

MARKET LINK

for primary producers

A publication of the Market Information Service (MIS) - Ministry of Agriculture and Fisheries
 “Linking the market and primary producers”

Inside this issue

Special Features	Page
General Climate of Samoa	1
Climate Change Effects on Agriculture in Samoa	1
Impacts on Agricultural Commodities	2
Impact on Livestock	3
Impact on Fisheries	3
Climate Adaptation Measures	3
Our Regular Features	
Local Market Prices	4
Exchange Rates	4

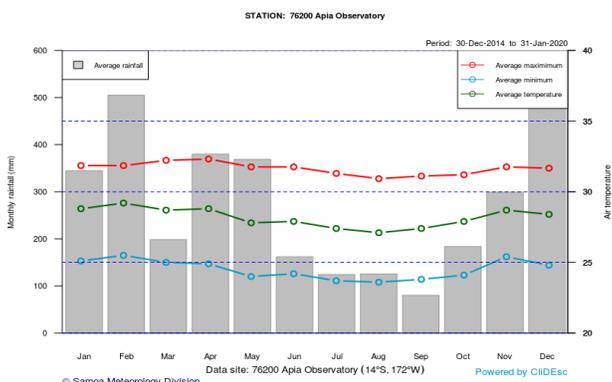
Climate Change Effects on Agriculture in Samoa



General Climate of Samoa

Samoa’s seasonal climate varies depending on the wet and dry seasons. On the average, about 75% of Samoa’s annual rainfall occurs in the wet season, between October and April, and this is accompanied with warmer air temperatures. By contrast, in the dry season (May-September) Samoa experiences low rainfall (only about 25% of the annual volume) and cooler air temperature.¹

Graph 1



Source: Metrology Division, MNRE

Droughts and flooding associated with the El Niño-Southern Oscillation have impacted the socio-economic livelihoods of the Samoan people on many occasions in the past.²

The current and anticipated occurrence of extreme weather in the Pacific Island Countries and thus Samoa will cause irreparable damage to food crops and other livelihood materials on which the island population depend. The projected impacts of climate change for agriculture in Samoa include extended periods of drought and loss of soil fertility, which will seriously affect agriculture and food security, and tropical cyclones bringing flooding and winds that will damage crops. Much of the prime agricultural land is located on the coastal plains that are threatened by sea level rise. Further climate- included changes in temperature; rainfall patterns, sea level, and the intensity of extreme weather events such as cyclones are projected to possibly:

¹ Apia, Samoa- Climate Change Vulnerability Assessment 2014

² Pacific Climate Change Science Program, 2011

- Affect the type of crops that can be grown and reduce agricultural yields due to greater heat stress more frequent and intense drought conditions or water logging, increased flooding of river catchments, and more soil erosions;
- Favor the establishment and spread of new pests and disease vectors, further threatening the production of crops and livestock; and
- Increase saltwater intrusion in atolls, further limiting what can be grown in these environments and exacerbating existing threats to food security.³

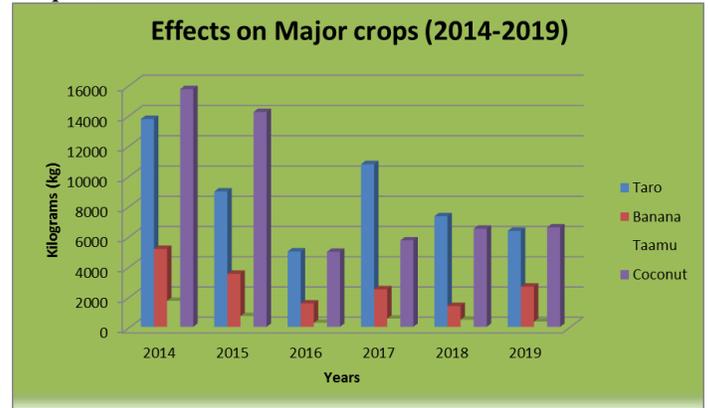
Impact on Agricultural Commodities Supply

Agriculture production has been affected by increasing temperatures, changing rainfall patterns, and more frequent and intense extreme weather events. In terms of the average supply of agricultural commodities at the Local Markets, fluctuation in weather conditions contributed to the fluctuation in the yield, quality and supply of all crops.

Heavy rainfall is likely to cause major damage to crops which led to higher market prices. Changes in rainfall patterns, temperature and wind direction could result in the establishment and emergence of new pests and diseases threatening agriculture & food security.

Presented in graph 2 below is the average supply of taro, banana, taamu and coconut, as major crops widely grown and consume in the country with regards to the annual rainfall and temperature. Taro is the most harvested and sold crop during low rainfall periods since 2016 to 2019, except in 2014 and 2015 whereas the supply of coconut increased substantially despite higher annual rainfall; banana in the first half of this 6 years period favored high rainfalls however supplies dropped in the drought periods with associated natural cyclones contributing to the reduction in the number of surviving plants especially early 2018. The graph indicated taamu supplies showing similar trend with rainfall amount throughout the period.

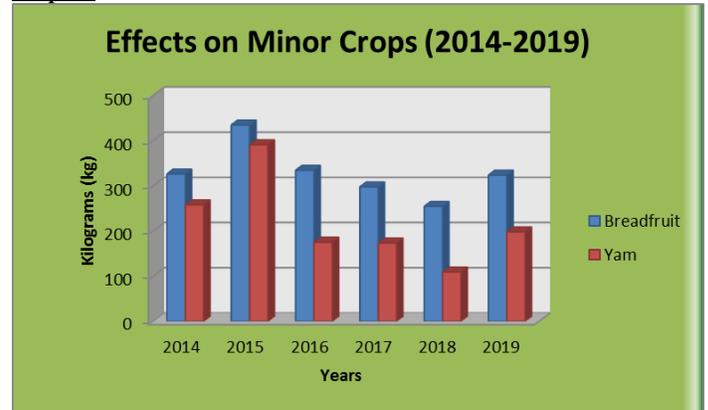
Graph 2



Source: SBS market data & Met rainfall data

Graph 3 displays the annual average supply of minor staple crops at the market in the last 6 years. Breadfruit supplies were relatively higher in the earlier years of the period and started dropping in 2016 to 2018, and then jumped again at about 12 percent in 2019. In addition to lower supplies of agricultural commodities at the market, average prices escalate while quality and quantity lessens resulting in decreasing consumer demand and switch to imported goods as substitutes for our local food stuff.

Graph 3



Source: SBS market data & Met rainfall data

Perishable crops such as vegetables and fruits are most vulnerable to changing weather conditions, pests and diseases. As shown in graph 4, head cabbage supplies jumped during peak rainfall periods as temperature lowers whereas Chinese cabbage is mostly likely the opposite. Tomato and cucumber supplies change slightly with the climate. Pumpkin dominates the sales abundantly at the market every year but reduction in supply is recorded during drought periods with limited rainfall since 2018 and 2019.

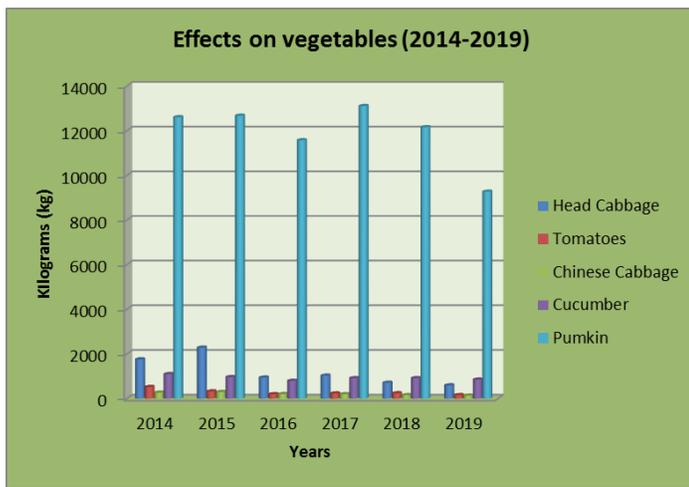
Graph 4

³<https://climateknowledgeportal.worldbank.org/country/samoa/impacts-agriculture>

for nutrients. Offshore fish catch is also highly dependent on sea surface temperatures.

Climate Change Adaptation Measures

Given all the potential impacts described above, the government has already put in place long term strategies and plans for climate risks and adaptation not only in the Agriculture sector but in all other sectors of the economy. As we are all aware of the various programs, projects and assistance from international organizations in the past and ongoing with regards to this issue. Of which include demonstration and analyzing the benefits of crop diversification and drought- and saline-resilient crops at the community farming level, strengthening the options available to local farmers to deal with climatic uncertainties and unpredictable dynamics in local food markets. Understanding the relationship between climate trends and vector-borne, water-borne, food-borne and heat related illnesses and thus providing a critical mass of data and knowledge for the design of more effective disease prevention programs. Educating farmers and fishers in practical areas which help manage and control climate change effects such as introducing new technologies and skills for farming and fishery. All in all, food security and health of all mankind is prioritized.



Source: SBS market data & Met rainfall data

Impact on Livestock

Atmospheric carbon dioxide levels are increasing and in some conditions pasture and fodder growth could increase through differing response of species could lead to shifts in the grass-legume balance. Soil microflora ecosystem may result in a soil fertility decline and reduced pasture growth.

Increasing temperature increase plant respiration and transpiration will lower pasture productivity, and feed for livestock will have increased lignin content that will reduce both digestibility and also the conversion of plant tissue into soil organic matter.

Rainfall as expected to increase will increase soil loss from pastures through erosion and decline quality of pasture. Increased heat stress on animals will result in reduced production and reproduction; lowered feed intake; reduce milk production; low conception rates; reduce growth; reduces the period of estrus results to less number of mounts and cause death.⁴

Impact on Fisheries

Marine ecosystem studies have shown a correlation between increased sea surface temperatures and incidents of fish poisoning. With reef fish being a major part of the Samoan diet, there is a real threat of more cases of fish poisoning. Damaged marine ecosystems, such as coral bleaching, add pressure to the already depleted fish stocks. This will lower the availability of fish for consumption, which will cause dietary problems for those who depend on reef fish

⁴[Climate change impact on livestock APHD Div, MAF.](#)

Table 1: Average Prices at the Fugalei Markets

Commodities (SAT\$/lb)	July 2020	August 2020	Lowest price for 2020to date	Highest price for 2020 to date
Taro	2.97	3.06	0.89	1.06
Banana	1.36	1.09	1.05	1.36
Taamu	4.64	5.17	0.90	2.29
Coconut	1.04	1.06	2.27	3.06
Breadfruit	1.31	1.11	3.56	5.32
Yam	4.22	3.58	3.47	5.97
Head cabbage	9.89	8.63	3.54	5.30
Tomato	12.08	14.57	4.32	9.82
Chinese cabbage	5.99	4.32	4.34	8.78
Cucumber	4.18	3.48	8.63	14.71
Pumpkin	4.13	3.58	12.08	19.92

Source: Samoa Bureau of Statistics

Table 2: Foreign currency per tala (ST\$)

July-August 2020		USD\$	NZD\$	AUD\$	YEN\$	FJD\$	EURO
1 Samoan Tala SAT\$ =		0.3824	0.5352	0.5127	39.1200	0.7855	0.3080

Source: Bank of the South Pacific

Market Link Newsletter

This newsletter is published bi-monthly and it seeks to assist stakeholders (farmers, consumers, wholesalers, policymakers) make informed market and marketing decisions based on credible, relevant price and supply information. Help us help you by providing constructive feedback on market information issues that will improve the service which will lead to growing a healthy and wealthy Samoa. For more information contact the Policy Planning and Communication Division and ask for Tilomai Wong.

Disclaimer

While every effort has been made to ensure the information in this publication is accurate, the Ministry of Agriculture and Fisheries does not accept any responsibility or liability for error or fact omission, interpretation or opinion which may be present, nor for the consequences of any decisions based on this information. Any views or opinions expressed do not necessarily represent the official view of the Ministry of Agriculture and Fisheries.

You can contact us by phone, fax and email or come down and visit us. We are located on Level 1, TATTE Building, Sogi or you can write to us at:

Ministry of Agriculture and Fisheries
P.O Box 1874
Phone: (685) 22 561
Email: tilomai.wong@maf.gov.ws