

Integrating Impact Assessment into Farm Planning¹ⁱ

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Introduction

New Zealand's variable climate and young topography mean that its farmers are well-attuned to and prepared for 'normal' natural adverse environmental events. However, seismic events over the last decade coupled with the apparent exacerbation of adverse climatic events due to climate change have severely tested farmers' resilience. A project was initiated under the National Science Challenge – Resilience to Nature's Challenges (RNC) to develop a tool to assist farmers to develop Resilient Farm Plans (RFP). This project has been continued and expanded as a key research theme in Lincoln University's Centre of Excellence in Designing, Future Productive Landscapes (CDFPL).

Impact Assessment in rural New Zealand

In New Zealand, Impact Assessment in relation to farming has taken two forms:

- assessment of the impact of non-farming activities on rural productive land (e.g., effects of subdivisions or network utilities), and
- the effects of farming on the environment (except its impact on climate change).

The latter converts the impact assessment into Farm Environment Plans, usually with the assistance of consultant farm advisors. To obtain resource consents to allow farming activities, in some regions, requires a FEP. They are also being required as part of good management practice by some companies or industry sectors..

RFPs

Resilient Farm Plans (RFP) involve assessing the impact of significant adverse natural events (SANE) on farming livelihoods. The assessment results in a plan of action (the RFP) to be better prepared to respond to and recover from a SANE.

Kendall & Cairns (2013) in the UK used consultant-driven scoring systems to build farm resilience plans for climate change. The New Zealand approach developed through the RNC, however, is based on sharing experience and lessons learnt from experiencing a SANE. At its heart are three principles:

- Assessment of vulnerability is best done by the farmer
- Resilient farm planning should be voluntary and cost efficient
- Shared research and lived experience should inform the process.

Creating the RFP Tool

A tool to aid farmers in developing their RFP was developed through examining the lessons learnt from events like the Kaikoura earthquake and significant drought or storm events. The RFP tool is based on

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the five capitals of the Sustainable Livelihood Framework: Financial, Physical, Social, Human, and Natural.

Data was drawn from literature reviewed,, interviews, public meetings. casual conversations and a workshop of farm advisors. The project links with and draws from NZ Federated Farmers experience in developing its Emergency Toolkit for Farmers.

The RFP tool comprises a set of generic questions, the response to which are applicable to all types of event, and a second set that are specific to particular types of event (e.g. severe gales).

Testing the RFP Tool

A prototype set of questions to guide farmers in developing their RFP was tested on three farmers in Hurunui in mid-2019..The focus was on drought, fire and earthquakes. Each farmer was taken through the set of questions and drew up an RFP with the researcher during the process. The farmers were then asked a series of questions to evaluate whether the tool: adequately covered hazards and the impacts of climate change, improved disaster risk reduction planning for the farm, was sufficiently context specific, and was easy to use.

Longer term testing of the tool is commencing in 2020 at Mount Grand sheep station (Central Otago) and Ashley Dene research farm (Lincoln, Canterbury) as part of the CDFPLs research into developing on farm resilience at each farm.

Results

The farmers' responses were classified in terms of whether the tool "was not", "was somewhat" or "was" effective in terms of each variable evaluated. The results were strongly in favour of the tool. No one recorded that it was not effective. They were especially positive about its utility as a voluntary module that could be efficiently prepared and monitored with a farm advisor when preparing and auditing their FEP. It is important to recognize that farmers do have practices for managing risks of disaster, but these farmers all commented on the value of having an actual written plan and that the tool had made them think of things they had not thought about (e.g., emergency procedures for farm visitors).

Conclusions

Impact assessment is now being undertaken at the individual farm level in most parts of New Zealand. This is to assess the impacts farms are having on their environment and to prepare Farm Environment Plans (FEP). At present these do not include consideration of the effects of farming activities on climate change and consequently mitigation measures are not a focus. The preparation of FEP provides an opportunity to assess the potential impacts of natural hazards, especially in the context of their exacerbation due to climate change (e.g., drought and wildfire), and develop Resilient Farm Plans (RFPs) to mitigate such threats.The tool developed through the RNC and CDFPL can strengthen the resilience of farm livelihoods.

References

Kendal, R. & Cairns, I. 2013. *Climate change farm resilience planning* Natural England Commissioned Reports Number 120.

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