



UNDERSTAND | ADAPT | TRANSITION

Supporting climate adaptation planning in Queensland with high quality data and resources

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Background

- delivers or supports key actions under the Q-CAS and QCTS.

1.2

Advance climate science

- Continue to support quality scientific research to improve knowledge of projected climate change and risks.
- Work with industry, universities and research organisations to expand climate science research and expertise.

1.3

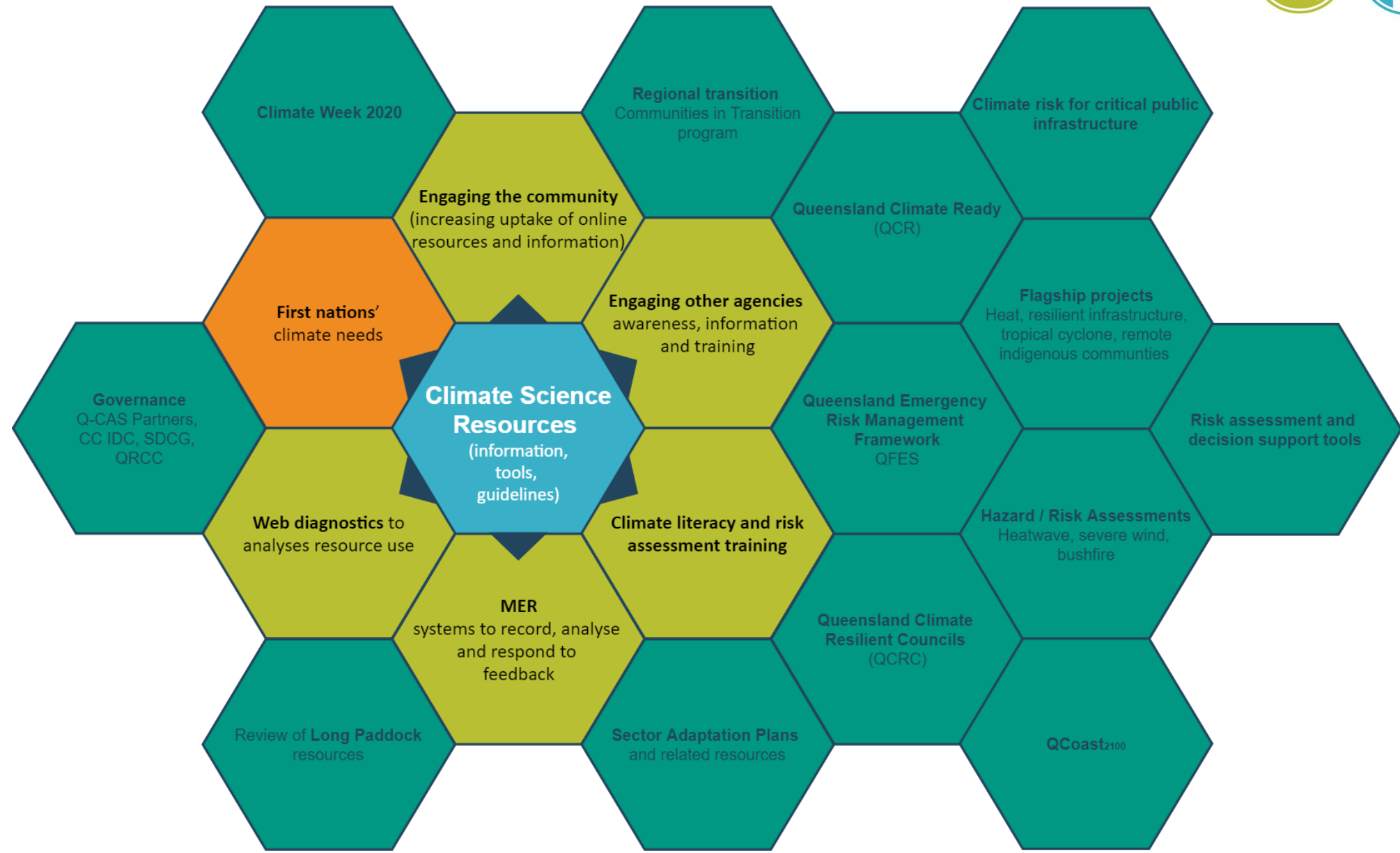
Educate using the best climate science

- Provide the best climate science in a consistent and relatable way.
- Provide relevant climate data in formats that facilitate risk-based decision making.

1.4

Develop a climate risk toolkit

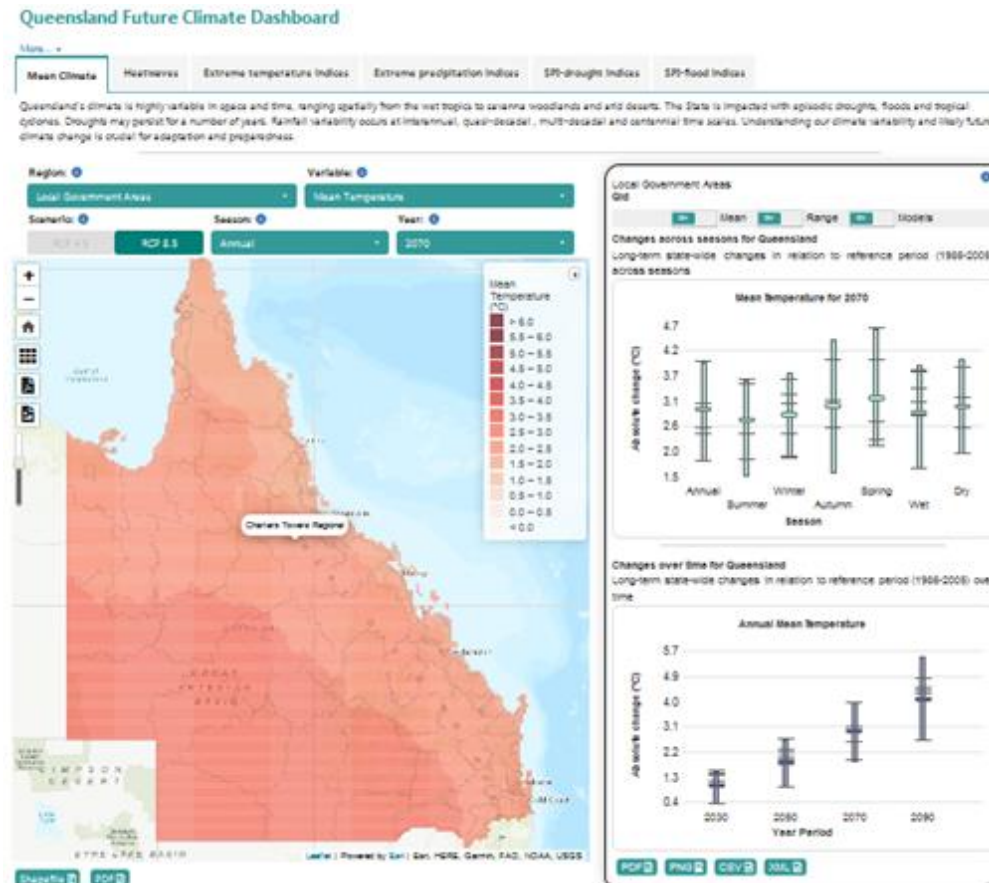
- Provide risk assessment and adaptation decision support tools to suit Queensland households and businesses.
- Continue to develop resources that allow communities to recognise, equip and integrate climate change impacts and risks on a regional basis.





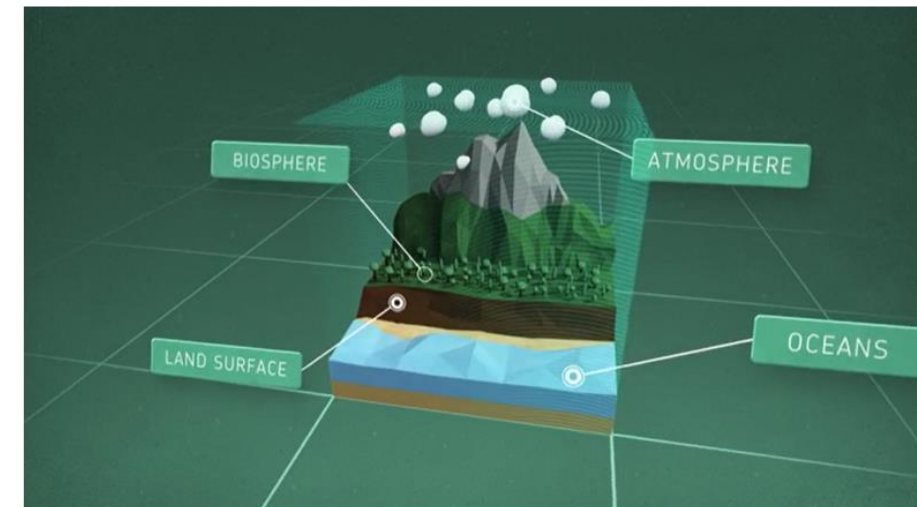
Background

- The program has already delivered a number of important resources.



How do we model climate change?

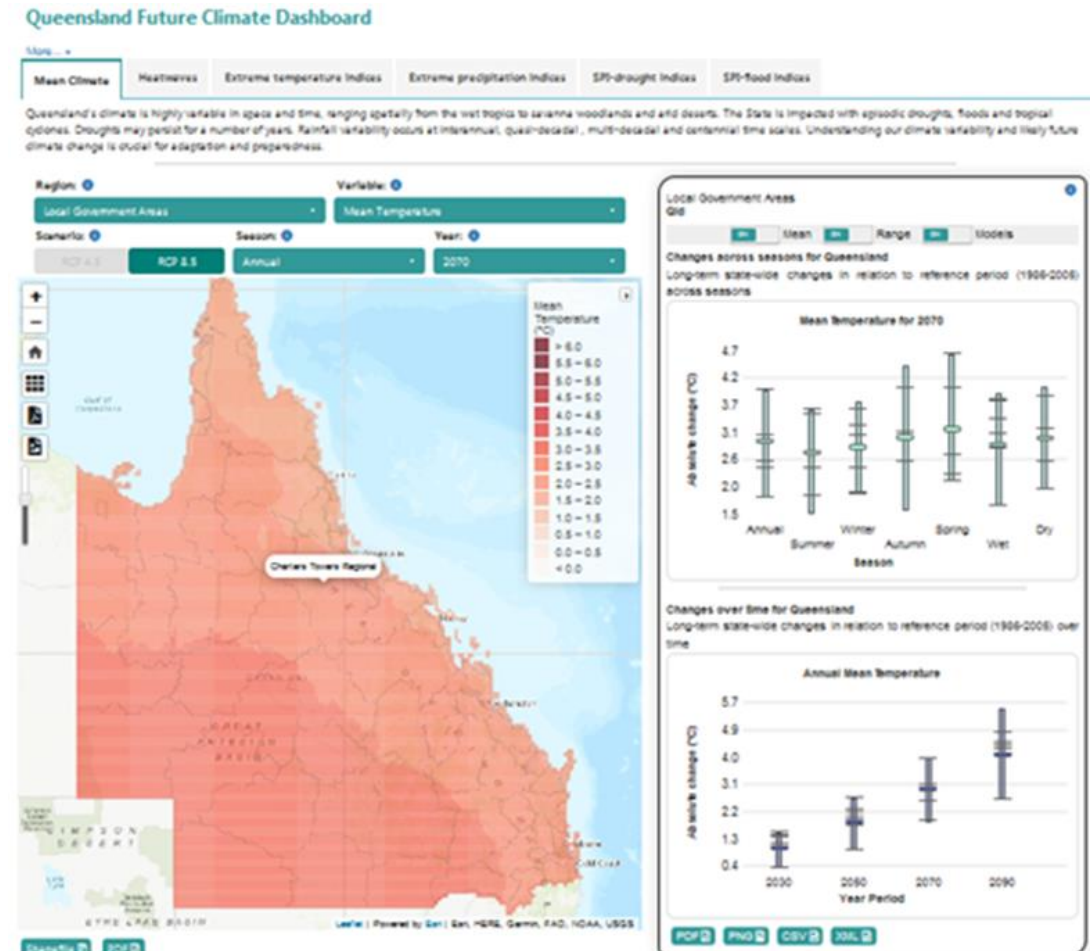
Climate Models are our primary tools for understanding climate change and its likely impacts. Such models use observed data and mathematical equations to estimate the future climate either in the form of short-term forecast or long-term projections.





Accessing the high-resolution projection data


- Queensland Future Climate Dashboard
 - <https://app.longpaddock.qld.gov.au/dashboard/>





Accessing the high-resolution projection data

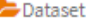
- High resolution gridded data (TERN Portal)
 - <https://geonetwork.tern.org.au/geonetwork/srv/eng/catalog.search#/metadata/bf437edd-a533-4967-ad46-b1cb1dc3ac82>
- Details
 - <https://longpaddock.qld.gov.au/qld-future-climate/data-info/tern/>




Queensland Future Climate Dataset – Downscaled CMIP5 climate projections for RCP8.5 and RCP4.5



Terrestrial Ecosystem Research Network

Syktus, Jozef (Author, Principal investigator) Data Librarian (Point of Contact)

 Dataset

 Viewed: 37 Accessed: 2

▼ Access the data

 Cite  Save to MyRDA

Licence & Rights:

✓ Open Licence [view details](#)

Access:

✓ Open

Contact Information

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Brief description

Dynamically downscaled high-resolution (~10 km spatial resolution) climate change projection data for Queensland. Downscaling was completed using CSIRO Conformal Cubic Atmospheric Model (CCAM) for two RCPs (RCP4.5 and RCP8.5) from 11 CMIP5 global coarse resolution models for period 1980-2099. The Queensland Future Climate Dashboard (www.longpaddock.qld.gov.au/qld-future-climate/) provides easy access to climate projection for Queensland. The dashboard allows users to explore, visualize and download the latest high-resolution climate modelling data for specific regions, catchments, disaster areas, local government areas and grid squares. Underlying data is provided via TERN for easy access for each of 11 downscaled models. The Queensland Future Climate Dataset provides high resolution data for over 30 different metrics grouped in six climate themes: (i) Mean Climate; (ii) Heatwaves; (iii) Extreme Temperature Indices; (iv) Extreme Precipitation Indices; (v) Droughts; and (vi) Floods. In addition selected variables at daily and monthly intervals are also available.

Climate Change in Australia (CSIRO and BoM)

- Projected changes from the Queensland high-resolution data are now included in the [Climate Futures toolkit](#).



The screenshot shows the 'Queensland Future Climate' website. The header features the 'CLIMATE CHANGE IN AUSTRALIA' logo and the title 'PROJECTIONS FOR AUSTRALIA'S NRM REGIONS'. A navigation bar includes links for 'About', 'Future climate', 'Explore data', 'Climate Futures Tool', 'Climate analogues', 'Coastal & marine', and 'Sign-In/Register'. The main content area has a breadcrumb trail 'Home » Climate projections » Future climate' and a large banner with the text 'Queensland Future Climate'. To the right of the banner is a vertical list of links: 'Queensland Future Climate Portal', 'Qld Future Climate - Water Security', 'Qld Future Climate - Heatwaves', 'Understanding the Qld data', and 'Climate Futures toolkit'. Below the banner, a paragraph states: 'The Queensland Government partnered with the University of Queensland in 2019 to develop high resolution climate projections to underpin climate adaptation across Queensland's regions.' Another paragraph follows: 'The project has been developing regionalised datasets, information and guidance for decision making in climate adaptation and risk mitigation across Queensland.' A section titled 'Available resources at the Queensland Future Climate portal include:' lists several bullet points: 'Queensland Future Climate Dashboard', 'High resolution gridded datasets (10 km)', 'Understanding the data communication piece', 'Heatwaves and Water security animated communication pieces', 'New interactive platform for tropical cyclone risk', and 'Application-ready time series data for biophysical modelling.'

CLIMATE CHANGE IN AUSTRALIA
PROJECTIONS FOR AUSTRALIA'S NRM REGIONS

About Future climate Explore data Climate Futures Tool Climate analogues Coastal & marine Sign-In/Register

Home » Climate projections » Future climate

Queensland Future Climate

Queensland Future Climate Portal
Qld Future Climate - Water Security
Qld Future Climate - Heatwaves
Understanding the Qld data
Climate Futures toolkit

The Queensland Government partnered with the University of Queensland in 2019 to develop high resolution climate projections to underpin climate adaptation across Queensland's regions.

The project has been developing regionalised datasets, information and guidance for decision making in climate adaptation and risk mitigation across Queensland.

Available resources at the Queensland Future Climate portal include:

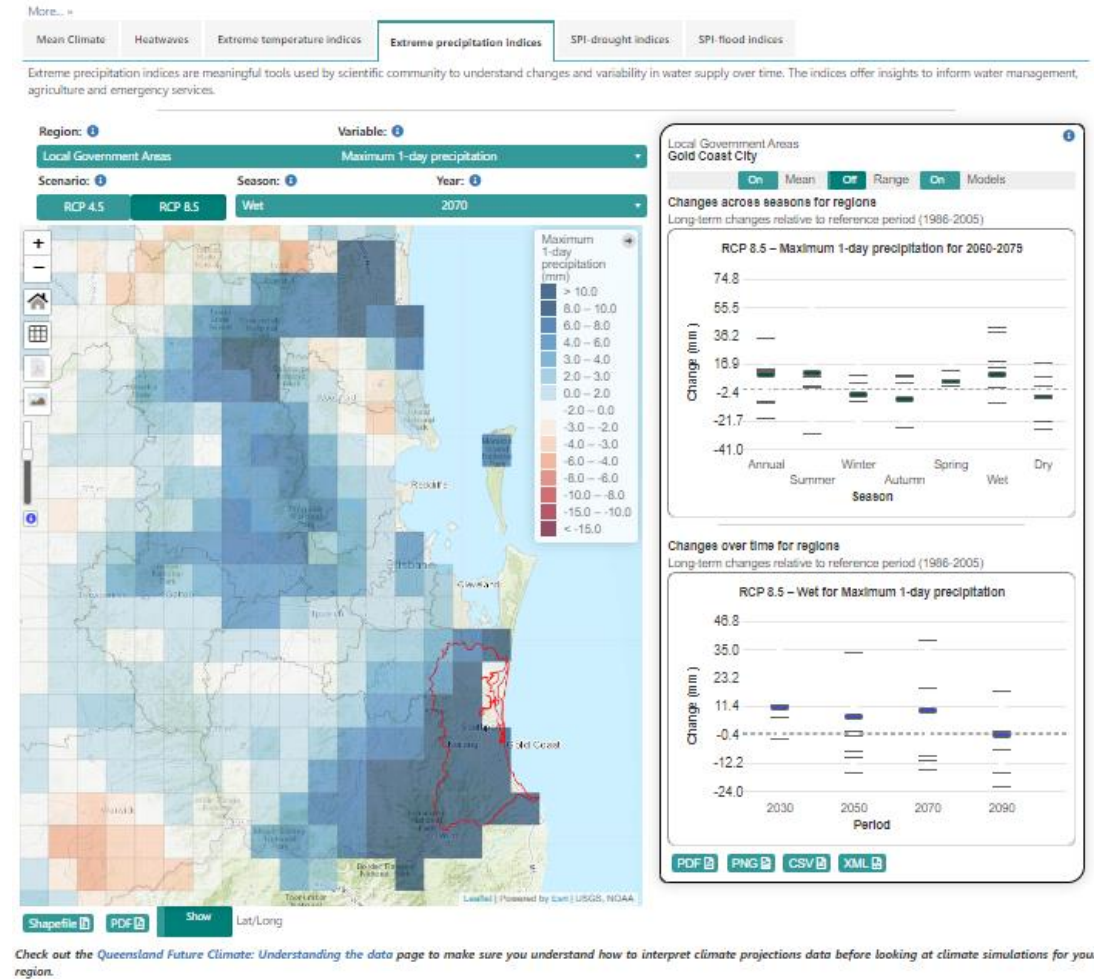
- Queensland Future Climate Dashboard : an interactive regionalisation platform with future climate data for 205 regions, 32 climate metrics, four time periods and two emissions scenarios.
- High resolution gridded datasets (10 km) with summary changes as well as daily and monthly time series for a range of climate metrics.
- Understanding the data communication piece with description of modelling approach and introduction to data resources.
- Heatwaves and Water security animated communication pieces.
- New interactive platform for tropical cyclone risk.
- Application-ready time series data for biophysical modelling.



Extreme precipitation indices

- Max 1-day precipitation
- Max 5-day precipitation
- Extremely wet day precipitation (>99 percentile)
- Simple daily intensity
- Consecutive dry days
- Consecutive wet days
- Also heatwave, evaporation, drought and flood indices (SPI)

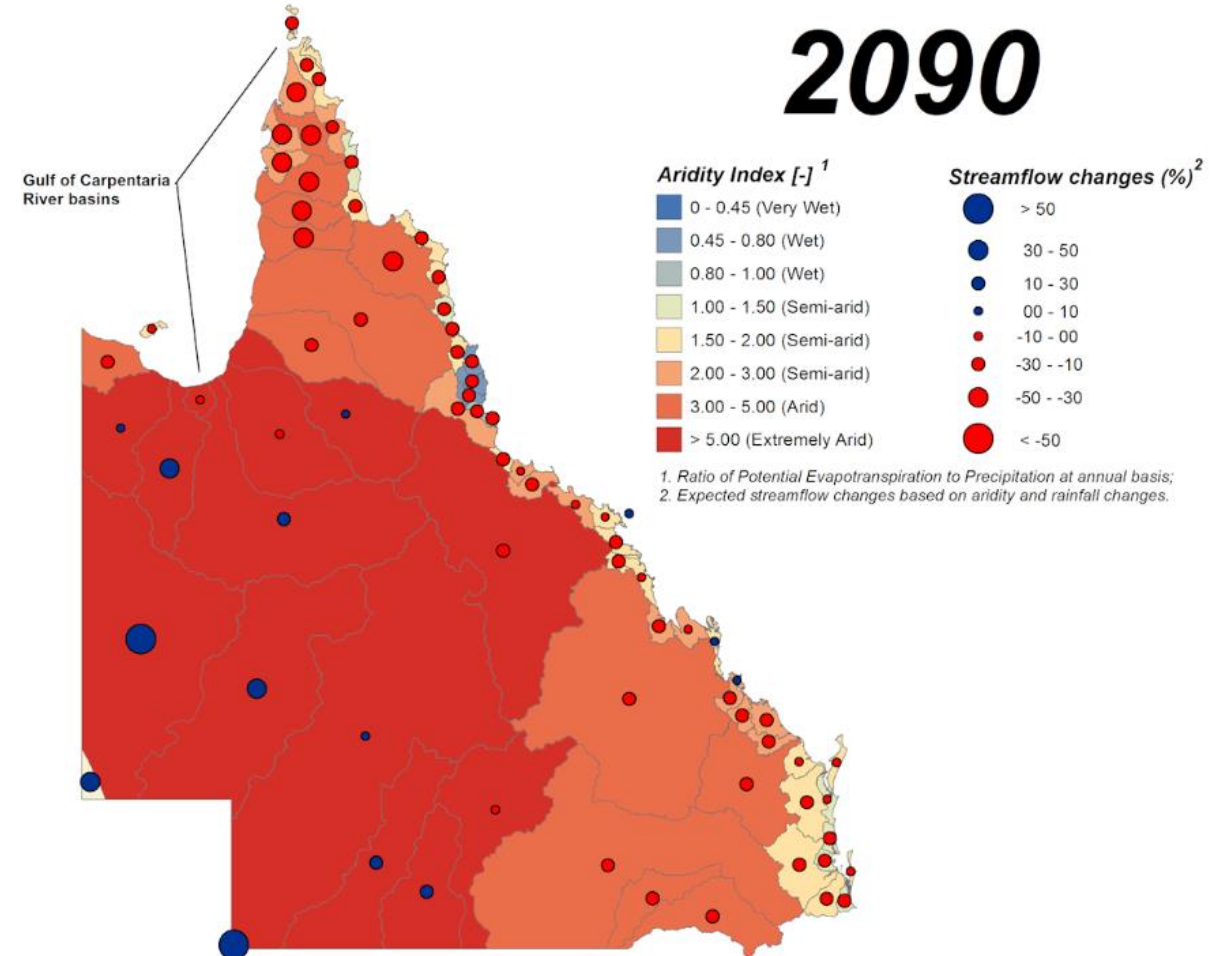
Queensland Future Climate Dashboard





Water security case study

- <https://app.longpaddock.qld.gov.au/water/>





Science Program aims for 2020 - 2022

- Build on the Program's existing achievements
- Extend the range of available data and resources
- Ensure resources address priority needs
- Provide guidelines, tools and training to encourage the use of high-resolution climate data in decision-making
- Increase stakeholder engagement with the available resources to increase the level of uptake
- Focus on servicing the needs of specialist practitioners.



Priority stakeholders

Queensland Climate Ready program

- DES
- Transport and Main Roads
- Queensland Health
- Queensland Fire and Emergency Services

Queensland Climate Resilient Councils program

- Local Government Association of Queensland

Established programs on climate risk

- Agriculture and Fisheries - Drought and Climate Adaptation Program
- **Queensland Water Modelling Network** (QWMN) – *Water Act 2000*.



Two broad themes

Core activities will inform and support other QCCR programs

- Queensland Climate Ready
- Queensland Climate Resilient Councils
- Communities in Transition
- Sector adaptation planning
- Other communications and engagement activities.

Targeted activities will address the needs of priority stakeholders

- Identify their climate information needs
- Ensure resources are delivered to meet those needs
- Develop guidance and tools to support effective climate risk management
- Develop staff training / engagement packages to drive adoption.



Core projects

1. Enhance the Queensland Future Climate Portal and Dashboard to improve communication, presentation and data accessibility (S&T)
2. Communication and engagement to increase the use of the Portal among a range of stakeholder groups (CCSF)



Targeted projects

3. Develop an interactive platform for regional and tailored reports (S&T)

- export tailored data summaries in application-ready formats
- interactive platform for tailored regional reports.

4. Develop a climate risk dashboard for advanced applications (S&T)

- provide access to datasets for selected climate variables and extreme event indices (e.g. heatwave, bushfire, temperature thresholds etc.) to meet needs of priority stakeholders.

5. Develop training package on climate risk management for priority stakeholders (CCSF)



Looking further ahead

add sea level
rise

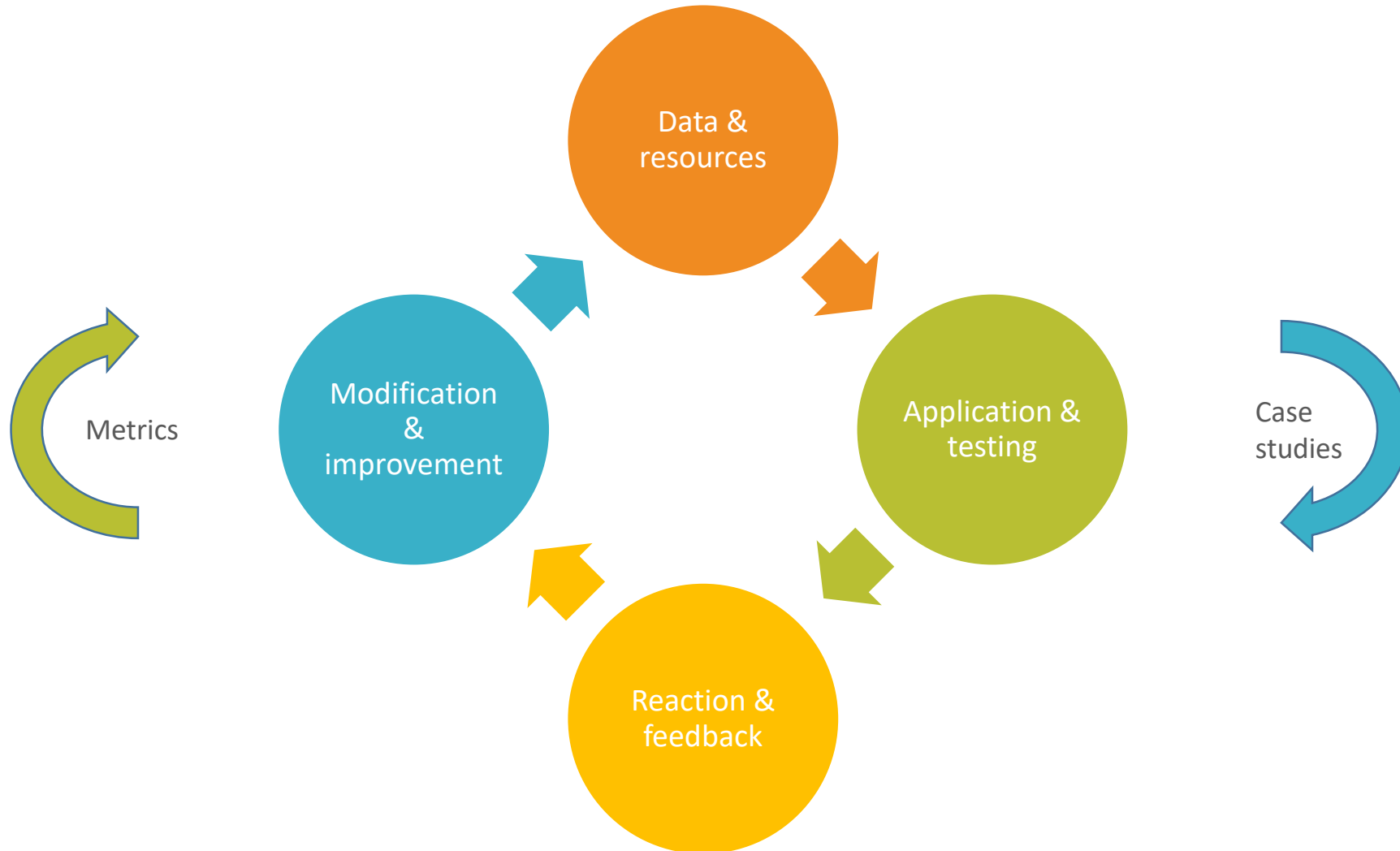
compound
events

updates for
CMIP6

extend to a
wider group
of end users



How to provide input & feedback



Any questions?

