



1990–2021

Te Rārangi Haurehu Kati Mahana a Aotearoa: He Whakarāpopoto New Zealand's Greenhouse Gas Inventory: Snapshot



Ministry for the
Environment
Manatū Mō Te Taiao



Te Kāwanatanga o Aotearoa
New Zealand Government

Ā tātou tukunga mō te 2021



He 76.8 miriona
tana o te CO₂-e
ngā tukunga peke

**He 0.7%
te hekenga**

o ngā tukunga peke
ina whakatauritea ki te
2020, ko te wāhanga nui
o tērā nā ngā tukunga
ahuwhenua



He 55.7 miriona
tana o te CO₂-e
ngā tukunga more

**He 3%
te pikinga**

o ngā tukunga more
ina whakatauritea ki te 2020,
ko te hekenga o ngā
tangohanga i ngā mahi
ngāherehere te take

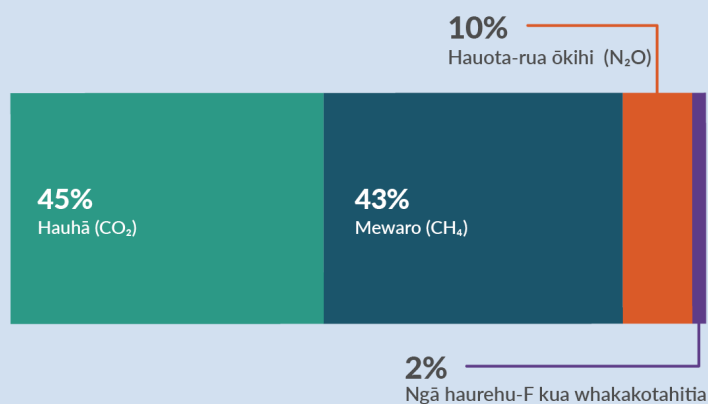


I pāngia tonutia ngā tukunga i te 2021
e te KOWHEORI-19, inarā i te rāngai Pūngao,
me te hokinga atu o te nuīnga o ērā atu rāngai
i pāngia ki ngā taumata o mua i te mate urutā

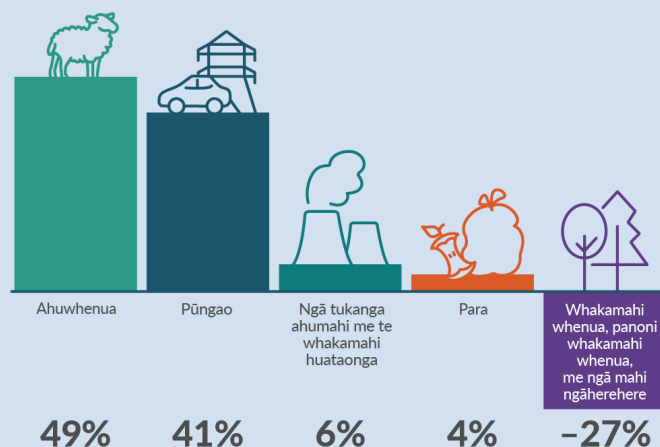


He mea whakaineine e
ngā mahi ngāherehere te
27% o ngā tukunga peke

Ngā tukunga mā te haurehu



Ngā tukunga mā te rāngai



Kei waenga i te 1990 me te 2021



He 19%
te pikinga o ngā
tukunga peke



He 25%
te pikinga o ngā
tukunga more

He mea whakarite tēnei e:



↗ 123%

Ngā tukunga mai i ngā
kau miraka



↗ 85%

Ngā tukunga mai i te tūnuku
i ō tātou rori

Ā, i taua wā anō:



↘ 44%

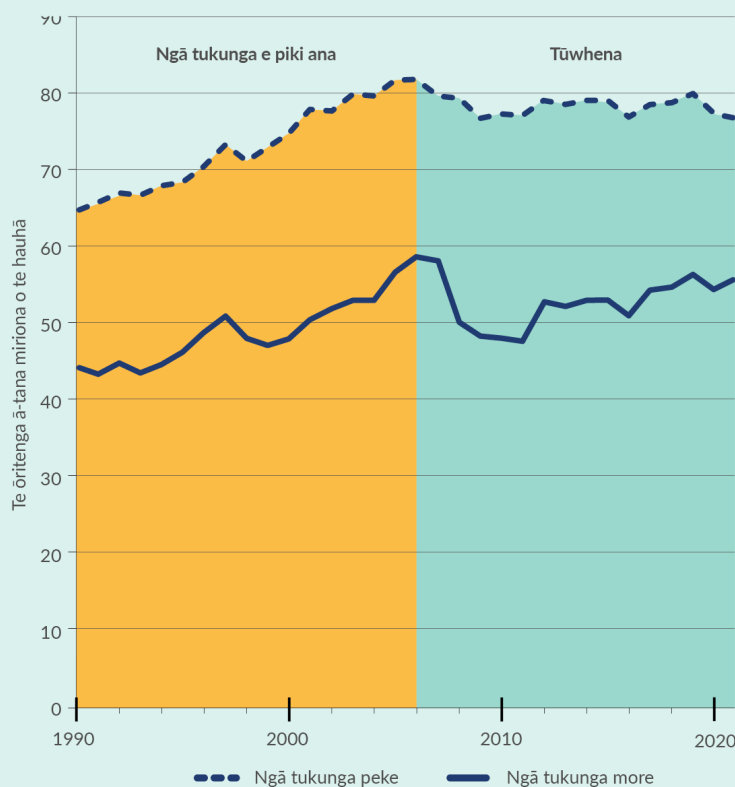
Ngā tukunga mai i ngā hipi



↘ 18%

Ngā tukunga mai i te para

Mai i te tāpuhipuhitanga i te 2006, e noho tūwhena ana
ngā tukunga peke



Ngā tukunga peke me te more o Aotearoa

I roto i Te Whakarārangi Haurehu Kati Mahana a Aotearoa (te whakarārangi), ka whakarōpūhia ngā tukunga me ngā tangohanga hei rāngai e rima:

- Ahuwhenua (arā, mai i ngā pūnaha nakunaku kai o ngā kararehe o te pāmu, i te whakahaumako me te maniuā)
- Pūngao (arā, mai i te tūnuku rori me te whakanaonga hiko)
- Ngā Tukunga Ahumahi me te Whakamahi Huataonga (Industrial Processes and Product Use (IPPU)) (arā, mai i te waihanga konganuku me ngā matū, me te whakamahi matū whakamātao)
- Para (arā, mai i ngā ruapara me te tukatuka waipara)
- Whakamahi Whenua, Panoni Whakamahi Whenua me ngā Mahi Ngāherehere (Land Use, Land-Use Change and Forestry (LULUCF)). E aroturuki ana te rāngai LULUCF i ngā haurehu kati mahana mai i te whakamahi whenua, pērā i ngā ngahere, ngā huanga kai me ngā pātiki. He mea wehe kē tēnei i ngā tukunga kararehe o te pāmu e pūrongotia ana i te rāngai Ahuwhenua. Kua kapi i tērā ngā panoni ki ngā one me ngā otaota e puta mai ana i te whakahaere whenua me ngā panoni ki te whakamahi whenua, ā, koia te rāngai kotahi anake e pā mai ana ngā tukunga me ngā tangohanga o te hauhā.
- Ko 'Tērā Atu' rāngai o Aotearoa, ko Tokerau.

Ko ngā tukunga peke ngā tukunga katoa mai i ngā rāngai Ahuwhenua, IPPU me te Para, me ngā tukunga i Tokerau āno hoki. Kāore a Tokerau e pūrongo ana i ngā tukunga LULUCF, nō reira he ōrite ngā tukunga peke me te more mō Tokerau.

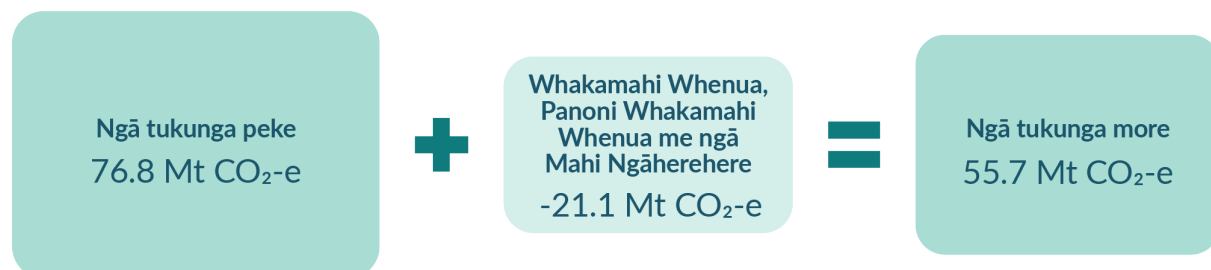
Ko ngā tukunga more ko ngā tukunga peke kua whakakotahitia ki ngā tukunga me ngā tangohanga i te rāngai LULUCF.

E whakaatu nei i te [hoahoa 1](#) ngā tukunga me ngā tangohanga haurehu kati mahana (greenhouse gas emissions (GHG)) o Aotearoa mai i ia rāngai i te 2021. Nō te mea he whenua whirinaki o tāwāhi a Tokerau, ka pūrongotia ngā tukunga katoa mai i Tokerau i te rāngai 'Tērā Atu' o te whakarārangi.

Ka pokea ngā tukunga peke e ērā nā ngā rāngai Ahuwhenua me te Pūngao

He tino nui rawa te wāhi ki ngā rāngai Ahuwhenua me te Pūngao ki ngā tukunga o Aotearoa, ko te 49 ōrau me te 41 ōrau o ngā tukunga peke i te tau 2021 ki tēnā, ki tēnā (hoahoa 2). I pupū nga tukunga i te tūnuku rori, he kāwai iti o te rāngai Pūngao, ki te 16 ōrau o ngā tukunga peke.

Hui katoa, neke atu i te haurua o ō tātou tukunga peke, ko te nuinga nō ngā pūtake ahuhwhenua, i puta mai i te mewaro me te hauota-rua ōkai (43 me te 10 ōrau ki tēnā, ki tēnā). Ko te nuinga o ērā atu tukunga i ahu mai i te hauhā (45 ōrau), ko te nuinga o ērā nā ngā rāngai Pūngao me te IPPU.

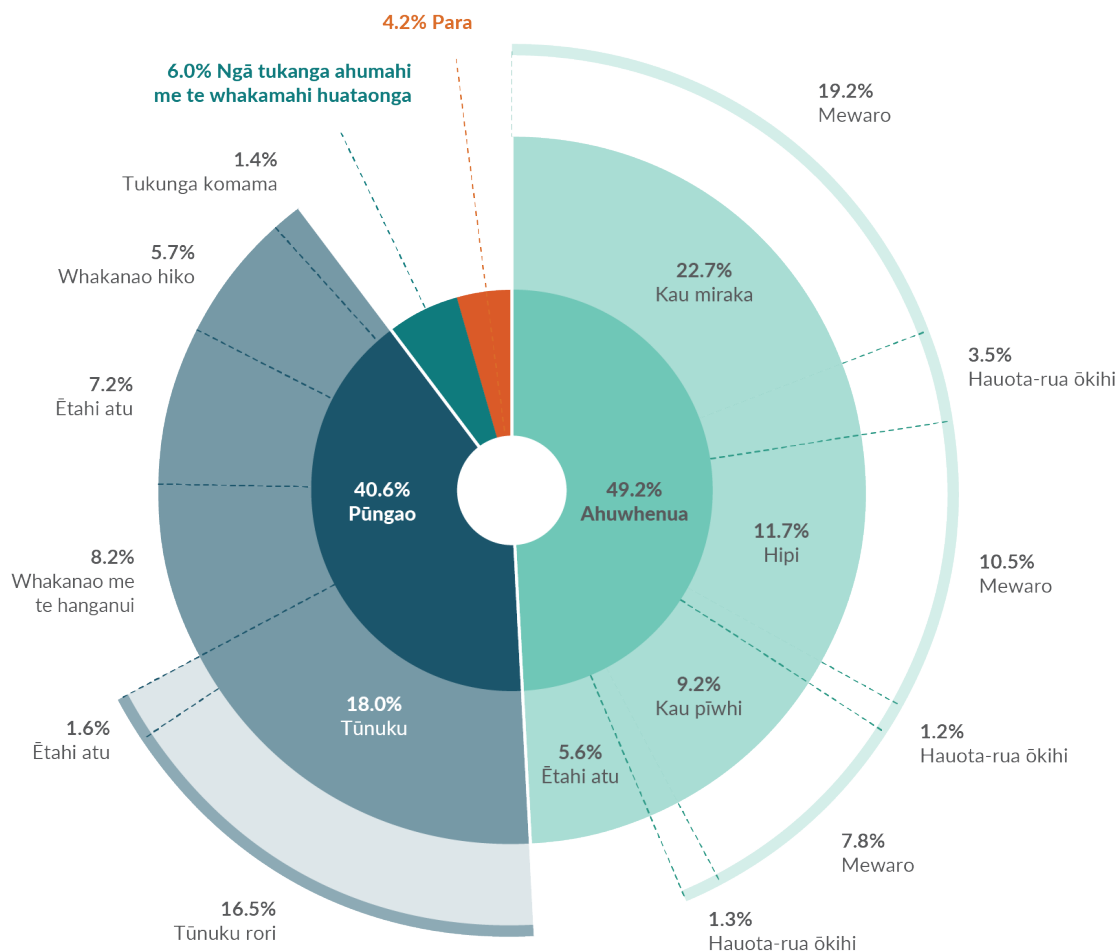


Hoahoa 1: Te wāwāhitanga o ngā tukunga a Aotearoa (e ōrite ana ki te miriona tana o te hauhā, Mt CO₂-e) mā ia rāngai i te 2021



E whakaaturia ana ngā tukunga more i te rāngai LULUCF hei tau tōraro nā te mea he nui ake ngā GHG e tangohia ana e te rāngai i te kōhauhau i ērā e tukua ana.

Hoahoa 2: Ngā tukunga haurehu kati mahana i te 2021 mā te rāngai, te kāwai iti me te momo haurehu.



Te wāwāhitanga ā-rāngai o ngā tukunga (Ahuwhenua, Pūngao, Ngā Tukanga Ahumahi me te Whakamahi Huataonga (IPPU), me te Para) me te kāwai iti me te momo o te haurehu kati mahana. He tino iti rawa ngā tukunga i Tokerau kia whakaaturia ai ki te hoahoa.

Kua piki ngā tukunga peke i waenga i te 1990 me te 2021

He 76.8 miriona tana o te ōritenga ki te hauhā (Mt CO₂-e*) ngā tukunga haurehu kati mahana o Aotearoa i te 2021. He pikinga o te 19 ōrau tēnei i ngā tukunga i te 1990 (te tau taketake mō ngā pūrongo mō te Anga Whakaaetanga a Te Rūnanga Whakakotahi i ngā Iwi o te Ao mō te Panoni Āhuarangi (UNFCCC)). Heoi, mai i te tau 2006, te wā tāpuhipuhi mō ngā tukunga peke, kua noho āhua tūwhena ngā tukunga, me ētahi māneinei ā-tau (hoahoa 3).

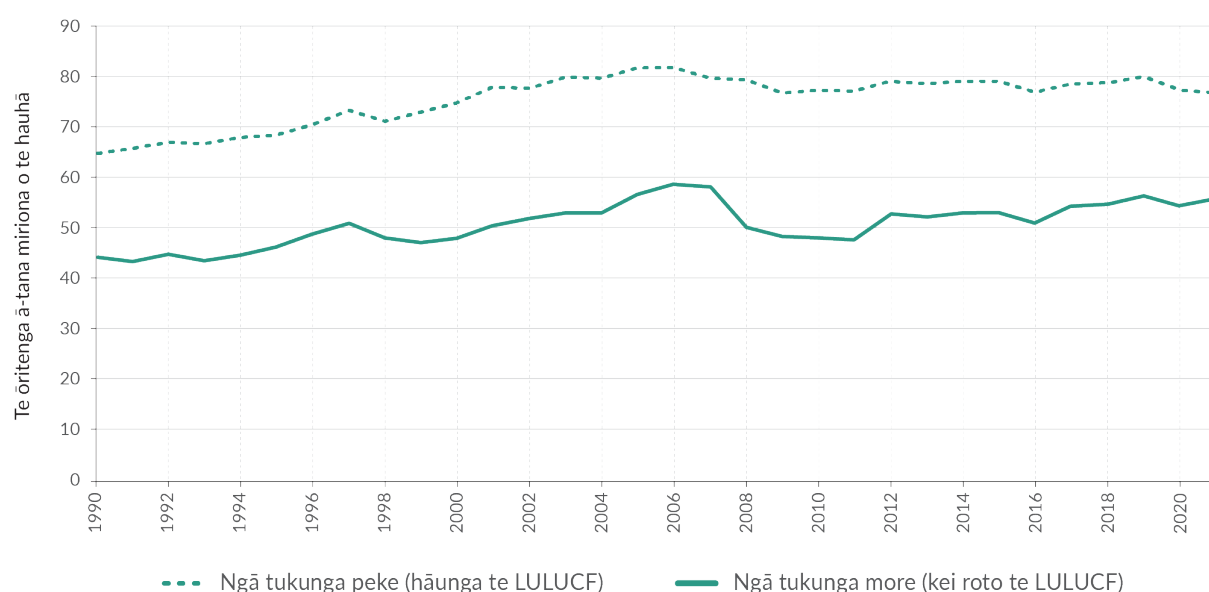
* Te ōritenga ki te hauhā (CO₂-e)

He inenga te ōritenga ki te hauhā (CO₂-e) mō te whakataurite i ngā GHG rerekē i runga anō te hua whakamahana o ia haurehu ina whakatauritea ki tētahi rahinga ōrite o te hauhā. Whakamahia ai te CO₂-e ki te whakaatu i ngā tukunga o ngā haurehu kati mahana rerekē mā te wae taunoa, tērā ka tuku kia ōrite te pūrongo me te whakataurite.

Ko ngā pūtake tukunga e rima i tino whai wāhi ki taua pikinga ko:

- te moī i rō kōpiro nā te pikinga o te taupori kau miraka (mewaro) (7.4 Mt CO₂-e)
- te whakapau kora i te tūnuku rori nā te pikinga o ngā waka (hauhā) (5.9 Mt CO₂-e)
- ngā one ahuwhehua nā te nui ake o te whakamahi whakahaumako (hauota-rua ōkihi) (2.1 Mt CO₂-e)
- te whakapau kora i ngā ahumahi whakanao me te hanganui, nā te pikinga o ngā mahi whakanao (hauhā) (1.5 Mt CO₂-e)
- te whakamahi matū whakamātao ā-warō haukōwhai wai (hydrofluorocarbon) i ngā pūnaha whakamātao ahumahi me te wharenoho me ngā pūnaha whāhau i whakakapi i ngā matū whakapau hāora toru (1.5 Mt CO₂-e).

Hoahoa 3: Ngā tukunga peke me te more o Aotearoa (o te Mt CO₂-e) mai i te 1990 ki te 2021



Ka aukati ngā tukunga peke i te rāngai Whakamahi Whenua, Panoni Whakamahi Whenua me ngā Mahi Ngāherehere (LULUCF). Kei roto ngā tukunga more i te rāngai LULUCF.

Mai i te 1990, ko te rāngai anake kei reira te hekenga o ngā tukunga peke ko te rāngai Para, me te hekenga o te 18 ōrau nā ngā whakapainga haere tonu i te whakahaere ruapara.

He nui te pānga o te KOWHEORI-19 ki ngā tukunga o Aotearoa i te 2020, me te hekenga iho o te 3 ōrau i ngā taumata o te tau 2019. I ahu mai te nuinga o aua hekenga i ngā rāngai tūnuku rori, whakanao me te hanganui, me te ao rererangi, ko ngā herenga KOWHEORI-19 te pūtake.

I te tau 2021 i heke haere tonu ngā tukunga, ka mutu he 0.7 ōrau te hekenga mai i ngā tukunga o te tau 2020, ko te wāhanga nui o taua hekenga ko ngā tukunga iti iho puta noa i te rāngai Ahumahi. I pāngia tonutia ngā tukunga e te KOWHEORI-19 i te tau 2021, inarā i te rāngai Pūngao, me te hokinga atu o te nuinga o ērā atu rāngai i pāngia ki ngā taumata o mua i te mate urutā.

E pāngia ana ngā tukunga more e ngā huringa ono rākau i ngā ngahere

Kei roto i ngā tukunga more ko ngā tukunga peke kua whakakotahitia ki ngā tukunga me ngā tangohanga i te rāngai LULUCF. Ko tā te ngahere he tango hauhā i te kōhauhau i ngā rākau e tupu ana, engari ka taea hoki te tuku, hei tauira i muri i te topenga, i te whakarakenga, whai muri rānei i ngā aituā māori pērā i te tūkinotanga āwhā. Ko te tikanga nei, he nui te pānga o ngā pāpātanga ono o mua me ngā huringa tope ki te rahinga more o te hauhā e tangohia ana e ō tātou ngahere i tētahi tau ake. Ahakoa rā, mai i te 1990 e noho tonu ana te rāngai LULUCF hei **putunga waro*** more.

Hei whakatau tata i ngā tukunga more, kua tātaihia e te Manatū mō te Taiao me Te Manatū Ahumatua te horahanga kua kapi i ngā ngahere i Aotearoa. E ai ki aua whakatautata, i te 2021 kua tata ki te 54,268 heketea o te ngahere hou i onokia, ā, i whakarakea te 2,610 heketea.

Ko ngā tukunga more a Aotearoa he 55.7 Mt CO₂-e i te 2021. He mea tātai tērā nā te tango i te 21.1 Mt CO₂-e o ngā tangohanga more i puta i te rāngai LULUCF, i ngā tukunga peke o te 76.8 Mt CO₂-e. Kua piki ngā tukunga more mā te 25 ōrau ina whakatauritea ki ngā taumata o te tau 1990.

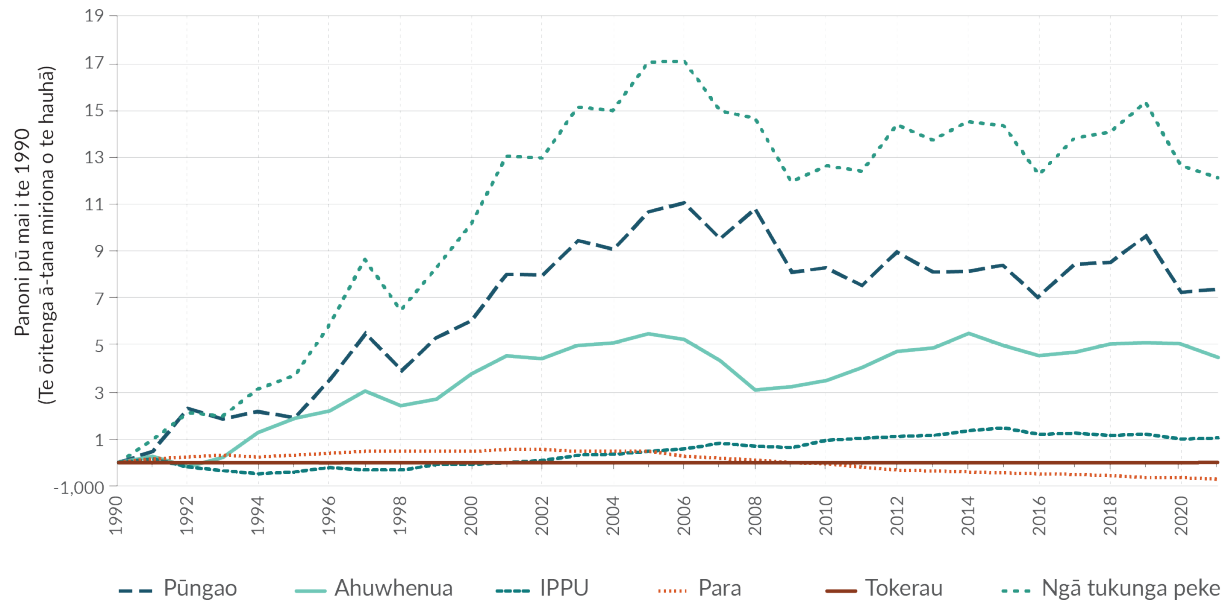
Ka taea te whakaineine i te 27 ōrau o ngā tukunga peke o Aotearoa i te 2021 ki ngā tukunga more i te rāngai LULUCF ([hoahoa 3](#)). He hekenga tēnei i te tau 1990 i whakaineinetia ai te 31 ōrau o ngā tukunga peke o Aotearoa ki ngā tukunga o te rāngai LULUCF ([hoahoa 3](#)). Ko te wāhi nui o taua panoni i ahu mai i te pikinga o ngā tukunga peke i waenga i te 1990 me te 2021, me te pānga o ngā huringa tope me te hauhake ki ngā tukunga more.

* Putunga waro

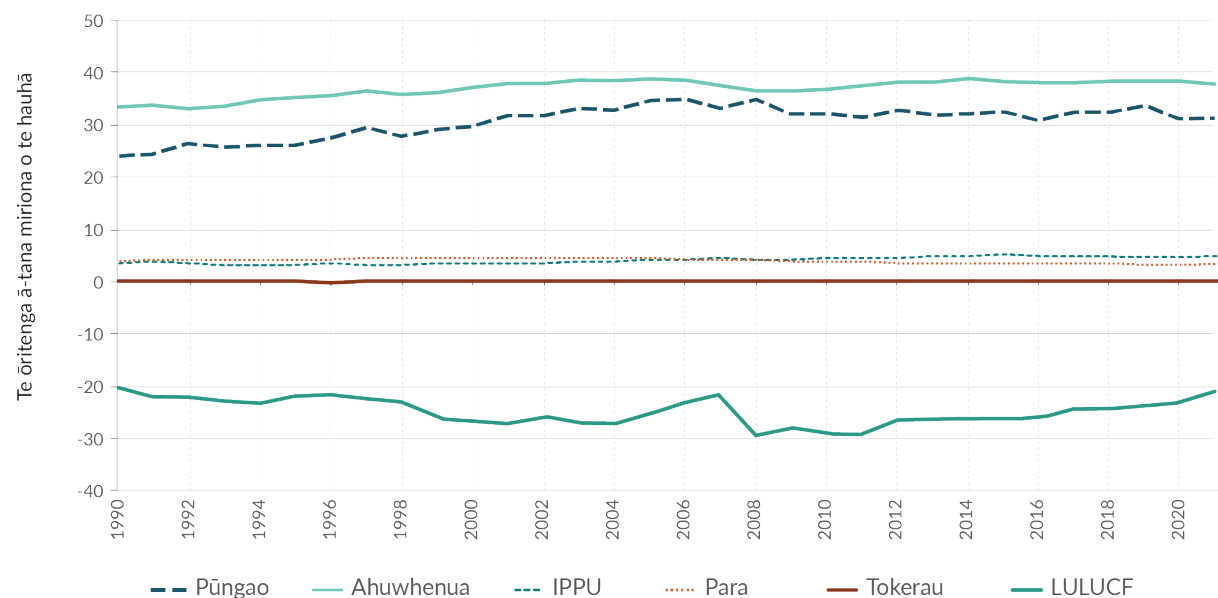
Ko tēnei mea te putanga waro tētahi tukanga, tikanga rānei ka tango i tētahi haurehu kati mahana i te kōhauhau. He putunga waro more te rāngai LULUCF i Aotearoa nō te mea ka tango i te nui ake o te hauhā i te kōhauhau tēnā i tērā ka tukuna.

Ngā tukunga mā te rāngai

Hoahoa 4: Ngā tukunga haurehu kati mahana peke o Aotearoa (ā-Mt CO₂-e): Te huringa pū mā te rāngai mai i te 1990 ki te 2021



Hoahoa 5: Ngā tukunga haurehu kati mahana o Aotearoa (ā-Mt CO₂-e): Ngā ia mā te rāngai mai i te 1990 ki te 2021



Ahuwhenua

1990-2021

I piki ngā tukunga mai i te rāngai Ahumahi mā te 13 ōrau mai i 1990 ki te 2021 (ngā [hoahoa 4](#) me [te 5](#)). Ko te take matua i pērā ai, ko te pikinga o te tapeke kau miraka mā te 88 ōrau mai i te tau 1990, me te pikinga ake o te 644 ōrau i te panipani whakahaumako hauota horihori mai i te 1990. Kua wāhi noa te whakaineine i aua pikinga ki ngā hekenga i ngā taupori hipi (56 ōrau), ngā kau pīwhi (14 ōrau) me ngā tia (17 ōrau) mai i te 1990. Ko te tau 2014 te tau tāpuhipuhi mō ngā tukunga ahūwhenua, me te tāpuhipuhi anō hoki mō te tapeke o ngā kau miraka, engari i muri mai kua noho āhua tūwhena ngā tukunga.

2020-2021

I te tau 2021, i heke haere ngā tukunga mai i te rāngai Ahuwhenua mā te 1.5 ōrau. Ko te take matua o taua heke haere ko te hekenga i ngā taupori kau miraka me te hipi, te iti iho hoki o te whakamahi i te whakahaumako horihori. E whai wāhi ana ngā panoni wā roa puta noa i te rāngai ahūwhenua ki ngā hekenga i te tapeke o ngā kararehe o te pāmu me te whakamahinga o te whakahaumako. Kei roto i ēnei: ko ngā kōkiri e arahina ana e te ahumahi, tae atu ki te iranga me te whakaputaranga pai ake, me te whakamahi i ngā ritenga pāmu toitū ake; ngā huringa i te taiao waeture o Aotearoa, pēnei i te whakapai ake i te kounga o te wai māori; me te pikinga o te utu mō te whakahaumako ko ngā ānga māketē te take.

Kīhai i kitea he pānga ki ngā tukunga mai i te rāngai Ahuwhenua i te tau 2021 nā ngā herenga KOWHEORI-19.

Pūngao

1990-2021

He 31 ōrau te nui ake o ngā tukunga mai i te rāngai Pūngao i te tau 2021 i ērā i te tau 1990 (ngā [hoahoa 4](#) me [te 5](#)). Ko te nuinga o taua pikinga nā te tūnuku rori (he 85 ōrau te pikinga o ngā tukunga), me te whakapau koranehe i te whakanao huakai, hiko me te pōkākā. Nā te nui ake o te taupori me ngā mahi ohaoha kaha ake i Aotearoa taua pikinga i te rāngai tūnuku. E whakaatu nei te ia i piki haere tonu ngā tukunga taea noatia te 2006, kātahi ka paku heke, ā, i muri mai i tērā i noho āhua tūwhena, (ngā [hoahoa 4](#) me [te 5](#)).

2020-2021

Nā te urutā KOWHEORI-19 me ngā herenga pātahi ka heke ngā tukunga i te rāngai Pūngao mā te 7 ōrau i waenga i te 2019 me te 2020. I te 2021 ka puta he turapa iti me te pikinga tukunga o te 0.3 ōrau, heoi, i noho tonu ngā tukunga i raro i ngā taumata o ngā tau i mua i te 2020, ko tētahi wāhi nā ngā herenga KOWHEORI-19 haere tonu. E haere tonu ana ngā pānga o te KOWHEORI-19 me ngā haukotanga ara tukutuku ki te rāngai Pūngao, ina koa mō te taha ki ngā konganuku waiwai me ngā mahi maina. He 5 ōrau te nui ake o ngā tukunga tūnuku i te 2021 i ō te tau 2020, engari he iti iho tonu i ō ngā taumata i mua i te urutā, i te tau 2019.

Ngā Tukunga Ahumahi me te Whakamahi Huataonga (IPPU)

1990-2021

He 29 ōrau te nui ake o ngā tukunga mai i te rāngai IPPU i te tau 2021 i ērā i te tau 1990 (ngā [hoahoa 4](#) me [te 5](#)). Ko te wāhi nui o te pikinga: nā te āta whakamutu haere i te whakamahi matū whakapau hāora toru i raro o te Kawa o Montreal me te whakakapi ki ngā matū whakamātao ā-warō haukōwhai wai i ngā pūnaha whakamātao me te whāhauhau; me te pikinga i te whakamahi whāhauhau i ngā wharenoho me ngā wāhi mahi o Aotearoa.

I tua atu, kua piki anō hoki ngā tukunga hauhā nā te nui ake o te hanga konganuku me te raima, ahakoa i te pāpātanga pōturi ake. I ngā tau 2020 me te 2021, i whakaineinea te pikinga ki ngā tukunga iti iho nā ngā herenga KOWHEORI-19 me te āta kati haere i te whaketere tukatuka hinu māori o Ruakākā.

2020-2021

I piki ngā tukunga IPPU mā te 0.6 ōrau mai i te 2020 ki te 2021. Nā te whakaoranga anō o ngā pāpātanga whakanao me ngā tukunga puta noa i te rāngai i muri i ngā katinga wheketere i te tau 2020 ko ngā herenga KOWHEORI-19 te pūtake, taua paku pikinga. Ahakoa taua pikinga iti, e noho ana te tapeke o ngā tukunga i raro iho i ērā nō mua i te urutā – he 3 ōrau te iti iho o ngā taumata tukunga o te 2021 i ērā o te 2019. Ko tētahi wāhanga o tēnei nā te hekenga haerenga o ngā tukunga mai i te Wheketere Tukatuka Hinu o Ruakākā i mua i te katinga i Poutūterangi 2022.

Para

1990-2021

I te tau 2021, he 18 ōrau te iti iho o ngā tukunga rāngai Para i ngā taumata o te 1990 (ngā [hoahoa 4](#) me [te 5](#)). Nā te piki haere o te taupori me ngā mahi ohaoha kua nui ake ngā rahinga para mai i te tau 1990. Ahakoa tēra, ka heke haere ngā tukunga nā ngā whakapainga ake i te whakahaerenga o ngā para totoka i ngā ruapara, inarā mō te taha ki te taumanu haurehu i ngā ruapara. Kei roto i ngā take uruhi i aua whakapainga ko Ngā Paerewa Taiao ā-Motu mō te Kounga Hau Takiwā i whakatūria i te 2004, me te Kaupapa Hokohoko Tukunga o Aotearoa mai i te tau 2013. I piki ngā tukunga ā-tau i waenga i te 1990 me te 2002, i mua i te tūwhena haere me te āta heke haere mai i te tau 2005.

2020-2021

I heke ngā tukunga i te rāngai Para mā te 1.6 ōrau mai i te 2020 ki te 2021. Ko te wāhanga nui o taua hekenga ko te hekenga o ngā tukunga mewaro mai i ngā ruapara. Nā ngā whakapainga me ngā pikinga i te taumanu haurehu ruapara tēnei, me te hekenga i te nui o ngā para māra, kai me te pepa e tukuna ana ki ngā ruapara.

Kīhai i kitea he pānga ki ngā tukunga mai i te rāngai Para i te tau 2021 nā ngā herenga KOWHEORI-19.

Whakamahi Whenua, Panoni Whakamahi Whenua me ngā Mahi Ngāherehere (LULUCF)

1990-2021

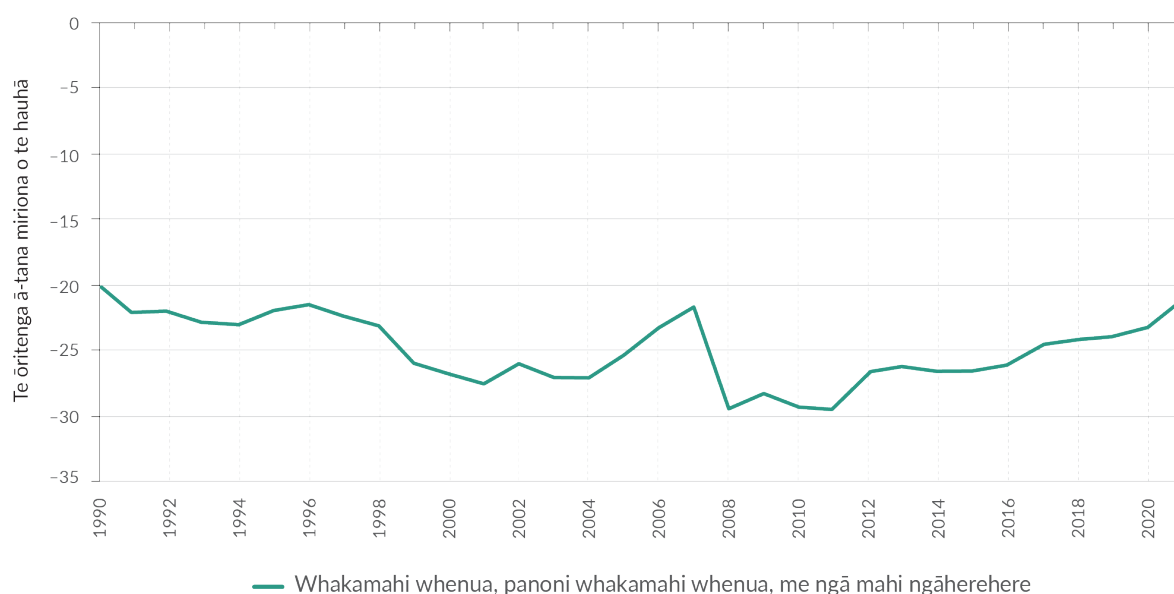
I piki ngā tangohanga more mai i te rāngai LULUCF mā te 4 ōrau mai i 1990 ki te 2021 (ngā [hoahoa 5](#) me [te 6](#)). Ko te wāhanga nui o taua pikinga o ngā tangohanga nā te nui ake o te tango mai i ngā rākau tupu me te nui ake o ngā hua rākau e whakanaohia ana, pēnei i ngā papa rākau. Mā te hanga i aua hua i ngā rākau kua topea ka 'rakaina' te waro i roto i ngā hua, me te aha ka whakatōmuri i te tukunga o te waro ki roto i te kōhauhau. Mai i te 1990, kua piki ake ngā rahinga o ngā rākau e topea ana, engari kua piki anō hoki te rahinga o te waro kua 'rakaina' i roto i ngā hua rākau.

I te tekau tau kua hori nei, ko te tikanga e piki haere ana ngā tukunga more i te rāngai LULUCF ([hoahoa 6](#)). Ko te take e pēnei ana, ko te tino nui rawa o te topetope rākau hei mutunga iho o te tino nui o ngā mahi onoono rākau i ngā tau 1980 me ngā tau tuatahi o ngā 1990. E pakari haere tonu ana aua ngāhere whakaputa rākau, ka mutu, ka haere tonu tērā ā roto i ngā tau 2020 nei. I te tino nui haere tonu o te topetope rākau, ka whakahekea te pakeke toharite o ngā ngāhere ahurākau i ia tau, nā te topetopetanga o ngā rākau i aua ngāhere, me te whakatō anō i ngā mea hou. He iti iho ngā pāpātanga tupu o ngā uru rākau māhuri ina whakatauritea ki ngā uru whai rākau pakari ake, he tere ake te tupu. Ka hurikōarotia tēnei ia ā ngā tau kei tua. Ka whai awenga tonu ngā huringa topetope me te whakatō anō o ngā ngāhere ahurākau o Aotearoa ki te ara whiu o ngā tukunga more o Aotearoa ā muri atu nā te kūreureu o te kōtaha pakeke-karangatanga.

2020-2021

I waenga i te 2020 me te 2021 i heke haere ngā tangohanga more mai i te rāngai LULUCF mā te 9 ōrau, ko te nui ake o ngā mahi topetope te wāhanga matua. I pāngia te rāngai LULUCF ki tētahi paku whakahekenga i te topetope rākau i ngā ngāhere ahurākau i te 2020, ko te KOWHEORI-19 te pūtake, heoi, i piki ake anō ngā pāpātanga topetope i te 2021.

Hoahoa 6: Ngā tukunga haurehu kati mahana more o Aotearoa (ā-Mt CO₂-e): Ngā ia kei te rāngai LULUCF mai i te 1990 ki te 2021 (i raro i te pūrongo UNFCCC)



He tōraro ngā tukunga more o te rāngai Whakamahi Whenua, Panoni Whakamahi Whenua me ngā Mahi Ngāherehere nā te mea he rahi ake ngā tangohanga i te kōhauhau i ngā tukunga.

Ka pēhea te rite o Aotearoa ki ētahi atu whenua

He ahurei te kōtaha tukunga o Aotearoa

He rerekē te kōtaha tukunga o Aotearoa i tō te nuinga o ērā atu **whenua Āpitihanga 1*** e 43. E pēnei ana nā te mea ko tōna haurua o ā tātou tukunga nō te rāngai Ahuwhenua. Ko tētahi wāhanga o tēnei nā te āhua iti o tō Aotearoa rāngai pūngao. Ahakoa he nui ngā tukunga tūnuku o tēnā, o tēnā o tātou, he hira te pānga o te tino nui o te whakanao hiko whakahou ki tō tātou kōtaha tukunga, me te aha ka whakapiki i te whāinga wāhi o te rāngai Ahuwhenua ki tō tātou kōtaha whānui.

Kei Aotearoa te wāhanga tino nui o ngā tukunga rāngai Ahuwhenua ina whakatauritea ki ētahi atu whenua Āpitihanga 1, ā, ka whāia e Airani (36 ōrau) me Tenemāka (26 ōrau). Ko te tikanga, i ērā atu whenua Āpitihanga 1, he wāhanga iti noa iho o ngā tukunga peke nā te rāngai Ahuwhenua (13 ōrau te toharite).

Kei Aotearoa anō hoki ngā tukunga tūnuku nunui mō ia tangata, te mea tuarima te nui o ngā whenua Āpitihanga 1. Ko te taupori iti o Aotearoa e tohaina whānuitia ana, me te hanga roa me te whāiti o te whenua te take, me te aha ko te tūnuku rori te wāhanga nunui o te pūnaha tūnuku. Ko ngā tukunga rāngai Pūngao o Aotearoa mō ia tangata he 6.3 tana o te ōritenga ki te hauhā (T CO₂-e), he rite ki te toharite Āpitihanga 1 o te 6.4 T CO₂-e. E pēnei ana nā te mea e whakaineinea ana ā tātou tukunga tūnuku āhua nui e te nui o te whakanao hiko whakahou.

E ai ki te raraunga Whakarārangi tino hou rawa mō te 2020 mō ngā whenua Āpitihanga 1, kei te tūranga rua tekau ngā tukunga peke a Aotearoa i waenga i ngā whenua Āpitihanga 1, engari ko ngā tukunga a Aotearoa mō tēnā, mō tēnā tangata kei te tūranga tuarima te nui me te 15.7 tana o te ōritenga ki te hauhā (CO₂-e) mō ia tangata ([hoahoa 7](#)).

Nā te nunui o te whakanaonga ahuhenua i Aotearoa ko te mewaro me te hauota-rua ōkai te ōwehenga nui ake o ngā tukunga peke, ka mutu he nui ake te kaha whakamahana o ērā i te kōhauhau i tō te hauhā.

* Āpitihanga 1

E rārangi ana te Āpitihanga 1 ki te UNFCCC i ngā whenua whakaahumahi e noho mema ana o te Organisation for Economic Co-operation and Development me ngā whenua whai ohanga e panoni ana i te 1992 (te tau i whakaaetia ai te UNFCCC). Ko te whakarite me auau te pūrongorongo a ngā whenua he mea rārangi i te Āpitihanga 1, kua haina anō hoki i te UNFCCC, i ā rātou raraunga, kaupapahere me ngā inenga mō te panoni āhuarangi.

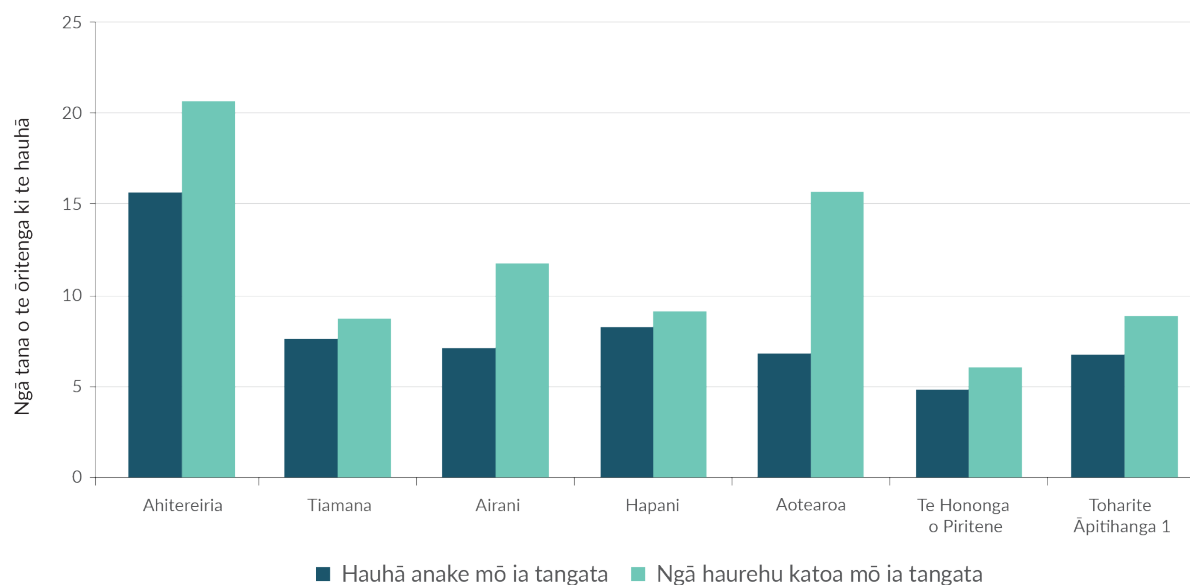
Ko Aotearoa te whenua Āpitihanga 1 anake e iti iho ai ngā tukunga hauhā i te haurua o te maha o ngā haurehu kati mahana (43.7 ōrau i te 2020). Ko te whenua tata rawa ki tēnei ko Airani me te 60.6 ōrau. Ina titiro ki ngā tukunga peke hauhā anake o Aotearoa, ka heke ō tātou tukunga mō ia tangata me te whakaata i tō tātou kōtaha tukunga ahurei. He 6.9 tana hauhā mō ia tangata ngā tukunga peke hauhā anake o Aotearoa, ā, he tino tata tērā ki te toharite Āpitihanga 1 2020 o te 6.8 tana o te hauhā mō ia tangata ([hoahoa 7](#)).

Nā te [United Nations Framework Convention on Climate Change \(UNFCCC\) Data Interface \(2022\)](#) ngā raraunga tukunga katoa i tēnei wāhanga. Ka tauria motuhakehia e ngā raraunga Āpitianga 1 i ēnei whakatauritenga ngā whenua o te Kotahitanga o Uropi (EU), ka aukatia hoki te EU hei tōpūtanga. Me mōhio i oti ngā whakatauritenga ki ngā whenua Āpitianga 1 nā te mea e whakamahia ana aua whenua katoa i ngā aratohu pūrongo haurehu kati mahana ōrite ki te pūrongo i ā rātou tukunga me ngā tangohanga.

Te pūtake e rerekē ana ngā ia tukunga o Aotearoa

Kua piki ngā tukunga peke i Aotearoa mai anō i te 1990, heoi kei te maha o ērā atu whenua Āpitianga 1 (hei tauria, Te Hononga o Piritene Nui me Tiamana), kei raro ngā tukunga ināianei i ngā taumata o te 1990. Nā te panoni i ngā pūnaha pūngao me te wetetukuwaro i te whakanaonga hiko i puta mai ngā arawātea hira ki te maha o ngā whenua ki te āta whakaiti i ngā tukunga. I te tau 1990, e whakanaohia ana te 81 ōrau o te ratonga hiko o Aotearoa e ngā puna whakahou, ā, he tino teitei tērā e ai ki ngā ngā paerewa ā-ao, ā, e pērā tonu ana i ēnei rā. I te tau 2021, he 82 ōrau te wāhanga o te hiko e whakanaohia ana ki ngā puna pūngao whakahou. Ko te tikanga nei, tē taea e Aotearoa te whakaheke i ngā tukunga mā te whakawhiti mai i ngā puna tē taea te whakahou ki ngā mea whakahou mō te whakanao hiko – nā reira me whakaiti ngā tukunga i ngā wāhi he uaua ake te whakaiti tukunga, tae atu ki te ahuwahenua me te tūnuku.

Hoahoa 7: Ngā whakatauritenga ā-ao mō ia tangata (hei tana CO₂-e) i te 2020.



Kia mōhio: Nō te UNFCCC Data Interface (2022). Ngā raraunga tukunga katoa i tēnei wāhanga. Ka tauria motuhakehia e ngā raraunga Āpitianga 1 i ēnei whakatauritenga ngā whenua o te Kotahitanga o Uropi (EU), ka aukatia hoki te EU hei tōpūtanga.

He mea tango ngā raraunga taupori i whakamahia hei whakaputa i te hoahoa 7 i ngā raraunga taupori 2020 i te UN Population Division.

E whakatauritea ana ngā whenua Āpitianga 1 (UNFCCC) ki Ahitereiria, Hapani, Aotearoa Te Hononga o Piritene Nui, me Te Hononga o Amerika. E whakaatu ana ia whenua i ngā pae e rua e tohu ana i te 'hauhā anake mō ia tangata' me 'ngā haurehu katoa'.

Te koke ki tētahi ōhanga e iti iho ai ngā tukunga

Kua piki ngā tukunga o Aotearoa i waenga i te 1990 me te 2021, ko te kaha pikinga o te whanake ōhanga me te pikanga o te taupori ngā take. I roto i taua wā kua heke te kaha o ngā tukunga mā te 48 ōrau ([hoahoa 8](#)). Ko te tikanga he tere ake te tupu o te ōhanga i te nui haere o ngā tukunga, tērā e tohu ana i te kokenga ki tētahi ōhanga e iti iho ai ngā tukunga.

Te herenga ki te whakaiti i ngā tukunga haurehu kati mahana

Kua whakaritea e Aotearoa he mahere tukunga rāroto hei uruhi i tā tātou panoni ki te ōhanga tukunga iti. Kua whakatauria ngā tepenga heke haere mō ngā tukunga rāroto hei whakarite kia tutuki tō tātou ūnga tukunga kore mā te 2050 i raro i te Climate Change Response Act 2002.

Kua takoto i tā tātou [mahere whakaheke tukunga tuatahi](#) i Haratua 2022 te pēheatanga o tā Aotearoa whakaheke tukunga kia ea ai te mahere tukunga tuatahi mō te wā 2022–2025. E whakatinanahia ana te mahere, ā, kei roto he rautaki me ngā kaupapahere puta noa i ia rāngai mō te whakaheke tukunga. Mā tērā e āhei ai tātou te mahi i tērā i whakaūngia i raro i te Whakaaetanga o Parī ki te whakaheke tukunga me te whakatiki i te pikinga pāmahana o te ao ki te 1.5 putu Celsius.

Te whai haere i te kokenga ki te whakatutuki i ngā whāinga whakaheke tukunga

Kua kapi i te mahere tukunga rāroto tuatahi a Aotearoa te wā 2022–2025, ā, kei waho tērā i te wā e kapi ai i tēnei rārangi.

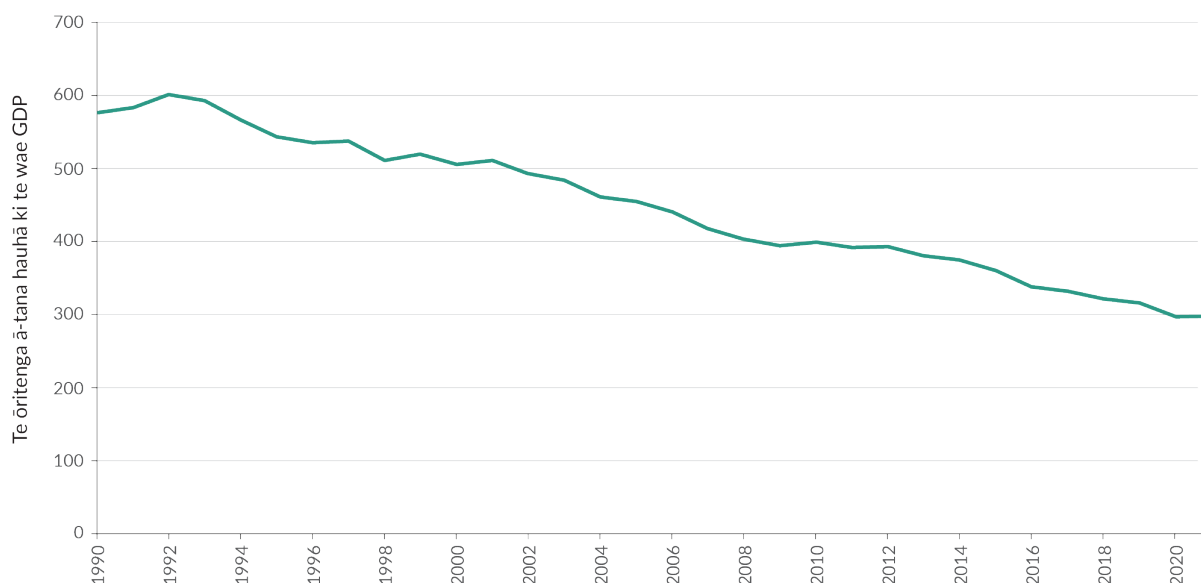
Kua whakatakotoria anō hoki e Aotearoa he ūnga whakaheke tukunga ā-ao. Kua whakawhitiwhitia tērā mā tā tātou [Whai Wāhitanga He Mea Whakatau ā-Motu](#) tuatahi (NDC1), i runga anō i te whakaritenga i raro i te Whakaaetanga o Parī. Kua whakaritea e te NDC1 he whakahekenga 50 ōrau o ngā tukunga more ki raro i ō tātou taumata peke mā te 2030.

Ahakoia kei roto i te rārangi mō tēnei tau ngā whakatautata tukunga mō te tau tuatahi kua kapi i te Whakaaetanga o Parī, he tau whakawhitinga tēnei tau mō te mahi pūrongo. Ka tīmata te pūrongo i raro i te Whakaaetanga o Parī hei te 2024.

Ka tāpae a Aotearoa i tōna Pūrongo Pūataata ā-Rua Tau tuatahi i raro i te Whakaaetanga o Parī ā te 2024. Kei roto i taua pūrongo ngā mōhiohio e hiahia ana ki te whai haere i te kokenga i tā Aotearoa whakaea i tā mātou NDC tuatahi, me ngā mōhiohio mō ngā tikanga urutau me ngā pūtea ki ngā whenua whakawhanake ki te whakatutuki i te panoni āhuarangi.

Ka tukuna ā te mutunga o te 2023 ngā mōhiohio whai haere kua whakahoutia ki te NDC1 e pūtakea mai ana i te rārangi 2023 Tirohia te [whakahou kokenga hou rawa e wātea ana](#) e pūtakea mai ana i te rārangi 2022.

Hoahoa 8: Ngā tukunga peke a Aotearoa ā-wae tapeke wāriu hokonga (GDP) mai i te 1990–2021



Kia mōhio: Nā Tatauranga Aotearoa ngā tauanga GDP: Ropū: Pūtea ā-Motu – SNA 2008 – SNE, Tūtohi: Rangatū, GDP(P), Rōrahi mekameka, Tūturu, Tapeke (ā-Tau-Poutūterangi). He tōtika ngā raraunga i te 15 o Poutūterangi 2023. Tohutoro tūtohi: SNE053AA.

Mō te rārangi

He herenga pūrongo te rārangi i raro i te United Nations Framework Convention on Climate Change (UNFCCC). E ū ana ki ngā aratohu pūrongo UNFCCC me ngā aratohu tikanga ā-ao kua takoto i te Intergovernmental Panel on Climate Change.

He mahi whakawhiti kāwanatanga te whakarite me te whakahiato i te rārangi, ā, ko te Manatū mō te Taiao te tari hautū. Ka tāpaetia te pūrongo Whakarārangi hei te takiwā o te 15 marama i muri i te mutunga o te tau maramataka e pūrongotia ana, tērā e whakarato i te wā hei kohikohi, manatoko, tukatuka me te tātari i ngā raraunga.

He matatiki taunakitanga whaimana te whakarārangi mō ngā tukunga haurehu kati mahana o Aotearoa me ngā ia tango

Ko tā te whakarārangi he whakamōhio i ngā mahi a Aotearoa e pā ana ki te panoni āhuarangi. He waiwai ngā raraunga tukunga tōtika kia mārama ai ki ngā ia o ngā tukunga o nāianei me ngā ia o mua, ki te waihanga tūtohu kaupapahere mō te panoni āhuarangi me te aroturuki i ngā ūnga whakaheke tukunga. E whakamahia ana ngā raraunga whakarārangi a Aotearoa mō ngā mahi pūrongo ā-ao, me te purongo rāroto.

Kia kitea mōhiohio atu anō mō te āhua e pūrongo ana, e ine ana a Aotearoa i te kokenga ki ā tātou ūnga me ētahi atu momo pūrongo tukunga, tirohia te whārangi tukutuku a Te Manatū mō te Taiao i [Ngā ūnga whakaheke tukunga a Aotearoa](#).

Ngā pitomata whakamahana o te ao

E whakamahi ana te whakarārangi 1990–2021 i ngā uara pitomata whakamahana o te ao 100-tau (GWP100) mai i te Pūrongo Aromatawai Tuawhā (AR4) nā te Intergovernmental Panel on Climate Change (IPCC). Tirohia te [Āpitihanga III o te whakataunga UNFCCC 24/CP.19](#). E pēnei ana nā te mea kua tāpaetia i raro i te UNFCCC.

E whakamahi ana te Whai Wāhitanga He Mea Whakatau ā-Motu tuatahi a Aotearoa i raro i te Whakaaetanga o Parī me ngā mahere tukunga rāroto i ngā uara GWP mai i te Pūrongo Aromatawai Tuarima IPCC. Ko te tikanga nei, tē taea te whakataurite pū ki ngā uara kei roto i te whakarārangi o 2023.

E tohu ana te whakarārangi i te whakawhitinga i te pūrongo i raro i te UNFCCC me tōna Kawa Kiōto ki tērā o te Whakaaetanga o Parī. Ahakoa kua pūrongotia te whakarārangi 2023 i te AR4, kua whakaputaina e te Manatū mō te Taiao he whakarāpopoto AR5 o te whakarārangi 2023 whai muri i te tukunga o te whakarārangi. E wātea ana tēnei i te taha o te [Whakarārangi Haurehu Kati Mahana o Aotearoa 1990–2021](#).

Ka tīmata te tuku pūrongo i raro i te Whakaaetanga o Parī ā tērā tau. Mā te penei, atu i te 2024 ka whakamahi te whakarārangi i ngā uara AR5, e ai ki ngā aratohu o te pūrongorongo whakarārangi GHG i raro i te Whakaaetanga o Parī.

He mutunga kore te whakapai ake i ngā whakatautata whakarārangi

Ka tātaihia anō te houanga whakarārangi katoa, mai i te tau tuatahi (1990) ki te tau hou rawa e whakaumu ai te tikanga ine, ngā raraunga tūāpapa rānei. Ko te tikanga nei, ka noho hou rawa ngā whakatau tata tukunga i te whakarārangi hou rawa anake, me te aha kāore he take o te whakamahi i ngā whakarārangi o mua mō te hanga whakatauritenga. Whai pānga ai ngā panoni ki te whakarārangi ki ngā whakapainga o te kohikohi raraunga hohenga, ngā āhuatanga tukunga me te tikanga, te tautohutanga rānei o ngā puna tukunga tāpiri.

Kua whakaputaina e Te Manatū mō te Taiao he mōhiohio mō ngā [whakapainga ā-tikanga kua whakaurua ki te whakarārangi o 1990–2021](#) me te whakatautata o te pānga ki ngā tukunga.

Ētahi atu puna mōhiohio

Ko te Whakarārangi Haurehu Kati Mahana a Aotearoa te puna whaimana o ngā mōhiohio mō ngā raraunga tukunga haurehu kati mahana o Aotearoa.

E ako atu anō ai mō ngā ara e pūrongo ana, e ine ana a Aotearoa i te kokenga ki ā tātou ūnga me ērā atu mahi pūrongorongo tukunga, haere ki tā mātou whārangi tukutuku [Ngā ūnga whakaheke tukunga a Aotearoa](#).

Ngā whakaputanga (he mea tuku i Paengawhāwhā 2023) me te Pūaroturuki Tukunga

- Te pūrongo katoa: [Te Whakarārangi Haurehu Kati Mahana o Aotearoa 1990–2021](#) – Whai urunga ki te whakaputanga whakarārangi tino hou rawa, tae atu ki ngā tūtohi me ngā kōnae tautoko.
- [Pūaroturuki Pāhekoheko Haurehu Kati Mahana](#) – Whakamahia te taputapu pāhekoheko kia urua me te raweke i ngā raraunga mai i te whakarārangi hou rawa kia kite ai i te huringa o ngā tukunga a Aotearoa i roto i te wā.

Ngā hono ki ētahi atu puna raraunga kua takea mai i te whakarārangi mō ngā take rāroto

- Ngā hua tukunga [Te Ine Tukunga: He aratohu mā ngā whakahaere](#) a Tatauranga Aotearoa mō te Manatū:
 - [Ngā tukunga ahumahi me te wharenoho \(SEEA\)](#)
 - [Ngā tukunga hauwhā tau](#)
 - [Ngā tukunga ā-rohe](#)
 - [Ngā tukunga whakapeto](#)

Tērā whakaputanga whakarārangi o muri

Ka whakaputaina te Te Whakarārangi Haurehu Kati Mahana o Aotearoa 1990–2022 ā mua i te paunga o te 15 Paengawhāwhā 2024.

Ngā mihi

E mihi ana te Manatū mō te Taiao i ēnei tari kāwanatanga mō tā rātou whai wāhi ki te whakaputa i te Whakarārangi Haurehu Kati Mahana o Aotearoa: Hīkina Whakatutuki; Te Mana Rauhi Taiao; Te Manatū Aorere; Te Manatū Ahumatua; Tatauranga Aotearoa; me te Manatū o te Āhuarangi, ngā Moana me te Manawanui o te Kāwanatanga o Tokerau.

