This Supplementary File accompanies the manuscript,

Craig, H., Wilson, T., Magill, C., Stewart, C. and Popovich, B. (2021) “Agriculture and forestry impact assessment for tephra fall hazard: fragility function development and New Zealand scenario application”, *Volcanica*, 4(2). pp. 345–367. doi: 10.30909/vol.04.02.345367.

Craig et al. (2021) should be cited if these data are used independently.

Supplementary Material 3: Land cover (ha) and percentage of individual agricultural sector (in the North Island) exposed within each IS at full vulnerability for A) 1995 Ruapehu; B) 1996 Ruapehu; and C) ~1314 AD Kaharoa scenarios.

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| --- | --- | --- | --- | --- | --- | --- |
| **A) 1995 Ruapehu** | **IS0** | **IS1** | **IS2** | **IS3** | **IS4** | **Total area in****isopachs (ha)** |
| **Agricultural sector** | **Area (ha)** | **%** | **Area (ha)** | **%** | **Area (ha)** | **%** | **Area (ha)** | **%** | **Area (ha)** | **%** |
| Cereals | 4848.2 | 17.0 | 0 | - | 0 | - | 0 | - | 0 | - | 4848.2 |
| Non-tree fruit | 548.7 | 14.9 | 0 | - | 0 | - | 0 | - | 0 | - | 548.7 |
| Tree fruit | 6950.2 | 20.3 | 0 | - | 0 | - | 0 | - | 0 | - | 6950.2 |
| Root vegetables | 2628.7 | 23.3 | 0 | - | 0 | - | 0 | - | 0 | - | 2628.7 |
| Leafy vegetables | 0 | 0 | 46.0 | 2.0 | 0 | - | 0 | - | 0 | - | 46.0 |
| Viticulture | 3308.3 | 34.4 | 0 | - | 0 | - | 0 | - | 0 | - | 3308.3 |
| Non-dairy pastoral | 1345984.0 | 24.0 | 1529.423 | 0.0 | 0 | - | 0 | - | 0 | - | 1347514.0 |
| Dairying | 104640.8 | 7.3 | 2991.665 | 0.2 | 0 | - | 0 | - | 0 | - | 107632.4 |
| Forestry | 522640.8 | 45.8 | 14449.01 | 1.3 | 0 | - | 0 | - | 0 | - | 537089.9 |
| Total Area (ha) | 1991596.0 | - | 18970.1 | - | 0 | - | 0 | - | 0 | - | 2,010,566.0 |

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| --- | --- | --- | --- | --- | --- | --- |
| **B) 1996 Ruapehu** | **IS0** | **IS1** | **IS2** | **IS3** | **IS4** | **Total area in****isopachs (ha)** |
| **Agricultural sector** | **Area (ha)** | **%** | **Area (ha)** | **%** | **Area (ha)** | **%** | **Area (ha)** | **%** | **Area (ha)** | **%** |
| Cereals | 2837.0 | 9.9 | 14.05178 | 0.0 | 0 | - | 0 | - | 0 | - | 2851.0 |
| Non-tree fruit | 517.2 | 14.0 | 0 | - | 0 | - | 0 | - | 0 | - | 517.2 |
| Tree fruit | 9161.9 | 26.8 | 0 | - | 0 | - | 0 | - | 0 | - | 9161.9 |
| Root vegetables | 433.9 | 3.8 | 0 | - | 0 | - | 0 | - | 0 | - | 433.9 |
| Leafy vegetables | 0 | 0 | 269.9 | 11.9 | 0 | - | 3.9 | 0.0 | 0 | - | 273.8 |
| Viticulture | 20.3 | 0.2 | 11.45662 | 0.1 | 0 | - | 0 | - | 0 | - | 31.8 |
| Non-dairy pastoral | 570679.2 | 10.2 | 7229.098 | 0.1 | 0 | - | 0 | - | 0 | - | 577908.3 |
| Dairying | 251167.3 | 17.5 | 2378.641 | 0.2 | 0 | - | 0 | - | 0 | - | 253546.0 |
| Forestry | 170520.3 | 14.9 | 1115.873 | 0.1 | 0 | - | 0 | - | 0 | - | 171636.1 |
| Total Area (ha) | 1005611.0 | - | 10745.22 | - | - | - | 3.9 | - | 0 | - | 1,016,360.0 |

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| --- | --- | --- | --- | --- | --- | --- |
| **C) ~1314 AD Kaharoa** | **IS0** | **IS1** | **IS2** | **IS3** | **IS4** | **Total area in****isopachs (ha)** |
| **Agricultural sector** | **Area (ha)** | **%** | **Area (ha)** | **%** | **Area (ha)** | **%** | **Area (ha)** | **%** | **Area (ha)** | **%** |
| Cereals | 0 | - | 0 | - | 0 | - | 4880.7 | 17.1 | 1851.6 | 6.5 | 6732.3 |
| Non-tree fruit | 0 | - | 0 | - | 660.5 | 17.9 | 599.1 | 16.2 | 352.6 | 9.6 | 1612.3 |
| Tree fruit | 0 | - | 18603.0 | 54.5 | 0 | - | 1314.1 | 3.8 | 0 | - | 19917.1 |
| Root vegetables | 0 | - | 0 | - | 1138.8 | 10.1 | 44.0 | 0.4 | 50.6 | 0.4 | 1233.4 |
| Leafy vegetables | 0 | - | 0 | - | 0 | - | 0 | - | 590.9 | 25.8 | 590.9 |
| Viticulture | 0 | - | 2208.9 | 22.9 | 0 | - | 88.2 | 0.9 | 10.7 | 0.1 | 2307.7 |
| Non-dairy pastoral | 0 | - | 563981.0 | 10.1 | 516416.9 | 9.2 | 27769.7 | 0.5 | 13269.3 | 0.2 | 1121436.9 |
| Dairying | 0 | - | 166389.7 | 11.6 | 141389.2 | 9.9 | 0 | - | 37421.9 | 2.6 | 345200.8 |
| Forestry | 0 | - | 396115.2 | 34.7 | 0 | - | 143.4 | 0.0 | 0 | - | 396258.6 |
| Total Area (ha) | 0 | - | 1147297.8 | - | 659605.4 | - | 34839.3 | - | 53003.4 | - | 1,895,290.1 |