Climate services for Agriculture – Lessons from New Zealand and Samoa

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Some typical climate products & services

- Access to climate data
- Up-to-date line plots
- Last-15-days and month-to-date maps
- Long-term climate maps
- Forecasts for the next 15 days
- Seasonal climate outlooks
- Scenarios for future climate
- General information

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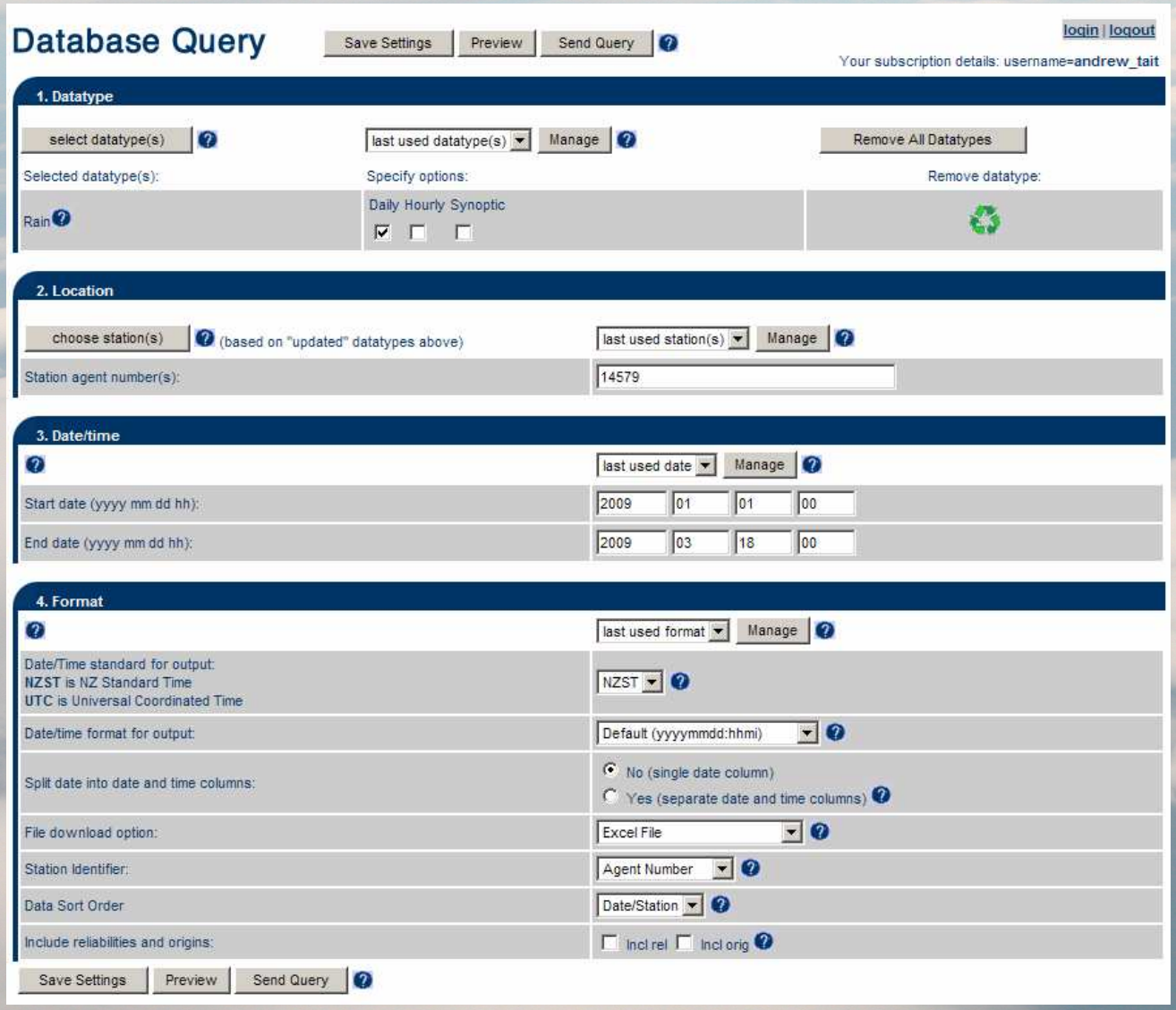
Access to climate data



http://cliflo.niwa.co.nz

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Access to climate data

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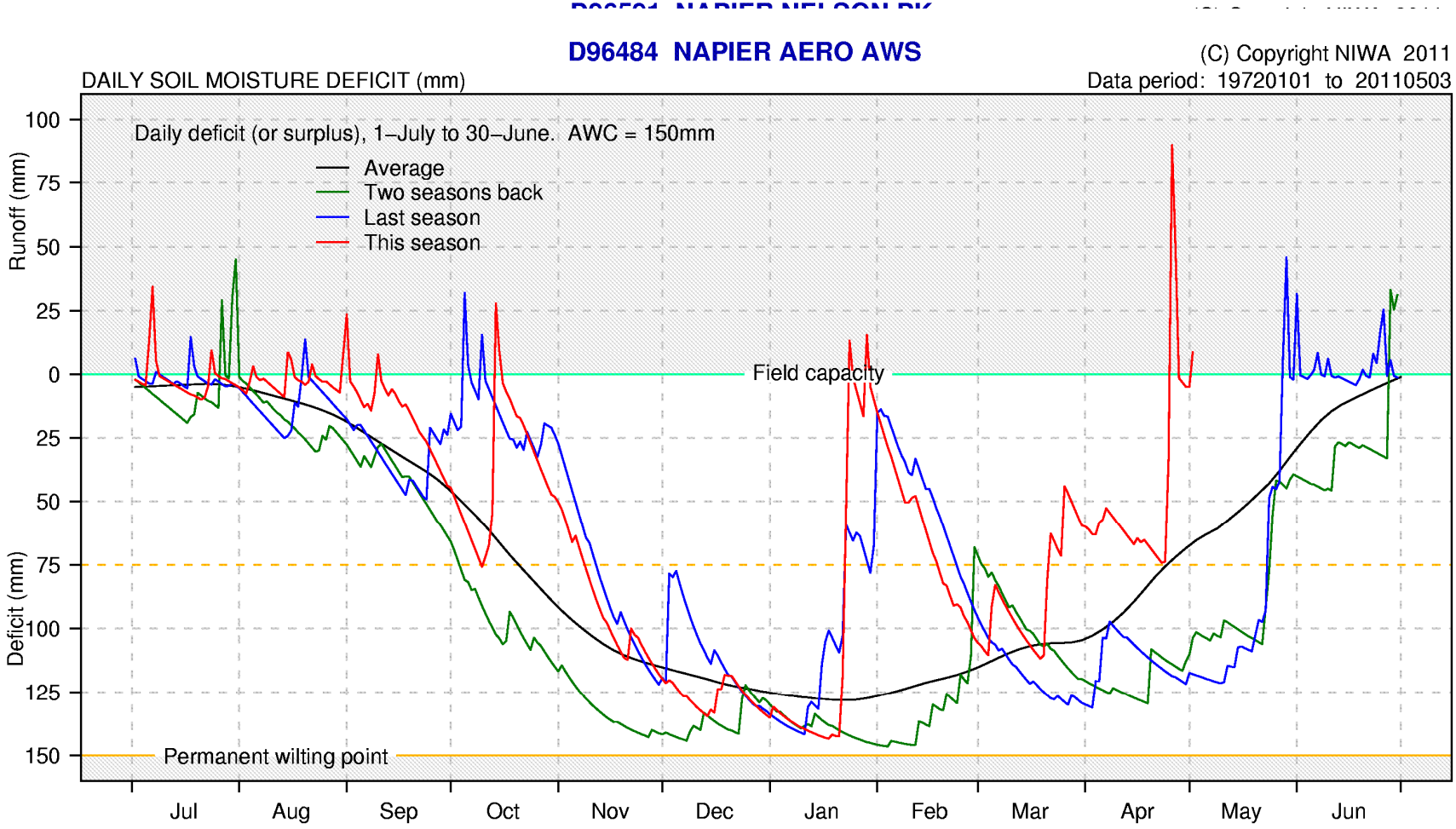
Up-to-date line plots



http://climate-explorer.niwa.co.nz

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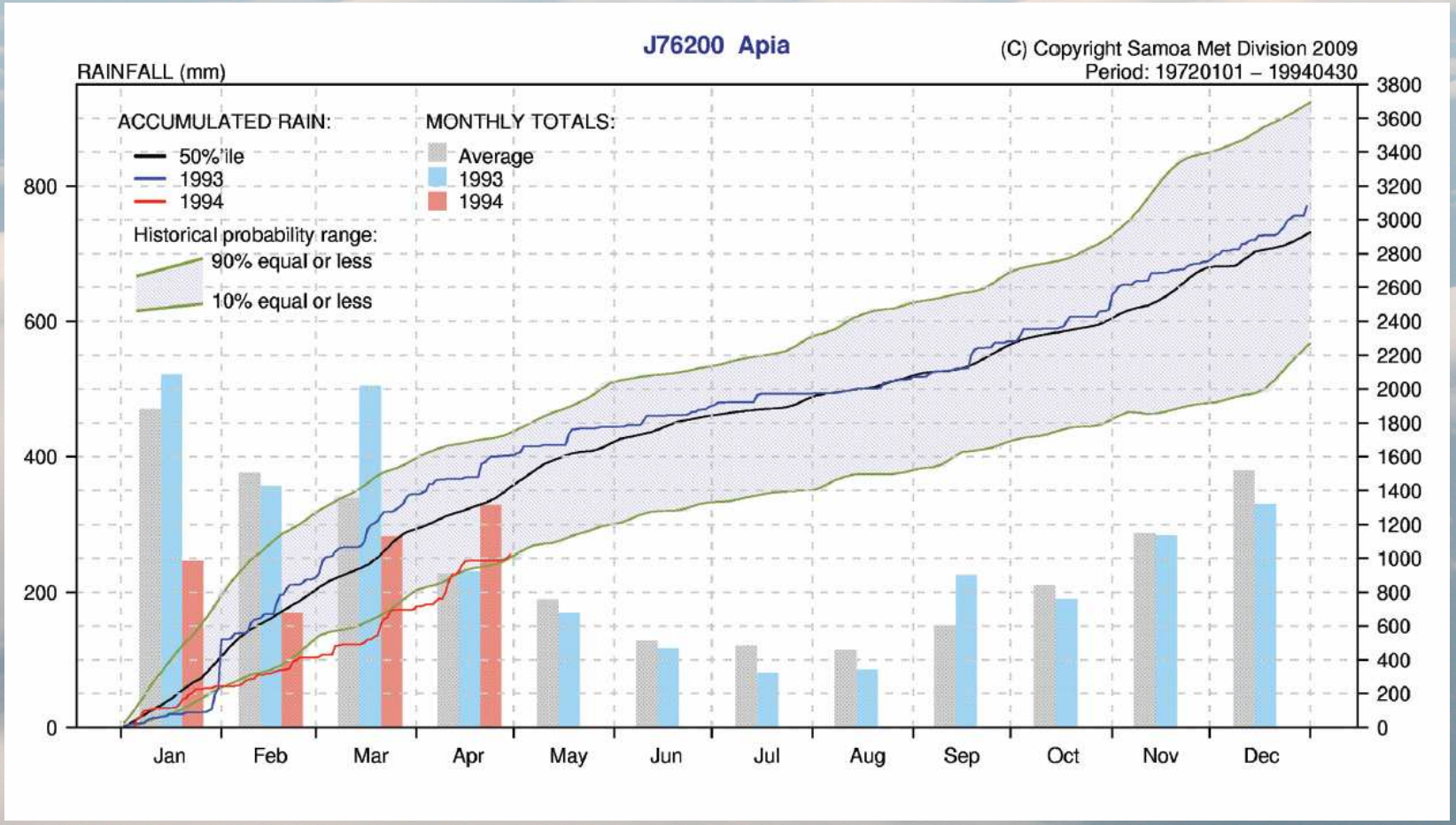
Up-to-date line plots



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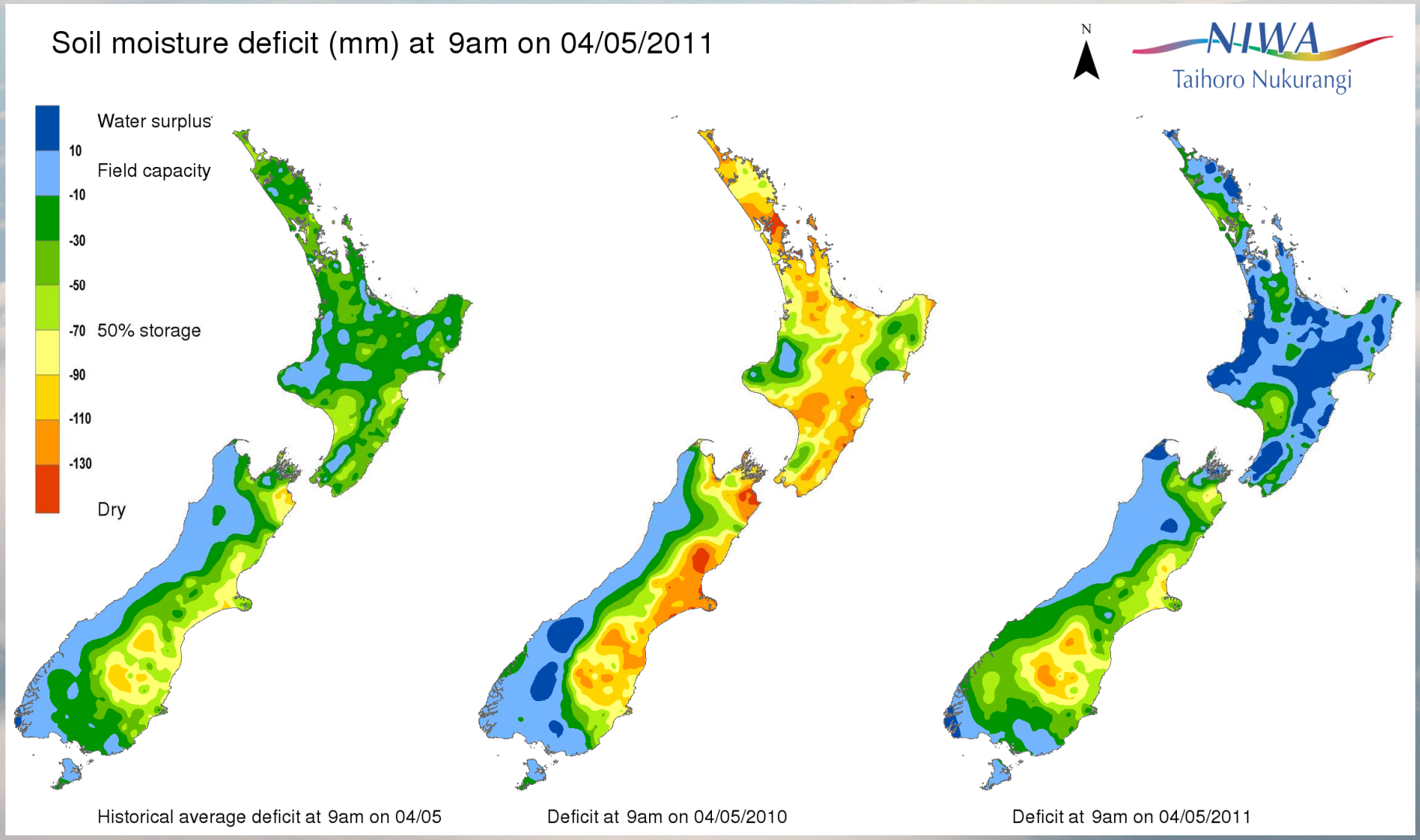
Up-to-date maps



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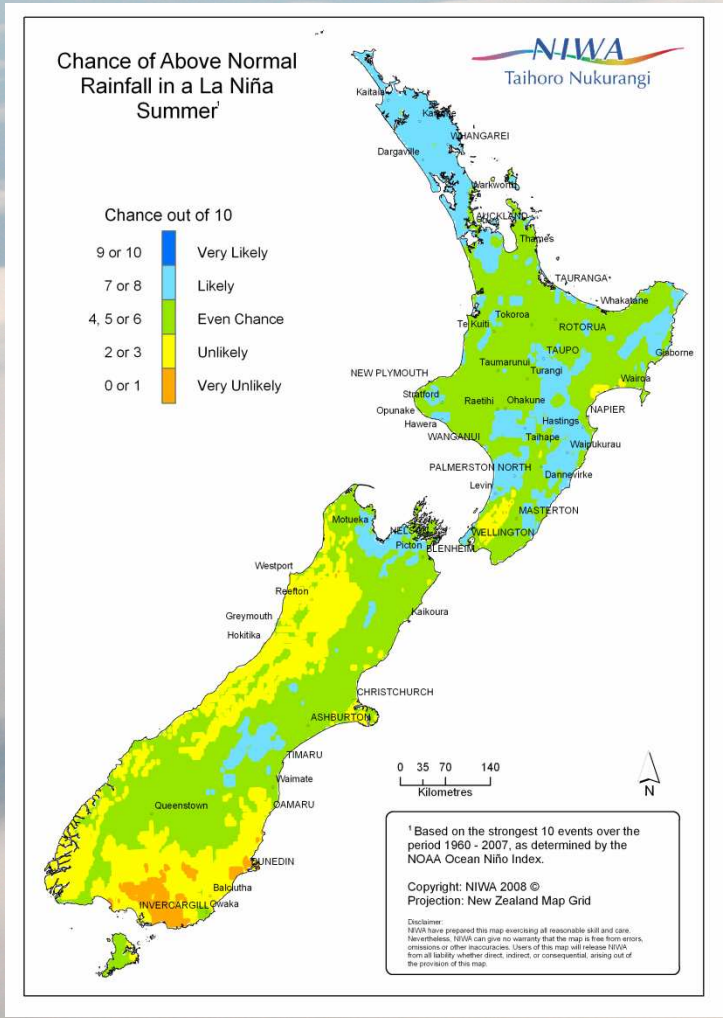
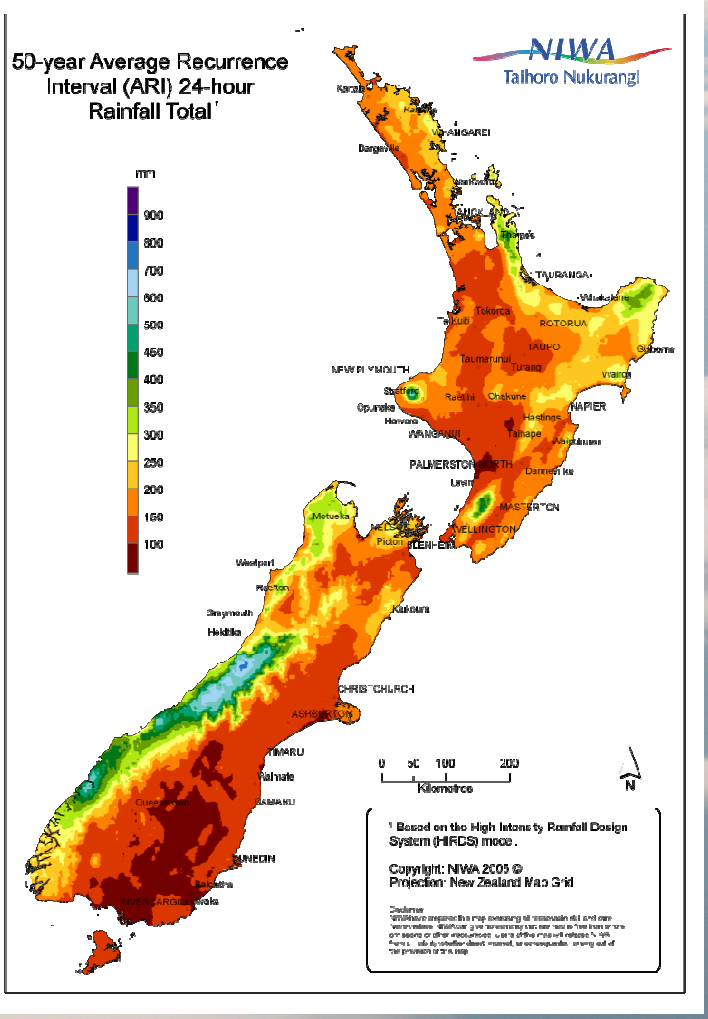
Long-term climate maps





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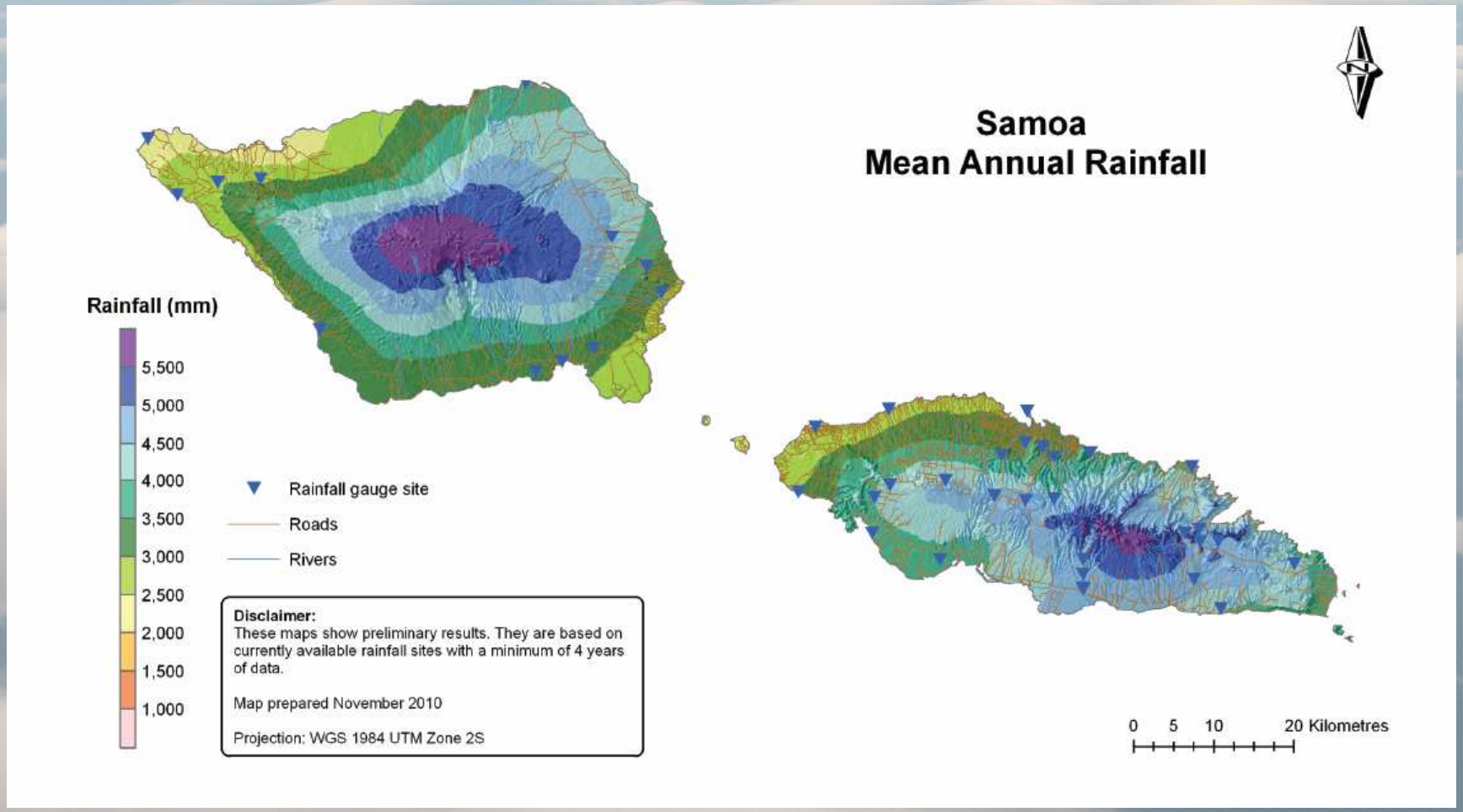

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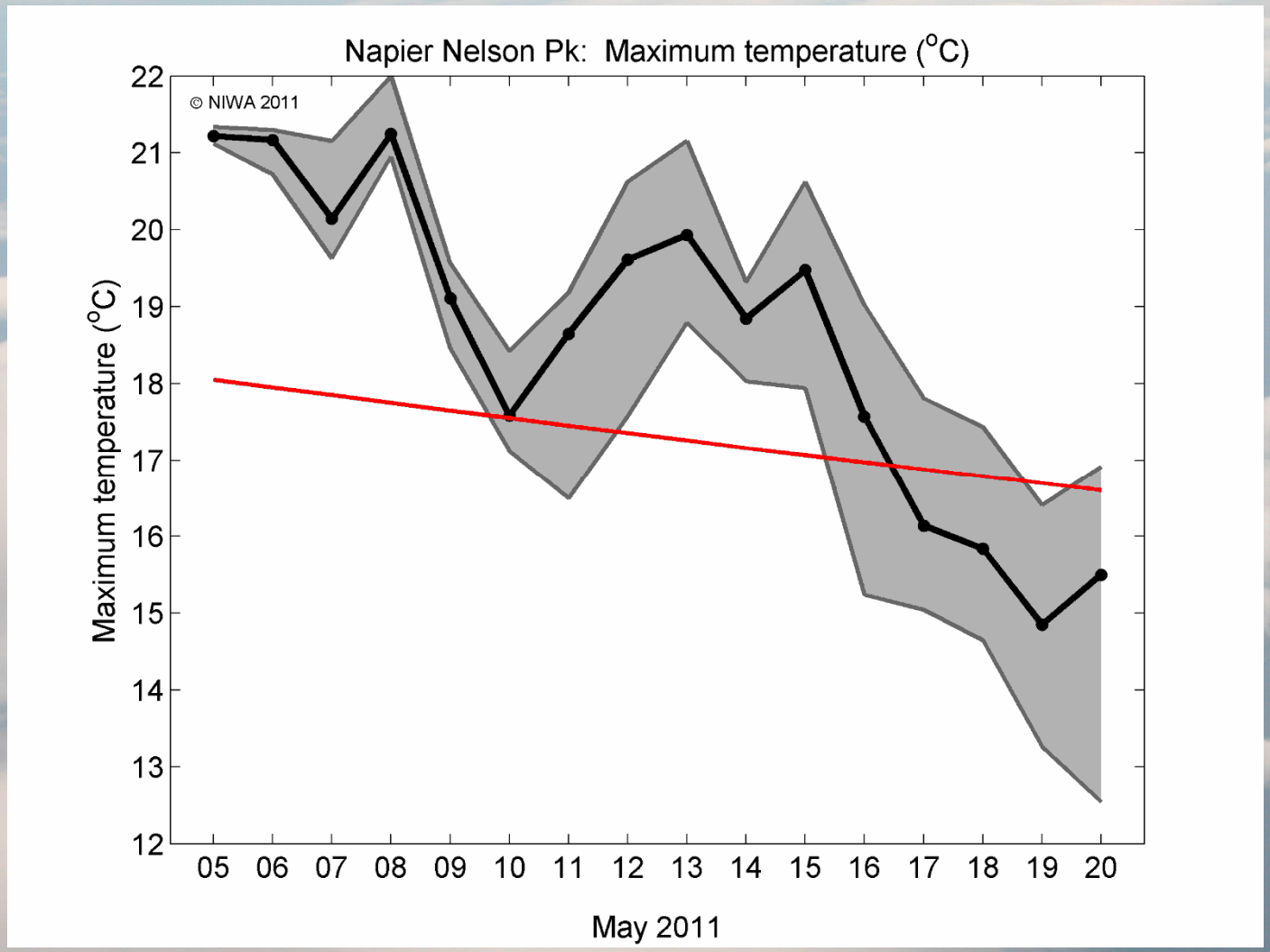
15-day forecast plots



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Seasonal climate outlooks

Outlook for May-July 2011

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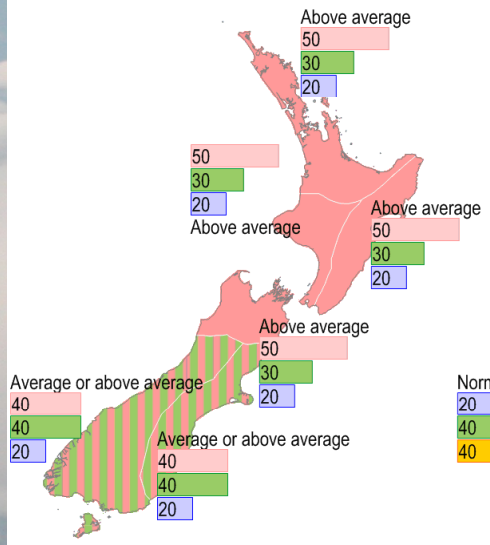
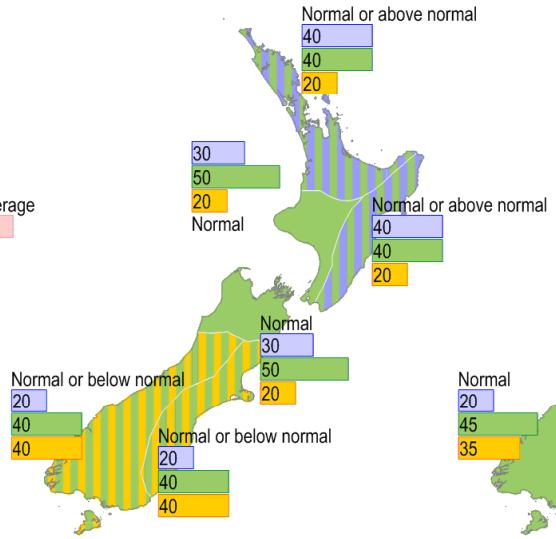
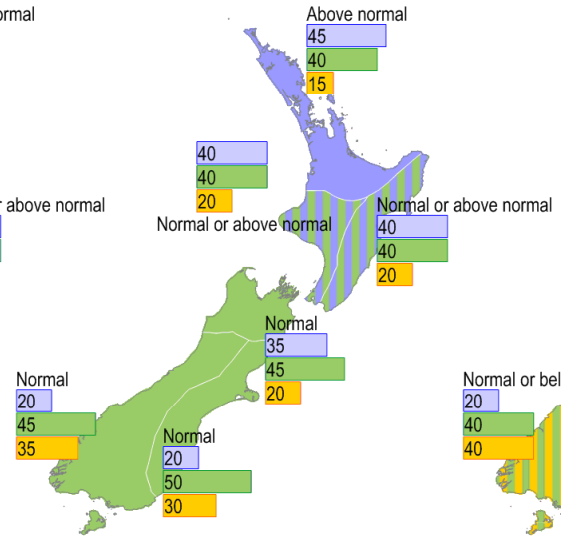
Mean air temperature



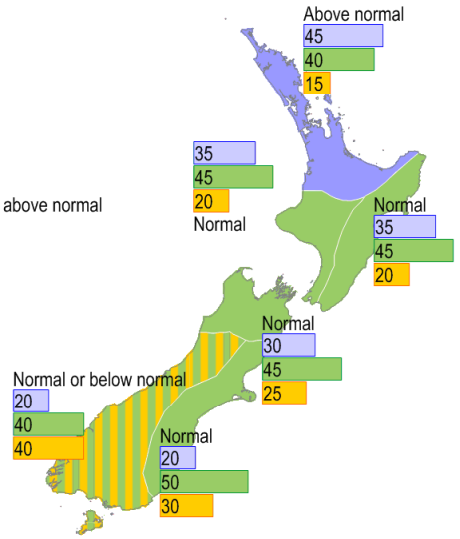
Rainfall



Available soil moisture



River flows



Key to maps (example interpretation)

Below normal

Upper tercile: 20% chance of above normal 20
Middle tercile: 30% chance of normal 30
Lower tercile: 50% chance of below normal 50

In this example the climate models suggest that below average conditions are likely (50% chance of occurrence), but, given the variable nature of the climate, the chance of normal or above normal conditions is also shown (30% and 20% repectively).

http://www.niwa.co.nz/ncc

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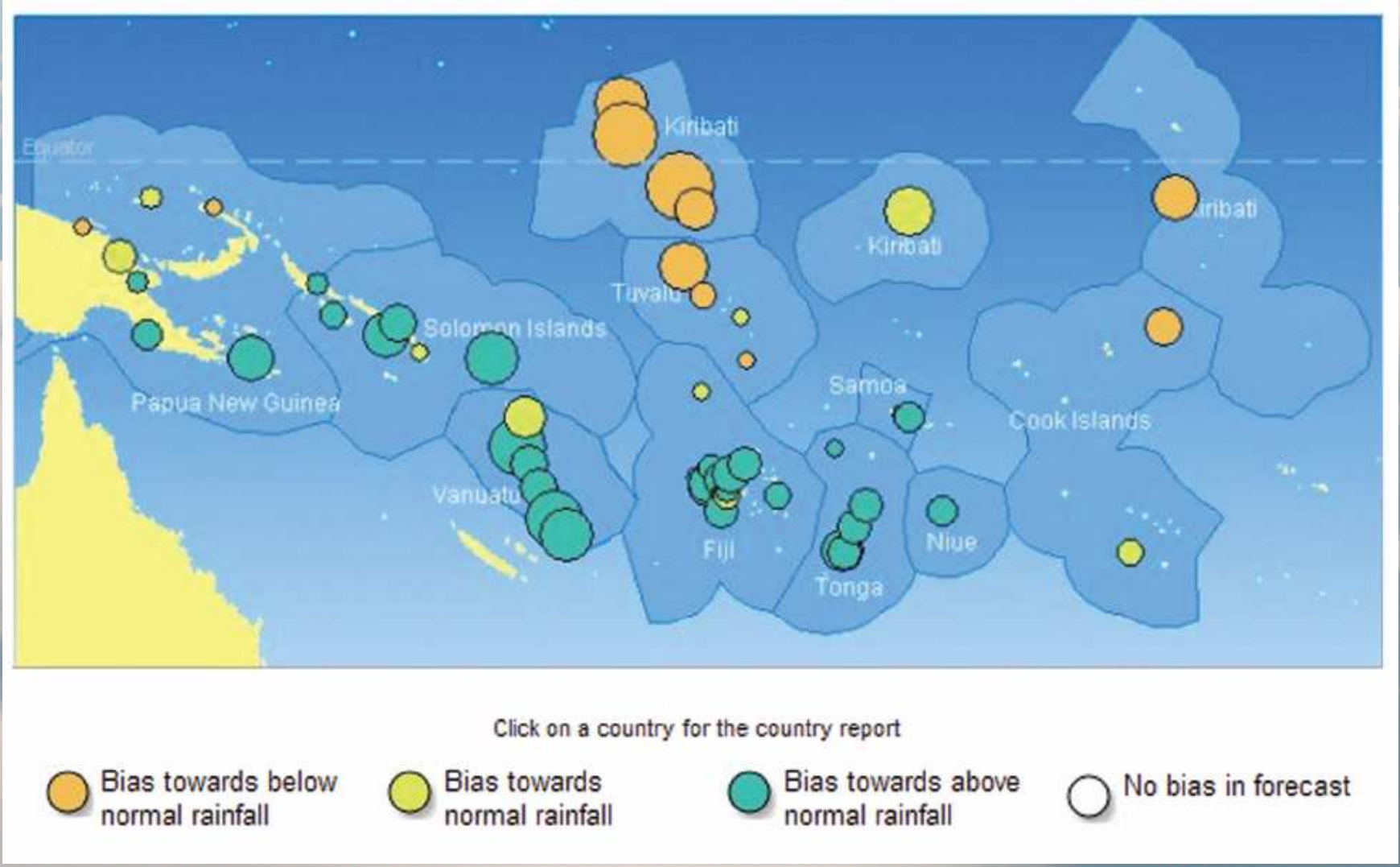
Seasonal climate outlooks



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Projections of future climate

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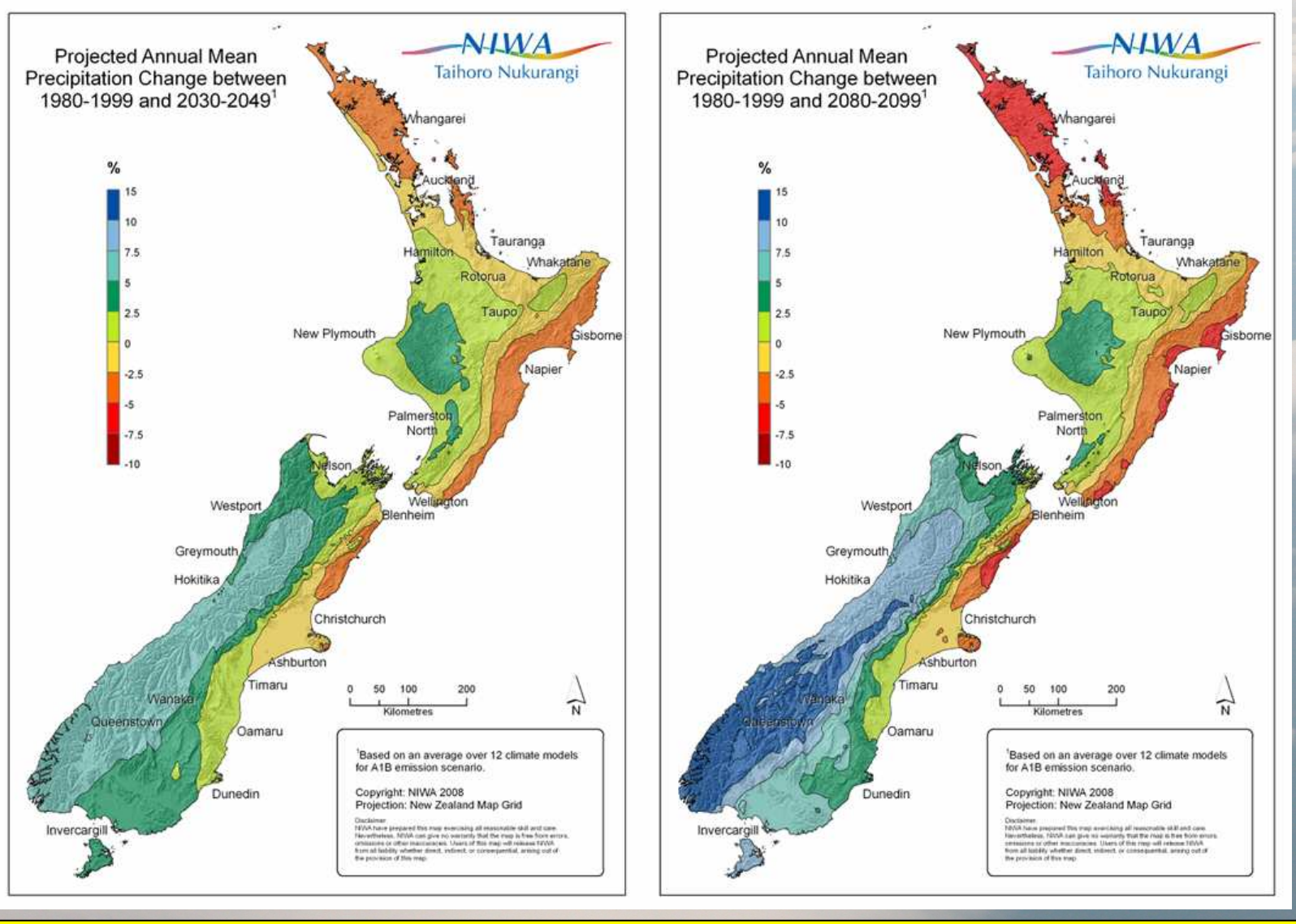
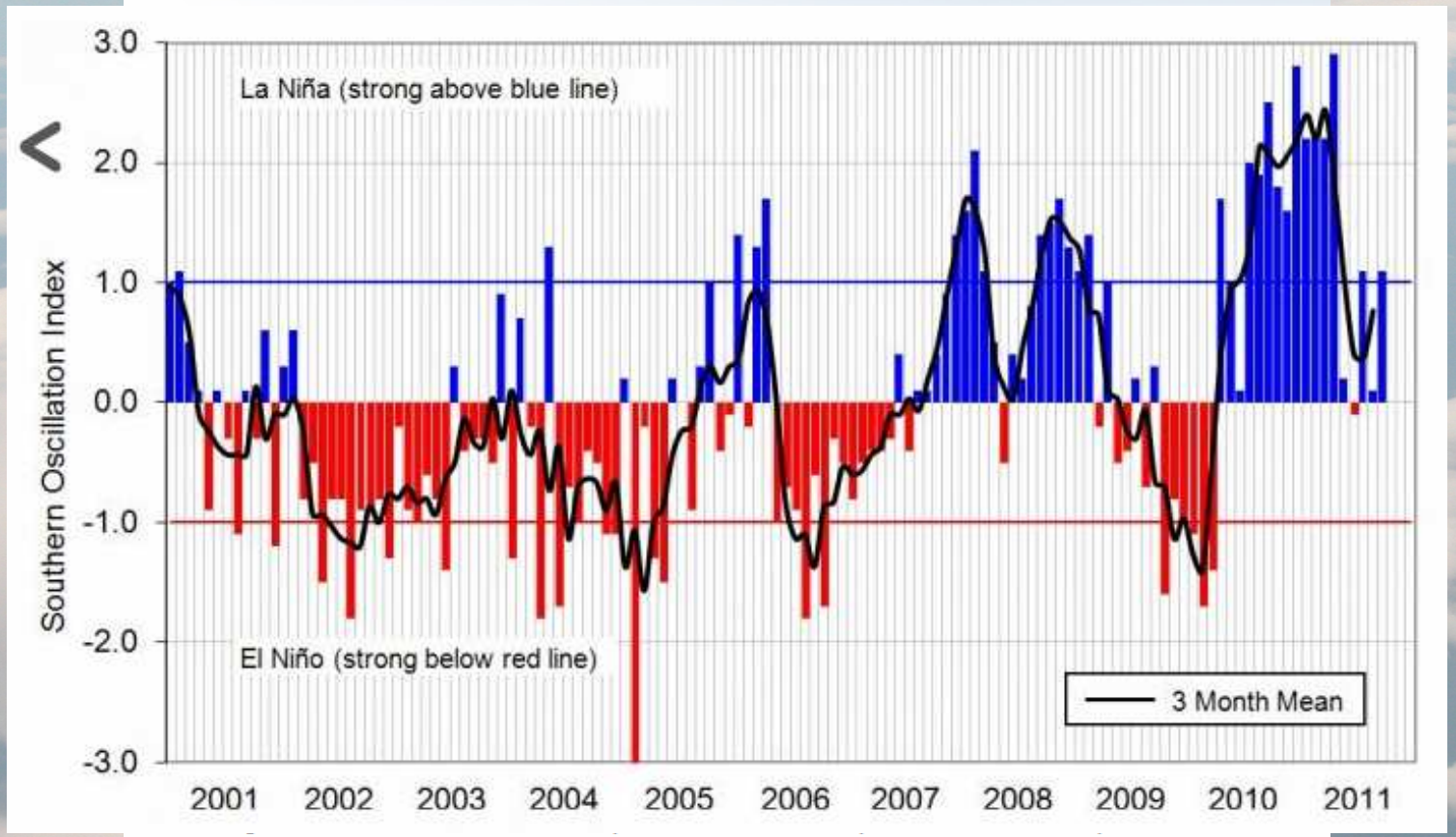


http://www.mfe.govt.nz/publications/climate/

General climate information



April, and in the wet, southeast event on 27-28 April. The New Zealand national average temperature in April was 13.0°C (0.4°C below the 1971–2000 April average).

Sunshine totals in April were below normal (between 75 and 90 percent of normal) for much of the North Island (except Northland), as well as in Nelson and Marlborough. In contrast, it was a very sunny month for the West Coast of the South Island (with totals around 125 percent of normal), as well as for the far south.

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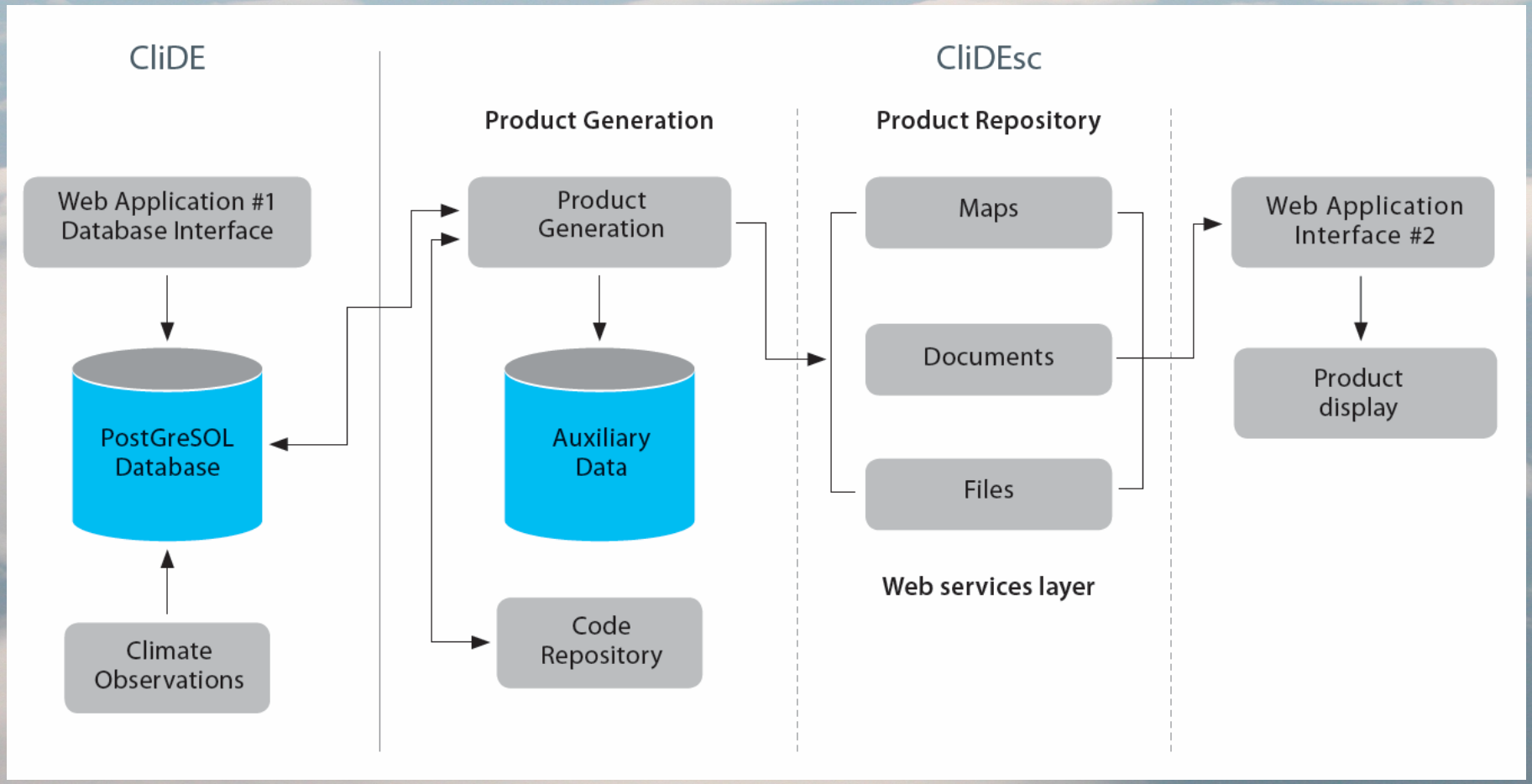
A well-structured system for product generation



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If this is such a good system, why are few NZ farmers using it?

- Limited internet access
- Information not quite what they want
- Didn’t know it existed
- Takes time to get it
- Requires self motivation
- Hard to see the value
- Don’t know how to apply the information

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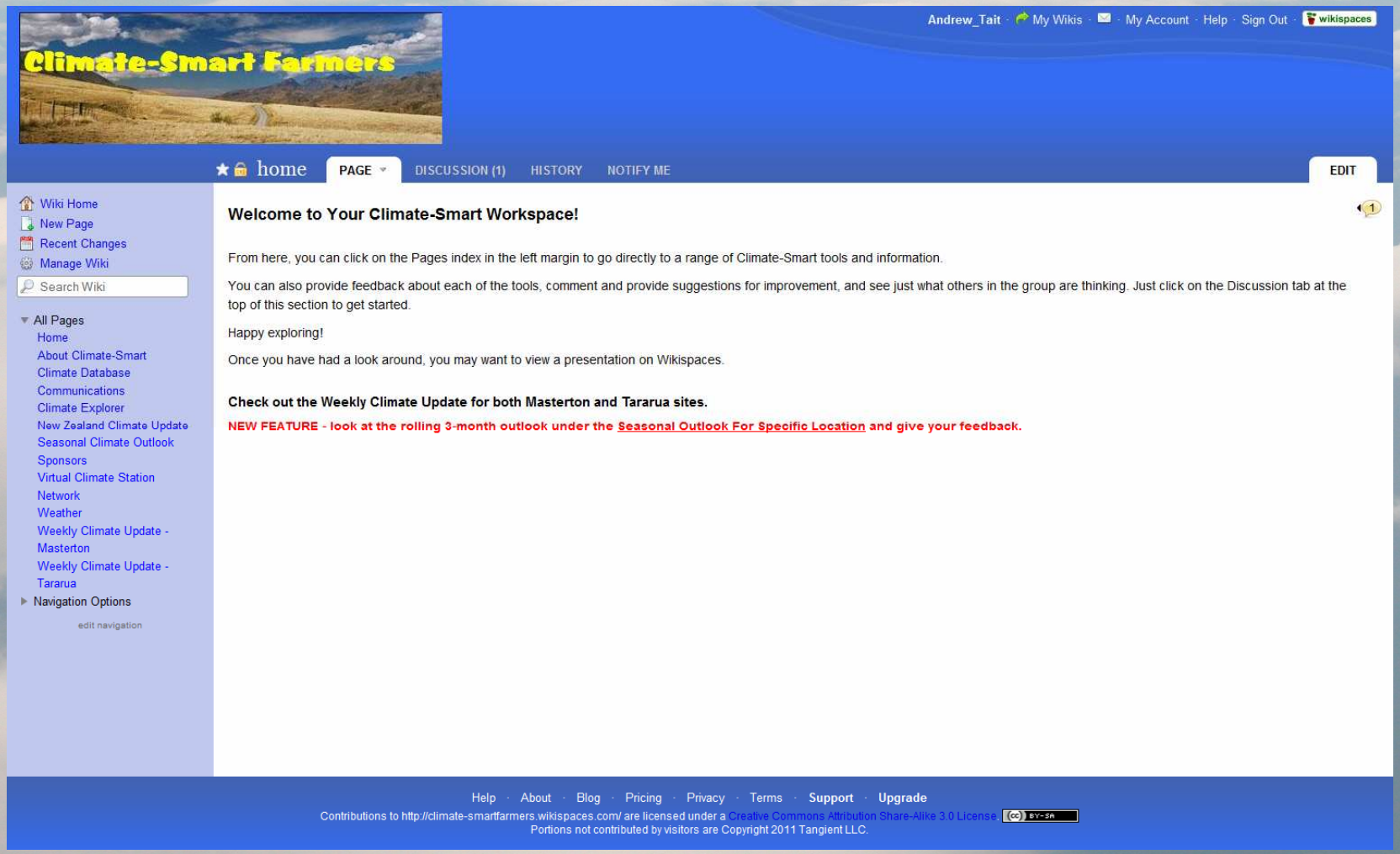
“Climate Smart Framers” project



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An email notification service

NOTIFY ME

EDIT

- Wiki Home
- New Page
- Recent Changes
- Manage Wiki

Search Wiki

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  - Home
  - About Climate-Smart
  - Climate Database
  - Communications
  - Climate Explorer
  - New Zealand Climate Update
  - Seasonal Climate Outlook
  - Sponsors
  - Virtual Climate Station Network
  - Weather
  - Weekly Climate Update - Masterton
  - Weekly Climate Update - Taranua
- Navigation Options
  - Show All Pages

The Weekly Climate Update - Dannevirke

This page is updated once a week (nominally, every Monday morning) with the latest graphs and forecasts for the VCS g
27324, near Dannevirke). Three "current conditions" graphs (the water balance, the rainfall accumulation, and the soil ter
forecast graphs (the soil moisture index, the daily rainfall amount, and the 9am soil temperature) are shown.

Update date

17-10-2011

Agent # 27324, near Dannevirke

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Systems need to be science-based but people-centred

The Climate Early Warning System for agriculture in Samoa is a collaborative initiative involving climate scientists, meteorologists, farmers, agricultural advisors, administrators, and community leaders. Its success is dependent on engagement at each step, and the applied knowledge and experience of all.

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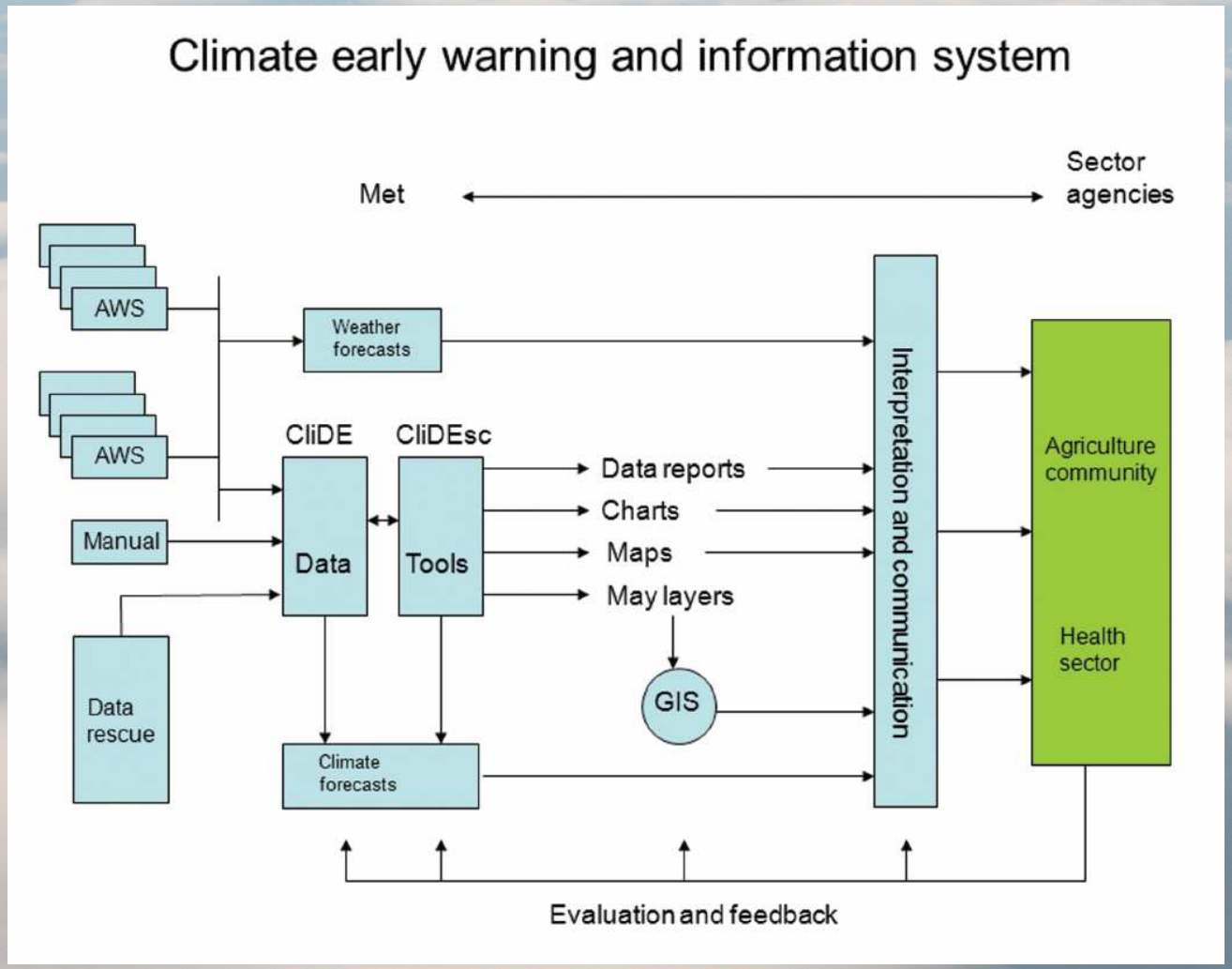
Need a strong focus on interpretation & communication



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Deliver what is really needed

Scheduled reports and advisories, and severe weather warnings

The key to the successful uptake of new knowledge and data services will be the interaction with users in planning, analysis of problems, building of services, and accessibility on time and through the best channels.

Example:

Agricultural Services Report

- A summary of recent climate
- Charts of rainfall, soil moisture, air and soil temperature, and sunshine hours from all the climate station locations around the country showing the patterns and trends from the start of the year to now
- Maps of the last 7-days, month-to-date and year-to-date rainfall, soil moisture, air and soil temperature, and sunshine hours.
- A phenology update (e.g. the emergence of leaves and flowers, the appearance of migratory birds, leaf colouring, crop cycle stage, etc.)
- A disease / pest update (e.g. outbreaks, management plans or actions)
- Extended range (7-day) weather forecasts for the country
- The most recent seasonal (3-month) climate forecast for the country
- A tropical cyclone update and outlook (during the cyclone season)
- A seasonal drought outlook
- A seasonal phenology and disease / pest outlook.

Establish response processes

A planning table for climate decision support for seasonal agricultural production

INDICATORS	REPORTING TIME FRAME	POSSIBLE RESPONSES
NORMAL Climate indicators show that the situation is normal.	Climate-to-date updated daily. Seasonal outlook issued monthly.	Management plan with normal contingencies. Normal watch level.
LOW LEVEL ALERT Climate indicators show a climate anomaly is occurring or is likely to develop.	Climate-to-date updated daily. Seasonal outlook issued monthly. Special advisories/updates as needed. Immediate 'new-information' updates.	Heightened focus on communication and awareness. Ensure emergency contingencies are in place, eg. irrigation and drinking water.
HIGH ALERT Climate indicators show a high risk event is occurring or is very likely.	Daily climate-to-date updates. Severe weather impact warnings issued sub-daily.	High level of monitoring and evaluation of possible worse-case scenarios. Implement front-line response capability.
IMPACT REPORT Assessment of extent, strength and potential relative frequency of event.	As soon as possible after the event.	Develop learning and evaluation strategies to mitigate future events. Implement structural change.

Lessons learned (ongoing!)

- Good quality data and systems are vital
- Products are great, but…

  …you're only 1/4 of the way there!
- Engage and consult at every step
- Establish partnerships
- Produce things that are really needed
- Delivery mechanism is crucial
- Need response options

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Thanks!

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