

# Climate change & cocoa

## on the Guadalcanal Plain

Cocoa is a valuable industry for smallholder farmers in the Guadalcanal Plain and more generally provides a significant national social and economic benefit. The climate of Guadalcanal Plain is currently suitable for growing cocoa, although there are various climate impacts on the industry, including flooding and heavy rainfall. These risks have the potential to become worse in the future under a changing climate, and other new climate-related risks may also arise.



### How does climate affect cocoa farming?

There are many climate factors that affect cocoa growing, including:

- Cocoa growth and flowering is directly related to air temperature, with the best range for cultivation 25–30°C.
- Extreme dry periods can lead to small pod sizes and even death of cocoa trees
- High and prolonged rainfall can lead to the spread of black pod disease
- Extreme rainfall can damage flowers, and floods (associated with seasonal variability of rainfall and tropical cyclones) can damage cocoa farms.

Humidity and solar radiation are important climate conditions for growing cocoa but were not examined in this case study, nor were non-climate factors.



### How might climate change impact on cocoa farms on the Guadalcanal Plain?

- Guadalcanal could become too warm to grow cocoa by about 2050 and beyond, with a very high chance it would be too warm by the end of the century under a high (carbon dioxide) emission scenario.
- Changes in average annual rainfall mean that parts of Guadalcanal may become less suitable for cocoa, but the change is not clear.
- Extreme wet days and seasons and more intense tropical cyclones are projected to increase, potentially increasing the risk of spreading black pod disease and flooding.



### How can cocoa farmers prepare for these changes?

The Ministry of Agriculture and Livestock will re-visit existing and past cocoa program activities in the Solomon Islands and advise farmers of appropriate practices. These may include:

- Selecting and planting heat-tolerant plant varieties and clean and healthy cocoa planting material that is resistant to black pod disease
- Changing growing locations (e.g. further up the slope) to deal with rising temperature
- Changing growing locations and crop management practices to reduce the impact of floods on crops, as well as securing the supply chain (e.g. off-farm warehouses so crops are not lost)
- Looking at ways to improve crop management to better manage black pod disease (e.g. pruning).

### Where can I get more information and advice?

For information about this case study, contact the Solomon Islands Meteorological Service

Director, Solomon Islands Meteorological Service, Ministry of Environment, Climate Change, Disaster Management and Meteorology | PO Box 21 | Ph: 20332/24218 | Email: david.hiba@met.gov.sb

### How do we know?

Experts at the Solomon Islands Meteorological Service and Ministry of Agriculture and Livestock collaborated with climate scientists from CSIRO and SPREP to assess the possible impact of climate change on cocoa in the Guadalcanal Plain. They followed a process set out in new guidelines, *Developing climate change information for the Pacific*, to develop climate change information to make decisions about how to adapt to a changing climate. These guidelines are available at [www.pacificclimatechangescience.org](http://www.pacificclimatechangescience.org)

