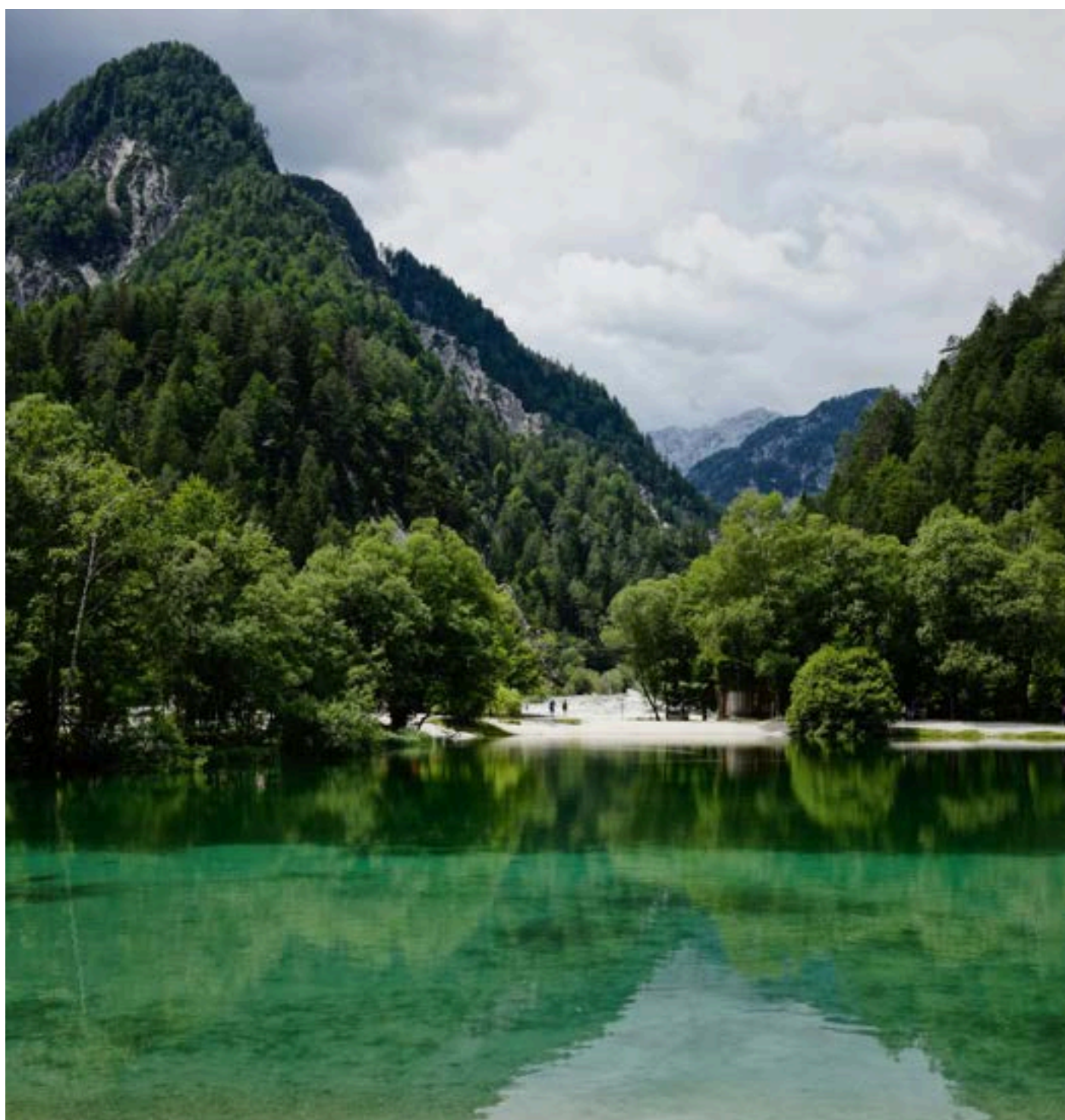


# W Indigenous Involvement in New Zealand's Environmental Policy Decisions

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## Abstract

Historically, in the policy management space, indigenous people, knowledge, and experiences have been neglected. There have been attempts made to bring indigenous voices to the table. This case study analysis aims to determine whether organizations that seek to bring indigenous perspectives to the forefront of environmental protection processes are successful at this objective. We analyzed minutes from watershed management committees in New Zealand, which include indigenous voices. Two coders independently coded the meeting minutes to identify indigenous voices across groups and over 12 years. Results show that indigenous knowledge was scarcely used in the decision-making process in favor of experiential knowledge. Of the 221 coded presentations recorded across 70 meetings, indigenous knowledge was observed only 17.1% of the time, and experiential knowledge was observed 31.4% of the time. While experiential knowledge provides value in policy construction, scholarship emphasizes the importance of policy designers in incorporating the historic, place-based knowledge that indigenous cultures uniquely possess.



## Introduction

For nearly a millennium, the Māori people have lived in Aotearoa, and since the mid-19<sup>th</sup> century, New Zealand has been a predominantly sheep-farming nation. However, in the second half of the 20<sup>th</sup> century, cattle farming operations scaled up significantly. This had a massive negative environmental impact, including, but not limited to, pollution of New Zealand's pristine water systems that flow from the Southern Alps, increased nitrate levels, and runoff. To address these issues, the New Zealand government attempted several forms of governance to varying degrees of success. In roughly 2010, the Environment Canterbury Regional Council (ECan) launched the Canterbury Water Management Strategy (CWMS). This form of collaborative governance focused on bringing in scientific experts, community members, other stakeholders, and the indigenous Māori people. Leading to the following research questions:

1. How frequently is Indigenous knowledge used in New Zealand's collaborative watershed governance?
2. Does the frequency of incorporating Indigenous knowledge change over time?

## Literature Review

Governing common-pool resources is challenging, especially when considering additional complex factors such as food networks, global capital, and the historical disenfranchisement of people. However, previous research suggests that collaborative governance and the integration of indigenous knowledge into decision-making may lead to more equitable outcomes (Knootz et al., 2025; Robson-Williams et al., 2022). In 1999, Letey published a case study regarding the decision-making process regarding the San Jaoquian Valley Drainage Program (Letey, 1999). This case study is an exemplary example of natural science not being incorrect but also not necessarily meeting the needs of the people, as decisions guided only by natural science would. Letey carefully monitored community advisory groups regarding the San Jaoquian Valley Drainage Program, how their decisions guided policy, and how natural scientists interacted with political decision-makers (Letey, 1999). He found that not all decisions were grounded in natural science and that other human factors also influenced them (Letey, 1999). Letey concludes that it is perhaps not the job of political decision-makers or the general populace to be completely literal about matters of natural science, but rather the responsibility of scientists to be aware of how the human condition affects science (Letey, 1999). Robson-Williams et al. describe previous attempts to govern water systems in the New Canterbury of New Zealand and how these attempts did not achieve the desired result of cleaner water (2022). Koontz states that the current system for managing natural freshwater ecosystems (at the time of writing) illustrates the possibilities and pitfalls of collaborative governance (2024). Robson-Williams et al. attribute the success of the current water management system in New Canterbury to the inclusive, diverse range of voices that Environment Canterbury brings to collaborative governance efforts (2022). Letey concludes that it is perhaps not the job of political decision-makers or the general populace to be completely literal about matters of natural science, but rather the responsibility of scientists to be aware of how the human condition affects science (Letey, 1999). Robson-Williams et al. describe previous attempts to govern water systems in New Zealand and how these attempts did not achieve the desired result of cleaner water (2022). Koontz states that the current system for managing natural freshwater ecosystems (at the time of writing) illustrates the possibilities and pitfalls of collaborative governance (2024). Robson-Williams et al. attribute the success of the current water management system in New Canterbury to the inclusive, diverse range of voices that Environment Canterbury brings to collaborative governance efforts (2022). There is little doubt that these systems of collaborative governance and community engagement are effective, as they have remained largely unchanged for roughly 15 years; members of collaborative watershed Management groups state the importance of indigenous knowledge in collaborative governance (Koontz et al., 2025). However, there is a strong emphasis on including the indigenous Māori people and their knowledge of the land in this decision-making process. After 15 years of existence, it should be called into question whether ECan has followed through on its promise to bring indigenous knowledge into the decision-making process and to accord it the same respect as other types of knowledge, such as scientific and experiential knowledge.

## Methods

We conducted a coded content analysis of 3 of New Zealand's regional watershed management committee meeting minutes to examine whether the use of Indigenous knowledge changed over time. Each coded entry represented a presentation from the agenda and/or meeting minutes. Two coders independently coded the presentations using a shared codebook to identify knowledge types, including Indigenous, experiential, and scientific knowledge. A meeting was counted as using a knowledge type if at least one presentation from that meeting included that category.

The final data set included 67 meetings and 213 coded presentations across two time periods: 2011–2013, with 32 meetings and 99 presentations, and 2021–2023, with 35 meetings and 114 presentations. We compared the frequency and percentage of meetings that incorporated Indigenous knowledge in each period, then repeated the same process for experiential knowledge to provide a comparison

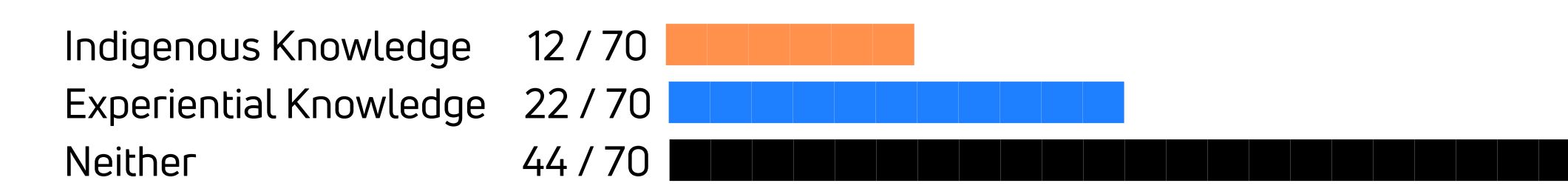
## Discussion

The results suggest that the incorporation of Indigenous knowledge did not meaningfully increase over time. In 2011–2013, Indigenous knowledge appeared in 6 of 32 meetings, or 18.8%. In 2021–2023, it again appeared in 6 meetings, but out of 35 total meetings, or 17.1%. This indicates that Indigenous knowledge remained relatively limited across both periods, even within watershed governance committees intended to include Indigenous perspectives.

The comparison with experiential knowledge highlights this gap. Experiential knowledge increased from 21.9% of meetings in 2011–2013 to 42.9% in 2021–2023, while Indigenous knowledge stayed nearly unchanged. This suggests that committees became more open to some forms of lived or practical knowledge, but not necessarily to Indigenous knowledge systems. Overall, the findings point to a difference between including Indigenous perspectives structurally and actually incorporating Indigenous knowledge into decision-making.



## Results



Category	Meetings	Percent of 70 Meetings
Total meetings coded	70	100%
Meetings with Indigenous Knowledge	12	17.10%
Meetings with Experiential Knowledge	22	31.40%
Meetings with both	8	11.40%
Indigenous only	4	5.70%
Experiential only	14	20.00%
Neither Indigenous nor experiential	44	62.90%

### n = 70 meetings

Knowledge Type	Coded Rows	Percent of 221 Rows
Indigenous Knowledge	16	7.20%
Experiential Knowledge	32	14.50%

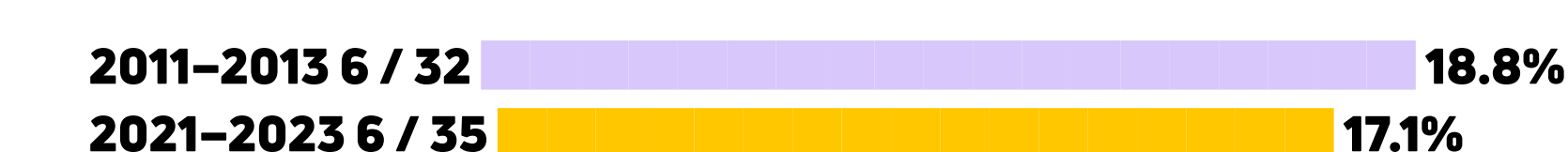
Knowledge Type	Coded Presentations	Percent of 221 Presentations
Indigenous Knowledge	16	7.20%
Experiential Knowledge	32	14.50%

### n = 221 Presentations

Time Period	Total Meetings	Meetings with Indigenous Knowledge	Percent of Meetings
Early set: 2011–2013	32.000	6.000	18.800%
Later set: 2021–2023	35.000	6.000	17.100%

### n = 67 meetings

#### Meetings using Indigenous Knowledge



## Key numbers

- 70 total meetings
- 12 meetings used Indigenous knowledge = 17.1%
- 22 meetings used experiential knowledge = 31.4%
- Experiential knowledge appeared in 10 more meetings
- Experiential knowledge was used about 1.83x as often as Indigenous knowledge
- 8 meetings used both
- 44 meetings used neither

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