

What communities can do

Regional adaptation - support local partnerships and actions aimed at building resilience

Development of region-wide resilience requires partnerships between communities, industry groups and statutory organisations. Everyone needs to be working together.

Economic development

Making a living is a necessity but long-term resilience requires a more integrated approach involving communities and care for the environment.

Environmental protection and enhancement

There needs to be forward planning that takes into account 'what-if' scenarios of climate change. Decisions need to be made on what proactive adaptations are needed. What are the priorities for protection and enhancement of the environment?

Social interactions

Involving people and working together develops mutual respect. Anything is possible with goodwill and respect for other points of view.

Everyone has a point of view - we need to be listening to each other more.

Education for a resilient and sustainable future

The overriding need is for education, particularly of the next generation, and effective communication.

Urban/rural development

An integrated land management approach is needed with rural and urban communities working together.

Water

Regional water security and quality issues need to be addressed for the future. A whole-catchment approach is needed for the management of water. Everyone needs to play their part.

Biosecurity

Increased biosecurity threats will have local, regional and national costs. A range of solutions will be needed including more border controls, people working together, sharing of information between regions, and building ecological resilience.

Biodiversity

Well-planned biodiversity protection and enhancement will contribute to the development of resilience.

Infrastructure

There needs to be smart forward planning for flood protection, roading, power, water reticulation, coastal erosion protection, transportation.

Energy

Focus on renewable energy/increased efficiency. Develop regional energy plans. Support on-farm/local power generation through wind farms, solar power, micro hydro systems.

Waste management

A change of thinking is needed with waste management. There needs to be more recycling of water and rubbish.

Some good examples

There are some excellent examples of community or regional government initiatives that are consistent with the development of regional resilience.

- The Coast Care BOP Programme: www.envbop.govt.nz (look under Coast) or phone 0800 368 267.
- The Hawke's Bay Regional Council Land Management Group: www.hbrc.govt.nz (look under Land) or phone 0800 108 838
- The Environment Canterbury Living Streams Programme: www.ecan.govt.nz/Our+Environment/Land or phone 800 324 636.
- EnviroSchools: www.enviroschools.org.nz or phone 07 839 5605. The vision of EnviroSchools is 'a generation of innovative and motivated young people, who instinctively think and act sustainably'.
- Integrated Catchment Management Project: www.landcare.org.nz/integrated_catchment_management/index.htm or phone 0508 526 322.

Adapting to Climate Change in Eastern New Zealand

What is adaptation?

Adaptation is what people and communities can be doing through positive actions and interactions to address the likely effects of climate change. We all need to work on shifting our thinking to the next 50 to 100 years and focusing on the development of local and regional resilience.

What is climate change?

Climate change has occurred over millennia but there is now an unmistakable influence on climate from a rapidly increasing world population and its use of resources. In a few generations humankind is in the process of exhausting fossil fuel reserves that were generated over several hundred million years. More greenhouse gases, such as carbon dioxide, in the atmosphere are enhancing the natural greenhouse effect.

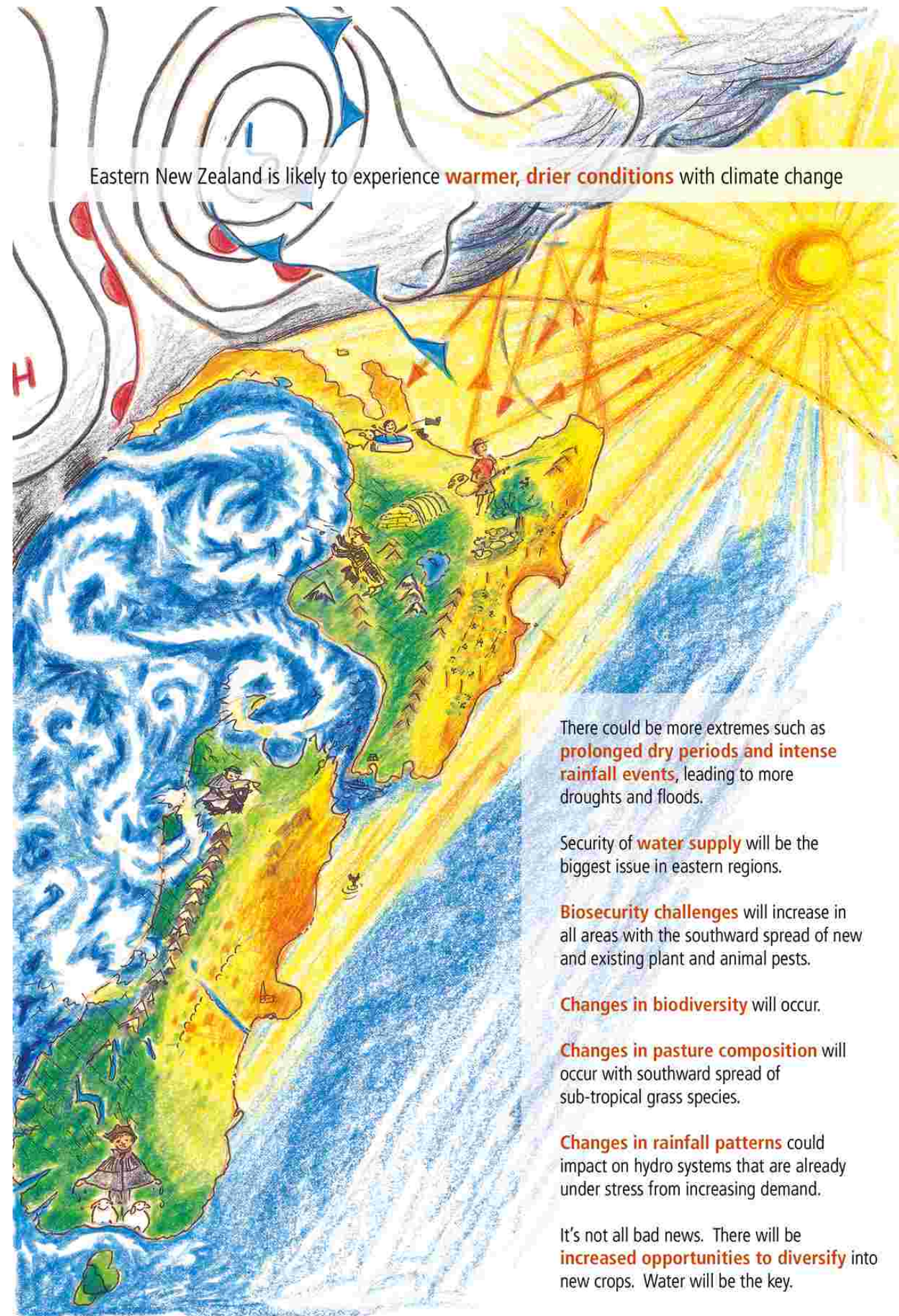
The consequence of the enhanced greenhouse effect is climate change. Climate change is likely to bring wetter average conditions in the west and drier average conditions in the east of New Zealand. By 2050 temperatures could be up to 1°C higher on average in the east and possibly of the order of 10 percent drier on average. These seemingly small shifts in temperature and rainfall could lead to significant changes in the occurrence of extreme weather events. The consequence could be increased drought and flood risk. The latter could occur even with drier average conditions.

This brochure addresses three further questions:

- ▶ What will be the impacts and opportunities?
- ▶ What can you do to adapt to climate change?
- ▶ What can communities do to adapt to climate change?



Projected Changes & Impacts in Eastern New Zealand



Eastern New Zealand is likely to experience **warmer, drier conditions** with climate change

There could be more extremes such as **prolonged dry periods and intense rainfall events**, leading to more droughts and floods.

Security of **water supply** will be the biggest issue in eastern regions.

Biosecurity challenges will increase in all areas with the southward spread of new and existing plant and animal pests.

Changes in biodiversity will occur.

Changes in pasture composition will occur with southward spread of sub-tropical grass species.

Changes in rainfall patterns could impact on hydro systems that are already under stress from increasing demand.

It's not all bad news. There will be **increased opportunities to diversify** into new crops. Water will be the key.

What you can do (and what proactive farmers are already doing)

Adaptation on the farm - develop a resilient system

'Success comes from making a decision to act and getting the timing right.'

Focus on a flexible, balanced approach that addresses the economy, ecology and social well-being of the farm.

Economy

- Do what you can afford now but be mindful of the future.
- Don't have all your eggs in one basket.

Ecology

- Match land use with the limitations and potential of the land.

Social well-being

- Celebrate successes, enjoy what you are doing, live a balanced life.

Information and support

The following are some key information and support services.

- **Sustainable Farming Fund:** www.maf.govt/sff
Many good projects of relevance to development of greater on-farm resilience are being supported by the MAF Sustainable Farming Fund.
- **Sustainable Management Fund:** www.smf.govt.nz
The Ministry for the Environment has supported projects on land management, fresh water quality and biodiversity enhancement, amongst other topics

Regional Council land management information and support

- **Environment Bay of Plenty:** www.envbop.govt.nz, click on Land
- **Hawke's Bay Regional Council:** www.hbrc.govt.nz, click on Land
- **Environment Canterbury:** www.ecan.govt.nz/Our+Environment/Land

For other Regional Councils go to the Local Government website to find relevant website and contact details: www.localgovt.co.nz

- **Farm Forestry Association:** www.nzffa.org.nz
- **New Zealand Landcare Trust:** www.landcare.org.nz
- **Ballance Farm Environment Awards:** www.ballance.co.nz/fea.html

Forestry/Trees

Trees provide protection systems. Plant trees for shelter and shade, retire degraded land and plant with trees, fence and plant riparian areas, plant trees for drought relief.

Water

Develop efficient water storage and reticulation systems, ensure flood and erosion protection, improve water quality.

Diversification

There are many options for diversification but it needs to be in keeping with the land type and resource base of the farm. Options include diversification of production and ecotourism.

Soil

Focus on smart fertility management, build up organic matter, and fence to land classes.

Pasture

Aim for greater pasture diversity, including a diversity of species and age of the pasture. Combine this with edible shrubs and a flexible stocking policy. The whole picture needs to be supported with effective on-farm research.

Stock management

Develop a flexible and diverse stocking policy.

Cropping

Diversify cropping options to match soil and climate and to provide a store for times of shortage.

Infrastructure

A good infrastructure is critical both for effective management and to cope with climatic extremes such as extreme rainfall and flooding.

Energy

Aim for household and farm energy efficiency and self sufficiency.

Waste management

Develop a farm-based waste and sewage treatment system. Focus on recycling and create composting sites.