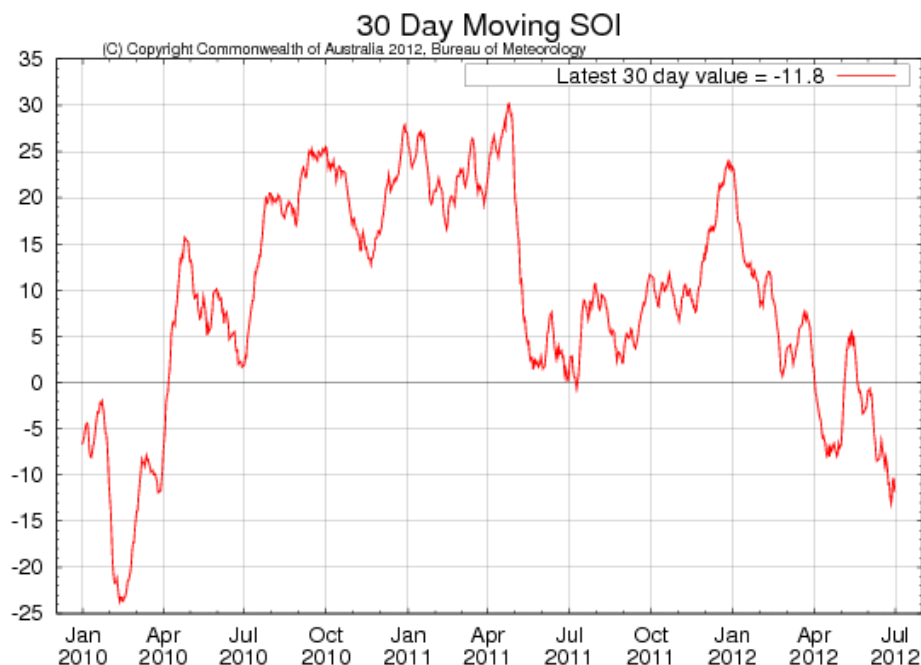


## A Brief Analysis of the Impact of the El Niño Southern Oscillation (ENSO) Cycle In specific areas around East Timor

In the Climate Change section of Seeds of Life, we believe it would be beneficial for agricultural workers and farmers across East Timor to have an understanding of how the ENSO cycle affects them. This will assist farmers to better prepare for periods when there is a greater chance of high rainfall and for periods when there is a greater chance of low rainfall. We have used the Portuguese rainfall data and aligned it with established historical records for when ENSO cycles occurred. This has been done for the district centres across East Timor to show how the ENSO cycle has historically impacted on the rainfall patterns.

### What is the ENSO Cycle?

Meteorologists around the Pacific use the Southern Oscillation Index (SOI) to indicate when we are entering into an El Niño or La Niña period. This information can be used to give farmers in East Timor a possible 3-6 month warning on likely weather patterns. If the SOI is strongly negative for a period, it may indicate an approaching El Niño. Strong positive SOI values sustained over a period indicate a La Niña. The Australian Bureau of Meteorology tracks the El Niño Southern Oscillation (ENSO) cycle and provides advice on how it is moving.



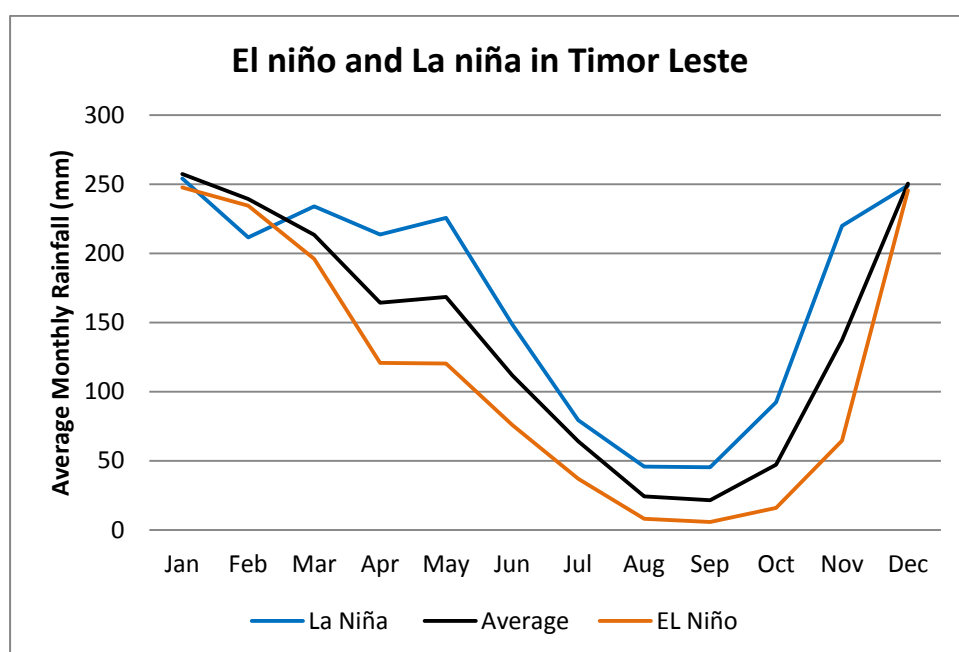
“Sustained positive values of the SOI above +8 may indicate a La Niña event, while sustained negative values below –8 may indicate an El Niño event. Values of between about +8 and –8 generally indicate neutral conditions.” Australian Bureau of Meteorology

[www.bom.gov.au/climate/enso/](http://www.bom.gov.au/climate/enso/)

## How the ENSO Cycle Affects different parts of East Timor

The ENSO cycle appears to affect different areas of East Timor in different ways. In some areas, such as Same, there is significantly increased rainfall during La Niña in the wet season. In Liquica, it seems the greatest impact is felt during the late dry season. It should be noted that the data on which this analysis is based is somewhat limited. The ENSO cycle was averaged out over the period from 1914-1974 based on around 5 – 8 events for El Niño and La Niña respectively. An Excel spread sheet on the analysis is available for further inspection of the data by contacting the Climate Change Team in Seeds of Life.

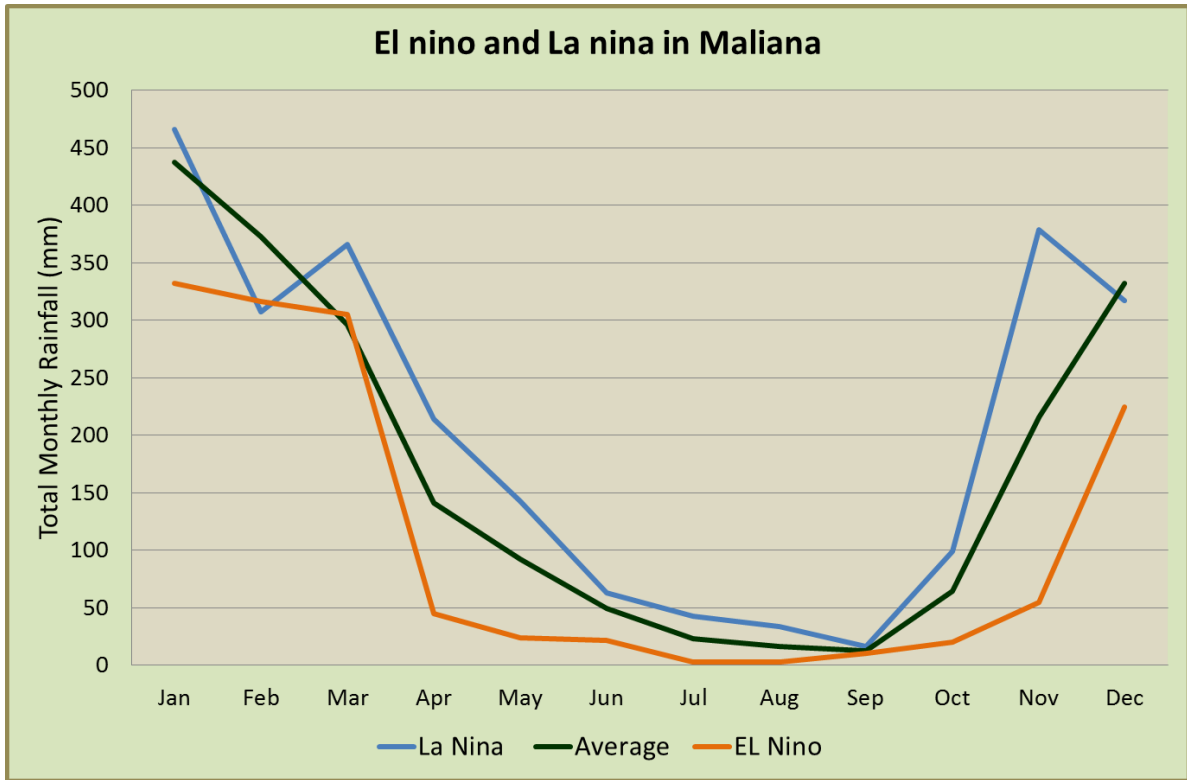
The graph below shows the general effect that the ENSO cycle has on East Timor. During El Niño, there is a lot less rain that fall around April and May. The dry season starts earlier and finishes later. During La Niña there is a lot more rainfall in April May with some areas experiencing a strong bimodal rainfall pattern. The dry season is a lot shorter.



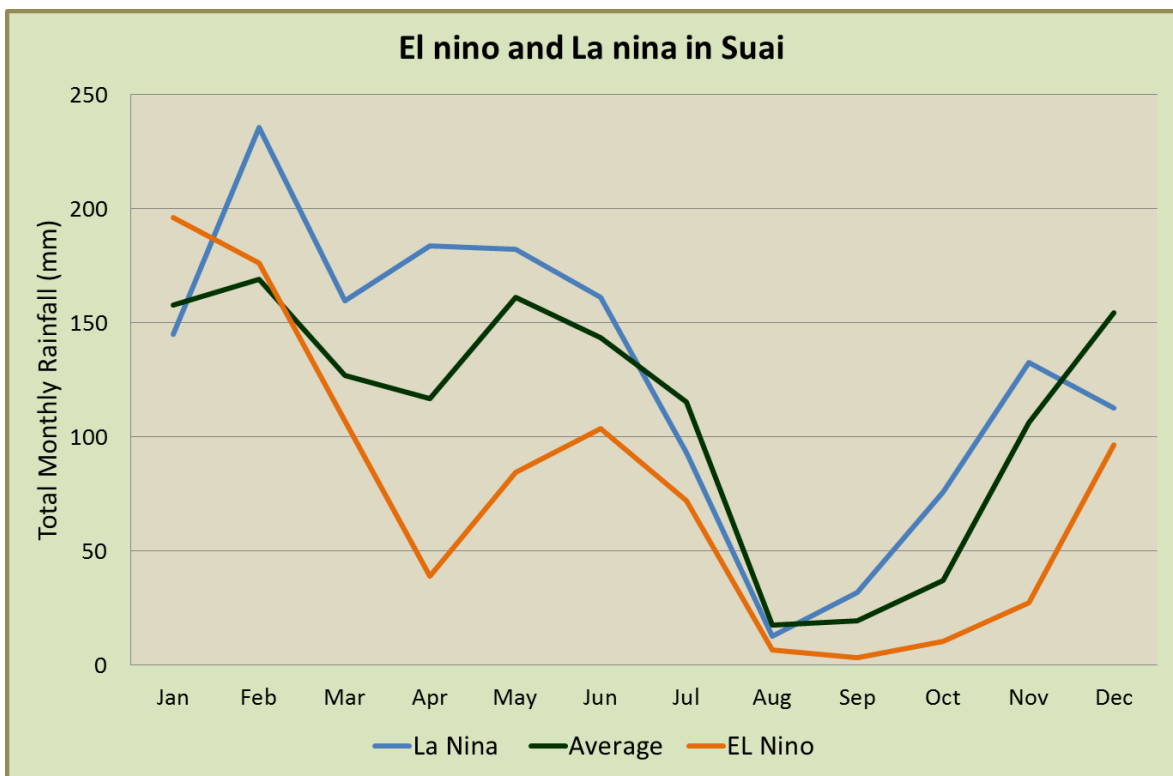
**19% More rain during La Niña.**

**19% Less rain during El Niño.**

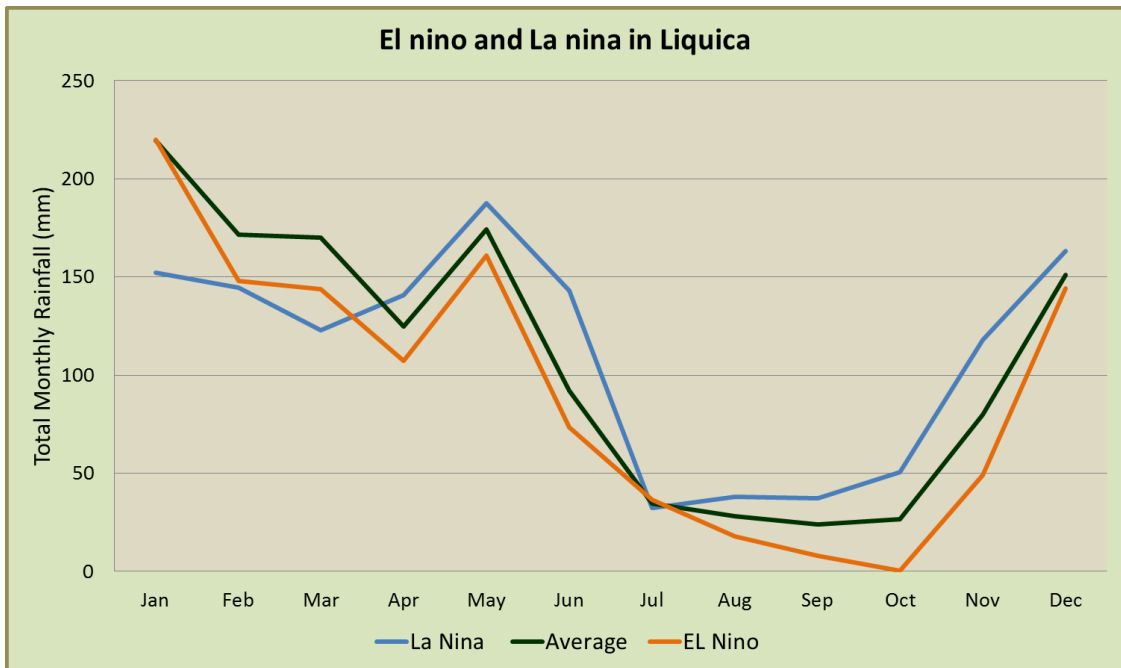
Below you can find graphs of each district centre that we have analysed.



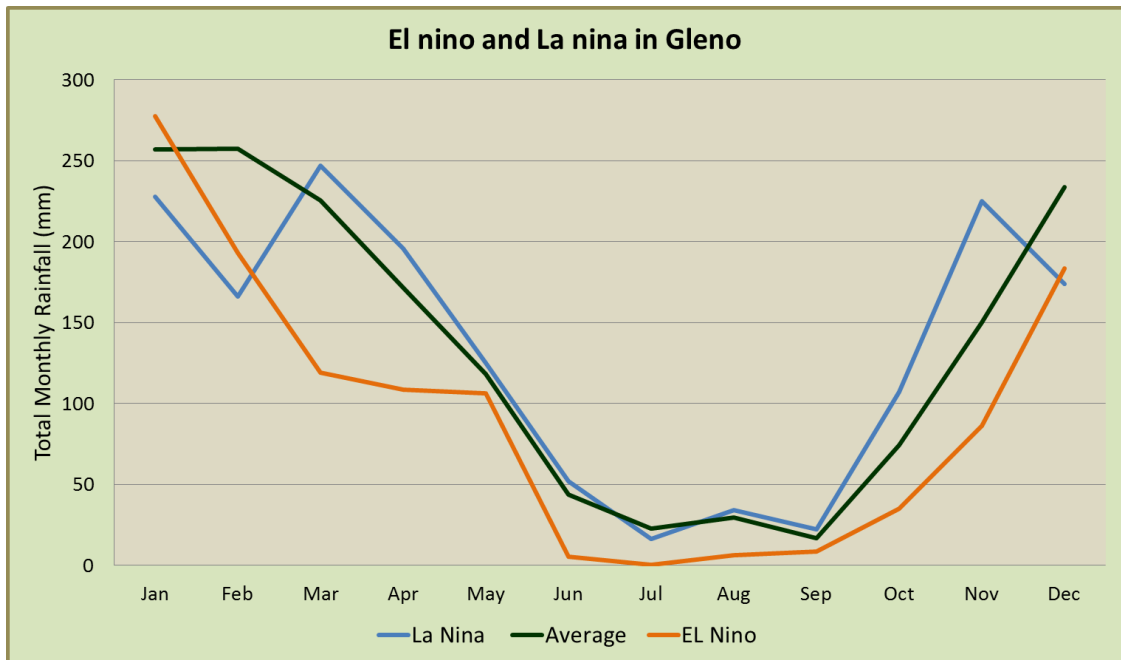
Maliana: Note the early start to the dry season and the late start of the wet season during El Niño periods.



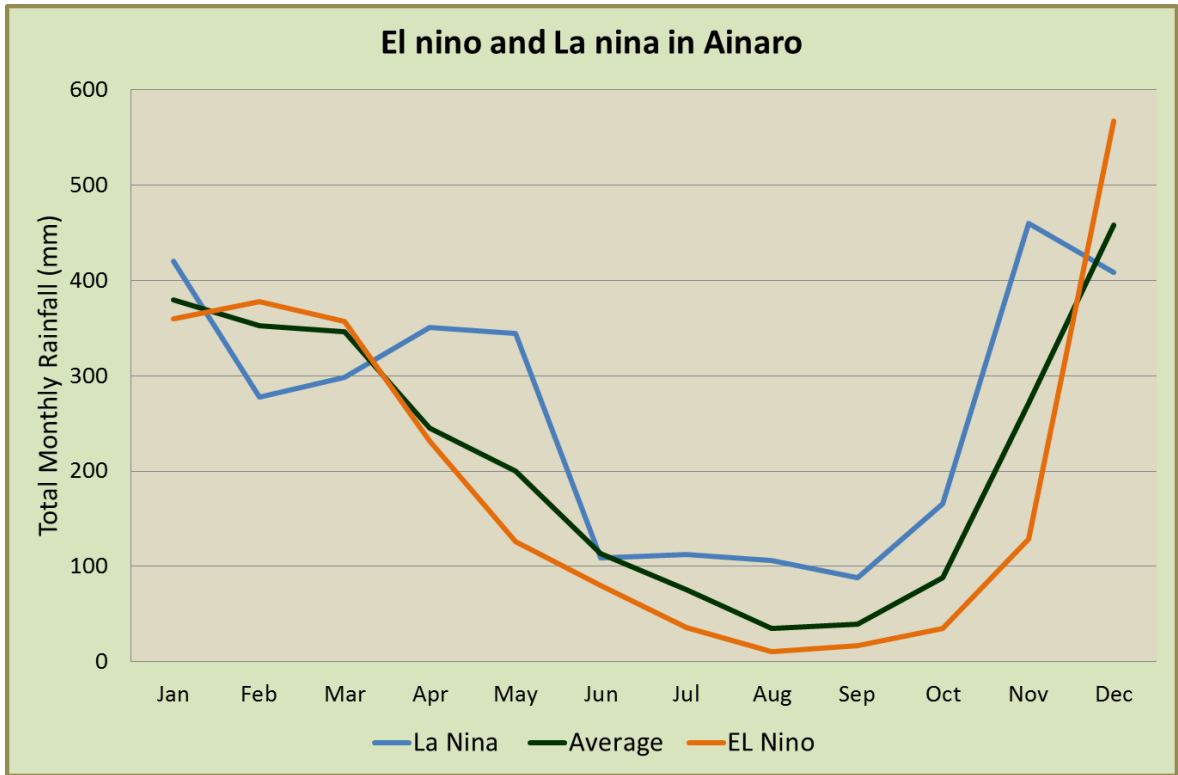
Suai experiences significantly reduced rainfall during El Niño.



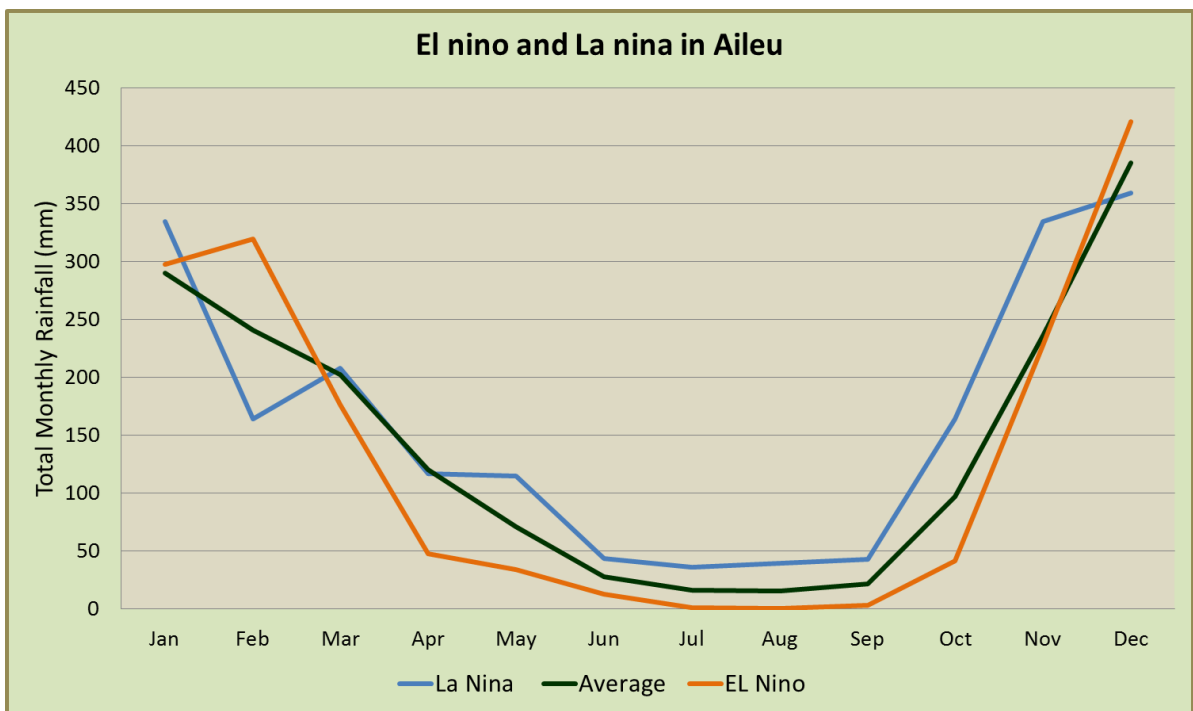
Liquica: El Niño has the greatest impact around October/November. Interestingly, in the past, La Niña has brought less rain in the wet season.



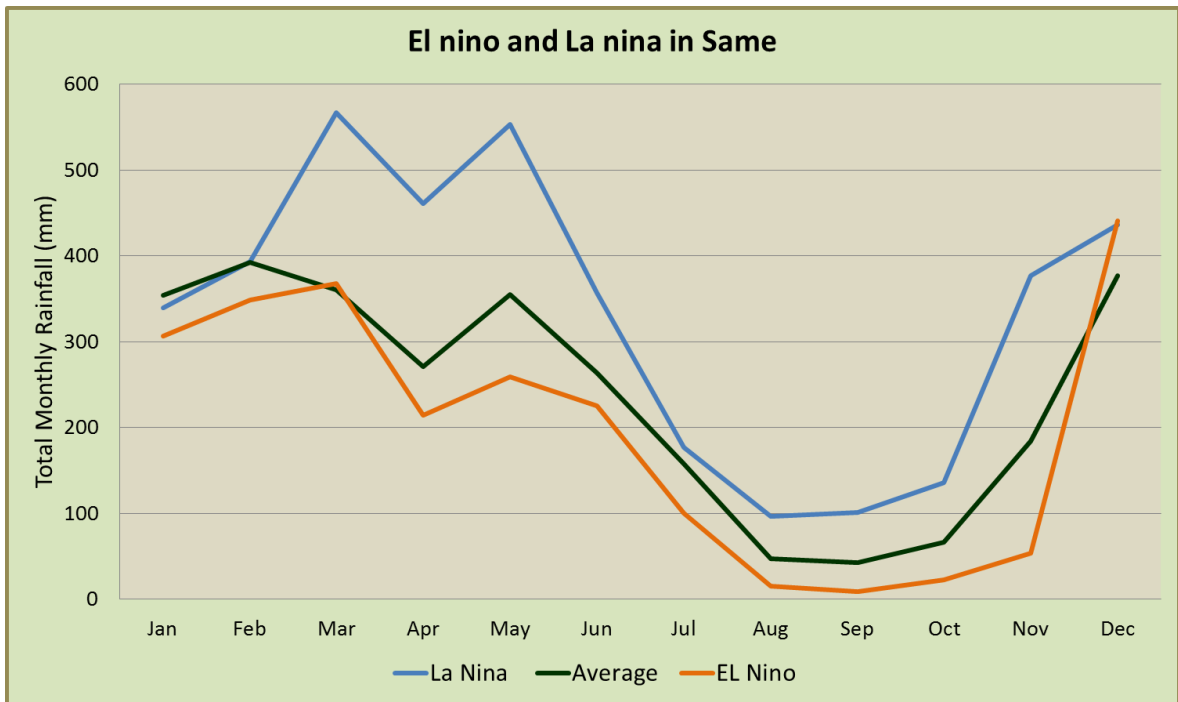
Gleno: El Niño tends to mean significantly less rain in the late wet season and an extended and more severe dry season.



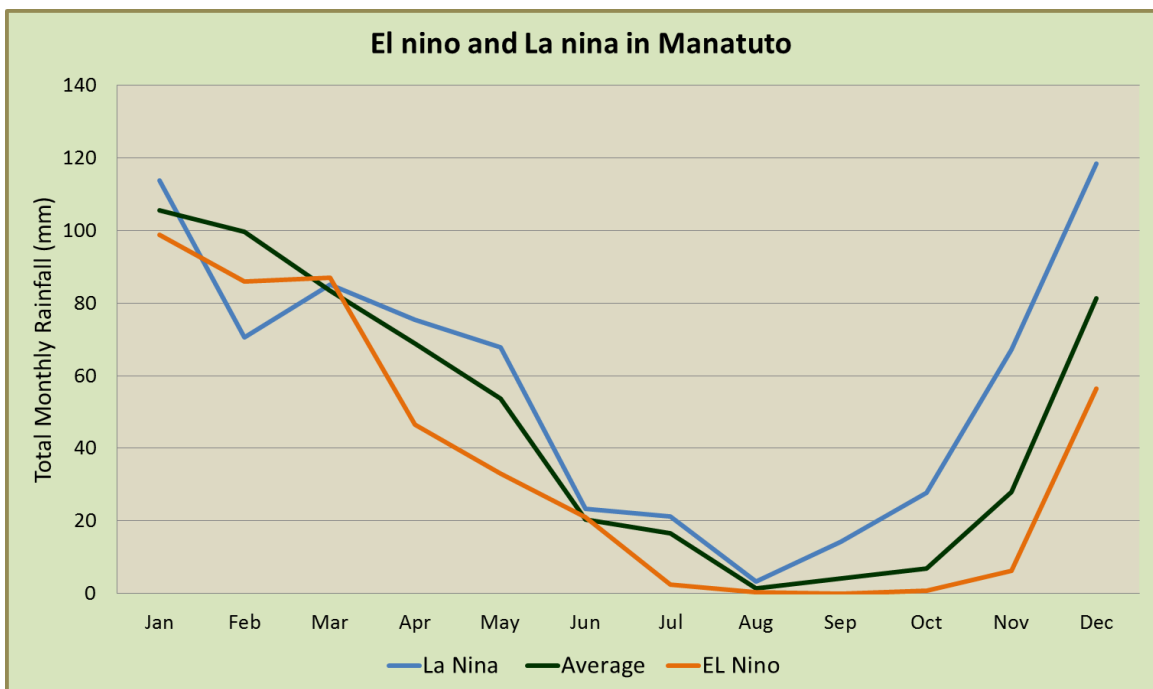
Ainaro: La Niña means a longer wet season possibly allowing two crops to be grown whereas El Niño brings an extended dry season.



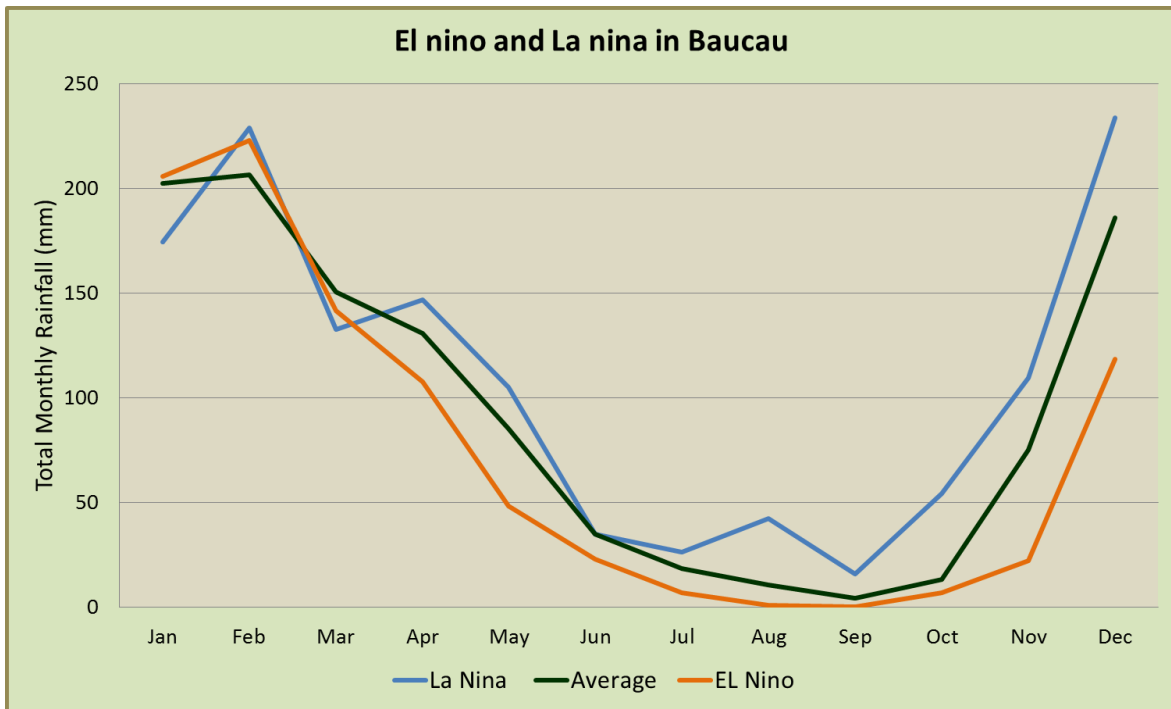
Aileu: El Niño means an extended dry season. La Niña does not generally appear to have a significant impact.



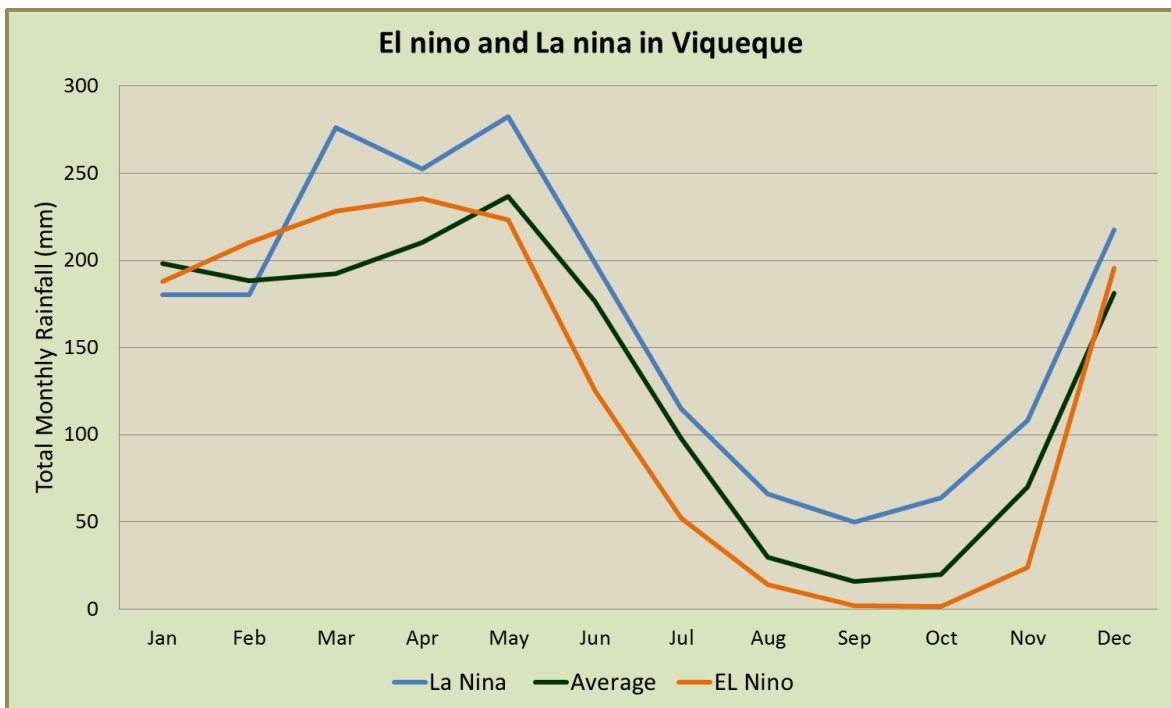
In Same, La Niña brings significantly higher rainfall in the late month and a short “dry” season where rain continues to fall. El Niño means lower rainfall and a longer dry season.



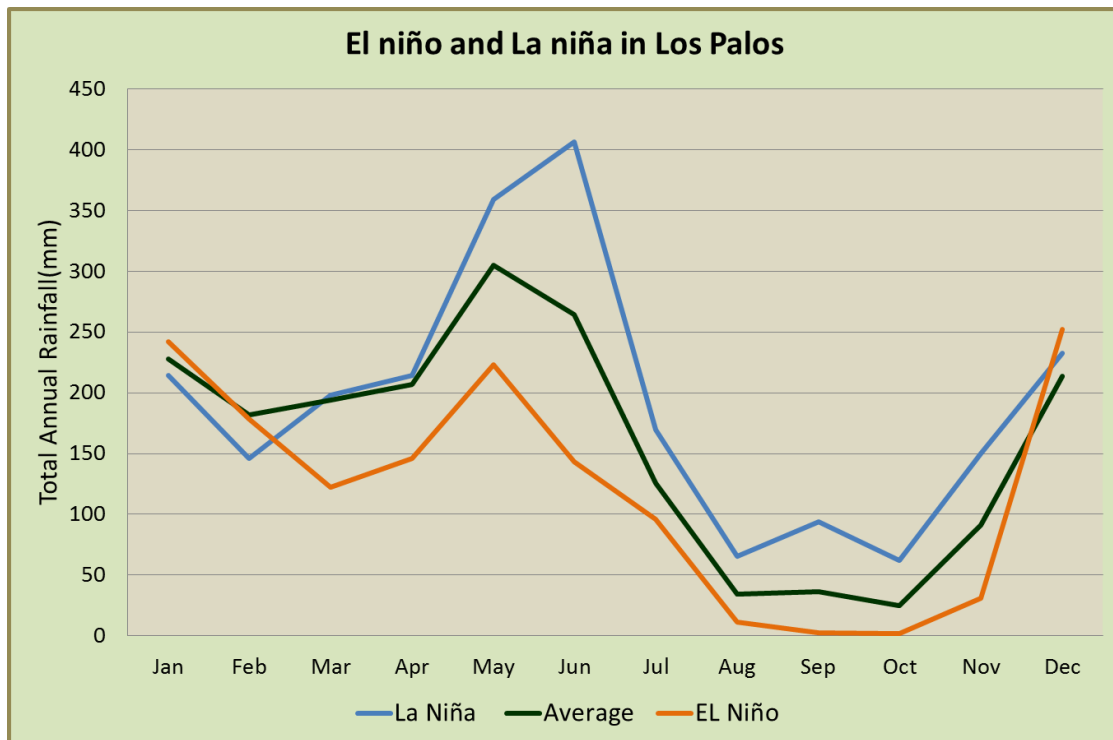
Manatuto: for the northern side of the district El Niño brings an intense and long dry season. La Niña means a shorter dry season and more rain especially in the early wet season.



Baucau: La Niña tends to deliver rain during the dry season whereas El Niño brings an extended dry season.



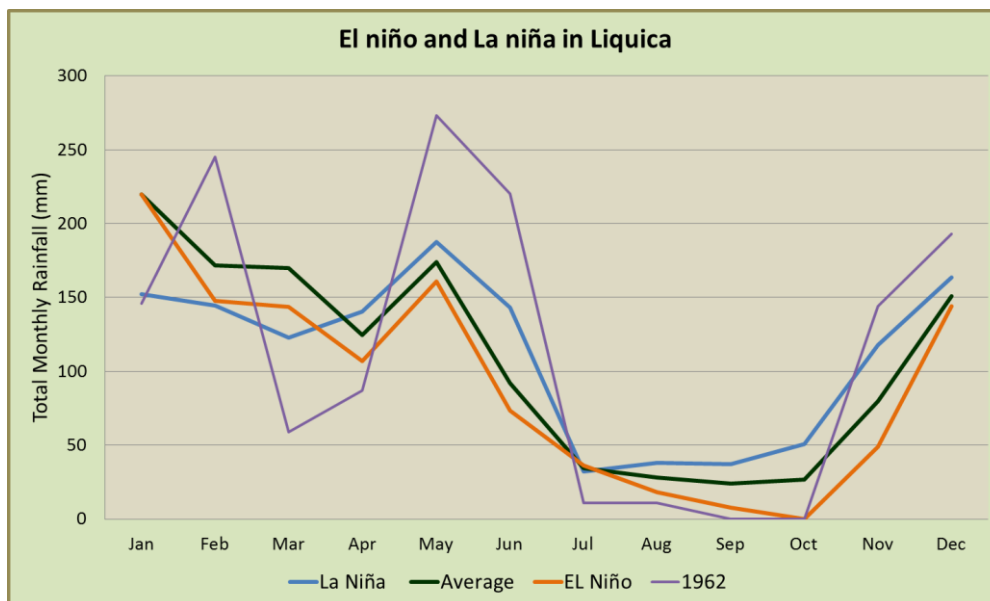
Viqueque: El Niño means less rain during the dry season. La Niña tends to bring significantly more rain throughout the year.



Los Palos: EL Niño brings less rain throughout the year. La Niña brings significantly more rain during the second peak in the wet season.

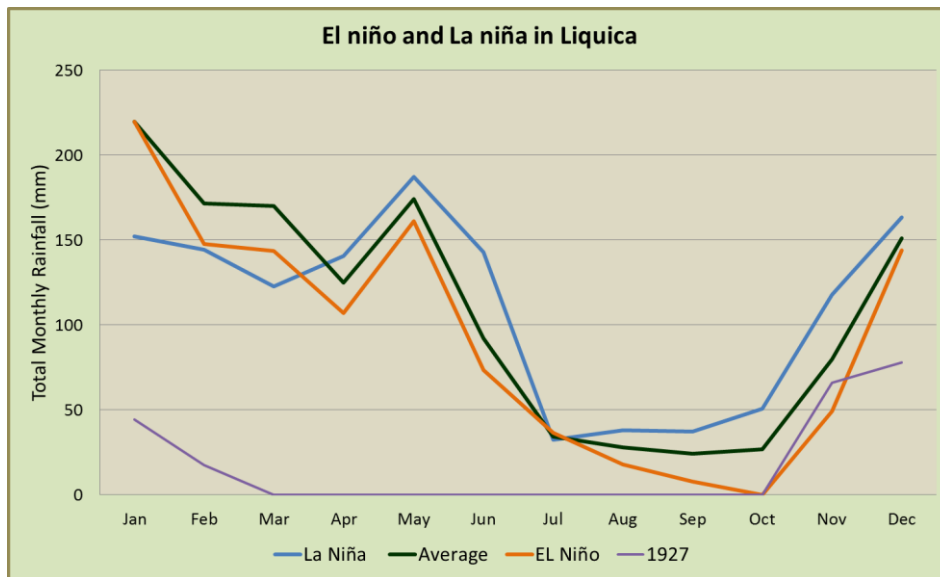
### Remember That its Just an Indication

It is important to note that these are averages to give agricultural workers and farmers a general idea of what to expect during EL Niño or La Niña. Individual years can have their own quite unexpected rainfall events. Below, in Liquica, two graphs are shown in 1962 and 1927 which are not officially considered as either EL Niño or La Niña cycles.



In 1962, Liquica experienced a strong bimodal wet season followed by very little rain in the dry season.





In 1927, records show that no rain fell from March through to October – this was not considered to be an El Niño year but rather a peculiarly difficult time for the Liquica area.

### In Summary

The El Niño Southern Oscillation cycle has a significant impact on the weather patterns of East Timor. It is important that agricultural workers and farmers have an understanding of how this cycle can affect them in their specific location. MAF should endeavour to be aware of the current SOI values and ENSO predictions and be able to warn farmers accordingly. The Climate Change Team in Seeds of Life will endeavour to assist MAF in this important area over the coming years.