry partners responsible for collecting the data needed to report on the primary sector climate change commitments. Assessing farmers' progress towards being ready for the alternative pricing system has also required us to draw on information provided to us by He Waka Eke Noa.

This advice also draws on a significant body of pre-existing work, supported by additional analysis and engagement.

The Interim Climate Change Committee (ICCC) drew together a significant body of work on pricing agricultural emissions in 2019. This included analysis on different approaches to pricing, including considerations for pricing at the farm versus processor level, as well as inside or outside the NZ ETS.

We have also reviewed more recent evidence to inform our assessment of readiness. This includes reports commissioned and published by government agencies and others, as well as literature and surveys completed by research groups, Crown Research Institutes and universities. We also met with farmers, industry bodies, representative groups, businesses, professional associations, and other stakeholders to inform our analysis.

For our recent advice on Agricultural Assistance, the Commission conducted additional analysis around the risk of emissions leakage, and a literature review of material published since the ICCC report which was then independently reviewed. The Commission also commissioned a literature review of the policies and targets for emissions reductions in agriculture that other countries have publicly committed to. This helped us to understand how these policies may affect the potential risks of emissions leakage if Aotearoa prices agricultural emissions. We have drawn on this analysis where relevant for this report.

To understand the potential impacts on Māori collectively-owned land we conducted a geospatial analysis of the characteristics of Māori collectively-owned land by region. This included looking at characteristics such as landcover, Land Use Capability (LUC), and size of land parcels – as well as governance structures.

These insights were compared to general title land. This helped us to identify key aspects of Māori freehold land, collective ownership, and governance/management that must be considered in our advice to ensure impacts for Iwi/Māori are given appropriate consideration. For this exercise we define 'Māori collectively-owned land' as all block data that are available through the 'Māori Land Spatial Dataset'.[12]

We have also drawn on the evidence we collected though analysis and engagement to prepare *Ināia tonu nei*. Through our engagement and consultation on *Ināia tonu nei* one of the most common themes in submissions on agriculture was that faster action and more ambition for reducing agricultural emissions is needed, but that providing adequate support for farmers to transition to lower emissions will be crucial.

12. The Māori Land Spatial Dataset is a combination of the spatial data available in the Map Search section of the Māori Land Online website and static data about management structures from the Māori Land Information System. Working in conjunction with the Ministry for Primary Industries, a customised dataset has been developed to meet the needs of public whilst protecting the privacy of individuals.

Engagement has played an important role in our advice

Conversations with people across the agriculture sector have helped us to understand different views, and the needs, perspectives and concerns of individuals, communities, businesses, and others.

While preparing this advice we have spoken to a wide range of people who hold the knowledge and information we need to ensure our advice is robust. In order to consider how all the pieces fit together, we adopted a joint approach to engagement with both this advice and with our advice on Agricultural Assistance (provided to the government on 31 May 2022).

In December 2021 we held a series of four workshops with key groups on both aspects of our advice. These four workshops were targeted at rural professionals, local government representatives, NGOs, and academics. These groups had a depth of understanding regarding what this advice could mean in practice. We provided an overview of the work and sought input both on our approach and on key issues for consideration in our analysis.

We also met individually with sector bodies, representative groups, businesses, farmers and other stakeholders to both gather information and understand their perspectives. We also held a webinar giving the public an opportunity to find out more about the advice we have been developing and ask questions.

Acknowledging the complexity of this work and the fact that the He Waka Eka Noa Partnership was consulting on its proposals at the same time, we attended six He Waka Eka Noa workshops as observers. This enabled us to hear how the He Waka Eke Noa work was being explained to farmers, and the questions they asked.

We have also had regular discussions with the He Waka Eke Noa programme office, as well as with the sector and government partners, to understand their approach and decision-making process. The large delay in He Waka Eke Noa delivering their final proposal to Ministers presented some significant challenges for preparing this advice, and regular contact with the Partnership was important.

In March 2022 we conducted a series of four online workshops with farmers, which were focused on understanding how prepared farmers felt for emissions pricing. Forty individuals from across Aotearoa New Zealand, representing a range of different farm types, took part in the workshops. The farmers who participated were very generous with their time, and the discussion in these workshops was extremely rich and wide-ranging.

We also worked with Manaaki Whenua Landcare Research to conduct a farmer survey, to help us understand how prepared the agriculture sector feels for a potential emissions pricing system. The survey was administered in April 2022, and the final sample included 97 dairy and 128 sheep and beef farmers from across Aotearoa.

Although the perspectives shared during the workshops and in the farmer survey were wide ranging, some clear themes emerged. There was wide variation in terms of how 'ready' farmers felt to participate in a pricing system, but a common sense that more could be done to enable farmers to participate. Farmers varied in terms of whether they see a path forward for their farm under an emissions pricing system, and if so, what that path looks like. Many farmers expressed pride in New Zealand's innovative and environmentally conscious approach to farming.

We also held an online session with representatives from Te Aukaha FOMA, the Māori Agri-business Workstream of He Waka Eke Noa, to discuss specific challenges and differences for Iwi/Māori under an agricultural pricing mechanism. These discussions helped to inform our understanding of the broader He Waka Eke Noa process, the particular areas of

concern or importance for Te Aukaha FOMA, and our wider analysis around impacts on Iwi/Māori and Māori collectively-owned land.

Our Iwi/Māori engagement as we prepared *Ināia tonu nei* has also provided a good foundation for this advice.

In addition to meeting kanohi kitea with Iwi/Māori as part of developing *Ināia tonu nei,* we received written submissions and surveys from Māori through our 100 Coastie Voices campaign on the key proposals put forward in the consultation draft.

While there was overall support for addressing climate change challenges, Iwi/Māori submitters raised concerns that Māori would be disproportionately impacted by climate action if the Government does not uphold its commitments and obligations to Te Tiriti o Waitangi/The Treaty of Waitangi and the Crown-Māori partnership in its response to climate change.

Submitters talked about the need to recognise legacy issues, the potential to compound impacts of managing Māori collectively-owned land, and the importance of ensuring Iwi/Māori are adequately resourced to participate in an equitable transition.

The feedback and perspectives farmers and others have shared with us have been enormously valuable and have helped to inform our analysis around farmer readiness. Reports from the workshops and the farmer survey are available on our website.

Box 1.2: How we have used confidence language in this report

Providing independent, expert advice often requires the Commission to exercise expert judgement, while weighing up a range of available evidence and other considerations.

In this advice, we use the language of 'confidence' when making qualitative assessments. The level of confidence assigned to our expert judgements is based on the strength and quality of available evidence, and on the level of agreement within the evidence.

Below is a summary of how we have used confidence language when making judgements or drawing conclusions in this report:

- We express **high confidence** that an occurrence will (or won't) happen when our judgement or conclusion is based on robust and consistent evidence. There is reasonable consistency in information from multiple sources.
- We express **medium confidence** that an occurrence will (or won't) happen when our judgement or conclusion is based on some evidence, from different sources, potentially with mixed agreement. There is less consistency in information from different sources, or some of the evidence is less credible.
- We express **low confidence** that an occurrence will (or won't) happen when our judgement or conclusion is based on limited or conflicting evidence. There are few sources of the information, and/or the reliability of evidence is difficult to establish.

TŪTANGA RUA · PART TWO

Assessing progress milestones towards emissions pricing

The Climate Change Response Act (the Act) sets out seven 'milestones' for preparing farmers for farm-level emissions pricing. These are focused on farm-level reporting, and farm planning for managing greenhouse gas emissions – both of which are important enablers for effective participation in an emissions pricing system.[13] The Act refers to these milestones as primary sector commitments (Box 2.1).

These milestones help inform our overall assessment. Although they do not give us a complete indication of farmer readiness by themselves, the milestones help paint the overall picture of farmer readiness to participate in farm-level pricing by measuring the share of farms that are reporting on-farm emissions, and the share of farms with plans for managing emissions.

- **Emissions reporting:** For farm-level emissions pricing, all participants would be required to report their total on-farm emissions to the governing agency. The liability that participants face under a farm-level pricing system would be a product of their total emissions.
- **Farm planning:** Farm plans are not likely to be a mandatory component of any pricing options. However, farm planning will likely be an important decision-making tool for farmers to respond effectively to an emissions price.

In the sections that follow we assess the progress that has been made towards achieving the milestones.

13. Under Section 220 (a) of the Act, the Commission is required to provide advice on the progress that has been made towards meeting the primary sector climate change commitments set out in Schedule 5 (Box 2.1 in this section). These commitments take the form of milestones. This is a separate requirement from our advice on progress towards farmers being ready to comply with reporting and surrender obligations.

Box 2.1: Schedule 5: Primary sector commitments

Farm emissions reporting

1. For 25% of farms in New Zealand, a person responsible for farm management holds a documented annual total of on-farm greenhouse gas emissions, by methods and definitions accepted by the He Waka Eke Noa Steering group, by 31 December 2021.
2. For all farms in New Zealand, a person responsible for farm management holds a documented annual total of on-farm greenhouse gas emissions, by methods and definitions accepted by the He Waka Eke Noa Steering group, by 31 December 2022.
3. A pilot of a farm-level accounting and reporting system has been completed by 1 January 2024 across a range of farm types.
4. A system for farm-level accounting and reporting of 2024 agricultural greenhouse gas emissions at farm level is in use by all farms by 1 January 2025.

Farm plans

5. Guidance is provided to farmers on how to measure and manage greenhouse gas emissions through farm planning by 1 January 2021.
6. A quarter of farms have a written plan in place to measure and manage their greenhouse gas emissions by 1 January 2022.
7. All farms have a written plan in place to measure and manage their greenhouse gas emissions by 1 January 2025.

Context

1. The Commission acknowledges the hard work He Waka Eke Noa and farmers have done, in challenging circumstances, to progress towards the primary sector climate change commitments under Schedule 5 of the Climate Change Response Act 2002
2. The Commission has not examined every aspect of the He Waka Eke Noa proposal and has not formed a view on the readiness for the sector and government for aspects of the proposal other than those discussed in this advice. As the Government assesses the merits of the He Waka Eke Noa proposal in full, we recommend taking into account the general principles we have identified in part four.

How we have gone about making our assessment

Assessing progress towards meeting the primary sector commitments required the Commission to make judgements on whether past milestones have been met, and whether future milestones are likely to be met.

For commitments with dates prior to June 2022, the Commission has assessed whether they have broadly been met. This involved understanding the percentage of farms that have met the emissions reporting and farm-planning requirements. It also required us to understand how progress has been measured, and to be satisfied that the data used are fit for purpose.

For commitments with dates after June 2022, the Commission has assessed whether they are likely to be met. This required us to understand whether there are appropriate systems and mechanisms in place to deliver on the various milestones. For example, we had to be satisfied that emissions reporting and farm planning will be adopted by enough farms across all the relevant industries and farm types.

In making our assessments, we have relied heavily on data and evidence provided to us by the He Waka Eke Noa partners. The industry partner organisations developed industry-specific plans to meet the milestones, and have been responsible for collecting the data required for He Waka Eke Noa reporting on the milestones. We did not audit or independently verify the data, but requested additional information from the partners where necessary, to help inform our analysis. Where there are gaps in the information available, this has been noted.

As part of our assessment, we wanted to understand whether progress towards the commitments differed for the Māori agribusiness sector, as this could potentially create a barrier for readiness. However, most sector groups do not record the information necessary to assess this. Therefore, progress for the Māori agribusiness sector specifically could not be separated out from the broader progress data provided.

Progress towards meeting the milestones has varied between the different industries. This is due to their respective sizes, available resources for advisor support, and differing relationships between farmers and processors or buyers. Where there is wide variation between industries, this has been noted.

It is also important to note that reaching any milestone of 100% is an extremely difficult task. This is also the case when it comes to farm-level emissions reporting and planning – where it could be considered extremely unlikely that every single farm, of those that fall within the He Waka Eke Noa definition, could ever meet the requirements. As with any policy area, there will always be some who are unable to, or choose not to, comply. Yet, 100% compliance is what commitments (2) and (7) require.

Because of this, we have made some value judgements when assessing progress towards the 100% milestones under commitments (2) and (7). Where those commitments may not be reached on time, we have considered whether progress towards them is sufficient to help lay the foundations for participation in a farm-level pricing system.

Before assessing progress towards meeting the commitments, we also separately consider the methods and definitions used by He Waka Eke Noa in working towards the milestones. This includes the definition of a 'farm', and the on-farm emissions calculators approved for use in meeting the commitments. We have looked at whether these methods and definitions create adequate foundations for farm-level emissions pricing, how they could influence farmer readiness, and how they compare with the requirements of a farm-level pricing system.

Methods and definitions used by He Waka Eke Noa to assess progress towards the milestones

As part of our assessment of the Schedule 5 commitments we have looked at the methods and definitions used by He Waka Eke Noa. These include the definition of a "farm" used by He Waka Eke Noa to measure progress towards meeting the milestones, and the tools approved by He Waka Eke Noa for calculating on-farm greenhouse gas emissions.

This has helped us understand how the Schedule 5 commitments contribute to farmer readiness for farm-level pricing. The contribution of the Schedule 5 commitments towards readiness is influenced by the degree of consistency between the requirements for farmers under the Schedule 5 commitments and the requirements for farmers under a farm-level system.

For measuring progress against the Schedule 5 commitments, He Waka Eke Noa defined a "farm" as being either over 80ha in size, having a milk supply number, or being a cattle feedlot as defined in freshwater policy. This definition captures approximately 24,000 farms, which make up approximately 96% of farmland and 97% of agricultural emissions.

The dairy, sheep and beef, and deer sectors are the largest emitters of methane and nitrous oxide, and these farm systems are generally captured by the 80ha threshold. The benefits of capturing lifestyle blocks and small non-commercial farms with low emissions are likely outweighed by increased administration costs and increased costs to the farmer.

Under He Waka Eke Noa's proposed farm-level system, the "farm" definition used would be replaced with an entry threshold that would capture all farms that emit over approximately 200 t CO_2e per year.[14] However, overall coverage would be very similar, at about 96% of agricultural emissions and approximately 23,000 farms.

Eleven tools have been approved for calculating on-farm emissions under the Schedule 5 commitments. There is variation between the inputs required and the greenhouse gas figures produced; however, they give farmers flexibility to produce a greenhouse gas figure with tools they are already using and allow for an incremental move towards uniform reporting under a pricing system.

We consider that the methods and definitions used by He Waka Eke Noa to measure progress against the Schedule 5 commitments are fit for purpose. There is some variation between the requirements for farmers under the Schedule 5 commitments and the requirements for farmers under the He Waka Eke Noa proposed farm-level levy, but the farm definition and approved calculators help to contribute towards farmer readiness for emissions pricing.

14. (Waka Eke Noa, 2022c, p. 33)

Progress towards emissions reporting milestones

The first two milestones under the Schedule 5 commitments focus on farm emissions reporting. Under a farm-level pricing system, farmers would be required to report their on-farm emissions to the regulatory agency. These would be multiplied by the emissions price to determine how much farmers should pay for their emissions (their 'liability').

Milestones (3) and (4) relate to implementing a farm-level system as a whole, in contrast to milestones (1) and (2), which measure progress towards specific components of farm-level pricing. Because of this, there is some crossover with our broader analysis on how practical the different pricing options are. This analysis is covered in depth in part three of this report.

Robust evidence from the He Waka Eke Noa partners responsible for measuring progress towards the Schedule 5 commitments gives us *high confidence* that the 25% emissions reporting commitment (1) has been met. About 61% of farms held a documented total of their annual emissions as of 31 December 2021. However, ongoing progress and the total number of farms varies significantly between sectors (see Table 2.1).

The 100% emissions reporting commitment (2) is due by 31 December 2022. Based on evidence received to date, we have *high confidence* that the sector will not reach this commitment on time.

Evidence of progress towards commitment (2) included plans produced by He Waka Eke Noa partners on how their respective sectors would reach the milestone, and follow-up conversations with the partners.

As well as overall progress, the evidence provided by He Waka Eke Noa partners shows that progress between different industries varies widely. Evidence indicates that dairy, sheep and beef, and deer sectors will come closer to meeting this commitment than other parts of the primary sector.

Progress for the arable and horticulture sectors has been significantly slower, although they have a relatively small number of total farms to reach. It is worth noting that most of these farms would also not meet the 200 t CO_2e emissions threshold for entry into the He Waka Eke Noa proposed farm-level system.

Table 2.1: Sector progress towards emissions reporting commitments [15]

Sector	Total number of farms	Estimated number of farms with emissions number as of 31 Dec 2021	%
Dairy	10,765	9,884	92%
Sheep and Beef	11,928	4,520	38%
Arable	960	217	23%
Deer	441	260	59%
Horticulture	188	34	18%
Total	**24,282**	**14,915**	**61%**

15. (He Waka Eke Noa, 2022d)

We conclude with *high confidence* that commitment (3), for a pilot of a farm-level accounting and reporting system across a range of farm types by 1 January 2024, can be met in time if all parties continue to work towards it.

Some elements included in the He Waka Eke Noa farm-level system proposal, such as sequestration (the removal and storage of carbon from the atmosphere by vegetation) and incentives for approved actions, would add considerable complexity to a pilot system. A pilot that excluded some of these elements, and which only covered a small number of farms, would minimise the barriers for farmer participation and government implementation.

The evidence we have seen leads us to conclude with *high confidence* that commitment (4), for a farm-level system accounting for and reporting on 2024 emissions that covers all farms, as proposed by He Waka Eke Noa, will not be practical to implement by 1 January 2025.

The farm-level system proposal put forward by He Waka Eke Noa creates some challenges in implementing a full farm-level system by 2025. This includes IT system cost and build time, challenges with registering more than 20,000 farms into the system, and the establishment and running of a compliance function.

Sector-wide reporting would likely rely on the IT system being complete, which He Waka Eke Noa projects will finish in the second quarter of 2025. However, further simplifying a farm-level system could make implementation more practical by 2025, and we make suggestions how to achieve this in part four of this report.[16]

We have *high confidence* that with commitment (1) having been achieved, and progress made towards commitments (2) and (3), even if these milestones are not met in full, this contributes to laying the foundations for participation in a basic farm-level pricing system by 1 January 2025.

16. We refer to the simplified transitional system within the He Waka Eke Noa proposal, which they propose would start in 2025, as the 'simplified farm-level levy'. When referring more generally to a farm-level pricing system with minimal data reporting requirements, we refer to this as a 'basic' farm-level pricing system.

Progress towards farm-planning milestones

Milestones (5), (6) and (7) under the Schedule 5 commitments focus on farm plans. Farm planning is about helping farmers to identify where greenhouse gas emissions are coming from on their farm, and ways to manage those emissions within the context of their business.

Farm planning will likely be a useful tool for farmers to respond effectively to an emissions price. However, unlike emissions reporting, it is not likely to be a mandatory component of any pricing option. Because of this, we are comfortable with a higher degree of uncertainty as to whether the sector will achieve the 100% target.

We saw *robust* evidence that commitment (5), for guidance to be provided to farmers on how to measure and manage greenhouse gas emissions through farm planning by 1 January 2021, has been met. He Waka Eke Noa released and distributed their *Greenhouse gases: Farm Planning Guidance* to partner organisations by 1 January 2021. Second and third editions of the *Farm Planning Guidance* have subsequently been published.

We have *high confidence*, based on *robust* evidence, that commitment (6), for 25% of farms to have a written plan in place to measure and manage their greenhouse gas emissions by 1 January 2022, was not met. By 1 January 2022, approximately 21% of farms had a written plan in place. The dairy, deer, and horticulture industries individually met this commitment on time, but the sheep and beef and arable sectors did not.

We have *low confidence*, based on the *limited* evidence we have seen, that commitment (7), for 100% of farms to have a written plan in place to measure and manage their greenhouse gas emissions by 1 January 2025, will be met on time. Based on current rates of progress, and considerable variation between different parts of the agriculture sector, it is unclear how close the agriculture sector as a whole will get to achieving the 100% commitment.

Commitment (7) is not due until 2025. Due to a lack of available evidence, we have been limited in our ability to assess how close larger sub-sectors are likely to come to reaching the 100% farm-planning milestone. We are aware that ongoing farm-planning extension work is occurring across the dairy, sheep and beef, and deer industries to meet the target.

The progress of smaller sub-sectors is also uncertain. The horticulture sector is slowly progressing towards the milestone, however the limited data available did not allow us to make a detailed assessment. We conclude with *low confidence* that the arable sector will not reach the milestone. However, it is worth noting that only a small number of arable farms would meet the 200 t CO_2e emissions threshold for entry into the He Waka Eke Noa proposed farm-level system.

Even though commitments (6) and (7) were not met, or are unlikely to be met in full, our assessment is that progress towards the primary sector commitments for farm planning (5), (6), and (7) indicate sufficient preparation to be on track for a basic farm-level pricing system by 2025.

Table 2.2: Sector progress towards farm-planning commitments [17]

Sector	Total number of farms	Estimated number of farms with written plan as of 1 Jan 2022	%
Dairy	10,765	2,785	26%
Sheep and Beef	11,928	1,883	16%
Arable	960	16	2%
Deer	441	260	59%
Horticulture	188	127	68%
Total	**24,282**	**5,071**	**21%**

17. (He Waka Eke Noa, 2022d)

What progress has been made toward the milestones?

After reviewing the evidence and exercising our judgement, the Commission considers that:

3. Regarding farm emissions reporting, based on evidence provided by He Waka Eke Noa:
    a. We have *high confidence*, based on *robust* evidence, that commitment (1), for 25% of farms to hold a documented annual total of on-farm greenhouse gas emissions by 31 December 2021, has been met.
    b. The *evidence* we have seen gives us *high confidence* that commitment (2), for all farms to hold a documented annual total of on-farm greenhouse gas emissions by 31 December 2022, will not be met. The evidence we have seen suggests that the dairy, sheep and beef, and deer sectors will come closer to meeting this commitment than other parts of the primary sector.
    c. We have *high confidence*, based on *robust* evidence, that commitment (3), for a pilot of a farm-level accounting and reporting system to be completed by 1 January 2024 across a range of farm types, can be met in time if all parties continue to work towards it.
    d. The evidence we have seen leads us to have *high confidence* that commitment (4), for a farm-level system accounting for and reporting on 2024 emissions that covers all farms, as proposed by He Waka Eke Noa, will not be practically implementable by 1 January 2025.
    e. Nonetheless, we have *high confidence* that with commitment (1) having been achieved, and progress towards commitments (2) and (3), even if not met in full, contributes to laying the foundations for participation in a basic farm-level pricing system by 1 January 2025.
4. We have *high confidence*, based on *robust* evidence, that commitment (5), to provide guidance to farmers on how to measure and manage greenhouse gas emissions through farm planning by 1 January 2021, has been met.
5. We have *high confidence*, based on *robust* evidence, that commitment (6), for 25% of farms to have a written plan in place to measure and manage their greenhouse gas emissions by 1 January 2022, was not met. By 1 January 2022, approximately 21% of farms had a written plan in place.
6. We have *low confidence*, based on the *limited* evidence we have seen, that commitment (7), for 100% of farms to have a written plan in place to measure and manage their greenhouse gas emissions by 1 January 2025, will be met on time. Based on current rates of progress, and considerable variation between different parts of the agriculture sector, it is unclear how close the agriculture sector as a whole will get to achieving the 100% commitment.
7. Even though commitments (6) and (7) were not met, or are unlikely to be met in full, we consider that progress towards the primary sector commitments for farm planning (5), (6), and (7) is sufficient to prepare for a basic farm-level pricing system by 2025. We recommend the pricing system, the ways that farmers can respond to it, and the decision-support tools required to support the system, transitions from a basic to detailed system as rapidly as possible.

TŪTANGA TORU · PART THREE

Assessing farmer readiness for, and barriers to, emissions pricing

Agricultural emissions pricing is required by the legislation to be in place no later than 1 January 2025. Any delay in implementing pricing, and other targeted policies, makes it less likely that the agriculture sector's contribution to the 2030 targets for biogenic methane and the emissions budget for 2026-2030, and beyond, will be met.

Through our engagement we heard that the ability of a pricing system to recognise and incentivise a range of mitigation actions, beyond reducing production or changing land use, is a key reason why farm-level pricing is preferable for farmers.

The ability for farmers to respond to emissions pricing is important too. An important aspect of this, which relates to readiness, is how well the pricing system enables farmers to identify mitigation options for their farm.

To understand the progress that has been made toward readiness, we took a system view that includes both participation and implementation requirements. For farmers to be ready to participate, the whole system must be ready. This involves a network of groups including supporting advisory services, government and any third parties needed for implementation.

The three approaches to emissions pricing we have assessed farmer readiness against are:

1. Farm-level pricing of agricultural emissions outside the New Zealand Emissions Trading Scheme (NZ ETS)
2. Farm-level pricing of agricultural emissions through the NZ ETS
3. Processor-level pricing emissions of agricultural emissions through the NZ ETS.[18]

In this part we outline the progress that has been made towards farmers being ready to participate under each of these variations, identifying any barriers to progress, and outlining further steps needed to get ready.[19]

We use the He Waka Eke Noa proposal presented to Ministers on 31 May 2022 as an example to examine progress towards readiness for farm-level pricing outside the NZ ETS. However, our advice, including discussion of barriers and further steps, is also intended to apply to any alternative farm-level system the Government might choose to progress.

18. There are currently two possible approaches for pricing agricultural emissions at the farm level under the Act:
    1.an alternative farm-level system outside the NZ ETS (As described under s215 of the Act)
    2.a farm-level pricing system within the NZ ETS (The 'default option' described under s219 of the Act.)
    Emissions from agriculture could also be priced at the processor level through the NZ ETS at any time after July 2022, if the Minister deems progress toward farm-level pricing to be insufficient (Section 219 subsections 3-6 of the Act). The Commission is not required, under the Act, to comment on sector readiness for this option. However, given the Minister's ability to choose to price emissions in this way, we also look at readiness for this option, as important context for broader discussions around farmer readiness.
19. Section 220 (b), (c) and (d) of the Act

Design elements of a pricing system

With any pricing system, choices need to be made on a range of design elements. Those choices will affect how ready farmers, and the wider sector, are to participate in the system as well as how ready the regulator is to implement the system and enforce it. These design elements also have implications for outcomes, in terms of how practical, effective and equitable the system is.

There are many choices government needs to make when deciding how to price agricultural emissions. This advice on readiness, and our assessment of the three pricing approaches, touches on each of the following design elements:

Table 3.1: Design elements of a pricing system

Design Element	
Point of obligation	Determines who complies with the obligation to report emissions and pay for them. Either farmers and collectives report and face direct pricing for their emissions (farm-level), or the obligation is lifted to food processors (processor-level), who then pass the cost on to farmers.
How emissions are calculated	Emissions cannot be measured directly, but there are several ways in which they can be calculated. The way emissions are calculated affects what mitigation options are recognised and rewarded through the pricing system. A range of tools that estimate emissions are already in use by the sector, such as farm models like OverseerFM or Farmax. More detailed or less detailed methods can impact the accuracy and ease of doing the calculations. There can often be a choice between inputting specific data from each farm or using national averages across the sector.

Design Element	
How emissions are priced	There are several decisions for government to make regarding how emissions are priced. For example, whether there are different prices for methane and long-lived gases, and how the price is set. A fixed price levy/tax is one option, a market-driven price created by capped tradable emissions allowances is another. For a fixed levy, there are further questions about who sets the price, and when.
What, if any, assistance	Within a pricing system 'assistance' can be financial and non-financial support for participants to face, and appropriately respond to, a price on their emissions. Financial assistance can be structured or conditional. 'Structured' assistance is provided on the same basis to all participants, while 'conditional' assistance is provided on an eligibility basis. Effective financial assistance can help manage the risks of widespread material financial hardship while maintaining a strong incentive to reduce emissions.[20] Financial assistance could be provided directly to participants in the form of a rebate of levy revenues back to participants, or indirectly by reducing the price of emissions or requiring that only some of the participants' emissions must be paid for. Non-financial assistance includes, for example, extension and planning support, recognising on-farm sequestration, research and development, and support developing supply chains for alternative products.
How sequestration is treated	In addition to pricing emissions, a system can also recognise emissions removals by sequestration. This requires consideration of several technical issues, including types of vegetation, accounting rules, monitoring procedures, penalties for clearing vegetation, and standards for ensuring only 'additional' action beyond business-as-usual is rewarded.
How revenue is used	Revenue from pricing emissions can be used in a range of ways. Possibilities include research and development, covering a larger share of system establishment and operating costs, contributing to general government revenue, purchasing international mitigation credits to help meet New Zealand's Nationally Determined Contribution (NDC),[21] or returning to participants as direct payments for certain actions.
Compliance and oversight	An emissions pricing system requires compliance and oversight mechanisms to ensure its credibility and effectiveness. Decisions need to be made about who manages this and what details are required for compliance and verification. There can be tradeoffs here with practicality and cost.

20. See (He Pou a Rangi | Climate Change Commission, 2022)
21. The NDC reflects New Zealand's committed contribution towards delivering on the goals of the Paris Agreement. New Zealand's first NDC was updated on 31 October 2021 with a headline target of a 50% reduction of net emissions below our gross 2005 level by 2030. It covers the period 2021-2030, covering all sectors and all greenhouse gases. (Ministry for the Environment, 2021)

Requirements for readiness

We identified three main practical requirements that support farmer readiness for agricultural emissions pricing. Whether emissions are priced at the farm or processor level will greatly impact the nature of each requirement.

1. **System processes and infrastructure are able to be established and administered.** The pricing system needs to be practical for the regulator to implement by 1 January 2025. Key establishment processes include passing legislation, drafting regulations, developing IT systems, registering participants and developing a compliance function.
2. **Farmers are ready to participate by reporting data and paying for emissions.** Participants need to have access to the necessary farm data, and be sufficiently able and willing to report those data and pay for their emissions liability.
3. **Farmers are able to identify emissions reduction actions in response.** Under a farm-level approach, if an aim of farm-level pricing is to influence on-farm practices, participants need to be able to make informed choices in response to their emissions liability. This includes having access to information that shows which farm activities result in emissions, as well as access to the skills, tools and advice to plan and implement appropriate emissions reduction actions.

Our analysis also identified three groups critical to delivering these functions: farmers, rural professionals and the Government. Each group plays different roles in supporting the key functions described above, as illustrated in Table 3.2 below.

Table 3.2: Roles of critical groups in delivering the three key functions of a farm-level pricing system

Key functional requirement	Process involved	Critical groups
System processes and infrastructure are able to be established and administered	Developing legislation and regulations, IT systems, agency operations and compliance	The pricing system is implemented by the **Government**, with some support from **rural professionals** (e.g. compliance support) and external parties (e.g. IT system build)
Farmers are ready to participate by reporting data and paying for emissions	Collecting and reporting farm-level data and paying for their liability	Participation is the responsibility of **farmers** and/or processors, with support from **rural professionals**
Farmers are able to identify emissions reduction actions in response	System can assist farmers to identify appropriate mitigation measures in response to their emissions liability	Farm management and practice change, by **farmers** with support from **rural professionals**

Assessing readiness for farm-level pricing outside the NZ ETS

We have interpreted the proposal He Waka Eke Noa provided to Ministers on 31 May 2022 to be the 'farm-level pricing of agricultural emissions outside the NZ ETS' option that we are required to assess readiness for, as specified in the Act.

We acknowledge that if farm-level pricing is progressed by the Government, the implemented system may differ from the He Waka Eke Noa proposal. Our advice is therefore intended to apply to any alternative farm-level system the Government might choose to progress.

The proposal includes both a simplified transitional system starting in 2025, and a more detailed system to replace it and start in 2027.[22] The proposal acknowledges that a pricing system that uses detailed information about farm emissions is preferable, as it has better ability to recognise and reward mitigation actions taken by farmers, but is more complicated to implement and participate in.

Our assessment of readiness considers readiness for the simplified transitional system within the He Waka Eke Noa proposal, which they propose would start in 2025. We refer to this as the 'simplified farm-level levy'. When referring more generally to a farm-level pricing system with minimal data reporting requirements, we refer to this as a 'basic' farm-level system.

Later in this section we consider and acknowledge the challenges that different participants are likely to face under a more detailed future system, and what steps could be taken to resolve these issues.

How would emissions pricing under a simplified farm-level levy work?

Under the He Waka Eke Noa proposal, individual farms would be required to pay an emissions liability calculated through a centralised emissions calculator, using data from their farm.[23] Emissions of methane and long-lived gases would be priced separately, with prices set by Ministers based on recommendations from the System Oversight Board and the Independent Māori Board.[24]

Farmers would receive a discount off their emissions liability if they implement certain approved mitigation actions, to make adoption of those actions more cost-effective and increase uptake.[25] These discounts would be related to the cost of implementing the action and the amount of emissions it reduces.

Farmers would also be able to reduce their emissions liability by being rewarded for sequestration from a range of on-farm vegetation that is not currently recognised by the NZ ETS. [26]

22. (He Waka Eke Noa, 2022c, pp. 25–27)
23. (He Waka Eke Noa, 2022c, pp. 36–40)
24. (He Waka Eke Noa, 2022c, pp. 30–31)
25. (He Waka Eke Noa, 2022c, pp. 50–54)
26. (He Waka Eke Noa, 2022c, p. 55)

Table 3.3: Summary of proposed policy design elements for the He Waka Eke Noa simplified farm-level levy [27]

Point of obligation	
Farm-level	The threshold for entry would be all farm businesses that are GST registered and have an annual average of over: • 550 stock units (sheep, cattle, deer, and goats); or • 50 dairy cattle; or • 700 swine (farrow to finish); or • 50,000 poultry; or • 40 tonnes of nitrogen through synthetic nitrogen fertiliser application. This definition captures all farms that emit over approximately 200 tCO_2e per year, which is 96% of all agricultural greenhouse gas emissions (around 23,000 farms).[28] The business owners of every eligible farm would be required to report and pay for their emissions. Farmers may also opt in to a collective, where a group of business owners (including those who do not meet the farm definition) submit a single return.[29]
How emissions are calculated	
Centralised calculator	On-farm emissions would be calculated using a single centralised calculator. The simple reporting method requires farmers to report four inputs: farm area, annual stock reconciliation, production data per animal type and class, and synthetic nitrogen fertiliser by type. Two optional data inputs include: area of farm in different slope classes, and synthetic nitrogen fertiliser application method.[30] This simple-level reporting would capture some actions on farm that reduce emissions.
How emissions are priced	
Unique levy rates for short-lived and long-lived gases, and a sequestration price linked to the NZ ETS	Emissions are priced using a split-gas approach that combines total cost into a single levy, which takes into account incentive discounts and sequestration.[31] The levy calculation takes the form of "A + B – I – C = $". **A =** the total price of methane emissions **B =** the total price of nitrous oxide and carbon dioxide emissions **I =** the incentive discount for approved actions to reduce emissions **C =** the reward for on-farm sequestration **$ =** the total net cost, where A, B, I and C are all netted off as dollar values.[32] Methane emissions would be calculated by weight, and nitrous oxide and carbon dioxide emissions would be calculated in carbon dioxide equivalence (CO_2e).[33] Unique levy rates would be set for methane and long-lived gases (CO_2 and N_2O). A System Oversight Board with representation from the primary sector would recommend levy rates in line with a number of legislated "factors to consider".

27. (He Waka Eke Noa, 2022c)
28. (He Waka Eke Noa, 2022c, p. 33)
29. (He Waka Eke Noa, 2022c, pp. 33-35)
30. (He Waka Eke Noa, 2022c, p. 36)
31. (He Waka Eke Noa, 2022c, pp. 20-21)
32. (He Waka Eke Noa, 2022c, p. 12)
33. (He Waka Eke Noa, 2022c, pp. 41-49)

	The levy rates for long-lived gases would be set at the level required to fund recognised sequestration, incentive discounts, research and development for N_2O reduction, and a share of administration costs.[34] Farmers could also receive an incentive discount for undertaking actions that reduce emissions (practices or technologies) from an approved list. This would increase uptake of approved mitigation actions by making them more cost-effective. The value for the discount would be related to the cost of implementing the action, and the emissions reductions associated with it.[35] A separate price would be set for sequestration. This would be linked to the NZ ETS carbon price but discounted. The price of sequestration would be updated annually. The levy rates for short-lived and long-lived gases, and the discount on the price of sequestration would be reviewed/ updated every three years.
How assistance is designed	
No assistance	No formal financial assistance is recommended in the proposal. For farms without options to reduce their costs, and where pricing would have a severe impact on financial viability, and access to sequestration is severely restricted by national and local body regulation, levy relief would be provided on a case-by-case basis.[36]
How sequestration is treated	
Indigenous vegetation and some non-ETS exotic vegetation categories would be recognised	Sequestration from nominated areas of eligible vegetation would be reported and netted off against the emissions liability.[37] Several permanent and cyclical categories of vegetation would be recognised with different methods for calculating sequestration for permanent and cyclical vegetation. Scientifically credible sequestration estimates would need to be derived by experts. In the simplified system, only vegetation in existing schemes e.g., QEII, Ngā Whenua Rāhui, Māori Reservation Land (qualifying vegetation), and relevant Regional Council-funded indigenous vegetation on farmland would be eligible.[38] Farmers would face liabilities if nominated vegetation areas were cleared.[39]
How revenue is used	
Research and development, administration costs, and a dedicated fund for Māori landowners	Revenue for the farm-level levy would be the money left after incentive discounts and sequestration claims are netted off.[40] Levy revenue would be invested back into the primary sector with the System Oversight Board setting the strategy for revenue use based on a number of suggested principles. A dedicated fund will be established to support Māori landowners and the research and development of mitigation technologies is recommended as a priority area for revenue use.

34. (He Waka Eke Noa, 2022c, pp. 43-44)
35. (He Waka Eke Noa, 2022c, pp. 50-54)
36. (He Waka Eke Noa, 2022c, p. 53)
37. (He Waka Eke Noa, 2022c, pp. 55-56)
38. (He Waka Eke Noa, 2022c, p. 26)
39. (He Waka Eke Noa, 2022c, pp. 63-64)
40. (He Waka Eke Noa, 2022c, pp. 66-69)

What is needed to support this system to be implemented?

While He Waka Eke Noa has made significant progress in developing an emissions pricing proposal, timelines for development have not kept pace with what was laid out in their Terms of Reference.[41,42]

During our engagement we heard that delays by He Waka Eke Noa in delivering their proposal constrained the planning government was able to do to understand how practical the proposal would be to implement, to feed into government decision-making on agricultural emissions pricing.

We did not see sufficient evidence to enable us to assess the Government's plan for standing up a system to price agricultural emissions and assess it as part of this advice.

There are a number of establishment processes needed to implement the simplified system by 1 January 2025. These include registering over 20,000 farms; passing legislation and drafting regulations; designing, building and administering IT and data management systems; establishing and administering a compliance function; and developing and delivering enforcement mechanisms.

At the time of our engagement, the Government had yet to define a responsible administrative agency/s, and had not secured budget appropriations for implementing a farm-level system in 2025. Decisions on these matters will be needed by the end of December 2022, as required by section 215 of the Act. This timeframe will be very challenging to meet.

External constraints may also affect the feasibility of implementing the system within current timeframes, including a tight labour market and the capacity of the IT industry.

The willingness of farmers to participate will also play a role in how challenging it will be for the Government to implement and administer a pricing system. We heard in our engagement that there are different opinions across the sector on the need and urgency for farms to reduce emissions, the quantity of reductions that are required and are possible, and how to accomplish these.

We also heard concern about the large number of regulatory and reporting requirements farmers are facing. We heard that the high pace of regulatory change risks a lack of farmer buy-in with any farm-level pricing system. Lack of buy-in creates additional burdens for implementing and administering a pricing system, such as increased non-compliance and a need for additional monitoring.

Nonetheless we heard from industry and government that opportunities exist that may help make rolling out a simplified pricing system more achievable.[43] One opportunity we consistently heard about was the need to integrate the pricing system with existing data systems and policies. For example, potential opportunities include using rural accountants to process and report simple farm data and leveraging the existing GST payment system.

There are also opportunities to align with recent changes in environmental regulation such as freshwater reforms, biodiversity, and animal welfare, as well as changes to the NZ ETS.

With respect to the He Waka Eke Noa sequestration proposal, the simplified farm-level levy only rewards qualifying vegetation in existing programmes such as QEII, Ngā Whenua Rāhui, and relevant Regional Council initiatives. By virtue of relying on existing programmes, there are few barriers to its implementation for farmers, government, and the wider system by 2025.

41. (Ministry for the Environment, 2020a, paragraph 13)
42. These include dates for delivering an initial concept for an alternative farm-level pricing system by end of 2020, and core design elements by early 2022, neither of which were met.
43. (Chartered Accountants Australia and New Zealand, 2022)

However, there are not currently scientifically robust estimates of the sequestration from the vegetation types in the proposal. He Waka Eke Noa has used indicative estimates for their modelling but note that experts will be required to come up with scientifically robust estimates for implementing the policy. This would need to be funded and prioritised to be ready for 2025.

While we conclude that implementing the simplified farm-level system may indeed be possible by 2025, we have been unable to assess how ready government are to implement the He Waka Eke Noa proposal due to a lack of evidence. We consider that the consequences of delayed or inadequate implementation could increase the risk that 2030 targets are not met.

How ready are farmers and the sector to participate?

The simple farm-level reporting used in the He Waka Eke Noa simplified farm-level levy will result in relatively low farmer effort and costs, and limited need for advisory support. Many farms already collect the data required for simple reporting, compared to that required for a detailed farm-level system.[44]

Achieving commitment (1) in Schedule 5 of the Act (25% of all eligible farms reporting their emissions) shows that progress has been made toward farmers being ready. We heard from both farmers and rural professionals that access to the data required under a basic farm-level system would not require additional effort for most farms. The required data are similar to those used for tax purposes, such as stock reconciliation numbers for GST returns.

We heard from industry experts that under a basic system with a simple level of reporting detail accountants would have the tools and processes to report emissions data on behalf of most farmers. We also heard that with a simple level of reporting detail, it is highly likely that there are already enough farm accountants able to do this.[45] Accounting processes also already include audit and verification.

Based on *robust* evidence, we have *high confidence* that all (or almost all) eligible farmers can be ready to effectively participate in a basic farm-level pricing system by 1 January 2025. This includes having access to sufficient farm-level data and support from advisory services.

Nonetheless we are aware that many farmers are still not supportive of emissions pricing and think participation will be challenging.[46] Nearly 70% of farmers who responded to our survey thought that participating in emissions pricing was going to be difficult or extremely difficult.[47]

One concern we heard frequently from farmers and industry experts alike is that emissions pricing would be poorly integrated with existing or upcoming systems and regulations. In our farmer workshops, some farmers voiced concern about the potential for 'shifting goalposts' as requirements under different regulations are implemented.[48]

The He Waka Eke Noa process has faced challenge, including from some farming groups. Developing a proposal that is supported by all partners, and by farmers, has been challenging. We observed evidence consistently showing disagreement across the sector on the need and urgency for farms to reduce emissions, the quantity of reductions that are required and are possible, and how to accomplish these.

44. (He Waka Eke Noa, 2022b)
45. (Chartered Accountants Australia and New Zealand, 2022)
46. In the recent survey we conducted, farmers were evenly split between agreement and disagreement over whether they should take steps to reduce emissions, with over 20% strongly disagreeing (Polyakov & Stahlmann-Brown, 2022).
47. (Polyakov & Stahlmann-Brown, 2022)
48. (Confluence Consulting, 2022)

A lack of consensus on emissions pricing may affect the willingness of some farmers to participate. We heard concern from industry experts that the lack of consensus among farmers and the wider sector could increase the likelihood of non-compliance, and potentially undermine the effectiveness of an emissions pricing system.

Overall, we have *high confidence* that farmers can be ready to comply with a basic farm-level pricing system outside of the NZ ETS by 1 January 2025, if such a system is established.

Will farmers be able to identify emissions reduction actions in response?

The He Waka Eke Noa simplified farm-level levy incorporates more detail than would be captured through a processor-level system. Nonetheless, the simple level of detail used in the system means that it is limited in its ability to recognise and reward on-farm actions that reduce emissions, including reducing emissions intensity of production.[49]

Farmers may be technically ready to implement on-farm actions that reduce emissions intensity of production, but based on the simple data they are required to report they will not be incentivised to do so, and may face barriers to identifying and planning those actions.

This limits farmers' choice about how to respond to price signals. It also makes it harder for farmers to identify which part of their operations are resulting in the most emissions.

Other barriers to identifying and planning actions to reduce emissions include access to information, tools and support. We heard that farmers who do not have ready access to sufficiently detailed data, for example non-dairy livestock farmers, are less likely to be able to plan and implement actions that reduce emissions intensity.

The written guidance prepared by He Waka Eke Noa provides a starting point to help farmers identify available mitigation options.[50] However, in our view the guidance does not assist farmers in identifying how different approaches might affect their business.

In order to make informed decisions about how to reduce emissions, or identify their emissions profile in greater detail, farmers may need to use a more detailed farm tool or model, and would benefit from farm planning and advisory support.

We saw evidence and heard from industry experts that emissions management often requires specialist professional support for planning and implementation.[51] These skilled and experienced advisors are currently in short supply.

Barriers are unlikely to be uniform across farms. We saw robust evidence that these barriers will be higher for Māori collectively-owned land due to land tenure and management structure restrictions. This was reflected by Māori farmers and landowners in the Te Aukaha FOMA analysis of submissions on the He Waka Eke Noa consultation document.[52]

Nevertheless, a basic farm-level system could provide incentives for some farm management practices that reduce emissions, but which only require simple information. These actions include reducing production and changing land use. Because farm-level animal and production data are used, some other on-farm actions that reduce emissions will also be captured.

49. Emissions intensity of production refers to the amount of greenhouse gases emitted per unit of production (eg, meat or milk).
50. (He Waka Eke Noa, 2020)
51. (BECA, 2018)
52. (Federation of Māori Authorities, 2022)

Assessing readiness for farm-level pricing within the NZ ETS

Emissions trading schemes work by placing a cap on total emissions allowed in sectors covered by the scheme. A volume of emissions units equal to the cap is then allocated to participants through a combination of auctions and free allocation. Because the supply of units is limited, a market and an emissions price are created.

Compliance for emissions in the NZ ETS occurs through the purchase, trade and 'surrender' of 'New Zealand Units' (NZUs) that each represent one tonne of carbon dioxide equivalent.

While the Act includes requirements for individual livestock farmers in the NZ ETS, they are currently exempt from reporting or paying for their farm emissions.

How would farm-level pricing within the NZ ETS work?

There are no details available indicating what farm-level pricing within the NZ ETS would involve, or what the threshold for participation would be.

However, we can assume that livestock farmers would be required to submit farm-level data to the regulator, who would then use a method aligned with the national inventory to calculate farm emissions as carbon dioxide equivalents.[53] The NZU price would then be applied, and farmers would be required to pay for their emissions through purchasing and surrendering NZUs.

Recognising carbon removals through sequestration in farm vegetation would only be available through the claim processes that are already available in the NZ ETS. Claims using vegetation not eligible in the NZ ETS would only be possible once there was sufficient scientific basis to support recognition in the national inventory, and the eligibility rules in the NZ ETS would need to be amended.

How revenue from the pricing system is used would be decided by the government of the day.

53. New Zealand's Greenhouse Gas Inventory is the main source of data on greenhouse gas emissions in Aotearoa. The inventory follows international guidelines from the IPCC for reporting emissions, and is used for international and domestic reporting, monitoring progress towards emissions targets, and informing climate policy.

Table 3.4: Summary of proposed policy design elements for farm-level pricing within the NZ ETS

Point of obligation	
Farm-level	Livestock farmers would be required to report and pay for all emissions through the NZ ETS through purchasing and surrendering NZUs. There are no other thresholds set for eligibility in the Act.[54] There is also a provision in the Act for farmers purchasing synthetic nitrogen fertiliser to report and pay for the relevant emissions within the NZ ETS.
How emissions are calculated	
No methodology defined	The methodology is not defined in the Act. For our assessment we have assumed that the emissions calculation methodology used by farm-level pricing within the NZ ETS would work in the same way as the He Waka Eke Noa proposal, but participants would also be responsible for surrendering NZUs to comply. The method is likely to be aligned with the NZ inventory and expressed as CO_2-e.
How emissions are priced	
Use emissions metric to convert to CO_2-e with price set by the NZ ETS	The emissions metric GWP100 would be used to calculate CO_2-e for each greenhouse gas. The price charged on emissions will be aligned to the carbon price in the NZ ETS, reflecting the current market value.
How assistance is designed	
95% free allocation to all participants, decreasing over time	The Government has indicated it will issue 95% of the required NZUs free of charge, meaning that only 5% of emissions will be effectively charged. Under the Act the rate of freely allocated NZUs will reduce by one percentage point per year, meaning that if the option was implemented in 2025, there would be 90% free allocation by 2030.
How sequestration is treated	
NZ ETS-eligible sequestration only	The scheme does not treat sequestration for farmers any differently from other participants in the NZ ETS. Any farmer wishing to claim eligible sequestration would need to place a claim for NZUs in the ETS.
How revenue is used	
To be decided by the government	The Government has indicated it intends to recycle revenue back into the industry, but has not defined how funds will be spent or how this will be decided.

54. Farmers are defined in Part 5 (Subpart 4) of the Climate Change Response Act 2002 as those: "Farming, raising, growing, or keeping ruminant animals, pigs, horses, or poultry for (a) reward; or (b) the purpose of trade in those animals, or in animal material or animal products taken or derived from those animals".

There are currently no specific details available on what farm-level pricing within the NZ ETS would involve, other than what is written in the Act. This means we have been unable to undertake detailed analysis or assess progress towards readiness for, or barriers to, implementation or participation. However, there are some observations we can make on progress towards readiness.

What is needed to support this system to be implemented?

Significant changes to NZ ETS regulations and legislation may be required to implement farm-level pricing within the NZ ETS. This is because calculating farm emissions would introduce significant complexity into the existing NZ ETS.

Developing new methodologies and regulations is likely to be time-consuming, due to the need for robust science to underpin changes, and consistency with the national inventory.

With the addition of potentially more than 20,000 farms, the number of participants in the NZ ETS would increase dramatically. This could create significant administrative, compliance and data management challenges for the regulator. Existing registration and compliance systems would require significant upgrading to manage the additional participants and the differences in data reporting.

The on-farm emissions reporting and compliance challenges for farm-level pricing within the NZ ETS would be similar to those for a farm-level levy system. These include passing legislation, developing regulations, registering participants and establishing and administering compliance and enforcement functions.

We heard concerns about the potential risks of over-allocation of NZUs into the NZ ETS if agricultural emissions were to be brought into the scheme with high levels of free allocation. There is a risk that, with high starting rates of free allocation for participants (farmers or processors), overallocation could happen very quickly.

The Interim Climate Change Committee highlighted this risk in their advice, noting that the emissions intensity of agricultural production in Aotearoa has fallen at a rate of about 1% per year over the last 25 years, with further reductions expected in the near term. If the rates of free allocation to the sector do not take this into account, in a few years the amount of allocation provided to agriculture would be 100% of actual agricultural emissions. This would be overallocation, which can cause perverse incentives that would erode the effectiveness of the NZ ETS.[55]

Due to these issues, we have *high confidence* that implementation of farm-level pricing within the NZ ETS will not be feasible by 1 January 2025.

55. The Act provides for 5-yearly reviews to avert the risk of overallocation (CCRA, Section 161G). To avoid the need for significant changes via review, the ICCC recommended that this issue could be addressed by setting livestock-related allocation factors so that they reduce in line with expected improvements in emissions intensity, with periodic reviews to account for less predictable changes in emissions intensity.

How ready are farmers and the sector to participate?

Due to uncertainty about how farm-level pricing within the NZ ETS would operate in practice, we were unable to assess the type of barriers to participation, or their significance. For example, the Act does not define eligibility criteria for farm-level pricing within the NZ ETS. It also does not define the farm data that farmers would be required to report.

It is possible that farm-level pricing within the NZ ETS could use similar data requirements to that of the simplified farm-level levy proposed by He Waka Eke Noa. If this were the case, and similar reporting methodologies were adopted, we consider that those farmers eligible under He Waka Eke Noa criteria would be ready to report simple farm data for farm-level pricing within the NZ ETS.

As described previously, there has been significant progress toward reporting of simple farm-level data across the sector. We conclude that if similar requirements and eligibility criteria were used, farmers could be ready to report emissions for farm-level pricing within the NZ ETS.

Participation in the NZ ETS would require farmers to purchase and trade NZUs. We consistently heard from farmers, advisors, industry professionals and government that participation in the trading of NZUs is likely to be complicated and inefficient for farmers. There would also be high transaction and administration costs for farmer participants.[56]

Small businesses already find participating in the NZ ETS challenging because understanding how to trade units and manage obligations and surrenders is complex. There may also be financial risks for farmers in dealing with unfamiliar and complex financial instruments.

Other than the general increase in awareness of farm emissions across the sector noted above, we did not observe any evidence showing progress towards individual farms being ready to participate in farm-level pricing within the NZ ETS. Based on the *absence of discernible effort* towards farm-level participation in the ETS, we have *high confidence* that implementing this approach will not be feasible by 2025.

Will farmers be able to identify emissions reduction actions in response?

We were not able to assess the ability for farmers to reduce emissions intensity of production in response to price signals under a farm-level pricing system within the NZ ETS. This will depend on the level of detail used, and there was no available evidence for us to assess.

Assuming that a similar methodology to the He Waka Eke Noa simplified farm-level levy is used, the information required to help farmers make informed choices will be very limited. We conclude that under farm-level pricing within the NZ ETS, farmers will not be incentivised to reduce emissions intensity in response to pricing, even if they are technically ready or able to do so. Similar barriers to the ones discussed in our assessment of the He Waka Eke Noa proposal are likely to apply.

However, we have *high confidence* that some actions to reduce emissions will be incentivised by a NZ ETS system, including actions to reduce production, and actions resulting in land-use change or the diversification of farm activities.

We conclude that farmers will face barriers to reducing emissions intensity of production by 2025, and will not be incentivised to do so in response to pricing. Due to limited information on the system, we are only able to have *medium confidence* in this assessment.

56. (Interim Climate Change Committee, 2019)

Assessing readiness for processor-level pricing within the NZ ETS

Milk and meat processors, and synthetic nitrogen fertiliser producers, are already required to report on the emissions associated with their processing activities through the NZ ETS. If this option is taken by government, processors will need to comply and surrender NZUs for the emissions resulting from the products they process, in addition to their processing activities.

How would processor-level pricing within the NZ ETS work?

Approximately 80 processors across the country would face agricultural emissions prices and incur an emissions cost for each kilo of product processed.[57] All processors would face the same cost per kilo of product processed, as any differences between the emissions intensity of the farms supplying them would not be reflected.

Processors would likely pass (all or most of) these costs on to farmers via reduced prices for milk and meat. Because costs are based on national averages, the costs passed on to farmers would be the same regardless of how emissions-efficient or otherwise they are.

For synthetic nitrogen fertiliser, the emissions price would be placed on manufacturers and importers of fertiliser, who would be liable for the emissions produced as the fertiliser is manufactured and used. They would likely pass on this cost to farmers through higher prices for their products.

Carbon removals via sequestration in farm vegetation would only be recognised through the claims processes that are already available in the NZ ETS. Carbon removals from vegetation not eligible in the NZ ETS would only be possible once there was sufficient scientific basis to support recognition in the national inventory, and the eligibility rules in the NZ ETS amended.

57. The 2021 EPA Participant Emissions Report included 77 agriculture participants – this includes meat and milk processors, importers and manufacturers of synthetic nitrogen fertiliser, and exporters of live livestock. (Environmental Protection Authority, 2021, p. 27).

Table 3.5. Summary of proposed policy design elements of processor-level pricing within the NZ ETS [58]

Point of obligation	
Processor-level	Dairy and meat product processors, and synthetic nitrogen fertiliser suppliers would be required to report and pay for all emissions associated with their activities through the NZ ETS by purchasing and surrendering NZUs. Charges to farmers would be passed on through the supply chain in the form of reduced payments for products, or in the case of fertiliser, through increased product prices.
How emissions are calculated	
Simple production data using national average emissions factors	Production and supply data (weight of milk solids, meat, fibre or synthetic nitrogen fertiliser) would need to be reported. These would be multiplied by national average emissions factors set by the government to calculate the quantity of greenhouse gases emitted (i.e. methane, carbon dioxide and nitrous oxide). Emissions factors are estimates of the average emissions that are produced per kg of product or fertiliser used, and these can be specific to breeds and classes of animals. However, the calculations would not differentiate between management practices or production efficiencies between farms.
How emissions are priced	
Use emissions metric to convert to CO_2-e with price set by the NZ ETS	The emissions metric GWP100 would be used to calculate CO_2-e for each greenhouse gas. The price charged on emissions would be aligned to the carbon price in the NZ ETS, reflecting the current market value.
How assistance is designed	
95% free allocation to all participants, decreasing over time	The Government has indicated they will issue 95% of the required NZUs free of charge, meaning that only 5% of emissions will be effectively charged. Under the Act the rate of freely allocated NZUs would reduce by 1% per year, meaning that if the option was implemented in 2025, there would be 90% free allocation by 2030.
How sequestration is treated	
NZ ETS-eligible sequestration only	The scheme does not treat sequestration for farmers any differently from other participants in the NZ ETS. Any farmer wishing to claim sequestration would need to place a claim for NZUs in the NZ ETS.
How revenue is used	
To be decided by the government	The Government has indicated it intends to recycle revenue back into the industry but has not defined how funds will be spent or how this would be decided.

58. (He Waka Eke Noa, 2022c)

What is needed to support this system to be implemented?

There is likely to be minimal additional government administration required to start charging agricultural processors for emissions in the NZ ETS, and minimal need for additional compliance resources – given that they are already required to report emissions through the NZ ETS.

Establishment and operational costs are also likely to be small, and because this option is already in the Act there would be limited need for policy development or additional legislative processes.

Nonetheless there are some complications involved with entering agricultural emissions into the NZ ETS.

While the number of processor participants facing a liability through NZ ETS would be small, the amount of freely allocated NZUs would be very high due to an initial rate of 95% free allocation. As discussed under our assessment of farm-level pricing within the NZ ETS, with high starting levels of free allocation the risks of over-allocation increase. This is a risk for either processor- or farm-level emissions pricing, with consequences including the reduced ability of the NZ ETS to incentivise emissions reductions.

The NZ ETS also does not use a split-gas approach. This means that methane and nitrous oxide emissions would be converted to an equivalent quantity of carbon dioxide and charged at NZU prices.

There are few processes required to implement the backstop option. We have *high confidence* that there are few barriers to implementing processor-level emissions pricing as part of the NZ ETS.

How ready are farmers and the sector to participate?

We consider that there would be no barriers for farmers to participate in processor-level pricing within the NZ ETS. Complying with reporting and surrender obligations for agricultural emissions under the Act is readily achievable.

There would be some additional costs involved for processors, including for brokerage fees and hedging costs associated with trading in NZUs.

Farmers would be unlikely to face additional reporting or compliance requirements under processor-level pricing within the NZ ETS and would have little need for additional support from rural professionals. Any emissions reporting and planning is likely to be limited to the requirements for farm emissions reporting and farm plans in Schedule 5 of the Act. However, it remains unclear whether those requirements will continue if this pricing system is adopted.

We have *high confidence* that processors could fulfil reporting and surrender obligations in the existing NZ ETS by 2025, or at an earlier date.

59. (He Waka Eke Noa, 2022b)

Will farmers be able to identify emissions reduction actions in response?

While processor-level pricing within the NZ ETS would be simple to implement, in its present form the NZ ETS would not capture differences in emissions intensity between farms. This is because costs passed on to farmers would be based on production data and national averages, and would not reflect many available mitigation actions. As a result, this system would not recognise or reward actions taken by farmers to reduce the emissions intensity of production.

This also means that the incentive to increase knowledge or skills to learn about (and learn how to effectively implement) mitigation options would not be improved under this pricing system.

We heard in our engagement, as well as from the He Waka Eke Noa farmer consultation, that for these reasons, the option is not favoured by farmers – many of whom feel that this option will act as a tax.

We conclude with *high confidence* that processor-level pricing within the NZ ETS will not enable farmers to make informed decisions on farm management actions to reduce the emissions intensity of production, and will be limited in its effectiveness at reducing emissions while supporting production.

We conclude with *high confidence* that the system will be able to incentivise emissions reductions through changes in production and land use.

> *The Commission remains of the view that farm-level emissions pricing is an important element of an effective approach to reducing greenhouse gas emissions from agriculture.*

Overall conclusions on readiness

Our analysis of progress towards readiness of the three pricing options is summarised in Table 3.6 below. It shows our conclusions on how ready we believe the three main groups (government, farmers and advisory services) are in relation to the three key functional requirements (How ready is the system to be implemented? How ready are farmers and the sector to participate? Will farmers be able to identify emissions reduction actions in response?).

Our level of confidence in these conclusions is shown in italics, based on the type, quality and amount of evidence used to reach each conclusion.

The Commission remains of the view that farm-level emissions pricing is an important element of an effective approach to reducing greenhouse gas emissions from agriculture.

Our view is that with sufficient effort by government it would be possible to implement a basic farm-level pricing system by 1 January 2025. This would provide an effective path for progression towards a more detailed and responsive farm-level system. Any delay could increase the risk that 2030 targets will not be met.

We advise that the Government consider options for reducing the barriers to implementation and administration while ensuring that an emissions pricing system begins at the farm level on 1 January 2025.

In part four, we explore further steps for policy design that could help with meeting the deadline.

Table 3.6: Summary of our assessment of readiness for emissions pricing options

Functional requirement of pricing system	How ready is the system to be implemented?	How ready are farmers and the sector to participate?	Will farmers be able to identify emissions reduction actions in response? (for reducing emissions intensity)
Farm-level pricing outside the NZ ETS	**Unable to Assess**	**Ready by 2025** *High confidence*	**Not ready by 2025** *Medium confidence*
Farm-level pricing within the NZ ETS	**Not ready by 2025** *High confidence*	**Not ready by 2025** *Low confidence*	**Not ready by 2025** *Medium confidence*
Processor-level pricing within the NZ ETS	**Ready by 2025** *High confidence*	N/A[60]	**Not enabled**

60. There will be no requirements for farmers under a processor-level pricing system within the NZ ETS. However, we have high confidence that processors will be ready to participate by 2025, or earlier.

How prepared is the sector for emissions pricing?

8. **Timing of implementation:** Agricultural emissions pricing is required by the legislation to be in place no later than 1 January 2025. Any delay in implementing pricing, and other targeted policies, makes it less likely that the agriculture sector's contribution to the 2030 targets for biogenic methane and the emissions budget for 2026-2030, and beyond, are met.

After reviewing the evidence and exercising our judgement the Commission concludes that:

Progress made toward readiness for an alternative farm-level pricing system outside the ETS

9. The He Waka Eke Noa proposal asserts that implementing their simplified farm-level system is possible by the third quarter of 2025, but the Commission is unable to assess the readiness of implementation of their proposal due to a lack of evidence. We have identified the following as system-critical establishment and implementation barriers that may apply to any farm-level system that is commenced in 2025, including the He Waka eke Noa proposal:
    a) legislative processes
    b) IT system build and administration
    c) participant registration
    d) compliance function set-up and administration
    e) enforcement mechanisms.
10. We saw *robust* evidence that progress toward readiness has been made across the sector, including an increase in awareness of farm emissions and mitigation opportunities. However, we also observed evidence consistently showing disagreement across the sector on the need and urgency for farms to reduce emissions, the quantity of required and feasible reductions, and how to accomplish these.
11. Based on *robust* evidence, we have *high confidence* that all (or almost all) eligible farmers can be ready to effectively participate in a basic farm-level pricing system by 1 January 2025. This includes having access to sufficient farm-level data and support from advisory services.
12. Evidence suggests that barriers to participating in an emissions pricing system and taking action to reduce emissions will be higher for Māori collectively-owned land due to land tenure and management structure restrictions.
13. We have *high confidence* that farmers can be ready to comply with a basic farm-level pricing system outside of the NZ ETS by 1 January 2025, if such a system is established.
14. Current evidence suggests that the type of farm-level pricing system that could be implemented outside the NZ ETS by 1 January 2025 could provide incentives for farm-level emissions reductions through changes in output or land use. Such a basic system is less likely to recognise and reward reductions resulting from improvements in the emissions profile of production.

How prepared is the sector for emissions pricing?

Progress made toward readiness for farm-level pricing within the ETS.

15. The on-farm emissions reporting and compliance monitoring challenges to implementing farm-level pricing via reporting and surrender obligations within the NZ ETS would be similar to implementing a farm-level levy system. NZ ETS participation would create additional burdens on farmers to obtain, trade and surrender units within the NZ ETS to meet their obligations. NZ ETS participation would make it more challenging to align incentives with the split-gas target of the Act.
16. Other than the general increase in awareness of farm emissions across the sector noted above, we did not observe *any* evidence showing progress towards individual farms being ready to participate in a farm-level pricing system within the NZ ETS.
17. Based on *the absence of discernible effort* by anyone being made towards farm-level participation in the NZ ETS, we have *high confidence* that implementing this approach will not be feasible by 2025.

Progress made toward readiness for processor-level pricing within the NZ ETS.

18. Processors already report emissions in the NZ ETS. Complying with reporting and surrender obligations for agricultural emissions under the Act is readily achievable.
19. We have *high confidence* that there are few barriers to implementing processor-level emissions pricing as part of the NZ ETS.
20. We have *high confidence* that processors could fulfil reporting and surrender obligations in the existing NZ ETS by 2025, or at an earlier date.

Further steps towards a more detailed and effective system

While we recommend starting in 2025 with a basic farm-level system, a detailed farm-level system should be the long-term goal. A detailed farm-level system must include enough detail to provide the correct incentive structure to reduce emissions. Given that a detailed system is not possible in the near term, some preferred further steps, with that goal in mind, are laid out below.

Why moving to a detailed system is important

Farm-level emissions pricing has a distinct advantage over processor-level pricing: it can incentivise emissions reductions through improvements in the emissions intensity of production, as well as from reduced production or changes in land use. This allows farmers to choose the best set of mitigation options for their farm, which is cheaper for them and the country.

Emissions pricing can only fully achieve this by using a sufficient level of detailed on-farm data and emissions factors when calculating emissions. A pricing system using more detailed data can recognise a wider range of mitigation actions and on-farm efficiencies. This would give farmers more choice about how to respond to price signals in the way that makes the most sense for their business.

The amount of information captured in a detailed system would also support farmers to make informed choices for the most appropriate and cost-effective actions that reduce emissions. A detailed farm-level system would encourage farmers to seek out and learn about mitigation options that could reduce the emissions liability on their farm, supporting farmers to overcome information and management capability barriers.

While a processor-level option could be used as a transitional step, we consider that it does not lay the necessary foundations towards a detailed farm-level levy in the way that a basic farm-level levy does. For that reason we do not recommend it is pursued.

However, there is a wide range of evidence that shows that farmers face diverse barriers to participating in a detailed emissions pricing system. There are also actions that can be taken now that can help address these barriers and enable farmers to be ready for the future evolution of emissions pricing.

Barriers to a detailed system being implemented

Approved mitigation options that could be recognised and rewarded through a detailed farm-level system, including changes to farm management practices and adopting technology, will need to be centrally approved by the regulator in a way that is scientifically robust, transparent and consistent.

Changing the eligibility thresholds for participating in a pricing system can make it simpler or harder to implement. Adjusting the threshold for participating in the pricing system to include fewer farms could also increase the likelihood of a farm-level system being implemented by 2025.

The larger the share of sector emissions captured in the system, the greater the potential emissions reductions that could be achieved (more effective), but this could mean more participants needing to be ready, and a higher administration burden (less practical). Adjusting the initial threshold would make implementing the system more practical while providing the time needed to ensure the final system is effective and equitable.

He Waka Eke Noa proposes that the threshold for inclusion in the system is set at all farm businesses that are GST registered and have an annual average of over 550 stock units (sheep, cattle, deer, and goats); or 50 dairy cattle; or 700 swine (farrow to finish); or 50,000 poultry; or 40 tonnes of nitrogen through synthetic nitrogen fertiliser application. This definition captures farms that emit over approximately 200 tCO_2 e per year – approximately 23,000 farms, and around 96% of agricultural emissions.[61]

Based on information provided by He Waka Eke Noa, increasing the threshold, to capture only farms with emissions above 750 tCO_2e, for example, would reduce the number of participants by approximately 36% (about 14,000 farms), but emissions coverage would only be reduced by approximately 12% (about 85% of emissions).

It is important to note, however, that the ratio of different farm types captured would also change, i.e., a greater percentage of dairy farms would be captured compared to red meat farms as there are more of the latter with relatively lower total emissions.

It could also be possible to phase in participants while maintaining a liability for all final participants from 2025. This could be done, for example, by backdating a farm's emissions liability to 2025. This would require clear communication and planning to ensure data are collected for all participating farms while giving time for the registration process to be completed by, for example, 2027. A similar process was followed for registering forestry participants in the NZ ETS.

Barriers to farmers and the sector being ready to participate

If emissions pricing develops towards a system that uses more detailed farm data, the requirements for farmers will change. Correspondingly, differences between farms' ability to participate and respond will become more apparent, such as access to detailed data.

The kinds of detailed data that could be required include those outlined in the He Waka Eke Noa proposal, such as monthly or quarterly animal numbers by livestock breed, class, and age, time spent on off-paddock facilities, as well as start and end of grazing on different types of feed.[62]

61. (He Waka Eke Noa, 2022c, p. 33)
62. (He Waka Eke Noa, 2022c, p. 37)

Many farmers already gather either some or much of the detailed data that could be required under a future detailed farm-level pricing system. These data not only support farm management, but also help meet tax reporting requirements, industry assurance scheme requirements, and environmental regulations.

However, many farms will need to collect additional data under a detailed system. Data are not consistently available across the sector. For example:

- Dairy farms are more likely than others to already have access to some types of data required.[63] Research shows that it is more likely that dairy farms already hold data on time and animal numbers on off-paddock facilities, as this information is required by some milk processors.[64]
- Sheep and beef, and deer farms are more likely to require additional data collection for detailed reporting under a farm-level system. For these farms, He Waka Eke Noa estimated that this could take 25 to 75 hours per year on top of existing reporting requirements.[65] We also heard in our engagements that some farms lack the infrastructure or processes required to collect detailed information such as stock weights or movements.

Through our engagement we heard about the large number of regulatory and reporting requirements that farmers will be facing in the near future. A common theme was the importance of ensuring that systems and tools that use farm data are integrated and minimise duplication of effort. Designing the basic farm-level system so that it realises efficiencies in data sharing between industry processes, commercial farm tools, and other regulatory or taxation processes would reduce the burden on farmers.

Another barrier to participation is whether there are enough available farm advisors for farmers to access. Under a detailed system many more farmers would require advisory services. Estimates suggest that even a partial uptake of detailed reporting would require approximately 50-100 additional skilled advisors across the industry.[66]

Demand for these experienced advisors, often with specialist nutrient management skills, will also coincide with upcoming freshwater farm-planning regulations. According to projections from the Ministry for Primary Industries, the industry is likely to require an additional 130 skilled advisors by 2025 to meet the additional demand from freshwater reforms.[67] Experienced farm advisors are currently in short supply, and difficulties in attracting and retaining employees mean that the industry struggles to grow.[68] Continuing to support the training and professional development of advisory services will assist farmers to participate in a more detailed system.

Barriers to farmers being able to identify emissions reduction actions in response

Making decisions on farm mitigation actions can involve complicated long-term changes to whole-of-farm management processes. Farm planning can help farmers to identify and respond to their emissions profile and liability, and embed mitigation actions into farm business operations using appropriate technology. We heard from both farmers and industry experts that expert guidance, tools and other assistance for on-farm decision-making are important.

63. (Polyakov & Stahlmann-Brown, 2022)
64. (van der Weerden et al., 2021)
65. (He Waka Eke Noa, 2022b)
66. (BECA, 2018)
67. (G. Mangin, personal communication, 20th May 2022)
68. (MPI, 2021a)

As we discussed in our advice *Inaia tonu nei,* national and regional scale will help landowners, Iwi/Māori, and local and central government make decisions and implement land-use change and diversification.

There is an abundance of literature on the barriers to the uptake of mitigation actions.[69] These include how available appropriate and affordable mitigation options suited to farm types and local circumstances are, access to information and advice for implementation, behavioural barriers, lack of peer networks, and the time taken for the emissions reductions results to take effect.

While emissions reductions through reduced production and changing land use have fewer barriers, we also heard that farmers faced challenges accessing emerging markets for low-emissions products, especially where the necessary systems and infrastructure to support supply and export chains are yet to be established locally.

Farmers need to be enabled to make well-informed land-use decisions, including improved data, information, and tools at a national and regional scale. Improving access to effective advisory services would also assist farmers to develop new skills, and learn about and adopt practices and technologies that reduce emissions.[70]

Relevant regulatory regimes, such as the Agricultural Compounds and Veterinary Medicines Act, can also create barriers to deploying new technologies by unnecessarily making it difficult for them to be adopted.

> *Farm planning can help farmers to identify and respond to their emissions profile and liability, and embed mitigation actions into farm business operations using appropriate technology.*

69. See, for example, (Cortés-Acosta et al., 2019; Fleming et al., 2019)
70. (MPI, 2021b)

TŪTANGA WHĀ · PART FOUR

Recommended further steps for agricultural emissions pricing

A key purpose of the Climate Change Commission is to provide independent, expert advice to the Government on mitigating climate change.[71] In line with this, we have built on our conclusions regarding readiness by highlighting further steps the Government should consider to ensure the pricing system is fit for purpose.

We conclude that elements of the He Waka Eke Noa proposal could provide a useful starting point for progressing a basic farm-level system for implementation in 2025. However, several critical changes are necessary to improve its alignment with key principles for evaluating an agricultural emissions pricing system.

This part contains the following sections.

- General principles for emissions pricing that government should consider when deciding next steps, and
- Recommended further steps on four system design choices, based on an assessment against these principles and obligations.

71. See section 5B of the Act.

General principles for agricultural emissions pricing

The Commission has noted that the purpose of agricultural emissions pricing policy should be to encourage and enable, alongside other policies, reductions in gross emissions, in line with meeting Aotearoa New Zealand's statutory targets for emissions reductions.[72] This includes the target for reducing biogenic methane emissions, which builds in the unique properties of methane as a short-lived, but potent greenhouse gas.

In achieving this objective, the policy should ensure that the Crown's obligations under Te Tiriti o Waitangi/ The Treaty of Waitangi are upheld and relevant international commitments are recognised.

We have also suggested that agricultural emissions pricing policy options be evaluated against the following principles:

a. **Practical:** able to start pricing emissions from 1 January 2025 in a way that encourages active participation and can be enforced.
b. **Broadly supported:** has sufficient buy-in from the sector and is seen as reasonable by New Zealanders.
c. **Efficient:** avoids unnecessary administration and aligns with existing systems and processes as far as possible. If emissions pricing were used to raise revenue to fund a broader set of emissions reduction activities, it should be considered against other methods of revenue raising.
d. **Equitable:** acknowledges the varied circumstances facing different agricultural activities and participants, and the implications for the broader economy and future generations. This includes recognising the land tenure restrictions and specific challenges faced on Māori collectively-owned land, as well as broader impacts on Iwi/Māori.
e. **Effective:** creates clear long-term incentives that support investments and changes to deliver emissions reductions in line with meeting statutory targets. Methods of calculating emissions must be able to capture changes on farm that result in emissions reductions. Policy seeks to avoid emissions reductions in Aotearoa resulting in increased global emissions.

72. (He Pou a Rangi | Climate Change Commission, 2022)

f. **Comprehensive:** recognises and encourages, where possible, emissions reductions which count towards meeting domestic and international targets from changes to farm management practices, production and land use.

g. **Well-aligned:** creates a system that supports and is actively aligned with other climate policies, non-climate environmental policies, and other social and economic policies. Does not duplicate, undermine, or conflict with, the incentives for emissions reductions created by the NZ ETS. Reinforces co-benefits and avoids perverse outcomes.

h. **Adaptable:** performance should be monitored and evaluated so that the policy can be adjusted to ensure it continues to meet its objectives. The policy is adaptable to take account of future changes in domestic targets, international context and developments in mitigation options for agricultural emissions.

i. **Transparent:** puts clear and predictable processes in place for how decisions to adjust the policy will be made.

> *Several critical changes are necessary to improve the He Waka Eke Noa proposal's alignment with key principles for evaluating an agricultural emissions pricing system.*

Design choices across principles

In this section we examine four design elements of the agricultural emissions pricing system where we think particular attention is warranted. This is due to their significance to the overall purpose of agricultural emissions pricing, how important considering principles and potential trade-offs is, and making decisions on them.

The design elements are:

1. Approach to incentivising emissions reductions
2. Pricing synthetic nitrogen fertiliser emissions
3. Recognising sequestration
4. The role of pricing and supplementary policies

Approach to incentivising emissions reductions

Effectively incentivising emissions reductions in line with targets is a fundamental requirement of an emissions pricing system. There are different ways to do this, directly and indirectly, that reflect trade-offs between the principles "effective" and "practical". Considering these is an important further step government should take to ensure that the design of any pricing system is fit for purpose.

One strength of a direct price signal is that it does not prescribe which emissions reductions, among those recognised by the system, should be taken. Using recycled revenue to create indirect incentives, for example through payments for approved actions, is more dependent on particular actions or technologies.

We identify three potential pathways for reducing emissions from agriculture:

- reducing the emissions intensity of production
- reducing production/output
- changing land use.

These pathways can vary significantly in terms of their impact on different farm types, and on the sector more broadly. A combination of these will likely be needed to meet emissions targets.

During our engagement we heard that it is important to farmers that a pricing system can recognise and reward a range of on-farm mitigation actions. Some farmers view a system that only recognises reductions in output or land-use change as unfair, and more likely to make many farms unviable.

The three pricing options considered in part three of this advice differ in their ability to recognise emissions reductions via these pathways, and in how they incentivise them:

The farm-level NZ ETS option would incentivise emissions reductions directly through a price on emissions. The point of obligation is at the farm level, and with sufficiently detailed data it could recognise emissions reductions achieved through reducing the emissions intensity of production. However, a specific calculator has not been designed for this option.

The processor-level NZ ETS option would also incentivise emissions reductions directly through a price linked to the amount of meat, milk or fibre processed, or synthetic nitrogen fertiliser produced. Processors would likely pass costs on to farmers, who could reduce costs by supplying less product to processors, using less fertiliser, or changing land use. However, it would not effectively incentivise farm-level emissions intensity improvements because the costs would be the same regardless of how emissions-efficient individual farms are.

The He Waka Eke Noa proposal expects to achieve most emissions reductions through incentive payments for approved actions that reduce emissions. These would be applied as a discount to a farmer's liability. Incentive payments make adopting a certain technology or practice more cost-effective, so can increase uptake. The proposal prices emissions at the farm level, with no formal assistance to farmers to help maintain a marginal price incentive. Modelling indicates that the price will mostly serve to raise revenue, while the system addresses marginal incentives to reduce emissions by paying for emissions reductions.[73] The proposal is for a simple system that recognises and incentivises a limited number of farm-level actions from 2025, and which transitions to a more detailed system in 2027.

Driving emissions reductions in line with targets

Based on our analysis, we have *high confidence* that a detailed farm-level system with a full marginal price incentive on emissions would most effectively incentivise on-farm emissions reductions. This would mean there is a direct emissions price incentive high enough to drive action by farmers to reduce emissions, and in doing so they avoid the full cost of the emissions reduced.

Such a system should have a detailed farm emissions calculator that can capture emissions reductions achieved via a range of activities that improve the emissions intensity of production, as well as through reduced production and land-use change. This would give farmers more choice about how to respond to price signals, which should be set at levels high enough to directly incentivise emissions reduction actions.

73. (Resource Economics, 2022)

Alongside this, effectively designed assistance can help maintain a full marginal incentive for emissions reductions while limiting widespread material financial hardship. We provided detailed advice on the role of assistance in our report *Advice on Agricultural Assistance: How financial assistance could support Aotearoa New Zealand's agricultural emissions pricing system*.[74]

Based on our analysis the best approach for a farm-level system would be a levy, because farm-level ETS participation is not practical (see part three of this advice).

However, as noted above, there are trade-offs between the principles of "effective" and "practical" to be considered. A system that can recognise and reward a wide range of mitigation actions on farm that improve production efficiency requires more data to be collected and reported, as well as higher requirements for administration, IT and compliance. In contrast, emissions reductions achieved by reducing production and land-use change can be recognised and rewarded using very simple data – at either a farm or processor level.

Overall, we have *high confidence*, based on the evidence reflected in this report, that the agriculture sector will not be ready for a detailed emissions pricing system that captures all currently available on-farm mitigation options in all agriculture subsectors by 2025.

However, our view is that it would be possible to implement a basic farm-level pricing system by 1 January 2025, using elements of the He Waka Eke Noa proposal as a stepping stone and undertaking actions that address implementation barriers. This will provide an effective path for rapid progression towards a more detailed and responsive farm-level system.

A basic system would be limited in its ability to recognise reductions in emissions intensity of production. For this reason, indirect incentives such as payments for specific actions that reduce emissions would be appropriate in the short term to help a basic pricing system incentivise actions other than reducing output and land-use change.

Additional considerations to achieve emissions reductions

Two important additional considerations for achieving emissions reductions through emissions pricing are if or when actions to reduce emissions are available to farmers, and if and when the resulting emissions reductions will be captured in the national greenhouse gas inventory. This is important for the alignment with the principles of "effective" and "comprehensive".

The He Waka Eke Noa modelling indicates that to be effective their proposal relies heavily on incentive payments for as-yet-unavailable technologies – methane reducing feed additives and vaccines – to reduce emissions.[75] We have *high confidence* that these will not be widely available for New Zealand farmers by 2025. While products like 3NOP[76] are in use internationally, there is *limited* evidence demonstrating their effectiveness across New Zealand farming systems and regulatory barriers to their use remain.[77]

Relying on such technologies introduces risks, including the possibility that technology uptake is slower than assumed. This could require more drastic emissions cuts later through other measures, and in a shorter timeframe, to meet the 2030 methane target. This could potentially have severe significant social and economic impacts. Some farms may also be much better able to take advantage of these technologies (e.g., dairy) than others, raising equity concerns.

74. (He Pou a Rangi | Climate Change Commission, 2022)
75. (Resource Economics, 2022)
76. 3-NOP (3-nitrooxypropanol) is a chemical compound that targets methane producing enzymes in the rumen, restricting their growth and ability to produce methane. It was developed by the Dutch company DSM Nutritional Products and is commercially known as Bovaer®.
77. (Global Research Alliance, 2021)

Actions to reduce emissions must also be captured in the national greenhouse gas inventory to contribute towards meeting emissions budgets and domestic targets. Incorporating new emissions reduction actions can be a lengthy process as it requires a scientifically robust evidence base applicable to the entire country and passing international peer review.

Many actions that reduce agricultural emissions (such as reducing synthetic nitrogen fertiliser use, reducing output/stocking rate, and changing land use) are captured in the greenhouse gas inventory. However, some actions to reduce emissions intensity of production, which rely on more detailed farm-level information, are not yet captured. These include some of the actions He Waka Eke Noa proposes incentivising with payments for actions, including use of low protein or methane forages and effluent methane capture.

We have *medium confidence* that these actions will not be incorporated into the national greenhouse gas inventory by 2025 after considering some evidence regarding the scale of work required to do so, including developing a scientifically robust evidence base.

Currently unavailable technologies like methane reducing feed additives and vaccines will also require significant work to be incorporated into the inventory and contribute towards meeting emissions budgets and targets.

Not contributing to emissions budgets and targets in the near term may be acceptable if the emissions reductions are genuine and can be incorporated into the national greenhouse gas inventory in future. If appropriate activity data exists, emissions reductions may be able to be backdated, as updates to historic emissions numbers based on improved science or data are not uncommon.[78]

Incentivising emissions reduction actions before they contribute to emissions budgets and targets could help spur the data required to enable their inclusion to be collected. However, the risks associated with greater uncertainty about the scale of these emissions reductions, and the likelihood of them being incorporated into the national greenhouse gas inventory in time to support achieving emissions budgets and targets, must also be considered.

Pricing synthetic nitrogen fertiliser emissions

Synthetic nitrogen fertiliser is a significant contributor to agricultural emissions that warrants specific attention by government as a further step in deciding on a pricing system. It contributes to emissions both directly through creating nitrous oxide emissions from the soil it is applied to, and by increasing pasture growth that can enable more livestock and dry matter intake.

Based on our assessment of the evidence, we conclude that there is currently no emissions reduction benefit to pricing synthetic nitrogen fertiliser emissions at the farm level compared to the manufacturer and processor level. Science suggests that local factors such as soil conditions do impact nitrous oxide emissions from synthetic nitrogen fertiliser application, but this is not understood well enough yet to be incorporated into emissions calculations.

Accounting for emissions budgets and targets recognises two emissions reduction options for synthetic nitrogen fertiliser – to use less, or to choose a product that includes a urease inhibitor. Kilograms of N applied is currently the only proxy for nitrous oxide emissions from fertiliser use. Including synthetic nitrogen fertiliser in a farm-level system would not change that.

78. For example, the 2032 Greenhouse Gas Inventory Report will be used to account for emissions over the 2021-2030 NDC period and 2030 methane target. If emissions reduction actions can be incorporated by then, they can help achieve these targets.

Pricing synthetic nitrogen fertiliser emissions at the manufacturer and processor level would also enable broader and more equitable coverage than pricing at the farm level. The requirement to define a farm or other threshold for inclusion in a farm-level system is highly likely to exclude some users of synthetic nitrogen fertiliser. The threshold for inclusion in the He Waka Eke Noa proposal, for example, would exclude many horticulture and arable farms that are significant users of synthetic nitrogen fertiliser. No horticulture operations would be included, and only approximately 80 arable farms. Pricing at the manufacturer and processor level would capture synthetic nitrogen fertiliser used across all farm types and users.

The downside of pricing at the manufacturer and importer level in the NZ ETS is that it may reduce the sense of overall "farm-level ownership" for emissions, which many farmers desire. On the other hand, it would also help simplify a farm-level levy with no impact on effectiveness for reducing emissions.

It would also be easier to incorporate any future developments in science about farm-level variation in emissions from synthetic nitrogen fertiliser if they were already priced at the farm level. Additional on-farm data, for example on soil condition at the time of application, would also be needed to support any related reduction in emissions liability. However, it would be possible to change the point of obligation from the manufacturer and importer level in the NZ ETS, to inclusion in a farm-level levy if the evidence were sufficiently robust. The Government could support this by signalling its commitment to change the point of obligation when the science supports doing so. This would align with the principles of "adaptable" and "transparent".

Overall, we consider that synthetic nitrogen fertiliser emissions should be priced at the importer and manufacturer level in the NZ ETS as soon as practicable, instead of within a farm-level pricing system. There are few barriers to enacting this right away, as fertiliser manufacturers already report the associated emissions, and there is already an established mechanism within the Act. This aligns with the principles of "effective", "practical", and "equitable", without overly contradicting the principle of "broadly supported'. It was also the recommendation of the Interim Climate Change Committee.[79]

If synthetic nitrogen fertiliser is priced at the importer/ manufacturer level in the ETS, and other agricultural emissions at the farm level in an alternative system, the Government should re-consider the basis for free allocation of New Zealand Units for synthetic nitrogen fertiliser manufacturers/ importers. The "backstop" in the Act current has provisions for allocation to start at 95% but this was decided on the basis of all agricultural emissions being priced through the NZ ETS. We have not assessed the data, but the effective level may be different for pricing synthetic nitrogen fertiliser alone at the importer and manufacturer level.

79. (Interim Climate Change Committee, 2019, p. 127)

Recognising sequestration

The inclusion of on-farm, non-ETS eligible vegetation for the purposes of carbon sequestration is a major feature of the He Waka Eke Noa proposal,[80] and would have significant implications both within and beyond an agricultural emissions pricing system. The Government should consider these implications as a further step in developing its pricing system.

The importance of sequestration came up as a clear theme in our engagement with farmers. Recognising sequestration from non-ETS vegetation is a top priority for many farmers and was also captured in our farmer survey as one of the key features farmers would like to see for an emissions pricing system.[81] This was also reflected by Te Aukaha FOMA in their analysis of responses to the He Waka Eke Noa consultation document.[82]

Many farmers feel strongly about the importance of capturing the broadest range of on-farm sequestration possible – though some expressed concerns about the administrative complexities of doing so. Some farmers said they want more certainty about the role sequestration will play within emissions pricing for agriculture. We also heard that farmers have a range of concerns about converting farming land to trees.[83]

On-farm vegetation can provide a wide range of environmental benefits – including for water quality and biodiversity as well as storing carbon. In *Ināia tonu nei*, we recommended government develop systems to help recognise and incentivise additional non-ETS sequestration. This would build on, and require support for, the significant research going on here and overseas on the potential for carbon sequestration in a range of natural systems such as vegetation, soils, and oceans.

However, rewarding carbon sequestration is not an essential feature of emissions pricing. The treatment of carbon sequestration should be evaluated in relation to the objectives of a pricing system.

Any reward for carbon sequestration should also be aligned with international standards regarding additionality and robust evidence, measurement, and verification.[84] Rewarded sequestration should also be matched by liabilities for clearing of vegetation and release of carbon stocks.

Of the three pricing options, only the He Waka Eke Noa pricing system would reward sequestration beyond what is covered by the NZ ETS. However, the sequestration proposal faces significant issues for the implementation of a practical, effective, and equitable agricultural emissions pricing system.

Practicality

In terms of practicality, the He Waka Eke Noa sequestration proposal increases the complexity of the pricing system and would create implementation challenges for farmers, government, and the wider sector.

As discussed in part three, the simplified sequestration system proposed for 2025-2027, which only covers qualifying vegetation in existing programmes (such as QEII, Ngā Whenua Rāhui, and relevant council initiatives), would make the system more practical for starting in 2025. This is because reporting and monitoring systems already exist for this land. However, the need to develop scientifically robust sequestration estimates for He Waka Eke Noa vegetation would remain.

80. (He Waka Eke Noa, 2022c, pp. 55-65)
81. (Polyakov & Stahlmann-Brown, 2022)
82. (Federation of Māori Authorities, 2022)
83. (Confluence Consulting, 2022; Polyakov & Stahlmann-Brown, 2022)
84. Additionality refers to incentivising action into the future, and only rewarding sequestration from action taken after a specified base-year.

Transitioning to the detailed farm-level levy would significantly increase the implementation challenges. Measuring and reporting vegetation areas across the multiple categories proposed by He Waka Eke Noa would be a challenge for many farmers.[85]

Although the system would allow farmers to select which vegetation areas they wish to register in the sequestration system, government still needs to have the capacity to accurately monitor all potential areas. We have heard from engagement with government that its Land Use and Carbon Analysis System (LUCAS), which would be required for monitoring, is currently unable to accurately monitor vegetation blocks as small as those in the He Waka Eke Noa proposal. Significant work and investment would be required to improve this and it is highly uncertain how long it would take.

Part three highlighted that there is a shortage of trained farm advisors to support participation in a farm-level emissions pricing system. This skills shortage would be exacerbated by farmers needing support to effectively manage vegetation to benefit from the sequestration.

The detailed sequestration proposal also creates land eligibility overlap with the NZ ETS, which would result in regulatory duplication and possible compliance issues, leading to increased administrative burden.

Effectiveness

In terms of effectiveness, the He Waka Eke Noa sequestration proposal has several shortfalls.

Firstly, it creates inconsistencies with the split-gas target. It does this by offsetting the price for biogenic methane emissions with payments for carbon dioxide removals. While combining pricing incentives for synthetic nitrogen fertiliser emissions with carbon sequestration is consistent with the Act, combining methane reductions and sequestration of carbon makes it much more difficult to design and maintain the system so that it meets the split-gas target of the Act.

The proposal also weakens efforts to reach emissions targets. It does this by using sequestration that largely does not contribute towards emissions budgets and targets to offset a price on emissions that is designed to incentivise emissions reductions in line with targets. He Waka Eke Noa estimates that only 25% of the sequestration rewarded through their proposal would contribute towards targets, and this comes from larger areas of native vegetation that may already be eligible for recognition in the NZ ETS.

Based on *limited information*, we are of the view that the sequestration system proposed by He Waka Eke Noa would not effectively incentivise additional vegetation and carbon sequestration beyond what is already occurring on farms.

The He Waka Eke Noa proposal does include a test of additionality, in that only vegetation established after 2008 would receive reward for the carbon it sequesters each year. Vegetation established before 2008 would only receive reward for carbon sequestration that results from additional management action. However, while using a base year is a common part of approaches to encourage additionality, it is not sufficient. The policy itself must also incentivise additional action into the future.[86]

The weak incentive for additional carbon sequestration is partly a result of the relatively low rates of sequestration from the vegetation eligible under the He Waka Eke Noa proposal. This means the financial reward would be low compared to the costs of establishing and managing the vegetation.

85. (Confluence Consulting, 2022, pp. 24–26)
86. (He Waka Eke Noa, 2022c, pp. 55–65)

Many farmers already protect vegetation despite the financial cost of doing so. However, establishing a system with high cost for low reward is a concern. It would mean generating little additional benefit for the climate, or for meeting emissions reduction targets, while significantly increasing system cost and complexity of the pricing system. There may also be reputational risks associated with the He Waka Eke Noa methodology, including rewarding non-additional sequestration.

Providing payments for sequestration diverts revenue raised by the levy that could be used to advance the core purpose of the pricing system – effectively incentivising emissions reductions in line with targets. Instead, this revenue is used is used to support sequestration that is largely not additional, and which does not count towards emissions budgets and targets. This would be exacerbated during the transitional period, with a simplified system, as revenue would need to be held back to backdate more extensive sequestration rewards once the detailed system is introduced in 2027.

Equity

Māori collectively-owned land could potentially benefit significantly from the He Waka Eke Noa sequestration proposal due to the large amount of indigenous vegetation on this land. This is highlighted by the case studies of Māori agribusinesses modelled by He Waka Eke Noa. Their analysis found that the total net levy in 2025 under a medium technology scenario ranged between a fee of $2,994 to a rebate of $30,602 for the Māori agribusiness sheep and beef case studies.[87]

However, there is significant inequity in creating a system to reward vegetation that only farmers can access. There are councils, businesses, Iwi/Māori, and other landowners with significant amounts of He Waka Eke Noa eligible vegetation that face emissions pricing via the NZ ETS, but who would be unable to claim financial reward for their sequestration under the He Waka Eke Noa proposal.

Equity considerations for the emissions pricing system options are discussed in more detail in part five.

Conclusion on sequestration

Overall, we consider that Government should avoid including sequestration in an agricultural emissions pricing system. We recognise including sequestration is important for farmer buy-in, but it introduces significant administrative cost and creates significant inequity between farmers and non-farmers without improving emissions reduction outcomes. Not including sequestration may push against the principle of "broadly supported" by the agriculture sector but this is outweighed by alignment with the principles of "practical", "effective", "equitable", "efficient" and "well-aligned".

However, we also recognise that non-ETS vegetation can provide a range of environmental benefits and consider that government should continue to develop tools for incentivising additional removals from this vegetation.

This work is of particular importance for Iwi/Māori due the significant potential benefits from rewarding on-farm sequestration for Māori collectively-owned land. A system outside of an agricultural emissions pricing system would be better able to recognise the important benefits that on-farm vegetation provides. Different agricultural land-use practices and choices can directly impact natural carbon stocks (including soil carbon), and more work needs to be done to build the evidence base to understand and quantify this.

The work of He Waka Eke Noa to develop their sequestration proposal could be a useful contribution to this ongoing policy development, which could occur inside or outside of the NZ ETS. We also note that any changes to accounting for emissions budgets and targets to incorporate additional sources of sequestration would require the budgets and targets to be updated to maintain ambition and the level of effort required to meet them.

87. (He Waka Eke Noa, 2022c, p. 75)

The role of pricing and supplementary policies

The Commission's advice to government on the first emissions reduction plan – *Ināia tonu nei* - recommended that emissions pricing should be part of a broader suite of policies to encourage emissions reductions in agriculture.

Trying to achieve every policy objective through emissions pricing alone is likely to create internal tensions and complexity that undermine alignment with the principles of a fit-for-purpose pricing system. As a further step in developing a pricing system, the Government should consider the role of other policies, and how emissions pricing relates to them. This is key for our principle of "well-aligned".

Additional policies can support agricultural emissions pricing to be more effective, efficient and timely at achieving emissions reductions. They can support farmers to respond to price signals and overcome non-price barriers to taking action to reduce emissions. Other policies can also help minimise inequities, including addressing impacts for Iwi/Māori collectively-owned land.

Trying to address all barriers and equity considerations through an emissions pricing system adds cost and complexity, which in turn affects readiness. The use of supplementary policies can help simplify the emissions pricing system and can improve alignment with national and international standards.

Key existing policies that an agricultural emissions pricing system must align with include the NZ ETS and freshwater standards. These are already having a significant impact on agriculture and land use in Aotearoa, including through incentivising afforestation and reducing synthetic nitrogen fertiliser use.

Recommending further specific supplementary policies is beyond the scope of this report, but in *Ināia tonu nei* we advised on a direction of policy that included:[88]

- Developing effective advisory services in partnership with industry and Iwi/Māori
- Resourcing and prioritising rural digital connectivity
- Removing barriers to deploying new technologies to reduce emissions on farm by ensuring relevant regulatory regimes, such as the Agricultural Compounds and Veterinary Medicines Act, do not unnecessarily hinder their adoption
- Demonstrating the environmental credentials of proven low emissions food and fibre products to help producers access domestic and international markets
- Developing a long-term, targeted research and development (and uptake/ deployment) plan for technologies and practices to reduce biogenic emissions from agriculture
- Enabling farmers, growers and local government to make well-informed land-use decisions by investing in nationwide land and climate information and decision-making tools, including information and tools relevant for Māori collectively-owned land
- Supporting the systems and infrastructure needed for alternative lower emissions farming systems and products, including enabling Iwi/Māori to participate in these new opportunities

> *Additional policies can support agricultural emissions pricing to be more effective, efficient and timely at achieving emissions reductions.*

88. (He Pou a Rangi | Climate Change Commission, 2021, p. 312)

What are the next steps?

After exercising our judgment on further steps in the development of a farm-level pricing system for agriculture, and with regard to the matters covered in Section 5M of the Climate Change Response Act, the Commission advises that:

21. We remain of the view that farm-level emissions pricing is an important element of an effective approach to reducing greenhouse gas emissions from agriculture.
22. Emissions pricing for agriculture should be part of a broader policy package. Other policies will be important for supporting farmers to respond effectively to price signals, overcoming barriers, avoiding unintended consequences, and minimising inequities – including addressing impacts for Iwi/Māori and Māori collectively-owned land.
23. We consider that a farm-level pricing system outside the NZ ETS remains the most desirable approach to pricing agricultural emissions in the long term. A system with sufficient detail to incentivise the full range of emissions reductions possible will be the most effective, as it would give farmers greater choice in how to respond to price signals.
24. We have *high confidence*, based on the evidence reflected in this report, that the agriculture sector will not be ready for a detailed emissions pricing system that captures all currently available on-farm mitigation options in all agriculture subsectors by 2025. However, our view is that it would be possible to implement a basic farm-level pricing system by 1 January 2025 using elements of the He Waka Eke Noa proposal as a stepping stone and including actions that address implementation barriers. This will provide an effective path for rapid progression towards a more detailed and responsive farm-level system.
25. We advise that elements of the He Waka Eke Noa proposal provide a useful starting point for progressing a farm-level pricing system for implementation in 2025, **however we recommend the following critical changes are made:**
    a. **Do not include sequestration from on-farm vegetation:** On-farm vegetation provides a wide range of important benefits including biodiversity and improving water quality. However, we recommend not including vegetation for sequestration in the farm-level agricultural emissions pricing system. The reasons for this are:
        i. including sequestration adds complexity and creates inequity between farmers and non-farmers by creating a sequestration rewards system only for farmers
        ii. it adds complexity without significantly improving emissions reduction outcomes as it largely does not incentivise on-farm vegetation and sequestration which is additional
        iii. the proposed on-farm vegetation for carbon sequestration would largely not count towards emissions budgets and targets, meaning it should not be mixed with a pricing system designed to meet emissions budgets and targets under the Act
        iv. while combining pricing incentives for nitrogen emissions with CO_2 sequestration is consistent with the Act, combining methane reductions and sequestration of CO_2 makes it much more difficult to design and maintain the system so that it meets the split-gas target of the Act.

What are the next steps?

b. We advise that the Government should progress a system that recognises and rewards additional carbon sequestration, and other benefits, occurring in vegetation that is not recognised by the current NZ ETS. Such a system would be better able to recognise the wide range of important benefits that on-farm vegetation provides, and could particularly benefit Iwi/Māori. Different agricultural land-use practices and choices can directly impact natural carbon stocks (including soil carbon), and more work needs to be done to build the evidence base to understand and quantify this.

26. **Price fertiliser at the processor level:** Price synthetic nitrogen fertiliser emissions at the manufacturer and importer level in the NZ ETS as soon as practicable, instead of within a farm-level pricing system. While synthetic nitrogen fertiliser could in principle be priced at the farm level, pricing emissions at the processor level at this point achieves more broad, equitable, and cost-effective coverage of emissions from synthetic nitrogen fertiliser use.

    However, government should re-assess the relevance of farm-level pricing in the future if science and administrative systems indicate a material benefit of doing so.

    a. If synthetic nitrogen fertiliser is priced at the importer/manufacturer level in the NZ ETS, and other agricultural emissions at the farm level in an alternative system, the Government should re-consider the basis for free allocation of New Zealand Units for fertiliser manufacturers/ importers.

27. We also advise the following **areas for further development** be considered:

    a. That the Government consider options for reducing the barriers to implementation and administration while ensuring that an emissions pricing system begins at the farm level on 1 January 2025.

    b. Commit to continuing development of the pricing system so that it increases coverage and the detail of emissions and mitigation options captured, and so that it enables emissions prices to increase in line with statutory targets. Using revenue collected through a farm-level levy to fund mitigation actions by some farmers can provide a way to get a farm-level system underway, but we do not consider this will be an effective and enduring model in the long term to meet targets.

28. Therefore, in conclusion, getting started with a basic farm-level levy provides an important foundation for improving the pricing system while increasing understanding, skills and advisory services, and providing funding to trial and demonstrate mitigation actions. A future farm-level emissions pricing system that recognises and rewards a wide set of emissions reduction actions, rather than relying on indirect reductions using revenue, should be rapidly pursued. As recommended in our *Advice on Agricultural Assistance*, this can be achieved by preserving marginal prices for emissions alongside output-based and other assistance.

TŪTANGA RIMA · PART FIVE

Further equity issues to consider

Part five lays out advice on further equity and impact issues for the Government to consider. These issues relate to matters the Commission must consider under Section 5M of the Act when formulating advice.

This part is structured as follows:

- Equity and impact considerations for Māori collectively-owned land
- Equity within the agriculture sector
- Equity between agriculture and other sectors
- International equity considerations
- Social, environmental, and economic impacts, and intergenerational equity

Equity issues for Māori collectively-owned land

To understand equity considerations for Māori farmers and agribusiness we have looked at the constraints and challenges of Māori collectively-owned land.[89] There are important considerations for Māori collectively-owned land that will have an impact on readiness for agricultural emissions pricing.

Māori have a unique relationship with their whenua; it is an integral part of who they are and how they connect to each other, to their tupuna and to the broader eco-system. This is reflected in concepts such as tūrangawaewae, a place where one has rights or residence and belonging through kinship and whakapapa. As tangata whenua (people of the land), whenua is taonga tuku iho (cultural property/heritage handed down), connecting them through whakapapa to their tupuna.

In the 1970s the Crown began to take action to address breaches of Te Tiriti o Waitangi/The Treaty of Waitangi and the Waitangi Tribunal was established in 1975. Te Ture Whenua Māori Act 1993 facilitates and promotes "*the retention, use, development, and control of Māori land as taonga tuku iho by Māori owners*".[90] That Act is administered by the Māori Land Court and recognises two main classifications of Māori collectively-owned land: Māori freehold land and Māori Customary Land. These two land types essentially recognise and record the connection between Māori landowners and their ancestral lands through whakapapa.

Characteristics of Māori collectively-owned land

Māori collectively-owned land is estimated to be 1.4 million hectares in Aotearoa.[91] Much of this land participates in primary sector activities, but is constrained by physical, ownership and governance characteristics.

Māori collectively-owned land faces different constraints and challenges compared to general title land ownership and management structures. In part, this is due to historic disruptions impacting on Māori collectively-owned land management and ownership. The number of owners of each land block varies hugely, ranging from a single owner to over 14,000 – with an average of 98 owners.[92]

Collective ownership structures can create complexity around decision-making, compliance and development opportunities.

The impact of policy-based and other disruptions over time have disadvantaged Iwi/Māori, consequently the remaining Māori collectively-owned land and land returned through Te Tiriti o Waitangi/The Treaty of Waitangi settlement process (all ancestral land) have left Iwi/Māori, in the main, with steeper, less versatile land. This means that the capability of the land Iwi/Māori have retained is also a constraint.

89. Māori collectively-owned land is defined in this report as any land that falls within the Māori Land Spatial Dataset created by the Ministry of Justice and Ministry for Primary Industries on behalf of the Māori Land Court. This does not cover all land that may be owned or managed by people or groups that identify as Māori.
90. (Te Ture Whenua Maori Act 1993, 1993, sec. 2 (2))
91. (Māori Land Court, 2021b)
92. (Māori Land Court, 2021a)

Table 5.1: Comparison of Land Use Capability for Māori collectively-owned land versus total land [93,94,95,96]

Land Use Capability class	Total land	Māori collectively-owned land
1-3	22%	9%
4-6	51%	44%
7-8	24%	42%
Other	3%	5%

About 86% of all Māori collectively-owned land is in the higher, less productive Land Use Capability classes (class 4 and above). Only a small percentage of land is considered highly productive. This ultimately limits the potential to diversify land use or to increase efficiencies for current land uses.

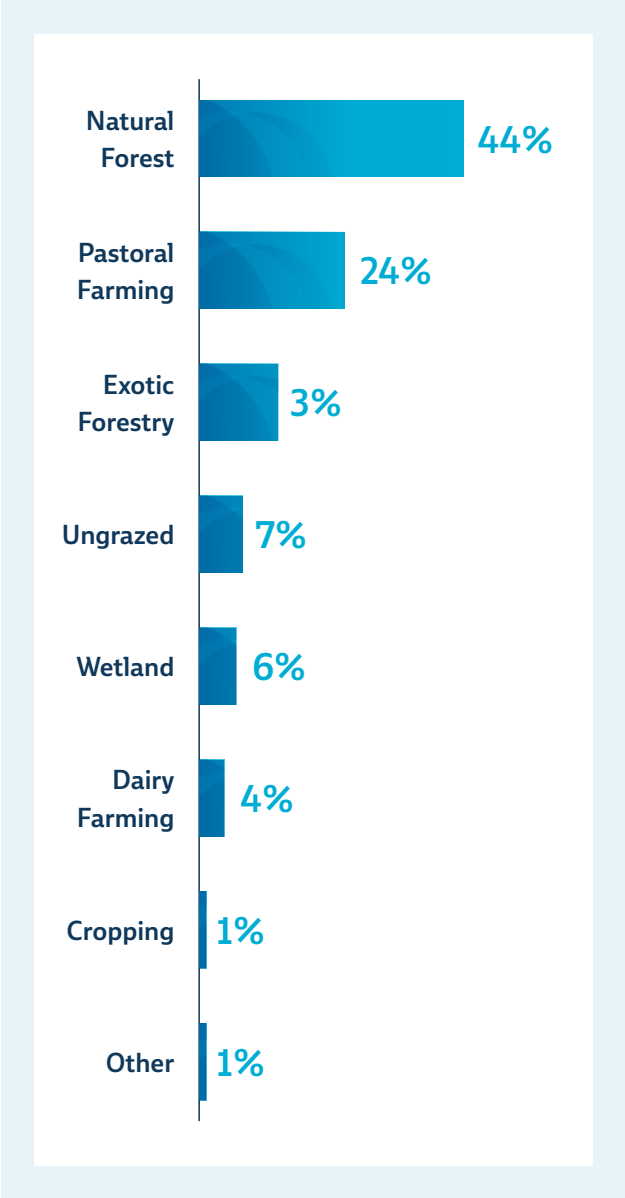
Many parcels of Māori collectively-owned land are also small and fragmented. The average size of these parcels is 49.8 hectares, with a median size of 2.2 hectares.[97]

In terms of the way land is used, about 44% of Māori collectively-owned land is in natural forest, and about 28% is in agriculture – mostly sheep and beef, with some in dairy.[98] While 'natural forest' is typically understood as uneconomic in a commercial sense, from a te ao Māori lens this is viewed as a taonga. To have the land in its original untouched state is of great significance to Iwi/Māori.

Forests, both natural and planted, make up over half of the total land cover on Māori collectively-owned land. This emphasises the fact that carbon sequestration opportunities for Māori collectively-owned land could be quite substantial.

93. Land Use Capability is a geospatial dataset produced by Manaaki Whenua Landcare Research that determines the ability of land to sustain agricultural and horticultural production. This dataset considers soil, slope and erosion susceptibility which is then put into a scale of 1 to 8 – with 1 being highest quality land, and 8 being least productive.
94. (Landcare Research, 2021)
95. The 'Māori collectively-owned land' component of Table 5.1 was calculated through spatially intersecting the Māori Land Spatial Dataset with NZLRI Land Use Capability data. The 'Total Land' component was calculated through calculating areas of NZLRI Land Use Capability within regional council boundaries less DOC administered land and Māori collectively-owned land.
96. (*DOC Public Conservation Areas*, 2017)
97. (Māori Land Court, 2021a)
98. (Ministry for the Environment, 2020b)

Figure 5.1: Māori collectively-owned land: Land utilisation breakdown (percentage) [99,100]



Impacts and equity implications for Māori collectively-owned land

When implementing a pricing system, the range of challenges that result from the characteristics of Māori collectively-owned land must be taken into consideration. Furthermore, these challenges and complexities may disproportionately impact Iwi/Māori by making participation in the pricing system more difficult and affecting their ability to reduce emissions through on-farm action or land-use change.

A price on emissions at the farm level could potentially exacerbate the challenges facing Māori collectively-owned land. For example, because Māori collectively-owned land tends to skew towards the lower quality Land Use Capability classes, the ability to implement on-farm mitigations or change land use can also be more difficult.

The lack of the ability to secure debt over Māori collectively-owned land is another consideration.[101] This affects the ability to raise capital, which will be an integral part in enabling on-farm behaviour changes, implementing on-farm mitigations, or changing land use.

The many ownership interests, and complex governance arrangements, also mean there are many complexities around administering Māori collectively-owned land that can affect the ability to make decisions, and to participate in and respond to emissions pricing.

For example, under Te Ture Whenua Māori Act, 75% shareholder approval is required for some key decisions.[102] This can be challenging when many owners are unknown and can create difficulties in implementing changes and for decision timing.

99. (Ministry for the Environment, 2020b)
100. The LUCAS dataset was spatially intersected with Māori Land Spatial Dataset to determine land utilisation breakdown.
101. (Audit Office, 2004, pt. 2.21)
102. (Te Ture Whenua Maori Act 1993, 1993, sec. 150C (a) (ii))

Non-contiguous blocks of Māori collectively-owned land are also more likely to be put in lease arrangements where the owners or management structures are passive income earners and have limited decision-making input regarding the use of their land.

In our recent report *Advice on Agricultural Assistance*, the Commission recommended giving consideration to providing conditional financial assistance to Iwi/Māori who may be disproportionately impacted by agricultural emissions pricing as a result of land management structures.

There is potential for Māori collectively-owned land to benefit significantly from the proposed treatment of sequestration in the He Waka Eke Noa proposal – despite the administrative and reporting burden associated with it. This is due to land cover on Māori collectively-owned land and the potential for owners to form collectives under the He Waka Eke Noa proposal. Strong support for this design element was heard in submissions from Māori agribusinesses, Māori landowners, managers and users in response to the He Waka Eke Noa consultation document.[103]

However, other complexities around this system are still unknown and further analysis would be needed to look into the eligibility of vegetation.

We are aware that there are wider impacts on Iwi/Māori from the introduction of an emissions pricing system, but due to insufficient data and evidence we have been unable to assess these. It is important that the government undertakes further engagement and consultation with Iwi/Māori to identify and understand the wider impacts.

> *A price on emissions at the farm level could potentially exacerbate the challenges facing Māori collectively-owned land.*

Further engagement and consultation with Iwi/Māori is needed

29. The Government should undertake further engagement and consultation with Iwi/Māori to ensure the system for pricing emissions from agriculture upholds the principles of Te Tiriti o Waitangi/The Treaty of Waitangi and mitigates against compounding historic grievance or unintentionally disadvantaging Iwi/Māori.

103. (Federation of Māori Authorities, 2022)

Equity within the agriculture sector

Emissions pricing will have different impacts across different parts of the agriculture sector. There are fundamental differences between dairy, sheep and beef, arable and others that affect how emissions pricing will be experienced and can be responded to.

Broadly speaking, there are more opportunities to improve emissions intensity through on-farm management practices in dairy compared to sheep, beef, and deer farming, as they are generally more intensively managed farm systems.

Outcomes for each farmer will vary depending on a range of factors, including how mitigation options are implemented, skill level required to implement these options, farm systems, as well as commodity and emissions prices.[104] The ultimate impact of emissions pricing will also depend on the design of the pricing system.

For example, the He Waka Eke Noa Partnership proposes a system with a broad price on emissions across the sector that is designed to limit impact on production and profitability.[105] This approach doesn't explicitly recognise the differences between farm types, and the varying ability of farms to implement mitigation actions.

The types of actions and technologies encouraged through the system's proposed incentive payments are likely to be more suited to intensively managed livestock operations, mostly dairy farming. In this way, emissions reductions will be largely achieved by raising revenue from all farmers to pay a smaller group to reduce their emissions. At the same time, the farmers most likely to be financially rewarded for on-farm sequestration will be extensive sheep and beef farmers – the pricing system participants least likely to be able to benefit from potential future methane mitigation technologies.

The issue of equity within the sector came up frequently during our engagement.[106] This included concerns about which farms would be captured in a farm-level system, as well as how emissions reduction liability would be attributed across the life of a traded animal, and between successive owners or holders of land.

Any farm-level system requires a definition of which farms are required to participate. The He Waka Eke Noa proposal threshold for inclusion, for example, would exclude many horticulture and arable farms, as well as some smaller deer and sheep and beef farms. On the other hand, a processor-level system would put a direct cost only on farms that supply a processor.

104. (BERG, 2018, p. 23)
105. (He Waka Eke Noa, 2022c, p. 2)
106. (Polyakov & Stahlmann-Brown, 2022)

Equity between agriculture and other sectors

The He Waka Eke Noa proposal would see the agriculture sector treated differently from other sectors in several ways. This includes through the proposed treatment of sequestration, the way revenue from the levy is used, and proposed governance and operational arrangements.

The He Waka Eke Noa sequestration proposal creates a system that financially rewards sequestration from non-ETS vegetation, but which only farmers can access.[107] There are many councils, businesses, Iwi/Māori, and other landowners around the country with significant amounts of vegetation that would comply with the requirements of the proposal. These groups already face emissions pricing in the NZ ETS but would be unable to claim financial reward for these same types of sequestration.

Revenue generated through the NZ ETS is not hypothecated by sector. In contrast, He Waka Eke Noa proposes hypothecating all revenue generated through the levy for the agriculture sector, which would raise equity concerns.[108] There are many other potential uses of the revenue that should be considered – including covering a larger share of system establishment and operating costs, contributing to general government revenue, or contributing towards the costs of purchasing international mitigation credits to help meet New Zealand's Nationally Determined Contribution.

He Waka Eke Noa also proposes linking the price of the emissions levy for methane and long-lived gases to the cost of mitigation.[109] This differs from the price other emitters face through the NZ ETS, which is largely market driven. The proposal also recommends a strong role for the agriculture sector in overseeing the management and operation of the pricing system, which also differs from treatment for other sectors.[110]

Pricing agricultural emissions through the NZ ETS would be equitable in as far as all greenhouse gas emissions across the economy would be priced within the same system, with the same rules. However, pricing emissions through the NZ ETS at the farm level would capture a much larger number of small businesses compared to other sectors where the point of obligation is further upstream.

107. (He Waka Eke Noa, 2022c, p. 55)
108. (He Waka Eke Noa, 2022c, p. 69)
109. (He Waka Eke Noa, 2022c, pp. 42–44)
110. (He Waka Eke Noa, 2022c, pp. 28–32)

International equity considerations

Considerations for international equity include the need to reduce methane emissions globally, while recognising that Aotearoa makes important contributions to global food security.

At present, no other countries price agricultural emissions, so there is the prospect of applying a cost to New Zealand farmers that international competition does not yet face. Associated with this is the risk that emissions reductions from reduced production in Aotearoa may be partially offset by increased production and emissions in another country – known as "emissions leakage".[111]

We analysed this risk at length in our Agriculture Assistance report, concluding that the risk of emissions leakage is highly uncertain, may vary by agricultural activity and over time, and may be mitigated by financial assistance. Any decision to provide financial assistance on the grounds of emissions leakage alone should be based on sound evidence about the materiality of emissions leakage risk and applied to individual agricultural activities.[112]

Government also needs to consider its multifaceted international commitments, such as those under the Paris Agreement and 2030 Agenda for Sustainable Development, United Nations Declaration on the Rights of Indigenous Peoples, and trade agreements. For example, Government has equity obligations to deliver emissions reductions associated with its NDC and to take the lead in reducing emissions as a developed country. At the same time, it should consider equity impacts from its decisions as they relate to global food security and other global challenges.

111. Emissions leakage is when pricing agricultural emissions results in some or all of the emissions reductions made in one country being offset by increased emissions in other countries due to a shift in production. If production in other countries is more greenhouse gas emissions intensive, overall global emissions could increase if New Zealand production is impacted by emissions pricing.
112. (He Pou a Rangi | Climate Change Commission, 2022)

Social, environmental, and economic impacts, and intergenerational equity

There is potential for agricultural emissions pricing to lead to wider social, environmental, and economic impacts, including abrupt and disruptive changes on farmers and rural communities. This could happen, for example, if many farms are made economically inviable. Impacts are likely to vary between regions.

Pricing agricultural emissions has the potential to create material financial hardship for farmers that are unable to reduce emissions at an acceptable cost. During our engagement we heard concerns from many farmers who felt they would have very limited options for how to respond to a price on emissions – with some noting that the only options would be to produce less or to plant trees. Many farmers expressed concerns that either option could mean their farms might become inviable.

During our engagement, farmers also raised concerns around how emissions pricing would affect some more than others. In particular, new farmers or others who have low equity in their farms were considered likely to be more affected.

The Comission's *Advice on Agricultural Assistance* report found that financial assistance is appropriate to limit disruptive change and help to smooth the transition.[113] Financial assistance may also be appropriate to address the risk of widespread financial hardship and the consequences of this for communities.

Regarding intergenerational equity, we heard during our engagement that agricultural emissions pricing must be designed in a way that does not delay action on reducing gross emissions. This would result in greater emissions reductions being needed in the future, likely at greater cost to future generations.

It is worth noting that many actions to reduce agricultural emissions can also have other environmental benefits. Reductions in animal numbers and synthetic nitrogen fertiliser use, and improved effluent management, for example, can significantly improve the quality of waterways that receive agricultural run-off. Incentives to support on-farm vegetation can also support biodiversity and some mitigation actions may improve soil health, although more data on this are required.

113. (He Pou a Rangi | Climate Change Commission, 2022)

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