



He  
Whakarāpopoto  
Āperira 2022

# Te Rārangi Haurehu Kati Mahana a Aotearoa 1990–2020

Ko Te Rārangi Haurehu Kati Mahana te whakatau tata ā-tau e ōkawa ana mō ngā tukunga me ngā whakakorenga tukunga haurehu kati mahana nā te tangata i whakaputa i Aotearoa. He whakarāpopoto tēnei i te Rārangi hou, e aro ana ki ngā tau mai i te 1990 ki te 2020.

Ko tā te Rārangi nei, he ine i te anga whakamua a Aotearoa i raro i ngā herenga kei roto i te Kawenata ā-Anga mō te Āhuarangi Hurihuri a te Kotahitanga o Ngā Iwi o te Ao (UNFCCC) me te Kawa o Kyoto. E ū ana te Rārangi nei ki ngā aratohu pūrongo a te UNFCCC me ngā aratohu tikanga rangahau ā-ao i whakatakotoria ai e te Pae Kōrero ā-Kāwanatanga i te Āhuarangi Hurihuri. E aro ana te Rārangi nei ki ngā tukunga mai i ngā rāngai e rima (arā, i te Ahuwhenua, i te Pūngao, i te Tukanga Ahumahi me te Whakamahinga Hua (IPPU), i te Para me te Whakamahinga Whenua, i te Panonitanga Whakamahinga Whenua me te Mahinga Ngahere (LULUCF)), tae atu ki ētahi atu mōhiotio me whakaatu i raro i te Kawa o Kyoto. E whai wāhi mai ana hoki ngā tukunga i Tokelau.

Ko Te Manatū mō te Taiao te tari whakahaere kua riro māna e whakaputa te Rārangi nei, engari kua mahi ngātahi ngā tari kāwanatanga ki te whakarite, ki te whakahiato hoki i te Rārangi nei. Ka tukuna te pūrongo mō te Rārangi i tōna tekau mā rima marama i muri mai i te pūrongo o te paunga o te tau ā-wākata kia nui ai te wā ki te kohikohi, ki te whakatūturu, ki te whakatikatika me te arotake i ngā raraunga.

## **Ko te Rārangi te pūtake whaimana o ngā taunakitanga mō ngā ahunga tukunga me ngā whakakorenga tukunga haurehu kati mahana o Aotearoa.**

Whakamahia ai ngā raraunga o te Rārangi a Aotearoa i ngā pūrongo ā-motu me ngā pūrongo ā-ao. Ka ārahi te Rārangi nei i ngā tūtohunga kaupapa here o Aotearoa mō te āhuarangi hurihuri, ā, mā tēnei hoki e aroturukihia ai te anga whakamua ki ngā whāinga whakaiti tukunga.

Kia ako ai koe i ētahi atu kōrero mō te āhua o te pūrongo me te ine a Aotearoa i te anga whakamua ki ā tātou whāinga me ētahi atu pūrongo tukunga, toro mai ki tā mātou pae tukutuku mō ngā **whāinga whakaheke tukunga o Aotearoa**.

Ko te hauhā, ko te mewaro, ko te hauota-rua ōkai me ngā haurehu pūkōwhai ngā haurehu kati mahana e tirohia ana i te Rārangi nei.

## **Tātaihia anō ai ngā whakatau tata mō te Rārangi i ia tau**

E rite tonu ana te whakapaitia ake o te Rārangi nei. Ka tātaihia anō te raupapa ā-wā mō te Rārangi katoa, mai anō i te tau tīmatanga (1990) ki te tau kātahi anō ka taha ake, kia panonihia te tikanga rangahau, ngā raraunga tūpapa rānei. Nō reira, ko ngā whakatau tata mō ngā tukunga i te Rārangi hou anahe e tika ana, ā, kāore e whaitake ana ngā rārangi o mua i roto i ngā whakatauritenga. E hāngai nui ana ngā panonitanga ki te Rārangi ki ngā whakapai ake i te kohinga raraunga mahi, i ngā āhuatanga tukunga, i ngā tikanga rangahau, i te tautuhinga rānei o ētahi atu pūtaka tukunga.

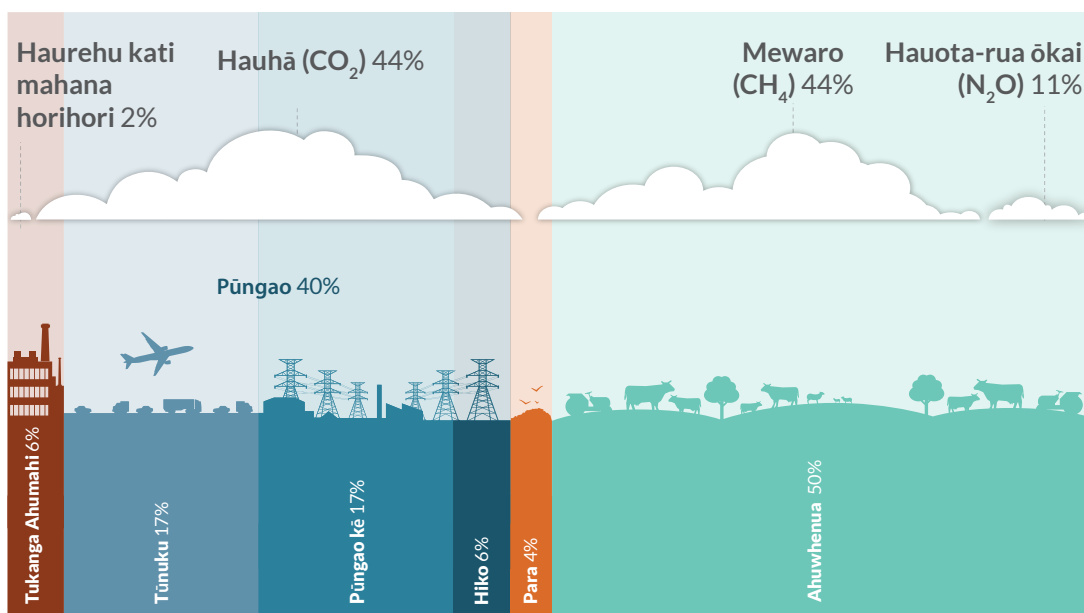
Kua whakaputa Te Manatū mō te Taiao i ētahi mōhiotio mō ngā whakapai ake i ngā tikanga rangahau matua kua oti te whakamahere e whakaurua ana ki te Rārangi me te whakapae i te pānga o ērā ki ngā tukunga. E wātea ana tēnei i te pae tukutuku a Te Manatū mō te Taiao:

**Ngā whakapai ā-tikanga rangahau kua oti te whakamahere mō te Rārangi Haurehu Kati Mahana o Aotearoa 1990-2020.**

## **Mā te Rārangi e mārāma ai tātou ki te āhua o tā tātou anga whakamua ki ngā whāinga whakaiti tukunga**

Kei roto i te Rārangi Haurehu Kati Mahana a Aotearoa 1990-2020 ngā raraunga mō te āhua o tā tātou ū ki te whakatutuki i te whāinga whakaiti tukunga mō te tau 2013 ki te tau 2020 i raro i te UNFCCC. Kia oti te arotake, ka whakaū te Rārangi o te tau 2022 i ngā tukunga me ngā whakakorenga tukunga mō te roanga o taua wā i whāia ai. Kua whakaputa mātou i ētahi kupu hou mō te Tūranga Tōpū mō te āhua o tā tātou anga whakamua ki tēnei whāinga e wātea ana i te pae tukutuku a Te Manatū mō te Taiao: **Ngā kōrero hou mō te tūranga tapeke o Aotearoa i te tau 2020.**

**Hoahoa 1:** He tātaritanga mō ngā tukunga tapeke haurehu kati mahana o Aotearoa i roto i ngā rāngai me te āhua o te momo haurehu i te tau 2020



He tātaritanga tēnei mō ngā tukanga e puta ake ana i te rāngai Ahuwhenua, i te rāngai Pūngao, i te rāngai Tukanga Ahumahi me te Whakamahinga Whenua (IPPU) me te rāngai Para. Kāore e whakaatuhia ana te rāngai Whakamahinga Whenua, te rāngai Panonitanga Whakamahinga Whenua me te rāngai Mahinga Ngahere nā te mea he tapeke tōpū tēnei mō te whakakorenga tukunga. He iti rawa te tukunga mai i Tokelau, nō reira kāore e whakaatuhia ana i te hoahoa nei.

## Ngā Kitenga Matua i te Rārangi mō te tau 2022

### I te tau 2020

- > I te tau 2020, e 78.8 miriona tana hauhā ōrite (Mt CO<sub>2</sub>-e) te nui o ngā tukunga tapeke haurehu kati mahana o Aotearoa.
- > E 44 ōrau te nui o te hauhā, e 44 ōrau te nui o te mewaro, 11 ōrau te nui o te hauota-rua okai, ā, e 2 ōrau te nui o ngā haurehu pūkōwhai i roto i ngā tukunga tapeke o te tau 2020.<sup>1</sup>
- > Ko te rāngai Ahuwhenua me te rāngai Pūngao ngā rāngai i nui katoa tā rāua whai wāhi ki ngā tukunga tapeke o Aotearoa i te tau 2020, e 50 ōrau ki tēnā, e 40 ōrau ki tēnā rāngai.
- > E 55.5 Mt CO<sub>2</sub>-e te nui o ngā tukunga tōpū o Aotearoa i te tau 2020.
- > I whakakore te rāngai Whakamahi Whenua, Panonitanga Whakamahinga Whenua me te Mahinga Ngahere (LULUCF) i tētahi 30 ōrau (23.3 Mt CO<sub>2</sub>-e) o ngā tukunga tapeke o Aotearoa i te tau 2020.

### Ngā tukunga tapeke mai i te tau 1990

- > I waenga i te tau 1990 me te tau 2020, e 21 ōrau (13.6 Mt CO<sub>2</sub>-e) te pikinga o ngā tukunga tapeke. I pēnei ai, nā te pikinga o te mewaro i te nui haere o ngā kau miraka me te pikinga o te hauhā mai i te tūnuku ā-rori.
- > I te rāngai Para anahe te hekenga kotahi o ngā tukunga tapeke katoa, ā, 17 ōrau (0.7 Mt CO<sub>2</sub>-e) te hekenga nā ngā whakapai ki te whakahaerenga o ngā ruapara.

### Ngā tukunga tōpū mai i te tau 1990

- > I waenga i te tau 1990 me te tau 2020, e 26 ōrau (11.5 Mt CO<sub>2</sub>-e) te pikinga o ngā tukunga tōpū nā te pikinga tonu o ngā tukunga tapeke.

- > Mai i te tau 1990, 10 ōrau (2.1 Mt CO<sub>2</sub>-e) te pikinga o ngā whakakorenga tukunga tōpū mai i te rāngai LULUCF, nā te pikinga o te whakaputanga o ngā huanga rākau kua oti te tua.

### Ngā ahunga i waenganui i te tau 2019 me te tau 2020

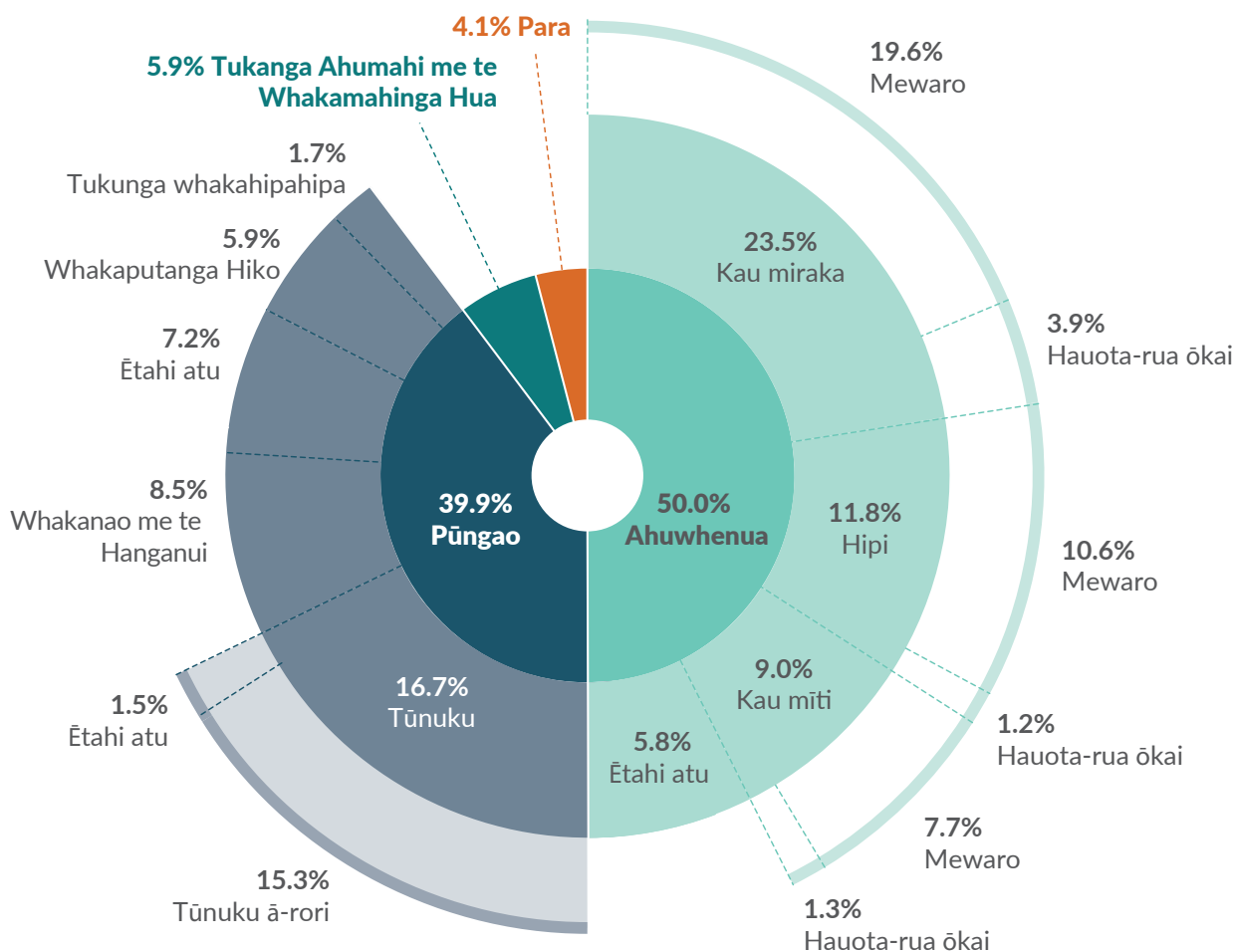
- > E 3 ōrau te hekenga o ngā tukunga tapeke (2.8 Mt CO<sub>2</sub>-e).
- > E 5 ōrau te hekenga o ngā tukunga tōpū (3.1 Mt CO<sub>2</sub>-e).
- > I puta ai ēnei panonitanga e rua, nā te hekenga o te whakamahinga o ngā kōhinu i ngā tūnuku ā-rori, i ngā ahumahi whakanao, i ngā hanganui me ngā rererangi ā-motu i roto i ngā here o te mate KOWHEORI-19.

### Ētahi atu pānga mai i ngā here o te mate KOWHEORI-19

- > Kua iti ake ngā tukunga i te rāngai IPPU i roto ngā here o te mate KOWHEORI-19 nā te katinga o ngā papamahi me te iti haere o te whakaputanga, tae atu ki ngā hekenga o ngā tukunga mai i ngā haringa hautaonga mā runga kaupuke i Tokelau.
- > Ahakoa i piki ngā whakakorenga tukunga katoa o LULUCF, i heke anō hoki ērā i te wāhanga ki ngā huanga rākau kua oti te tua nā te mea i iti haere ngā whakaputanga nā whakapōrearea i ngā tukunga.
- > Kāore he pānga nui ki te rāngai Ahuwhenua me te Para nā ngā here o te mate KOWHEORI-19.

<sup>1</sup>Kāore pea ngā ōrau e piki ki te 100 nā te whakaawhiwhi.

**Hoahoa 2:** Ngā haurehu kati mahana i te tau 2020 e wehea ana ki ngā rāngai, ngā wāhanga iti me ngā momo haurehu



He tātaritanga tēnei mō ngā tukunga e puta ake ana i te rāngai Ahuwhenua, i te rāngai Pūngao, i te rāngai Tukunga Ahumahi me te Whakamahinga Whenua (IPPU) me te rāngai Para. Kāore e whakaatuhia mai ana te rāngai Whakamahinga Whenua, te rāngai Panonitanga Whakamahinga Whenua me te rāngai Mahinga Ngahere nā te mea he tapeke more tēnei mō te whakakorenga tukunga. He iti rawa te tukunga mai i Tokelau, nō reira kāore e whakaatuhia ana i te hoahoa nei.

E whakarāpopoto ana tēnei hoahoa i te Rārangi hou (i tukua ai ki te UNFCC i te Āperira o te tau 2022) e whai ana i ngā raraunga i kohia mai i te tau 1990 ki te tau 2020, tae atu ki:

- > ngā kitenga matua
- > te pūrongo tukunga a Aotearoa mō te tau 2020
- > ngā tukunga tapeke me ngā tukunga tōpū o Aotearoa
- > ngā ahunga tukunga i roto i ngā rāngai
- > te āhua o te Aotearoa ina whakatauritea ki ētahi atu whenua.

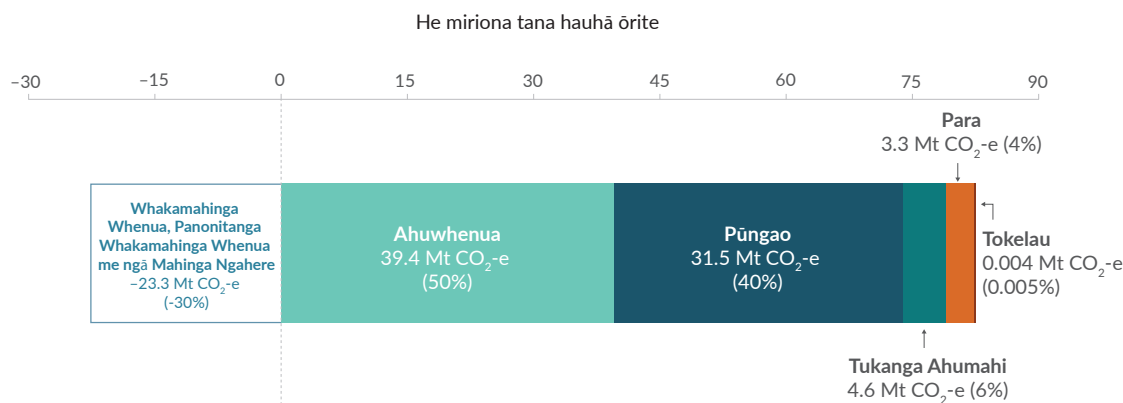
### He hononga ki ētahi whakaputanga Rārangi (i whakaputahia ai i te Āperira o te tau 2022) me ngā Arunga Tukunga

- > **Te pūrongo katoa – Te Rārangi Haurehu Kati Mahana a Aotearoa 1990-2020** – Toro mai ki te whakaputanga mō te Rārangi hou, tae atu ki ngā ripanga me ngā kōnae taunaki.
- > **Pūaru Tukunga Haurehu Kati Mahana** – Whakamahia te taputapu pāhekoheko kia uru ai, kia raweke ai hoki koe i ngā raraunga nō te Rārangi hou, kia kite ai koe i ngā panonitanga o ngā tukunga o Aotearoa i roto i te wā.
- > **Tūranga Tōpū** – Whakamahia ai te tūranga tōpū hei aru i te anga whakamua ki te whāinga whakaheke tukunga o te tau 2020 mō ngā tau i waenga i te 2013 me te 2020.

## Te pūrongo mō ngā tukunga o Aotearoa i te tau 2020

E whakaatuhia mai ana ngā tukunga me ngā whakakorenga haurehu kati mahana o Aotearoa i te tau 2020 i ia rāngai i te Hoahoa 3. He whenua whakawhirinaki a Tokelau kei tāwāhi. Kei te takoto ngā kōrero mō ngā tukunga katoa mai i Tokelau i te rāngai e kīia ana ko Ētahi atu i roto i te Rārangi.

**Hoahoa 3:** He tātaritanga mō ngā tukunga o Aotearoa (ki ngā tana miriona o te hauhā ōrite, Mt CO<sub>2</sub>-e) i ia rāngai i te tau 2020.



E whakaputahia ana ngā tukunga tapeke mai i te rāngai LULUCF hei tau tōraro nā te mea he nui ake tā te rāngai whakakore i ngā haurehu kati mahana i tana tuku haurehu kati mahana ki te kōhauhau.

## Ngā tukunga tapeke me ngā tukunga tōpū o Aotearoa

I roto i te Rārangi, e wehea ana ngā tukunga me ngā whakakorenga tukunga ki ngā rāngai e rima, arā:

- > Ko te ahuhenua (hei tauira, ko ngā pūnaha nakunaku kai o ngā kararehe, ko ngā whakahaumako me ngā wairākau)
- > Ko te pūngao (hei tauira, ko te tūnuku ā-rori me ngā whakaputanga hiko)
- > Ko ngā Tukanga Ahumahi me ngā Whakamahinga Hua (IPPU) (hei tauira, ko ngā whakaputanga konganuku me ngā whakaputanga matū, me te whakamahinga o ngā whakamātao)
- > Ko ngā para (hei tauira, ko ngā ruapara)
- > Ko te Whakamahinga Whenua, ko te Panonitanga Whakamahinga Whenua me te Mahinga Ngahere (LULUCF). E aru ana te rāngai o LULUCF i ngā haurehu kati mahana mai i te whakamahinga whenua (pēnei i te mahinga ngahere, i ngā huanga kai me ngā huanga

mauti). E motuhake ana ēnei i ngā tukunga kararehe mai i ngā whakahaerenga whenua me ngā panonitanga whakamahinga whenua, waihoki koinei te rāngai kotahi e puta ake ai ngā tukunga me ngā whakakorenga tukunga hauhā

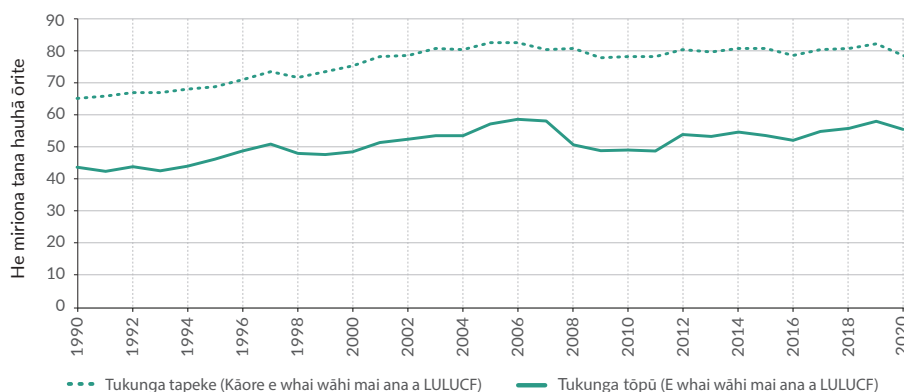
- > Ko te rāngai o Aotearoa e kīia ana ko 'Ētahi atu', arā ko Tokelau.

Ko te tapeke o ngā tukunga o Aotearoa te katoa o ngā tukunga mai i te rāngai Ahuwhenua, te rāngai Pūngao, te rāngai IPPU me te rāngai Para.

Ko te tapeke more o ngā tukunga te tapeke o ngā tukunga me ngā tukunga me ngā whakakorenga tukunga mai i te rāngai LULUCF.

Kāore a Tokelau e pūrongo i ngā tukunga LULUCF, nō reira he ōrite ngā tukunga tapeke me ngā tukunga tapeke more o Tokelau.

**Hoahoa 4:** Ko ngā tukunga tapeke me ngā tukunga tapeke more o Aotearoa (hei Mt CO<sub>2</sub>-e) mai i te tau 1990 ki te tau 2020



Kāore e whai wāhi ana ki ngā tukunga tapeke o te rāngai Whakamahinga Whenua, te rāngai Panonitanga Whakamahinga Whenua me te Mahinga Ngahere (LULUCF). E whai wāhi ana ki ngā tukunga tapeke more o te rāngai LULUCF.

## E pokea ana ngā tukunga tapeke e ngā tukunga mai i te rāngai Ahuwhenua me te rāngai Pūngao

I te tau 2020, i eke ngā tukunga tapeke haurehu kati mahana o Aotearoa ki te 78.8 miriona tana o te hauhā ōrite Mt CO<sub>2</sub>-e\*. E 3 ōrau te nui o tēnei whakahekenga mai i ngā tukunga o te tau 2019 i puta ake ai nā ngā whakahekenga i ngā whakamahinga kora i ngā waka haere i ngā huarahi, i ngā whakanaotanga me ngā hanganuitanga, me ngā whakahaere rererangi ā-motu nā ngā here i puta ake i te mate KOWHEORI-19.

I nui katoa te whai wāhi a te rāngai Ahuwhenua me te rāngai Pūngao ki ngā tukunga o Aotearoa i eke rā ki te 50 ōrau me te 40 ōrau o ngā tukunga tapeke i te tau 2020, i tēnā me tēnā (kei te Hoahoa 1). Ko te 15 ōrau o ngā tukunga tapeke i ahu mai i ngā tukunga tūnuku ā-rori.

Hui katoa, neke atu i te haurua o ngā tukunga tapeke mō te tah ki te CO<sub>2</sub>-e i ahu mai i te mewaro me te hauota-rua ōkai, ko te nuinga i puta ake i ngā mahi ahuhenua (e 44 ōrau i tēnā, 11 ōrau i tēnā). Ko ērā atu tukunga i ahu nui mai i te hauhā (e 44 ōrau) i te rāngai Pūngao me te IPPU.

Mai i te tau 1990, e 21 ōrau te pikinga o ngā tukunga tapeke o Aotearoa. Kei raro ngā wāhi e rima i ahu mai ai ēnei tukunga i nui katoa te whai wāhi atu ki tēnei pikinga, e raupapa ana i runga i te kaha o te whai wāhi:

- > te moī ā-kōpiro nā te nui haere o ngā kau miraka (mewaro)
- > whakamahinga o ngā kōhinu i ngā tūnuku ā-rori nā te nui haere o ngā waka (hauhā)
- > te oneone ahuhenua nā te nui haere o te whakamahinga o ngā whakahaumako (hauota-rua ōkai)
- > te whakamahinga kora i ngā ahumahi whakanao me ngā hanganui nā te nui haere o te whakaputanga nā te tipu ā-ōhanga (hauhā)
- > ngā whakamātao ā-ahumahi, ā-kāinga hoki me ngā pūnaha whāhauhau nā te nui haere o te whakamahinga o ngā whakamātao e whakamahi ana i te hauwai, te haukōwhai me te waro (arā, i ngā haurehu pūkōwhai) i whakakapi i ngā matū tūkinu pekerangi

### \*He Whakamārama

He ara ine te hauhā ōrite (CO<sub>2</sub>-e) hei whakataurite i ngā haurehu kati mahana rerekē i runga i ngā pānga whakamahana o ia haurehu, i runga anō i te nui o te hauhā e ōrite ana. Whakamahia ai te CO<sub>2</sub>-e hei whakaatu i ngā tukunga mai i ngā haurehu kati mahana rerekē ki tētahi waeine kotahi, he huarahi tēnei e kotahi ai te āhua o te pūrongo me te whakataurite i ērā tukunga.

E whāia ana ngā aratohu pūrongo ā-ao, nō reira whakamahi ai te Rārangi o te tau 1990 ki te tau 2020 i ngā uara pitomata mō te whakamahana haeretanga o te ao i roto i te 100 tau mai i te Intergovernmental Panel on Climate Change (IPCC) Fourth Assessment Report. Tirohia tēnei [Annex III of UNFCCC decision 24/CP.19](#).

Atu i te tau 2023, ka whakamahi te Rārangi i ngā uara pitomata whakamahana haeretanga o te ao i roto i te 100 tau mai i te pūrongo aromatawai tuarima a te IPCC i tautuhia ai i ngā aratohu mō te whakatakoto i ngā pūrongo mō ngā haurehu kati mahana i raro i te Whakaaetanga o Parī.

## Ka pā ngā huringa whakatō ngahere ki ngā tukunga tapeke

E whai wāhi ana ki ngā tukunga tōpū ngā tukunga tapeke tae atu ki ngā tukunga me ngā whakakorenga tukunga mai i te rāngai LULUCF. Whakakore ai ngā ngahere i te hauhā i te kōhauhau i te wā e tipu ana. Tuku ai hoki ngā ngahere i te hauhā kia oti te hauhake me te tua i aua ngahere, i muri mai rānei i ngā whakapōrearea māori, pēnei i te karawhiu a te āwhā. Nō reira, i mua i nui te pānga o te nui o ngā whakatōnga me ngā huringa hauhake ki te tapeke o te hauhā e whakakorea ana e ō tātou ngahere i te tau.

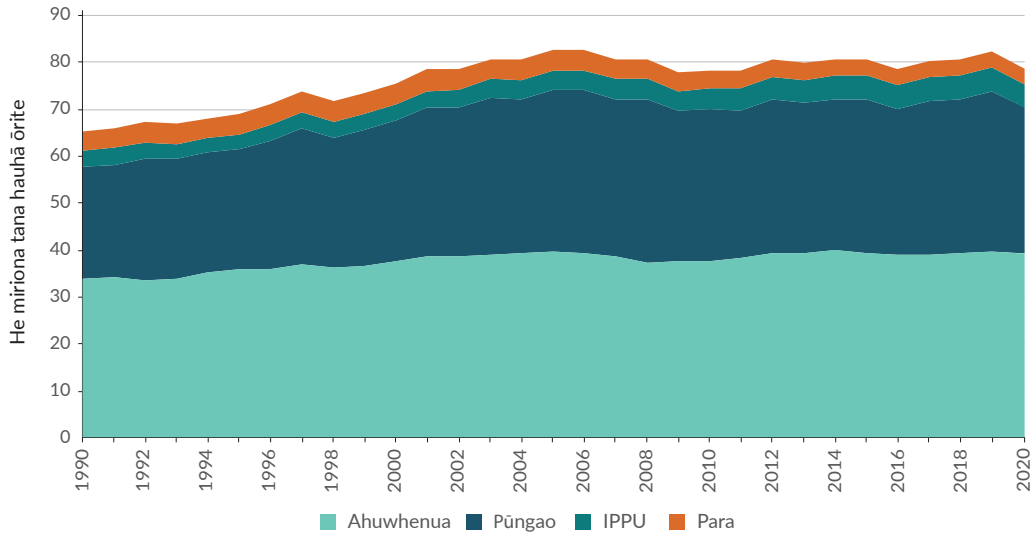
E whakapaetia ai ngā tukunga tapeke more, ka tātai te Manatū mō te Taiao me te Manatū Ahu Matua i te horahanga o te ngahere i Aotearoa. E ai ki ēnei whakapae, kei te takiwā o te 41,111 heketea te nui o te ngahere hou i whakatōkia, ā, e 2,506 heketea te nui o te ngahere i tuaina i te tau 2020.

I te tau 2020, e 55.4 Mt CO<sub>2</sub>-e, te tukunga tapeke o Aotearoa, i pūrongotia ai ki te UNFCCC. I puta ai tēnei tātaitanga nā te tango i te 23.6 Mt CO<sub>2</sub>-e o ngā whakakorenga tukunga tapeke more i puta ake i te rāngai LULUCF mai i ngā tukunga tapeke e 78.8 Mt CO<sub>2</sub>-e. E 26 ōrau te pikinga ake o ngā tukunga tapeke ina whakatauritea ki ērā i te tau 1990.

I raro i ngā tikanga pūrongo a UNFCCC, ka whakakore ngā tukunga tapeke mai i te rāngai LULUCF i tētahi 30 ōrau o ngā tukunga tapeke o Aotearoa i te tau 2020 (kei te Hoahoa 4). He iti tēnei whakahekenga mai i te tau 1990 i whakakore ai te rāngai LULUCF i tētahi 33 ōrau o ngā tukunga tapeke o Aotearoa (kei te Hoahoa 4). I puta ai tēnei panonitanga nā te pikinga o ngā tukunga tapeke i waenganui i te tau 1990 me te tau 2020.

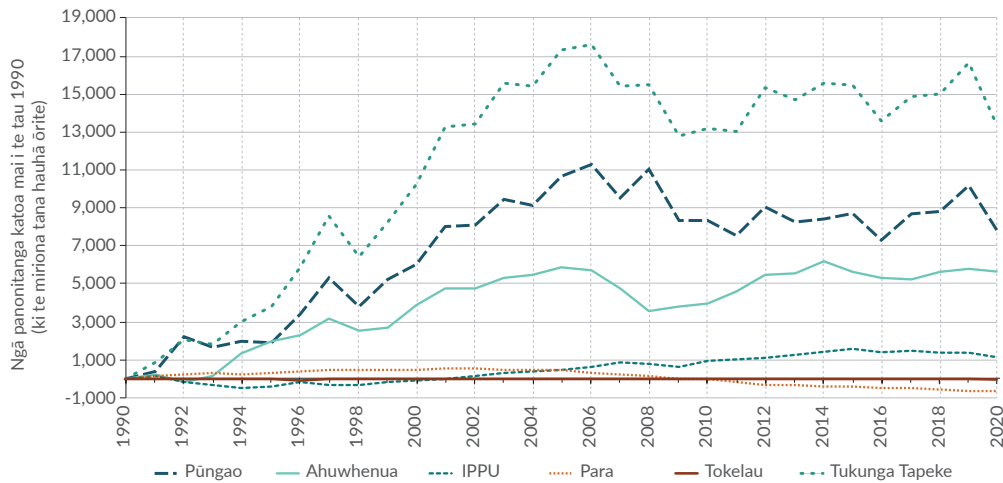
## Ngā ia tukunga i ngā rāngai

**Hoahoa 5:** Ngā tukunga tapeke o ngā haurehu kati mahana o Aotearoa mai i tēnā rāngai me tēnā rāngai, atu i te rāngai LULUCF, mai i te tau 1990 ki te tau 2020.

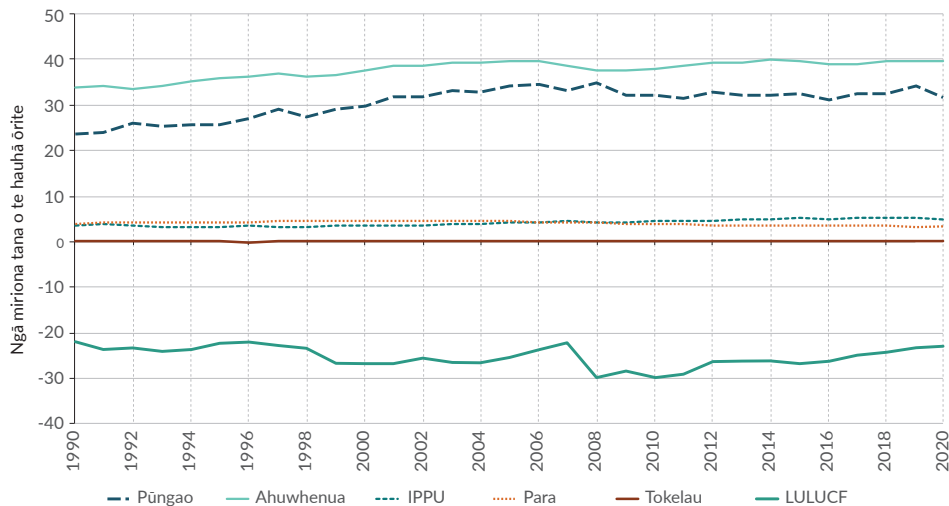


*Kāore e whakaatuhia ana ngā tukunga mai i Tokelau, he iti rawa.*

**Hoahoa 6:** Ngā tukunga tapeke o ngā haurehu kati mahana o Aotearoa: ngā panonitanga katoa i tēnā rāngai me tēnā rāngai mai i te tau 1990 ki te tau 2020



**Hoahoa 7:** Ngā tukunga haurehu kati mahana o Aotearoa (i te miriona tana CO<sub>2</sub>-e): ngā ia ā-rāngai mai i te tau 1990 ki te tau 2020



## Ko te Ahuwhenua

### 1990–2020

I waenganui i te tau 1990 me te tau 2020, i piki ngā tukunga a te rāngai Ahumahi mā te 17 ōrau (Hoahoa 5 me te 7). Ko te take matua i pēnei ai, ko te pikinga mā te 80 ōrau o te kāhui kau miraka ā-motu nō te tau 1990, otirā, ko te pikinga o te whakamahinga o te whakahaumako hauota horihori mā tōna 693 ōrau nō te tau 1990. Kua whakakorea ēnei pikinga mā ngā hekenga o te nui o ngā hipi, ngā kau mīti me te tia mā te 55, te 15 me te 15 ōrau nō te tau 1990.

### 2019–2020

I te tau 2020, i paku heke ngā tukunga o te rāngai Ahumahi (mā tōna 0.2 ōrau). Ko te take matua i pēnei ai, ko te hekenga o te nui o ngā hipi, otirā, ko te hekenga hoki o te whakamahinga o te whakahaumako raima me te tiomimi. I piki ētahi atu tukunga nō puna kē, pēnei i te whakahaumako ropi-kore, me te kau mīti, miraka hoki, engari kāore ēnei pikinga i nui rawa ki te whakatau anō i te hekenga tapeke o ngā tukunga ahumahi. Kāore ngā herenga KOWHEORI-19 i whai pānga nui ki ngā tukunga o te rāngai Ahumahi i te tau 2020.

## Ko te Pūngao

### 1990–2020

Ko ngā tukunga nā te rāngai Pūngao i piki mā te 32 ōrau i ērā o te tau 1990 (Hoahoa 5 me te 7). Ko te nuinga o tēnei i ahu mai i te tūnuku ā-rori (he pikinga tukunga o te 76 ōrau), me te whakamahinga o te koranehe mō te kai, te hiko me te whakaputanga mahana. Ka kitea i tēnei ia te piki haeretanga o ngā tukunga tae rawa ki te tau 2008, ā, nō muri mai ka āhua tau haere (Hoahoa 5 me te 7).

### 2019–2020

I waenganui i te tau 2019 me te tau 2020, i heke ngā tukunga o te rāngai Pūngao mā te 7 ōrau. Ko te take matua i heke ai ēnei ko ngā herenga o te KOWHEORI-19 i rongu whānuitia e te katoa o te rāngai Pūngao. Nā tēnei i kitea ai te hekenga o ngā tukunga nā te whakahaere waka me te whakahaerenga rererangi ā-motu, i piki rā mā te 1,093 kt CO<sub>2</sub>-e (8 ōrau) me te 315.3 kt CO<sub>2</sub>-e (31 ōrau). I pahawa tahi tēnei ki tētahi hekenga nā te whakanao me te hanganui o te 847.6 kt CO<sub>2</sub>-e (11 ōrau). I āhua tau anō nā ngā pikinga tukunga nā te hiko me te whakamahana.

## Ko Ngā Hātepe Ahumahi me te Whakamahi Hua (IPPU)

### 1990–2020

Ko ngā tukunga nā te rāngai IPPU i te tau 2020 i piki mā te 29 ōrau i ērā o te tau 1990 (Hoahoa 5 me te 7). Ko te take matua i piki ai ko te whakamutu haeretanga o te whakamahinga o ngā matū tūkinu pekerangi i raro i te Kawa o Montreal me te whakakapinga hoki ki te hauwai, te haukōwhai me te waro i ngā mahi whakamātao me te whakamātao hau. I piki ai hoki nā te nui o te whakamahi whakamātao hau i ngā whare me te rāngai whakamātao hau arumoni o Aotearoa. Waihoki, kua piki haere hoki ngā tukunga hauhā whakanao kohuke, matū me te konganuku nā te nui o te whakararanga atu.

### 2019–2020

I waenganui i te tau 2019 me te tau 2020, i heke ai ngā tukunga a te IPPU mā te 5 ōrau. I hua ai tēnei nā tētahi hekenga nui i ngā tukunga nā te ahumahi konganuku me ētahi hekenga iti i ētahi atu wāhanga, nā ētahi katinga wāhi mahi i hua ai nā te KOWHEORI-19- me ētahi hekenga whakaputanga.

## Ko te Para

### 1990–2020

I te tau 2020, i heke ngā tukunga o te rāngai Para mā te 17 ōrau e ai ki ngā tukunga o te tau 1990. I piki ngā tukunga ā-tau i waenganui i te tau 1990 me te tau 2002 nā te pikinga o te taupori me ngā whakahaeretanga tauhokohoko, ā, kua āta heke ināianei nō te tau 2004. Ko te take matua i heke ai ko ngā whakahounga i ngā mahi whakahaere para totoka ki ngā ruapara ā-rohe, āpaia rā i ngā mahi whakaaraa haurehu ruapara.

### 2019–2020

Ko te nui o ngā tukunga a te rāngai Para i te tau 2020 ko te 43.8 kt CO<sub>2</sub>-e (1 ōrau) iti iho i ērā o te tau 2019. Ko te take matua i heke ai ko te whakahaekenga o ngā tukunga mewaro i te rōpū whiu para totoka, nā ngā panonitanga ki te hanganga o te para kua whiua ki ngā ruapara ā-rohe. Kāore ngā tukunga a te rāngai Para i te tau 2020 i pāngia nuitia e ngā herenga Kōwhēori-19.

## Ko Te Whakamahi Whenua, te Panonitanga Whakamahinga Whenua me te Mahinga Ngahere (LULUCF)

E rua ngā huarahi ki te tātai i ngā tukunga me ngā whakakorenga tukunga nā te rāngai LULUCF. Ko te tuatahi ka whakamahia mō te tukunga tapeke i raro i te UNFCCC. Ko te tuatahi ko tētahi pūrongo mō tētahi wāhanga o ngā tukunga me ngā whakakorenga tukunga e ai ki ngā tukunga pūrongo tāpiri o te te Kawa o Kyoto (KP-LULUCF). Ko te rautaki tuarua e whakamahia ana ki te haurapa i ngā tukunga me ngā whakakorenga tukunga o te whāinga whakaheke tukunga o Aotearoa mō te wāhanga 2013–2020. Ka kīia tēnei whakatau tata he whāinga tukunga tapeke.

### Ko te pūrongo i a LULUCF i raro iho i te UNFCCC 1990–2020

I te tau 2020, he putanga waro\* te rāngai LULUCF e 23.3 miriona tana CO<sub>2</sub>-e te nui o ngā whakakorenga tukunga tapeke. Ko ngā manei mō ngā tukunga me ngā whakakorenga tukunga a te LULUCF kei roto i ngā mahi hauhake me te whakarake i ngā ngahere whakanao, me ngā pāpātanga tāupe o mua o ngā whakatōnga ngahere hou.

Ko ngā whakakorenga tukunga a te rāngai LULUCF i te tau 2020 i 9.8 ōrau nui ake i ērā o te tau 1990. Ko te take matua e pēnei nei ko te pikinga o te whakaputanga o ngā huanga rākau kua oti te tua.

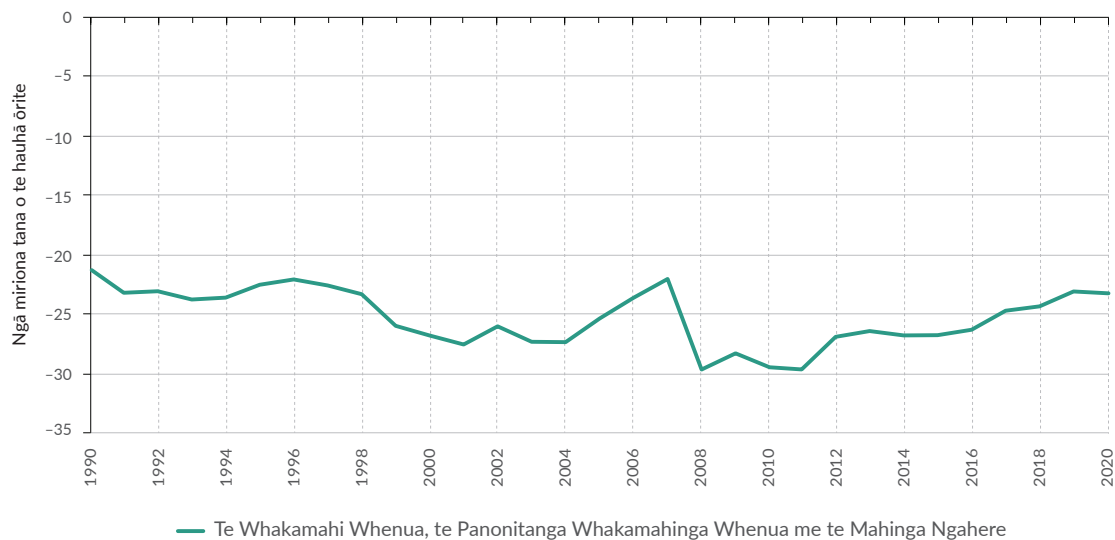
### 2019–2020

I waenganui i te tau 2019 me te tau 2020, ko ngā whakakorenga tukunga tapeke a te rāngai LULUCF i piki mā te 1 ōrau (mai i 23.0 ki te 23.3 miriona tana CO<sub>2</sub>-e). I pēnei ai ngā whakakorenga tukunga nā te hekenga o te whakarake i ngā ngahere whakatō, ā, ko te mutunga iho ka iti iho te huringa o te whenua ngahere hei whenua pātiti. I āhua tau haere tēnei whakahekenga nā ngā whakakorenga tukunga i ngā whakanaotanga tope rākau, nā te mea i heke iho te whakanaotanga nā ngā whakatōhenehene tukatuka, whakanekeneke hoki a te mate KOWHEORI-19.

### \*He Whakamārama

Kei roto te putanga waro i ētahi tukunga, tūmahi, mīhini rānei e tango ana i tētahi GHG i te kōhauhau. He putanga waro tapeke te LULUCF nā te mea he nui ake tana whakakore i te hauhā, i tana tuku.

**Hoahoa 8:** Ko ngā tukunga tapeke haurehu kati mahana o Aotearoa (ki te miriona tana CO<sub>2</sub>-e): ngā ia i te rāngai LULUCF mai i te tau 1990 ki te tau 2020 (i raro i te pūrongo o UNFCCC)



E noho tōraro ana te tōpūtanga o ngā tukunga a te rāngai Whakamahi Whenua, te Panonitanga Whakamahinga Whenua me te Mahinga Ngahere nā te mea he nui ake ngā tukunga i ngā whakakorenga tukunga i te kōhauhau.



## Ko te pūrongo LULUCF i raro i te Kawa o Kyoto\*

Ahakoia i whakataua a Aotearoa kia noho te whāinga mō te tau 2020 i raro i te mana o te UNFCCC, tēnā, i te Kawa o Kyoto, i whakataua hoki mātou ki te whakamahi i ngā ture o te Kawa o Kyoto i ō mātou whakahaerenga whāinga kia mārama ai, kia hāngai ai hoki.

E pūrongoia ai te anga whakamua ki te whāinga o te tau 2020, i whakamahi mātou i te arotakenga whāinga e whakamahi noa nei i tētahi wāhanga o ngā tukunga me ngā whakakorenga tukunga katoa nā te rāngai LULUCF e kapi mai ana ko ngā ngahere i whakatōkia nō muri mai i te tau 1989, ko ngā panonitanga i ngā tukunga me ngā whakakorenga tukunga i ngā ngahere i mua mai i te tau 1990 e hua ai i ngā tukunga whakahaere ngahere, me te whakarake ngahere.\*

Ka pūrongo mātou i te anga whakamua ki te whāinga o te tau 2020 i te **pūrongo tūranga tepeke**.

## He aha ō tātou tukunga mewaro koiiora?

I te tau 2019, nā te Climate Change Response (Zero Carbon) Amendment Act i hua ai ki te ture ngā whāinga rāroto mō te tau 2050, tae atu rā ki te mewara koiiora. Ko te tikanga o te mewara koiiora ko ngā tukunga mewara katoa nā ngā rāngai Ahumahi me te Para (i pūrongoia ai i te Rārangi). Ko ngā whāinga ā mohoa nei mō te mewara koiiora ko te whakaheke tukunga mewara koiiora mā te 24 ki te 47 ōrau i raro iho i ērā o te tau 2017 i mua i te tau 2050, ā, me te 10 ōrau hoki o raro iho o ērā o te tau 2017 i mua i te tau 2030.

## \*He Whakamārama

He whakaaetanga ā-ao te Kawa o Kyoto e whai pānga ana ki te Kawenata ā-Anga mō te Āhuarangi Hurihuri a te Kotahitanga o Ngā Iwi o te Ao. Kei roto ko ētahi whāinga whakaheke tukunga e here ana i ngā Pāti whenua whanake kua whakarārangitia ki te Tāpiritanga B, e ai ki te Whakahounga o Doha. Mō ētahi anō whakamāramatanga mō te Whakahounga o Doha, tirohia te pae tukutuku a te Manatū mō te Taiao e pā ana ki te **Kawenata ā-Anga mō te Āhuarangi Hurihuri a te Kotahitanga o Ngā Iwi o te Ao me Aotearoa**.

Ko te **whakanehenehe** ko te whakatō ngahere ki tētahi wāhi kāore i reira he ngahere i ngā tau e 50 i mua mai.

Ko te **whakangahere anō** te whakatōnga anō o te ngahere ki tētahi wāhi i reira rā he ngahere i hurihia ai hei whenua hei whakamahinga kē i ngā tau e 50 kua hori. Mō te wā tuatahi, tuarua hoki i whakaūngia ai te Kawa o Kyoto (2008–2020), kua herea mai te whakangahere anō ki ētahi wāhi ngahere-kore i te 31 o Tihema 1989.

Ko te **whakarake** he panonitanga whakamahinga whenua kia ngahere-kore (hei tauira, ko te mahi pāmu) mō tētahi wā.

Ko te **whakahaere ngahere** ko te whakahaere i ngā ngahere i tū ai i mua i te tau 1990.

## Ko ngā waeine katoa kei te miriona tana CO<sub>2</sub>-e e whakamahi ana i te IPCC Fourth Assessment Report's 100-year Global Warming Potential mō te mewara (25)

	2017	2020
Tōpūtanga mewaro (kāore e kapi ana i te rāngai LULUCF)	34.4	34.3
Mewaro koiiora	33.5	33.5
Mewaro ahuhenua	30.3	30.5
Mewaro para	3.2	3.0

## Ko te whakatairite i a Aotearoa ki whenua kē atu

### I te ao whānui he iti ō tātou tukunga, engari he nui mō ia kotahi rau pūranga

He rerekē tō Aotearoa kiwhaiaro tukunga i te nuinga o ngā whenua e 43 o ngā whenua Tāpiritanga I\*. He haurua o ngā tukunga a Aotearoa ka ahu mai i te rāngai Ahumahi (50 ōrau). I te nuinga o te wā, i ngā whenua rerekē o te Tāpiritanga I, he iti noa iho te nui o tā te rāngai Ahumahi ki te tukunga tōpū (13 ōrau te toharite).

Ko te katoa o ngā raraunga tukunga i tēnei wāhanga nō **te Kawenata ā-Anga mō te Āhuarangi Hurihuri a te Kotahitanga o Ngā Iwi o te Ao (UNFCCC) me te Tāhono Raraunga (2020)**. Ko ngā raraunga Tāpiritanga I i ēnei whakatairitenga, e kaute motuhake ana i ngā mema o te Uniana o Ūropi (EU), ā, kāore e kapi mai ana i te EU hei wāhi kotahi. Me aro te whakatairitenga ki ngā whenua Tāpiritanga I nā te mea katoa ēnei whenua ka whakamahi i ngā tikanga pūrongo haurehu kati mahana ōrite ki te pūrongo i ngā tukunga me ngā whakakorenga tukunga.

Nā te nui o ngā taumata whakanao ahumahi i Aotearoa i nui ai hoki te mewara me te hauota-rua ōkai i te tukunga tōpū. He nui ake te āheinga whakamahana haere o ēnei haurehu i te hauhā. E ai ki ngā raraunga hou o te Rārangi mō te tau 2019 mō ngā whenua Tāpiritanga 1, kei te tūranga 21 a Aotearoa mō ngā tukunga tōpū i waenganui i ngā whenua Tāpiritanga I, engari ko ngā tukunga o Aotearoa mō ia tangata i tuaono, arā, ko te rite i te 17.2 tana hauhā (CO<sub>2</sub>-e) mō ia kotahi rau pūranga (Hoahoa 9).

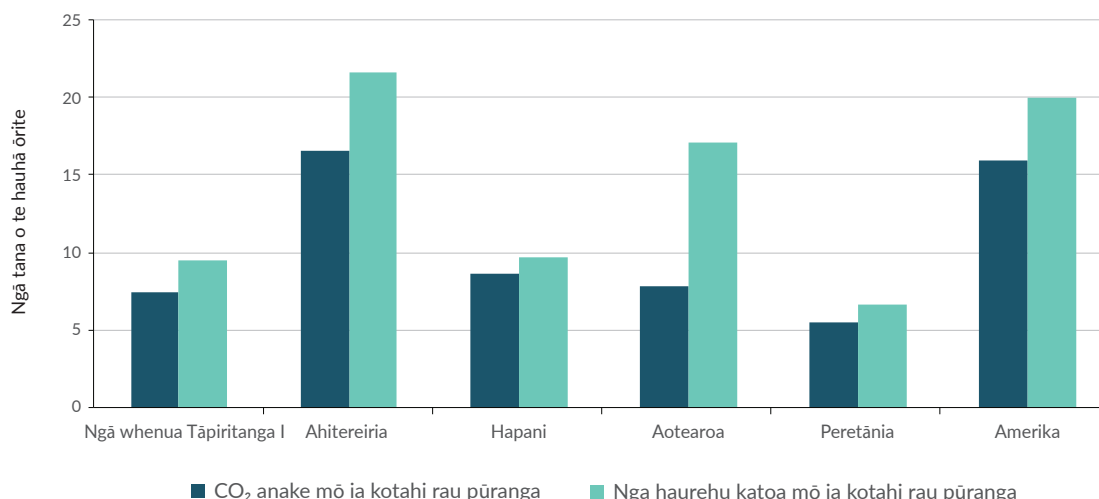
### \*He Whakamārama

Ko te Tāpiritanga I ki te UNFCCC e whakarārangi mai ana i ngā whenua ahumahi i noho ai hei mema ki te **Whakahaere mō te Whanaketanga me te Pāhekoheko ā-Ōhanga** me ngā whenua he ōhanga e huri ana i te tau 1992 (te tau i whakaaetia ai te UNFCCC). Ko ngā whenua e rārangi mai ana i te Tāpiritanga I e whai Hoanga ana ki te UNFCCC me auau te pūrongo mō te raraunga āhuarangi, ngā kaupapa here me ngā inenga, tae atu rā (i ngā wāhi e tika ana) ki ngā kaupapa e whakahaerehia ana e te Kawa o Kyoto.

Ko ngā tukunga Tāpiritanga 1 hou nō te tau 2019, nō ngā rārangi i tukuna i te tau 2021. Ko te tukunga hauhā tōpū o Aotearoa i te tau 2019, ko te 7.8 tana mō ia kotahi rau pūranga, ā, tata ana tēnei ki te toharite o te Tāpiritanga I 2019, arā, ko te 7.5 tana o te CO<sub>2</sub> mō ia kotahi rau pūranga (Hoahoa 9). Ka whakaatu tēnei i te huanga nui o te hiko i Aotearoa nei mai i ngā rawa whakahou. I te tau 2020, ko te nui o te hiko i ahu mai i ngā mātāpuna rawa whakahou i Aotearoa ko te 81 ōrau.

Ko te tukunga tōpū a Aotearoa, ko tōna 0.17 ōrau o te tukunga tōpū o te ao katoa. Heoi anō, kua piki te tukunga tōpū nō te tau 1990, manohi anō i te nuinga o ngā whenua Tāpiritanga I (hei tauira, i Peretānia me Tiamana) kei raro iho ngā tukunga i ērā nō te tau 1990.

**Hoahoa 9:** Ko ngā whakatairitenga ā-ao mō ngā tukunga mō ia kotahi rau pūranga (ki te tana CO<sub>2</sub>-e) i te tau 2019



Tapirihanga kōrero: Ko ngā raraunga tukunga i tēnei wāhanga nō te **Tāhono Raraunga UNFCCC (2020)**. Ka kaute motuhakitia e ngā raraunga Tāpiritanga I te nama o ngā mema o te EU, ā, kāore te EU e uru katoa mai.

Ko ngā raraunga taupori i whakamahia kia hua ai te Hoahoa 9 i tikina mai i ngā raraunga taupori 2019 i te **Wehenga Taupori UN (2020)**.

Ko ngā whenua Tāpiritanga 1 (UNFCCC) e whakatairitea ana ki Ahitereiria, Hapani, Aotearoa, Peretānia, me Amerika. Ka kitea ētahi pou e rua mō ia whenua e tohu ana i te 'CO<sub>2</sub> anake mō ia kotahi rau pūranga' me 'Nga haurehu katoa mō ia kotahi rau pūranga'.

## Ko tā Aotearoa anga whakamua ki te whāinga ā-ao 2020 i raro i te UNFCCC

Ka whakamahia ngā raraunga o te Rārangi ki te aroturuki i te whanaketanga ki te whāinga whakaheke tukunga ā-ao mō te wāhanga 2013–2020 i raro iho i te UNFCCC, ki te whakaheke i ngā haurehu kati mahana mā te 5 ōrau i raro iho i ngā taumata tōpū o te tau 1990.

Ka tukuna e Aotearoa tāna pūrongo mō tana anga whakamua ki te whāinga mō 2020 i tāna pūrongo taurua ka tukuna ki te UNFCCC ā te Tihema o te tau 2022.

Ko te anga whakamua ki tō Aotearoa whāinga o te tau 2020 e kapi ana i roto i te Pūrongo Tūranga Tōpū a te Mānatū mō te Taiao, ka whakahōungia ka puta ana he Rārangi hou. Kei te pae tukutuku a te Manatū mō te Taiao te pūrongo Tūranga Tōpū: **Ngā kōrero hou mō te tūranga tōpū o Aotearoa 2020.**

## Ko tā Aotearoa anga whakamua i roto i te Whakataunga ā-Motu mō ngā Whai Wāhitanga (NDCs) i raro i te Whakaaetanga o Pari

Ka tīmata a Aotearoa ki te pūrongo i te anga whakamua i roto tana whai wāhitanga tuatahi ki **te Whakataunga ā-Motu mō ngā Whai Wāhitanga (NDC)** mō waenga i te tau 2021 ki te tau 2030 me tana pūrongo e pā ana ki te Rārangi i te Āperira 2023 (koinei te pūrongo Rārangi tuatahi kei roto ko ngā raraunga o te wāhanga NDC), tahi ki tāna pūrongo pūataata taurua tuatahi ka tukuna ki te UNFCCC i mua i te Tihema 2024.

Mō ētahi atu kōrero anō e pā ana ki te NDC o Aotearoa, tirohia te pae tukutuku a te Manatū Mō Te Taiao: **te Whakataunga ā-Motu mō ngā Whai Wāhitanga.**

### He puna mōhiohio kē atu

Ko Te Rārangi Haurehu Kati Mahana te mātāpuna mōhiohio e ōkawa ana mō ngā raraunga tukunga haurehu kati mahana o Aotearoa.

Kia whānui ake ai tō ako mō tā Aotearoa pūrongo, ine hoki i tā mātou anga whakamua ki ā mātou whāinga me ētahi atu pūrongo tukunga, tirohia tā mātou whārangi ipurangi **mō ngā whāinga whakaheke tukunga o Aotearoa.**

Ko ētahi atu mātāpuna raraunga i ahu mai i Te Rārangi mō ngā take rāroto ko ēnei e whai ake nei:

- > tā te Manatū tuhinga **Te Ine Tukunga: He kupu āwhina mō ngā whakahaere Ngā tukunga ā-ahumahi, ā-whare hoki**
- > ā Tatauranga Aotearoa hua tukunga:
  - > **Ngā tukunga ā-ahumahi, ā-whare hoki**
  - > **Ngā tukunga ā-pekanga**
  - > **Ngā tukunga ā-rohe**
  - > **Ngā tukunga whakapeto**

### Ko te whakaputanga hou o te Rārangi

Ka whakaputaina anō Te Rārangi Haurehu Kati Mahana mō te tau 1990 ki te 2021 ā te 15 o Āperira ā te tau 2023.



### He mihi

Ka mihi te Manatū mō te Taiao ki ngā tari kāwanatanga e whai ake nei mō tā rātou i koha mai ai ki Te Rāranga Haurehu Kati Mahana: Hīkina Whakatutuki; te Environmental Protection Authority; te Manatū Aorere; te Manatū Ahu Matua; Tatauranga Aotearoa, te Manatū mō te Āhurangi Hurihuri, me te Kāwanatanga o Tokelau.



**Te Kāwanatanga o Aotearoa**  
New Zealand Government

I whakaputaina i te Āperira o te tau 2022 e te Manatū mō te Taiao, Manatū Mō Te Taiao, PO Box 10362, Wellington 6143, New Zealand

Tau tānga: INFO 1043