**Quality Control Cover Sheet**

2024 (1990-2022) Agriculture Greenhouse Gas Inventory

Team responsible: GHG Inventory, Natural Resources Directorate

Owner of this sheet: Joel Gibbs

File: https://piritahi.cohesion.net.nz/Sites/POL/NR/CC/AgriculturalGasInventory/2024%20Inventory/QC3%202024%20QA%20Check%20sheet%20sign%20off%20for%20inventory.docx?web=1

Purpose: The purpose of this sheet is to provide a record of QC activities covering the preparation and annual delivery of the Agriculture Greenhouse Gas Inventory, and contributions to the NIR text (Chapter 5, plus part of chapters 1, 2, 10, annex 2, annex 3, annex 6, annex 8) and CRF data tables. This sheet must be completed prior to providing these deliverables to MfE.

The following tables need to be completed by each person involved in preparing the documents. Where appropriate, note the date received for checking.

# Annual data collection

|  |  |  |
| --- | --- | --- |
| **Checklist** | **File location For 2024 inventory** | **Collected and archived in Piritahi or G drive (sign and date)** |
| Complete data input tables used for 2024 inventory | Piritahi  <https://piritahi.cohesion.net.nz/Sites/POL/NR/CC/AgriculturalGasInventory/2024%20Inventory%20Input%20Data?d=w50c9f6f9d0c94a338eebe53998c5c262>  G drive  G:\Greenhouse\_Gas\_Inventory\_Team\Amalthea\Data\_Raw | 28/11/24 Jamie Higgison  2024 data added to new git branch 2024-data-testing |
| Projections of activity data for cattle, sheep and deer for 2023  (projections used in lieu of provisional APS 2023 data) | Input assumptions for 2023 projections:  <https://piritahi.cohesion.net.nz/Sites/POL/NR/CC/NationalCommBiennialReport/2023%20Projections/June-Oct%20ag%20%2B%20forestry%20projections/Input%20assumptions%20for%202023%20ag%20projections.xlsx?d=we760bb4dbf5140c98dd3b601875eb046> | Jamie Higgison – archived in projections Pirtahi folder 2023 |
| 2022 Agricultural Production Statistics (APS) regional final results (from Statistics New Zealand) | [2022 APS](https://piritahi.cohesion.net.nz/Sites/POL/SEC/EA/CrossSector/Cross%20Sector%20Secure%20Data/2022%20APS%20final%20results%20-%20confidentialised%20no%20suppressions%20by%20region.xlsx)  https://piritahi.cohesion.net.nz/Sites/POL/SEC/EA/CrossSector/Cross Sector Secure Data/2022 APS final results - confidentialised no suppressions by region.xlsx | Jamie Higgison confirmed archived in Piritahi 30/11/23 |
| 2021 Agricultural Production Statistics (APS) regional final results (from Statistics New Zealand) | [2021 APS](https://piritahi.cohesion.net.nz/Sites/POL/SEC/EA/CrossSector/Cross%20Sector%20Secure%20Data/2021%20APS%20final%20results%20-%20confidentialised%20no%20suppressions%20by%20farmtype.xlsx?d=wd5581eb780e14a85a1bd919e18ca8585)(by farm type)  [2021 APS (by region](https://piritahi.cohesion.net.nz/Sites/POL/SEC/EA/CrossSector/Cross%20Sector%20Secure%20Data/2021%20APS%20final%20results%20-%20confidentialised%20no%20suppressions%20by%20region.xlsx))  https://piritahi.cohesion.net.nz/Sites/POL/SEC/EA/CrossSector/Cross Sector Secure Data/2021 APS final results - confidentialised no suppressions by region.xlsx | Jamie Higgison confirmed archived in Piritahi 30/11/23 |
| 2020 Agricultural Production Statistics (APS) regional final results (from Statistics New Zealand) | [*Revised dolomite application data for 2020*](https://piritahi.cohesion.net.nz/Sites/POL/NR/CC/AgriculturalGasInventory/2023%20Inventory/2022%20Inventory/Goat%20stats%20and%20dolomite%20revision%20detail.msg)  [2020 APS](https://piritahi.cohesion.net.nz/Sites/POL/SEC/EA/CrossSector/Cross%20Sector%20Secure%20Data/2020%20APS%20final%20results%20-%20confidentialised%20no%20suppressions%20by%20region.xlsx?d=w016c86eda2194eff8cd70228a4ba6b81)  https://piritahi.cohesion.net.nz/Sites/POL/SEC/EA/CrossSector/Cross Sector Secure Data/2020 APS final results - confidentialised no suppressions by region.xlsx?d=w016c86eda2194eff8cd70228a4ba6b81 | Jamie Higgison confirmed archived in Piritahi 30/11/23 |
| 2019 Agricultural Production Statistics (APS) regional final results (from Statistics New Zealand) | [2019 APS](https://piritahi.cohesion.net.nz/Sites/POL/SEC/EA/CrossSector/Cross%20Sector%20Secure%20Data/2019%20APS%20FINAL_CONFIDENTIALISED_NO%20suppressions%20by%20region%20V2.xlsx?web=1)  https://piritahi.cohesion.net.nz/Sites/POL/SEC/EA/CrossSector/Cross Sector Secure Data/2019 APS FINAL\_CONFIDENTIALISED\_NO suppressions by region V2.xlsx?web=1 | Jamie Higgison confirmed archived in Piritahi 30/11/23 |
| 2018 and prior Agricultural Production Statistics (APS) regional final results (from Statistics New Zealand). See the [2024 key links](https://piritahi.cohesion.net.nz/Sites/POL/NR/CC/AgriculturalGasInventory/2024%20Inventory/Important%20links%20for%202024%20inventory%20submission.docx?web=1) document for links to older APS data | [2018 APS](https://piritahi.cohesion.net.nz/Sites/POL/SEC/EA/CrossSector/Cross%20Sector%20Public%20Data/2018_FINAL_Confid_All%20linecodes%20by%20region.xlsx?web=1)  https://piritahi.cohesion.net.nz/Sites/POL/SEC/EA/CrossSector/Cross Sector Public Data/2018\_FINAL\_Confid\_All linecodes by region.xlsx?web=1 | Jamie Higgison confirmed archived in Piritahi 30/11/23 |
| Livestock Improvement Incorporation (LIC) data | 2022/23 data set:  **Part 1:** [Dairy NZ table 4-7 graph 3-2 and graph 3-3 22/23 season](https://piritahi.cohesion.net.nz/Sites/POL/NR/CC/AgriculturalGasInventory/2024%20Inventory/RE_%20Data%20request%20for%20updated%20dairy%20statistics%20-%202024%20GHG%20Inventory%20-%20Dairy%20NZ%20table%204-7%20graph%203-2%20and%20graph%203-3%2022-23%20season.msg) email message.  **Part 2:** [Dairy NZ remaining tables 22/23 season](https://piritahi.cohesion.net.nz/Sites/POL/NR/CC/AgriculturalGasInventory/2024%20Inventory/RE_%20Data%20request%20for%20updated%20dairy%20statistics%20-%202024%20GHG%20Inventory%20-%20Dairy%20NZ%20remaining%20tables%2022-23%20season.msg) email message.  https://piritahi.cohesion.net.nz/Sites/POL/NR/CC/AgriculturalGasInventory/2024 Inventory/RE\_ Data request for updated dairy statistics - 2024 GHG Inventory - Dairy NZ table 4-7 graph 3-2 and graph 3-3 22-23 season.msg  https://piritahi.cohesion.net.nz/Sites/POL/NR/CC/AgriculturalGasInventory/2024 Inventory/RE\_ Data request for updated dairy statistics - 2024 GHG Inventory - Dairy NZ remaining tables 22-23 season.msg  [LIC dairy statistics for 2021/22 season](https://piritahi.cohesion.net.nz/Sites/POL/NR/CC/AgriculturalGasInventory/2024%20Inventory/RE_%20Data%20request%20for%20updated%20dairy%20statistics%20-%202024%20GHG%20Inventory%20-%20LIC%2020-21%20season.msg) email message  https://piritahi.cohesion.net.nz/Sites/POL/NR/CC/AgriculturalGasInventory/2024 Inventory/RE\_ Data request for updated dairy statistics - 2024 GHG Inventory - LIC 20-21 season.msg  [Main LIC data working sheet](https://piritahi.cohesion.net.nz/Sites/POL/NR/CC/AgriculturalGasInventory/Annual%20Collection%20of%20Data/2016_LIC%20productivity%20data%20by%20region%20council%20v2.0.xlsx?web=1): Excel spreadsheet used to help compile the dairy production data and  [Regional dairy cow weights data and calculations](https://piritahi.cohesion.net.nz/Sites/POL/NR/CC/AgriculturalGasInventory/Annual%20Collection%20of%20Data/dairy%20cow%20weights%20regional%20v8.0.xlsx?web=1) (LIC Data)uses cow weight by breed to calculate regional dairy live weights | Jamie Higgison  All LIC and Dairy NZ data received by 22/11/23 |
| Livestock slaughter statistics, + poultry population (from MPI Resource Economics & Analysis team) | [Slaughter statistics:](https://piritahi.cohesion.net.nz/Sites/POL/NR/CC/AgriculturalGasInventory/2023%20Inventory/APS%20and%20Slaughter%20data%20from%20infoshare%20updated%20to%20Jun%202022.xlsx?d=wb05a0236c8dd410ab78bb671648de5de) Data extracted from [Infoshare](https://infoshare.stats.govt.nz/SelectVariables.aspx?pxID=d2d146cd-317a-4c15-a55e-d0b0c192e712) and MPI Slaughter [Statistics](https://www.mpi.govt.nz/science/open-data-and-forecasting/agriculture/)  (latter only for Swine)  https://piritahi.cohesion.net.nz/Sites/POL/NR/CC/AgriculturalGasInventory/2023 Inventory/APS and Slaughter data from infoshare updated to Jun 2022.xlsx?d=wb05a0236c8dd410ab78bb671648de5de | Mark Lieffering by 10/10/2023 |
| Wool production (from New Season Outlook report, Beef + Lamb New Zealand Ltd) | [B+LNZ New Season Outlook 2022-23](https://piritahi.cohesion.net.nz/Sites/POL/NR/CC/AgriculturalGasInventory/2023%20Inventory/New-Season-Outlook-2022.pdf?d=w718b28525192416d8b907cbc08bad8f4) used for 2023 inventory – wool data on page 35  [Mid-season Update 2023](https://beeflambnz.com/sites/default/files/data/files/Mid-Season%20Update-23.pdf) – wool production data page 33 (22/23 season estimate)  See 2024 inventory [key links](https://piritahi.cohesion.net.nz/Sites/POL/NR/CC/AgriculturalGasInventory/2024%20Inventory/Important%20links%20for%202024%20inventory%20submission.docx?web=1) document | Jamie Higgison 10/10/23 |
| Hill country slope data by farm class from Beef + Lamb NZ | [Beef+LambNZ](https://piritahi.cohesion.net.nz/Sites/POL/NR/CC/AgriculturalGasInventory/2024%20Inventory/MW9388%201990-91%20to%202021-22%20N2O%20MPI%20update.xlsx): Hill Country Data,  [Email](https://piritahi.cohesion.net.nz/Sites/POL/NR/CC/AgriculturalGasInventory/2024%20Inventory/RE_%20Data%20request%20for%20hill%20country%20data%20-%20National%20Greenhouse%20Gas%20Inventory.msg) containing data  https://piritahi.cohesion.net.nz/Sites/POL/NR/CC/AgriculturalGasInventory/2024 Inventory/MW9388 1990-91 to 2021-22 N2O MPI update.xlsx | Mark Lieffering by 22/11/2023 |
| DINZ Deer Slaughter Data (from MPI Resource Economics & Analysis team) | Deer slaughter data  https://piritahi.cohesion.net.nz/Sites/POL/SEC/EA/\_layouts/15/WopiFrame.aspx?sourcedoc=%7b9AF73FFD-0D78-4920-B036-FF2F5BADDC50%7d&file=Deer%20Slaughter%20and%20Schedule%20Data.xlsm&action=default  Old worksheet discontinued (Link here) | Jamie Higgison by 22/11/2023 |
| Additional data for crops from assure quality for herbage, legume and brassica seeds.  Organic soil area, and C-loss in cropland remaining cropland for FSOM calculation (from Ministry for the Environment) | [AsureQuality seed data](https://piritahi.cohesion.net.nz/Sites/POL/NR/CC/AgriculturalGasInventory/2024%20Inventory/RE_%20Data%20request%20for%20seed%20production%20and%20Lucerne%20seed%20crop%202022_23%20season%20-%202023%20Agriculture%20GHG%20inventory.msg): Email message that contains seed data  https://piritahi.cohesion.net.nz/Sites/POL/NR/CC/AgriculturalGasInventory/2024 Inventory/RE\_ Data request for seed production and Lucerne seed crop 2022\_23 season - 2023 Agriculture GHG inventory.msg  [SOM loss & Cropland data from MfE:](https://piritahi.cohesion.net.nz/Sites/POL/NR/CC/AgriculturalGasInventory/2024%20Inventory/RE_%202024%20Ag%20inventory%20-%20%20Data%20request%20for%20organic%20soils%20%26%20croplands.msg) Email message that contains the 2022 data  *https://piritahi.cohesion.net.nz/Sites/POL/NR/CC/AgriculturalGasInventory/2024 Inventory/RE\_ 2024 Ag inventory - Data request for organic soils %26 croplands.msg*  [Cropland N2O](https://piritahi.cohesion.net.nz/Sites/POL/NR/CC/AgriculturalGasInventory/2024%20Inventory/NIR2022%20-%20Cropland%20N2O%20-%20data%20to%202022.xlsx?d=wd05a699bd56b428abfebb09ac0d45535)  *https://piritahi.cohesion.net.nz/Sites/POL/NR/CC/AgriculturalGasInventory/2024 Inventory/NIR2022 - Cropland N2O - data to 2022.xlsx?d=wd05a699bd56b428abfebb09ac0d45535*  [Organic Soils area](https://piritahi.cohesion.net.nz/Sites/POL/NR/CC/AgriculturalGasInventory/2024%20Inventory/NIR2022%20-%20Agriculture%20organic%20soil%20area%20-%20data%20to%202022.xlsx?d=w414d8f991ec244c7bf21b38636bdf9e0)  *https://piritahi.cohesion.net.nz/Sites/POL/NR/CC/AgriculturalGasInventory/2024 Inventory/NIR2022 - Agriculture organic soil area - data to 2022.xlsx?d=w414d8f991ec244c7bf21b38636bdf9e0* | Jamie Higgison by 17/10/2023  See Row 142 [2024 Project Timeline](https://piritahi.cohesion.net.nz/Sites/POL/NR/CC/_layouts/15/WopiFrame.aspx?sourcedoc=%7b08C261C5-ECFA-498A-8CD2-0619AA646362%7d&file=AG%20Inventory%20Project%20Plan%202024.xlsx&action=default) for tracking details on data requests |
| Pea production | [*2023 email*](https://piritahi.cohesion.net.nz/Sites/POL/NR/CC/AgriculturalGasInventory/2024%20Inventory/RE%20peas%20GHG.msg)  https://piritahi.cohesion.net.nz/Sites/POL/NR/CC/AgriculturalGasInventory/2024 Inventory/RE peas GHG.msg | Mark Lieffering by 22/11/2023 |
| Potatoes | [PotatoesNZ production](https://piritahi.cohesion.net.nz/Sites/POL/NR/CC/AgriculturalGasInventory/2024%20Inventory/2024%20potato%20data%20email.msg) – data in email:  https://piritahi.cohesion.net.nz/Sites/POL/NR/CC/AgriculturalGasInventory/2024 Inventory/2024 potato data email.msg | Mark Lieffering by 22/11/2023 |
| Fertiliser sales data 2020 (for 2022 submission). Includes urease inhibitor data | [Fertiliser N data](https://piritahi.cohesion.net.nz/Sites/POL/NR/CC/AgriculturalGasInventory/2024%20Inventory/FW_%20Information%20request%20for%20FANZ%20data.msg): FANZ Email message that contains fertiliser data  https://piritahi.cohesion.net.nz/Sites/POL/NR/CC/AgriculturalGasInventory/2024 Inventory/FW\_ Information request for FANZ data.msg | Mark Lieffering by 22/11/2023 |
| Export and trade data | [Harmonised trade](https://piritahi.cohesion.net.nz/Sites/POL/NR/CC/AgriculturalGasInventory/2023%20Inventory/HarmonisedTradeExports_2021.xlsx?d=w900226ff9c674072954fd737d59bea3f) reports for NIR section 5.1.1: data from StatsNZ Infoshare, compiled in Piritahi excel spreadsheet.  [Export data for cattle](https://piritahi.cohesion.net.nz/Sites/POL/NR/CC/AgriculturalGasInventory/Annual%20Collection%20of%20Data/HarmonisedTradeTotalExportsexportsreexports_20230920_093227_50_20230920_093505_32.csv?d=w469aaad2e00d43e2b8725e2a7cd9f42b): Data extracted from Infoshare | Catherine by 20/11/2023 |

# Data entry

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| --- | --- | --- | --- |
| **Checklist** | **File location for 2024 inventory** | **Preparation**  **(sign and date)** | **Checking**  **(sign and date)** |
| Create data input checking spreadsheet. Update data source links in this document. | 2024 data check sheet  <https://piritahi.cohesion.net.nz/Sites/POL/NR/CC/AgriculturalGasInventory/2024%20Inventory/2024%20data%20check%20sheet.xlsx?d=wd6290c3f68944931b3e980f3af073e11> | Mark Lieffering 06/11/2023 | Joel Gibbs  1/12/23 |
| LIC data and SOPI dairy forecast % imported into “LIC productivity data by region council.xlsx” and saved on Piritahi | Complete dataset  https://piritahi.cohesion.net.nz/Sites/POL/NR/CC/AgriculturalGasInventory/Annual Collection of Data/2016\_LIC productivity data by region council v2.0.xlsx?web=1  Dairy cow weight  https://piritahi.cohesion.net.nz/Sites/POL/NR/CC/AgriculturalGasInventory/Annual Collection of Data/dairy cow weights regional v8.0.xlsx?web=1 | Jamie Higgison  30/11/2023 | Joel Gibbs  1/12/23 |
| LIC data imported into “dairy cow weights regional.xlsx” and saved on Piritahi |
| LIC data imported into “dairy cow weight calculation tool.xls” (for national average) and saved on Piritahi |
| Enter prepared regional dairy data into the Agriculture Inventory model, as per check sheet instructions | https://piritahi.cohesion.net.nz/Sites/POL/NR/CC/AgriculturalGasInventory/Annual Collection of Data/dairy cow weights regional v8.0.xlsx?web=1  https://piritahi.cohesion.net.nz/Sites/POL/NR/CC/AgriculturalGasInventory/Annual Collection of Data/2016\_LIC productivity data by region council v2.0.xlsx?web=1 | Miro Williams 23/11/2023 | Miro Williams 21/11/2023 |
| Save 2022 APS CSV into correct folder | G:\Greenhouse\_Gas\_Inventory\_Team\Amalthea\Data\_Raw\CSV\_APS | Catherine by 1/11/2023 | Joel Gibbs  1/12/23 |
| Enter national dairy data into the relevant spreadsheets (including regional) as per check sheet instructions | Piritahi  <https://piritahi.cohesion.net.nz/Sites/POL/NR/CC/AgriculturalGasInventory/2024%20Inventory%20Input%20Data/DairyXXInputArray.csv?d=w1116f7b189d744df8c204165c0f0670a>  <https://piritahi.cohesion.net.nz/Sites/POL/NR/CC/AgriculturalGasInventory/2024%20Inventory%20Input%20Data/DairyXXRegional_Dairy_Inputs.csv?d=w739926da3c3c4321855fb343fd23a252>  https://piritahi.cohesion.net.nz/Sites/POL/NR/CC/AgriculturalGasInventory/2024%20Inventory%20Input%20Data/Regional\_Dairy\_Population.csv?d=w3cf439e32c3b479aa3be48c1c89f5cca  https://piritahi.cohesion.net.nz/Sites/POL/NR/CC/AgriculturalGasInventory/2024%20Inventory%20Input%20Data/Dairy\_Expectations\_Report.csv?d=w60761b0f96864d0aa27caab070463feb  G drive  G:\Greenhouse\_Gas\_Inventory\_Team\Amalthea\Data\_Raw\Required   * Dairy\_Expectations\_Report.csv * DairyXXInputArray.csv * DairyXXRegional\_Dairy\_Inputs.csv * Regional\_Dairy\_Population.csv | Miro Williams 22/11/2023  Miro Williams 23/11/2023  Jamie Higgison  20/11/2023 | Joel Gibbs  24/11/2023  Joel Gibbs  24/11/2023  Miro Williams 21/11/2023 |
| Enter national beef data into the relevant spreadsheet, as per check sheet instructions | Piritahi  <https://piritahi.cohesion.net.nz/Sites/POL/NR/CC/AgriculturalGasInventory/2024%20Inventory%20Input%20Data/BeefXXInputArray.csv?d=wf204afaa14ee49d2a37796ef6c80a7ff>  https://piritahi.cohesion.net.nz/Sites/POL/NR/CC/AgriculturalGasInventory/2024%20Inventory%20Input%20Data/BeefXXPopulation\_ParametersXXAPS\_Populations.csv?d=wb2a17b52f3554cf0ba2c47dad803ba82  G drive  G:\Greenhouse\_Gas\_Inventory\_Team\Amalthea\Data\_Raw\Required  BeefXXInputArray.csv  BeefXXPopulation\_ParametersXXAPS\_Populations.csv | Mark Lieffering 20/11/2023  Mark Lieffering 15/11/2023 | Miro Williams 23/11/2023  Miro Williams 20/11/2023 |
| Enter national sheep data into the relevant spreadsheet, as per check sheet instructions | Piritahi  <https://piritahi.cohesion.net.nz/Sites/POL/NR/CC/AgriculturalGasInventory/2024%20Inventory%20Input%20Data/SheepXXInputArray.csv?d=w2ee860739ce1445691bc0fd0e0e3c962>  <https://piritahi.cohesion.net.nz/Sites/POL/NR/CC/AgriculturalGasInventory/2024%20Inventory%20Input%20Data/SheepXXPopulation_ParametersXXAPS_Populations.csv?d=w6d351c0115bc403e9c2ad3d24f5ce2de>  G drive  G:\Greenhouse\_Gas\_Inventory\_Team\Amalthea\Data\_Raw\Required  SheepXXInputArray.csv  SheepXXPopulation\_ParametersXXAPS\_Populations.csv | Mark Lieffering 17/11/2023  Mark Lieffering 23/11/2023 | Miro Williams 21/11/2023  Miro Williams 24/11/2023 |
| Enter national deer data into the relevant spreadsheet as per check sheet instructions | Piritahi  <https://piritahi.cohesion.net.nz/Sites/POL/NR/CC/AgriculturalGasInventory/2024%20Inventory%20Input%20Data/DeerXXInputArray.csv?d=wa107d02f41d448be8464adf422ed15f8>  <https://piritahi.cohesion.net.nz/Sites/POL/NR/CC/AgriculturalGasInventory/2024%20Inventory%20Input%20Data/DeerXXPopulation_ParametersXXDeerPopulation1July.csv?d=waac4de1bcc12440b9fc1a901d7ca5e42>  G drive  G:\Greenhouse\_Gas\_Inventory\_Team\Amalthea\Data\_Raw\Required  DeerXXInputArray.csv  Population\_ParametersXXDeerPopulation1July.csv | Miro Williams 17/11/2023 | Joel Gibbs  24/11/2023 |
| Enter hill slope data into the relevant spreadsheet | Piritahi  <https://piritahi.cohesion.net.nz/Sites/POL/NR/CC/AgriculturalGasInventory/2024%20Inventory%20Input%20Data/HC%20-%20slope%20class.csv?d=w76701a65be4e4451b7bf1714aaa0fa52>  <https://piritahi.cohesion.net.nz/Sites/POL/NR/CC/AgriculturalGasInventory/2024%20Inventory%20Input%20Data/HC%20-%20stock%20class.csv?d=wa7d9a4def18f4b858bb5309d5fadf025>  G drive  G:\Greenhouse\_Gas\_Inventory\_Team\Amalthea\Data\_Raw\Required  HC - slope class.csv  HC - stock class.csv | Miro Williams 17/11/2023 | Mark Lieffering  24/11/2023 |
| Enter pig slaughter and weight statistics into relevant spreadsheet | Piritahi  <https://piritahi.cohesion.net.nz/Sites/POL/NR/CC/AgriculturalGasInventory/2024%20Inventory%20Input%20Data/Tier1XXSwine_NEX.csv?d=wa40d0a2aacb84ed283048bdce3f82888>  <https://piritahi.cohesion.net.nz/Sites/POL/NR/CC/AgriculturalGasInventory/2024%20Inventory%20Input%20Data/Tier1XXAgricultural_Survey_Data.csv?d=w8189aa08838145b99cc67aa1a6b38ed1>  G drive  G:\Greenhouse\_Gas\_Inventory\_Team\Amalthea\Data\_Raw\Required  Tier1XXSwine\_NEX.csv  Tier1XXAgricultural\_Survey\_Data.csv | Mark Lieffering  15/11/2023 | Miro Williams 20/11/2023 |
| Enter goat statistics and data into relevant spreadsheet | Piritahi  https://piritahi.cohesion.net.nz/Sites/POL/NR/CC/AgriculturalGasInventory/2024%20Inventory%20Input%20Data/Tier1XXAgricultural\_Survey\_Data.csv?d=w8189aa08838145b99cc67aa1a6b38ed1  G drive  G:\Greenhouse\_Gas\_Inventory\_Team\Amalthea\Data\_Raw\Required  Tier1XXAgricultural\_Survey\_Data.csv | Mark Lieffering  15/11/2023 | Miro Williams 20/11/2023 |
| Enter other minor livestock statistics and data into relevant spreadsheet (poultry, alpacas, llama, buffalo, mules, horses) | Piritahi  <https://piritahi.cohesion.net.nz/Sites/POL/NR/CC/AgriculturalGasInventory/2024%20Inventory%20Input%20Data/Tier1XXAgricultural_Survey_Data.csv?d=w8189aa08838145b99cc67aa1a6b38ed1>  G drive  G:\Greenhouse\_Gas\_Inventory\_Team\Amalthea\Data\_Raw\Required  Tier1XXAgricultural\_Survey\_Data.csv | Mark Lieffering  15/11/2023 | Miro Williams 20/11/2023 |
| Enter fertiliser, lime and dolomite data into relevant spreadsheets | Piritahi  <https://piritahi.cohesion.net.nz/Sites/POL/NR/CC/AgriculturalGasInventory/2024%20Inventory%20Input%20Data/Tier1XXNon_Animal.csv?d=w4a6e53141cd544bd8b5b29cd4ce760b6>  G drive  G:\Greenhouse\_Gas\_Inventory\_Team\Amalthea\Data\_Raw\Required  Tier1XXNon\_Animal.csv | Mark Lieffering  24/11/2023 | Miro Williams 27/11/2023 |
| Enter organic soils area data into relevant spreadsheets | Piritahi  <https://piritahi.cohesion.net.nz/Sites/POL/NR/CC/AgriculturalGasInventory/2024%20Inventory%20Input%20Data/Tier1XXNon_Animal.csv?d=w4a6e53141cd544bd8b5b29cd4ce760b6>  G drive  G:\Greenhouse\_Gas\_Inventory\_Team\Amalthea\Data\_Raw\Required  Tier1XXNon\_Animal.csv | Mark Lieffering  24/11/2023 | Miro Williams  27/11/2023 |
| Enter FSOM data into relevant spreadsheets | Piritahi  <https://piritahi.cohesion.net.nz/Sites/POL/NR/CC/AgriculturalGasInventory/2024%20Inventory%20Input%20Data/Non_AnimalXXCropXXFSOM_Histosols.csv?d=w9947f8b97a33477fa41c1ae091dca076>  G drive  G:\Greenhouse\_Gas\_Inventory\_Team\Amalthea\Data\_Raw\Required  Non\_AnimalXXCropXXFSOM\_Histosols.csv | Mark Lieffering  17/11/2023 | Miro Williams 21/11/2023 |
| Input crop activity data into Agriculture Inventory model (Crop Production Data and Archive Activity Data) | Piritahi  <https://piritahi.cohesion.net.nz/Sites/POL/NR/CC/AgriculturalGasInventory/2024%20Inventory%20Input%20Data/Non_AnimalXXPastureXXPastureSeedLIC.csv?d=w1dc511ccf5684c4bbb9c030dd22cc4b2>  <https://piritahi.cohesion.net.nz/Sites/POL/NR/CC/AgriculturalGasInventory/2024%20Inventory%20Input%20Data/Non_AnimalXXPastureXXPastureRenewal.csv?d=w8fdfe1bc67b8410c85cdb7fbb7a33768>  <https://piritahi.cohesion.net.nz/Sites/POL/NR/CC/AgriculturalGasInventory/2024%20Inventory%20Input%20Data/Crop_Production.csv?d=w6ded5f21468d4a7d8f033b35455a2dd9>  <https://piritahi.cohesion.net.nz/Sites/POL/NR/CC/AgriculturalGasInventory/2024%20Inventory%20Input%20Data/Non_AnimalXXPastureXXLucerneImports.csv?d=wdd42258fd1d14a1f8996c62fcfd417ac>  <https://piritahi.cohesion.net.nz/Sites/POL/NR/CC/AgriculturalGasInventory/2024%20Inventory%20Input%20Data/Non_AnimalXXCropXXBurningArea.csv?d=w2a7b54902e8a4505a1d3379c7d1aa165>  G drive  G:\Greenhouse\_Gas\_Inventory\_Team\Amalthea\Data\_Raw\Required  Non\_AnimalXXPastureXXLucerneImports.csv  Non\_AnimalXXPastureXXPastureSeedLIC.csv  Non\_AnimalXXPastureXXPastureRenewal.csv  Non\_AnimalXXCropXXBurningArea.csv  Crop\_Production.csv | Mark Lieffering  17-21/11/2023 | Miro Williams  21-23/11/2023 |
| Check through Inventory model for data completeness |  | Jamie Higgison  12/12/2023 | Joel Gibbs  18/12/23 |
| Final version of inventory model (Amalthea) used for 2024 submission data and code archived | G:\Greenhouse\_Gas\_Inventory\_Team\Amalthea  https://piritahi.cohesion.net.nz/Sites/POL/NR/CC/AgriculturalGasInventory/2024%20Inventory/Amalthea.zip | Catherine Sangster  8/1/2024 | Jamie Higgison  1/02/2024 |

# ERT recommendations

|  |  |  |
| --- | --- | --- |
| **Checklist + File location for 2024 inventory** | **Preparation**  **(sign and date)** | **Checking**  **(sign and date)** |
| Based off of the 2022 ERT Review (1990 – 2020 NIR Report)  <https://unfccc.int/sites/default/files/resource/arr2022_NZL.pdf>  Check to make sure we have addressed or are addressing review recommendations and encouragements, and have covered this of in the NIR text   |  |  | | --- | --- | | A.1 3.A Enteric  fermentation – CH4  (A.16, 2021)  Accuracy | Using the data and results of research, improve the model trends or changes in death rates over the time series used for estimating emissions from enteric fermentation for dairy cattle, beef cattle, sheep and deer, and document any recalculations in the NIR. | | A.2 3.A.1 Cattle – CH4, N2O (A.17, 2021) Accuracy | Review whether a lactation length of six months and a milk yield of 800 l for beef cows are appropriate for the emission estimates and provide further justification for these values in the NIR or recalculate emissions using more appropriate values for milk yield for beef cows. | | A.3 3.A.1 Cattle – CH4 (A.18, 2021) Transparency | Include a clearer description in the NIR of how productivity data for milk production from the Livestock Improvement Corporation are matched with terrestrial livestock data, including for those instances where Livestock Improvement Corporation data combine geographically close regions to obtain a single value (productivity data) that is then used for livestock population in these regions. | | A.4 3.A.1 Cattle – CH4, N2O (A.19, 2021) Accuracy | Incorporate the data and results of the ongoing research in order to provide more upto-date data on the proportion of dry cows and update the parameter POPdnmct (total number of dairy cows and heifers not in milk or calf in year t), recalculate the emission estimates and explain the recalculations in the NIR. | | A.5 3.A.1 Cattle – CH4 (A.20, 2021) Accuracy | Improve the methodology related to the instantaneous gain of 10 per cent of the weight of mature cows to account for their higher energy requirements and recalculate the associated emission estimates. Document clearly these recalculations in the NIR. | | A.7 3.B.1 Cattle – N2O (A.21, 2021) Transparency | Correct the description of N excretion in the first two months of life for dairy cattle in section 5.1 of the New Zealand Ministry for Primary Industries technical report in order to resolve the inconsistency with section 5.1.1.2 of the same technical report. | | A.9 3.D.a.2.a Animal manure applied to soils – N2O (A.22, 2021) Transparency | Provide additional information describing the manure management systems used for dairy cattle in the NIR, including the information from Rollo et al. (2017). | | A.10 3.D.a.2.c Other organic fertilizers applied to soils – N2O (A.23, 2021) Completeness | Undertake an updated analysis of the AD related to N applied to soils for non-manure components of organic fertilizers and estimate and report N2O emissions for this subcategory. If the emissions are considered to fall below the threshold of significance, report in the NIR information in accordance with paragraph 37(b) of the UNFCCC Annex I inventory reporting guidelines on the likely level of N2O emissions, demonstrating that they are below 0.05 per cent of the national total and do not exceed 500 t CO2 eq. | | A.11 3.D.b Indirect N2O emissions from managed soils – N2O (A.15, 2021) (A.19, 2019) Transparency | Revise the description in the NIR of the country-specific values for FracLEACH and for the fraction of applied organic N fertilizer materials and of urine and dung N deposited by grazing animals that volatilizes as ammonia and nitrogen oxides in kg N volatilized. | | A.12 3.B.1 Cattle – CH | The ERT recommends that New Zealand (1) correct the omission in the reporting of the MCF value for anaerobic lagoons used to store and treat dairy cattle manure; (2) report the MCF value for anaerobic lagoons in CRF table 3.B(a)s2 for the entire reporting period; and (3) provide the reference source and brief description of the climate data used as the basis for selecting an appropriate MCF value for anaerobic lagoon manure management system from the 2006 IPCC Guidelines (vol. 4, chap. 10, table 10.17). |   **Text/corrections/data need to be entered into relevant part of chapter text and table in section 10.2** | Catherine Sangster  19/12/2023 | Joel Gibbs  15/1/24 |

# Model checks and calculations.

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| --- | --- | --- | --- | --- |
| **Checklist** | | **File location for 2024 inventory** | **Preparation**  **(sign and date)** | **Checking**  **(sign and date)** |
| Confirm all updates to the model have been implemented (Panel, corrections etc) |  | | Catherine Sangster  7/12/2023 | Jamie Higgison  11/12/2023 |
| Confirm full and complete time series is being calculated | CRF table output: <https://piritahi.cohesion.net.nz/Sites/POL/NR/CC/AgriculturalGasInventory/2024%20Inventory/NZL_2024_1_20122023_013150%20-%20FINAL.xlsx?d=wff65d4b3104d4ce2be9d8eeb9fb5252d> | | Jamie Higgison  11/12/2023 | Joel Gibbs  18/12/23 |
| Ensure correct GWP values are being used | G:\Greenhouse\_Gas\_Inventory\_Team\Amalthea\Data\_Raw\System\_Parameters   * Parameters\_EFs\_and\_ConversionsXXGlobal\_Warming\_Potentials\_CH4.csv * Parameters\_EFs\_and\_ConversionsXXGlobal\_Warming\_Potentials\_N2O.csv | | Catherine Sangster  7/12/2023 | Jamie Higgison  11/12/2023 |
| Confirm model version (Amalthea) as final to be used for 2024 inventory | G:\Greenhouse\_Gas\_Inventory\_Team\Amalthea | | Catherine Sangster  8/1/2024 | Joel Gibbs  18/12/23 |
| Save model outputs (i.e. final results) and calculate trends and percentage changes | https://piritahi.cohesion.net.nz/Sites/POL/NR/CC/AgriculturalGasInventory/2024%20Inventory/Detailled%20Results%20with%20additional%20graphs.xlsx?d=wb5930e2a6d144ba0a1af8a7a16abaa83 | | Joel Gibbs 18/12/23 |  |
| General trends checked and subcategory proportions with previous Inventory  Check category and sub-category totals and percentages against previous submission | https://piritahi.cohesion.net.nz/Sites/POL/NR/CC/AgriculturalGasInventory/2024%20Inventory/Detailled%20Results%20with%20additional%20graphs.xlsx?d=wb5930e2a6d144ba0a1af8a7a16abaa83 | | Through CRF output checking Jamie Higgison  11/12/2023 | Joel Gibbs  18/12/23 |
| Check that emissions from EF, MM, Ag Soils residue burning and liming equal total emissions from livestock, organic and inorganic fertiliser, CO2 emissions from urea and liming | https://piritahi.cohesion.net.nz/Sites/POL/NR/CC/AgriculturalGasInventory/2024%20Inventory/Detailled%20Results%20with%20additional%20graphs.xlsx?d=wb5930e2a6d144ba0a1af8a7a16abaa83 | | Through CRF output checking Jamie Higgison  11/12/2023 | Joel Gibbs  18/12/23 |
| Recalculation forms created, effect of recalculations documented, forms checked and signed off | Beef population changes  QC2  <https://piritahi.cohesion.net.nz/Sites/POL/NR/CC/AgriculturalGasInventory/Ag%20Inventory%20Advisory%20Panel/change%20approval%20form%20JA%20Sheep%20and%20Cattle%20Birth%20and%20Slaughter%20Dates.doc?d=w90ef0c8e827b4e899f2e0ff0243824a0>  QC5  <https://piritahi.cohesion.net.nz/Sites/POL/NR/CC/AgriculturalGasInventory/2024%20Inventory/QC5%20Recalculation%20form%20-%20Beef.docx?d=wae99459153a34146939f270e7ae620e7>  Lamb slaughter  QC2  <https://piritahi.cohesion.net.nz/Sites/POL/NR/CC/AgriculturalGasInventory/Ag%20Inventory%20Advisory%20Panel/change%20approval%20form%20JA%20Sheep%20and%20Cattle%20Birth%20and%20Slaughter%20Dates.doc?d=w90ef0c8e827b4e899f2e0ff0243824a0>  QC5  <https://piritahi.cohesion.net.nz/Sites/POL/NR/CC/AgriculturalGasInventory/2024%20Inventory/QC5%20Recalculation%20form%20Sheep.docx?d=wcb25c8cb410f49dbb8fdd578125707ae>  Corrections  QC2  NA  QC5  <https://piritahi.cohesion.net.nz/Sites/POL/NR/CC/AgriculturalGasInventory/2024%20Inventory/QC5%20Recalculation%20form%20Corrections.docx?d=w0909e84742ff49d4aa915abaa1e9b38b>  Migration  QC5  <https://piritahi.cohesion.net.nz/Sites/POL/NR/CC/AgriculturalGasInventory/2024%20Inventory/QC5%20Recalculation%20form%20Migration%20to%20R.docx?d=w389dec3db0054d1ea36b7b67718a05de> | | *Catherine Sangster*  *19/12/23* | *Joel Gibbs*  *22/1/24* |
| Correction of errors in inventory model   * Corrections to dairy population calculations * Corrections to dairy liveweight calculations * Corrections to deer liveweight calculations * Change to energy required for gestation for dairy cattle * Disaggregating N2O emissions from dairy cattle * sheep nitrogen retained in milk * use of final LIC dairy 2021/22 data | Note part of code where correction was made   * Programmes./Dairy\_population.r * Programmes/Calculate\_Dairy\_LWT.r and R/LWT\_Parallel\_Functions.r * Programmes/Calculate\_Deer\_LWT.r * Programmes/Dairy\_Animals\_Dairy\_DMI\_Metrics.r and Programmes/Dairy\_Animals\_Dairy\_DMI\_Metrics\_Regional.r * Programmes/MMS\_Split.r * Programmes./Create\_Sheep\_GHG\_Metrics.r   Note spreadsheet and location within spreadsheet where correction was made | | *Catherine Sangster*  *1/10/2023* | Some improvements checked by Henry Kyle 1/10/2023.  Also checked as part of general checking of outputs by Jamie Higgison 11/12/2023 |

# CRF table preparation

|  |  |  |  |
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| **Checklist** | **File location for 2024 inventory** | **Preparation**  **(sign and date)** | **Checking**  **(sign and date)** |
| Confirm target folder in UN CRF reporter webtool (check with MfE Inventory compiler) | UNFCCC webtool link:  [crfappar5.unfccc.int/crfapp/view/listSubmission.jsf;jsessionid=Nthk2H5Rpvs7ceMvQ465Eauli1aaTGlVUiQmhXdJ.pvacrf03](https://crfappar5.unfccc.int/crfapp/view/listSubmission.jsf;jsessionid=Nthk2H5Rpvs7ceMvQ465Eauli1aaTGlVUiQmhXdJ.pvacrf03) | Jamie Higgison 6/12/2023 | Joel Gibbs  22/1/24 |
| Checking of CRF data tables | Link to CRF tables on piritahi  <https://piritahi.cohesion.net.nz/Sites/POL/NR/CC/AgriculturalGasInventory/2024%20Inventory/NZL_2024_1_20122023_013150%20-%20FINAL.xlsx?d=wff65d4b3104d4ce2be9d8eeb9fb5252d> | Miro Williams 4/12/2023 | 6/12/2023 Jamie Higgison |
| Final upload to CRF reporter | Link to CRF tables on piritahi  <https://piritahi.cohesion.net.nz/Sites/POL/NR/CC/AgriculturalGasInventory/2024%20Inventory/NZL_2024_1_20122023_013150%20-%20FINAL.xlsx?d=wff65d4b3104d4ce2be9d8eeb9fb5252d> | Jamie Higgison 13/12/2023 | Joel Gibbs  22/1/24 |
| Download from CRF reporter and check uploaded accurately | Final outputs from QC10 tool  <https://piritahi.cohesion.net.nz/Sites/POL/NR/CC/AgriculturalGasInventory/2024%20Inventory/QC10%20CRF%20QC%20tools%202024%20Submission%20-%20Agriculture%20-%20Macros%20disabled.xlsx?d=w34416be3bce34f35bff26bca030847a5> | Jamie Higgison 15/01/2024 | Joel Gibbs  22/1/24 |

# Inventory chapter preparation

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| **Checklist** | **File location for 2024 inventory** | **Preparation**  **(sign and date)** | **Checking**  **(sign and date)** |
| Download Chapter 5 template from MfE Teams shared workspace and upload to Piritahi | Chapter 5  <https://piritahi.cohesion.net.nz/Sites/POL/NR/CC/AgriculturalGasInventory/2024%20Inventory/New-Zealands-Greenhouse-Gas-Inventory-1990-2021-Chapters-1-15_CHAPTER_FIVE_updated.docx?d=w6bb3a76be2094f4aa87377ff90dc8233>  Annexes  <https://piritahi.cohesion.net.nz/Sites/POL/NR/CC/AgriculturalGasInventory/2024%20Inventory/New-Zealands-Greenhouse-Gas-Inventory-1990-2022-Annexes.docx?d=w1aa90f1d71f64ebc925fdd5cdbc7bcca>  Chapter 10  [11 Chapter 10 - Recalculations](https://ministryforenvironment.sharepoint.com/:f:/r/sites/MFE-ClimateChangeAnalysis/Shared%20Documents/2024%20NIR/03%20-%20National%20Inventory%20Document/03%20-%20Individual%20chapters/11%20Chapter%2010%20-%20Recalculations?csf=1&web=1&e=eTbBMH) (MfE link)  <https://piritahi.cohesion.net.nz/Sites/POL/NR/CC/AgriculturalGasInventory/2024%20Inventory/Chapter%2010%20Recalculations%20and%20improvements.docx?d=w9d8f148447b044a5bc993003557232ba> | Jamie Higgison  27/11/2023 | Joel Gibbs  18/1/24 |
| Update the present inventory year and all data and % change (highlight text to be changed in yellow) including graph and table captions | Miro Williams 28/11/2023 | Joel Gibbs  18/1/24 |
| Update emissions and percentage change figures | Miro Williams 21/12/2023 I updated numbers in 5.7 | Joel Gibbs  18/1/24 |
| Update text to reflect any updates to the methodology (e.g. improvements approved by Panel) | Catherine 12/1/2024 (not much to update as population calcs are not in CH5) | Joel Gibbs  18/1/24 |
| Update text to reflect recommendations or encouragements in previous ERT reviews | Catherine 12/1/2024 | Joel Gibbs  18/1/24 |
| Graphs   * Units * Legend * Title, including correct years * Numbered sequentially, and referenced in text   Sensible, and agree with written commentary | GHG inventory style guide  [GHG inventory style guide 2024 updated.docx](https://ministryforenvironment.sharepoint.com/:w:/r/sites/MFE-ClimateChangeAnalysis/Shared%20Documents/2024%20NIR/01%20-%20Admin%20and%20Guidance/02%20-%20Guidance/GHG%20inventory%20style%20guide%202024%20updated.docx?d=w16d8940524a04443b3e7fc31ef02d2e1&csf=1&web=1&e=ezsV2R) | Graphs built - Catherine 13/12/2023 | Miro Williams 21/12/2023 I added most of the tables and graphs that were auto generated |
| Tables   * Units * Tables * Title, including correct years * Numbered sequentially, and referenced in text   Sensible, and agree with written commentary | GHG inventory style guide  [GHG inventory style guide 2024 updated.docx](https://ministryforenvironment.sharepoint.com/:w:/r/sites/MFE-ClimateChangeAnalysis/Shared%20Documents/2024%20NIR/01%20-%20Admin%20and%20Guidance/02%20-%20Guidance/GHG%20inventory%20style%20guide%202024%20updated.docx?d=w16d8940524a04443b3e7fc31ef02d2e1&csf=1&web=1&e=ezsV2R) | Miro Williams 21/12/2023 I added most of the tables and graphs that were auto generated | Joel Gibbs  18/1/24 |
| Recalculations in NIR   * High level overview of recalculations provided in 5.1.4 * Detailed explanation of recalculations provided in NIR 5.x.4 of each relevant section   Explanation of improvements in chapter 10 | Chapter 5  <https://piritahi.cohesion.net.nz/Sites/POL/NR/CC/AgriculturalGasInventory/2024%20Inventory/New-Zealands-Greenhouse-Gas-Inventory-1990-2021-Chapters-1-15_CHAPTER_FIVE_updated.docx?d=w6bb3a76be2094f4aa87377ff90dc8233>  Chapter 10  [11 Chapter 10 - Recalculations](https://ministryforenvironment.sharepoint.com/:f:/r/sites/MFE-ClimateChangeAnalysis/Shared%20Documents/2024%20NIR/03%20-%20National%20Inventory%20Document/03%20-%20Individual%20chapters/11%20Chapter%2010%20-%20Recalculations?csf=1&web=1&e=eTbBMH) (MfE link)  <https://piritahi.cohesion.net.nz/Sites/POL/NR/CC/AgriculturalGasInventory/2024%20Inventory/Chapter%2010%20Recalculations%20and%20improvements.docx?d=w9d8f148447b044a5bc993003557232ba> | Catherine  Made tables - 19/12/2023  Writing - 12/1/2024 | Joel Gibbs  18/1/24 |

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| Update QC and planned improvements in NIR text, if needed |  | Catherine 12/1/2024 | Joel Gibbs  18/1/24 |
| References   * Reference and archive checklist updated * References in the NIR listed in reference section * References in the reference section are referenced in the text   *Note: Missing references in Piritahi need to be located prior to September each year before the review commences. Ensure final reports have been published by MPI Publications team and are on the web before September.* | Chapter 5  <https://piritahi.cohesion.net.nz/Sites/POL/NR/CC/AgriculturalGasInventory/2024%20Inventory/New-Zealands-Greenhouse-Gas-Inventory-1990-2021-Chapters-1-15_CHAPTER_FIVE_updated.docx?d=w6bb3a76be2094f4aa87377ff90dc8233> | . Miro Williams 15/01/2024 – I checked the references in ch5, ch10, and annex | Jamie Higgison  1/02/2024 |

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| Summary explanations provided in tables to 10.1.4. | Chapter 10  [11 Chapter 10 - Recalculations](https://ministryforenvironment.sharepoint.com/:f:/r/sites/MFE-ClimateChangeAnalysis/Shared%20Documents/2024%20NIR/03%20-%20National%20Inventory%20Document/03%20-%20Individual%20chapters/11%20Chapter%2010%20-%20Recalculations?csf=1&web=1&e=eTbBMH) (MfE link)  <https://piritahi.cohesion.net.nz/Sites/POL/NR/CC/AgriculturalGasInventory/2024%20Inventory/Chapter%2010%20Recalculations%20and%20improvements.docx?d=w9d8f148447b044a5bc993003557232ba> | Catherine 12/1/2024 | Joel Gibbs  18/1/24 |
| Annex 3 information updated and cross=referenced from chapter | Annexes  <https://piritahi.cohesion.net.nz/Sites/POL/NR/CC/AgriculturalGasInventory/2024%20Inventory/New-Zealands-Greenhouse-Gas-Inventory-1990-2022-Annexes.docx?d=w1aa90f1d71f64ebc925fdd5cdbc7bcca> | Miro Williams 09/01/2024 | Mark  10/01/2024 |

# Peer-review

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| **Checklist** | **File location For 2024 inventory** | **Collected and archived in Piritahi (sign and date)** |
| General Reviewers (breadth of experience):   * Holly Foran * Rachel Read * Amita Fotedar * Shanon Bentley * Renee Rushton * Shania Brooks * Ellie Avery   Reviewers spreadsheet:  <https://piritahi.cohesion.net.nz/Sites/POL/NR/CC/AgriculturalGasInventory/2024%20Inventory/2024%20inventory%20reviewers.xlsx?d=w2d0bcf14890d4088b9be4315d9d792c9> | Chapter 5  <https://piritahi.cohesion.net.nz/Sites/POL/NR/CC/AgriculturalGasInventory/2024%20Inventory/New-Zealands-Greenhouse-Gas-Inventory-1990-2021-Chapters-1-15_CHAPTER_FIVE_updated.docx?d=w6bb3a76be2094f4aa87377ff90dc8233>  Annexes  <https://piritahi.cohesion.net.nz/Sites/POL/NR/CC/AgriculturalGasInventory/2024%20Inventory/New-Zealands-Greenhouse-Gas-Inventory-1990-2022-Annexes.docx?d=w1aa90f1d71f64ebc925fdd5cdbc7bcca>  Chapter 10  [11 Chapter 10 - Recalculations](https://ministryforenvironment.sharepoint.com/:f:/r/sites/MFE-ClimateChangeAnalysis/Shared%20Documents/2024%20NIR/03%20-%20National%20Inventory%20Document/03%20-%20Individual%20chapters/11%20Chapter%2010%20-%20Recalculations?csf=1&web=1&e=eTbBMH) (MfE link)  <https://piritahi.cohesion.net.nz/Sites/POL/NR/CC/AgriculturalGasInventory/2024%20Inventory/Chapter%2010%20Recalculations%20and%20improvements.docx?d=w9d8f148447b044a5bc993003557232ba>  QC4 forms: <https://piritahi.cohesion.net.nz/Sites/POL/NR/CC/AgriculturalGasInventory/2024%20Inventory/QC4%20peer%20review%20checklist%20forms.zip>  Chapter 5 and 10 reviews  <https://piritahi.cohesion.net.nz/Sites/POL/NR/CC/AgriculturalGasInventory/2024%20Inventory/2024%20inventory%20chapter%205%20and%2010%20reviews.zip> | Jamie Higgison  Emailed reviewers with chapter 12/1/2024  Reviews compiled by 19/01/2024  Miro Williams 22/01/2024 I put a lot of the comments from reviewers into the main version and updated some of the text myself following the comments.  Various GHG inventory team members addressed comments before finalising text. |
| Technical Reviewers:   * Gerald Rys – Principal Advisor, Chief Science Advisor * Asher Cook (MfE) * Kim Mashlan * Victoria Lamb * Darran Austin |
| Peer-review comments incorporated |

# Sign-off and release

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| **Checklist** | **File location for 2024 inventory** | **Preparation**  **(sign and date)** | **Checking**  **(sign and date)** |
| 1. Manager review of NIR text | Chapter 5  <https://piritahi.cohesion.net.nz/Sites/POL/NR/CC/AgriculturalGasInventory/2024%20Inventory/New-Zealands-Greenhouse-Gas-Inventory-1990-2021-Chapters-1-15_CHAPTER_FIVE_updated.docx?d=w6bb3a76be2094f4aa87377ff90dc8233>  Annexes  <https://piritahi.cohesion.net.nz/Sites/POL/NR/CC/AgriculturalGasInventory/2024%20Inventory/New-Zealands-Greenhouse-Gas-Inventory-1990-2022-Annexes.docx?d=w1aa90f1d71f64ebc925fdd5cdbc7bcca>  Chapter 10  <https://piritahi.cohesion.net.nz/Sites/POL/NR/CC/AgriculturalGasInventory/2024%20Inventory/Chapter%2010%20Recalculations%20and%20improvements.docx?d=w9d8f148447b044a5bc993003557232ba> | GHG Inventory Team | Joel Gibbs 1/02/2024 |
| 1. Manager approves CRF and NIR to MfE | 2024 CRF tables  <https://piritahi.cohesion.net.nz/Sites/POL/NR/CC/AgriculturalGasInventory/2024%20Inventory/NZL_2024_1_20122023_013150%20-%20FINAL.xlsx?d=wff65d4b3104d4ce2be9d8eeb9fb5252d> | Jamie Higgison  31/01/2024 | Joel Gibbs 1/02/2024 |