• The Pacific Climate Change Science Program:
http://www.cawcr.gov.au/projects/PCCSP

• Secretariat of the Pacific Community:
www.spc.int

• SPC Land Resources Division:
www.spc.int/lrd

• German Agency for International Cooperation (GIZ):
www.giz.de

• International Livestock Research Institute:
www.ilri.org

• Climate Change, Agriculture and Food Security Program:
www.ccafs.cgiar.org

• Food and Agriculture Organisation of the United Nations (FAO):
www.fao.org/climatechange/en/

• Manueli, P. (2010). Climate Change Mitigation and Adaptation for the Pacific. Suva:
Animal Health & Production Secretariat of the Pacific Community.

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SPC Secretariat of the Pacific Community

For More Information:
Contact your local animal health extension officer or
the Secretariat of the Pacific Community – LRD helpdesk:
lrdhelpdesk@spc.int

Produced by the Animal Health and Production Team,
Land Resources Division, Secretariat of the Pacific Community in collaboration with the German Agency for International Cooperation (GIZ)
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CLIMATE CHANGE AND LIVESTOCK IN THE PACIFIC ISLAND COUNTRIES AND TERRITORIES

Livestock And Food Security

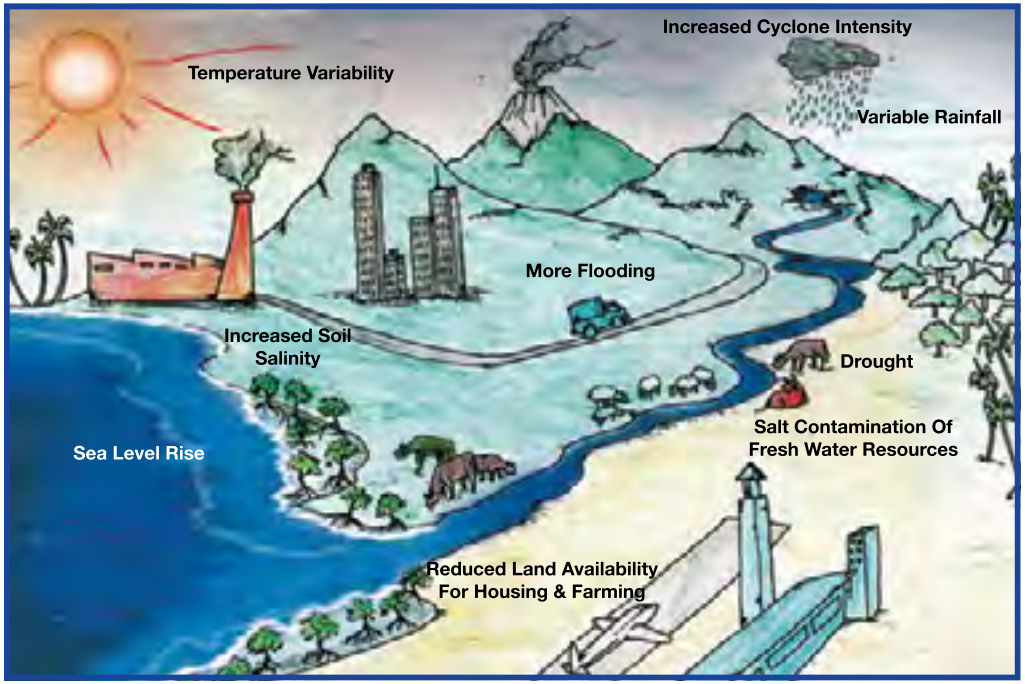
There is food security when people have access to food that is affordable, safe, nutritious and meets individual preferences. Food security also means there are equitable production, exchange and distribution of food that meet the needs of all consumers. Climate change perhaps poses the greatest risk to food security in the Pacific over the next century.

• Livestock are critical to food security in the Pacific. There is an imminent need for farmers, commercial industry and government agencies to make the region's livestock sector more resilient to climate change.

• Farmers and consumers are best able to manage risk when they can rely on diverse resources. Diversifying the livestock production system will contribute in ensuring that the farming sectors are resilient to disasters.

• Having diverse livestock products available will significantly contribute to food security in the communities, as the Pacific region deal with climate change.

• Both the private and public livestock sector has significant roles in educating decision-makers on the importance of livestock diversity for a food secure Pacific region.



Climate Change In The Pacific

- Some Pacific island countries are already experiencing environmental changes due to climate change. We can expect more of the following changes in the next couple of years:

✓ Countries may experience extreme events including tropical cyclones, storm surges, heat waves, drought and heavy rainfall.

✓ Increased rainfall is projected within the South Pacific Convergence Zone (SPCZ) in the wet season in particular. Climate models suggests that islands located near the eastern edge of the SPCZ will become drier in the wet season as the trade winds in the south-east Pacific become stronger.

✓ Changes in rainfall averaged over the Inter Tropical Convergence Zone (ITCZ) show a general increase in June-August, with little change in December-February, thereby amplifying the current seasonal cycle.

✓ There is a general tendency for rainfall to increase in the West Pacific Monsoon (WPM) region through the year, but with an amplification of the seasonal cycle rainfall.

✓ As climate changes, aspects of climate experienced in some countries during El Niño and La Niña events may differ from the past.

✓ The projected regional warming by 2030 is +0.5 to 1.0oC by 2030 regardless of emissions scenario, and +1.0 to 1.5oC by 2055 with regional differences depending on emission scenario.

✓ Large increases in the incidence of extremely hot days and warm nights are projected.

CLIMATE HAZARDS	LIVESTOCK IMPACTS
Increased Temperatures	Heat stress related reduced production (weight gain, milk, eggs) and reproduction.
Cyclones, Floods	Infrastructure damage: shelters and feed stores in villages, commercial barns, feed stores, processing facilities, roads. Supply and product shipping interruptions.
Flooding, Extreme Rainfall Events	Chronic disease (foot rot, brucellosis, GI parasites) exacerbation and emergence of animal diseases which can also affect humans.
Increased Temperatures, Flooding, Increased Cyclone Intensity	Direct mortality, loss of animals and potential animal genetic resources.
Increased Temperatures, Flooding, Salt Spray	Pasture damage, infrastructure damage.
Extreme Rainfall, Flooding, Sea Level Rise, Salt Spray, Drought, Salt Water Intrusion	Feed spoilage, scarcity, rising costs, salt poisoning and loss of grazing land.
Drought, Sea Level Rise, Salt Water Intrusion, Floods	Less fresh water for drinking, cooling and cleaning, salt poisoning and loss of grazing land
All Climate Hazards	Disease spread due to habitat shifts which may favor reproduction of disease agents.

Adapting Our Livestock

There are adaptation practices that livestock producers and services can immediately implement to make the farming community more resilient to climate change:

✓ Improve the design of traditional shelters for pigs and chickens to resist winds and flooding, increase air circulation, and decrease temperatures.

✓ Strengthen the commercial sector with barns and other facilities that resist cyclones and are located above flood zones.

✓ Assure fresh water supplies for livestock in villages and commercial facilities during disasters like cyclones, droughts and floods.

✓ Improve roadways critical to the movement of livestock supplies and products.

✓ Identify climate change tolerant breeds, and genetic lines within breeds, and improve tolerance to heat stress through line breeding, cross-breeding and importation of genetic stock.

✓ Develop new feeds and feeding methods that rely on locally available feedstuffs to reduce dependence on increasingly costly imported feedstuffs.

✓ Develop disaster plans for villages, countries and the region, including:

- Feedstuff stocks for quick distribution when disasters occur.
- Emergency water supply sources.
- Drought and flood reserve pastures and corals, with mechanisms to transport livestock to safe areas.

✓ Test and improve pasture species for heat, drought, flood and salt tolerance.

✓ Revise national animal disease surveillance systems:

- Include risk-based approaches to identify and target active surveillance activities to areas at greatest risk for disease spread, introduction or emergence.
- Provide farmers with incentives to report disease events.
- Make it possible to share information and data between livestock and public health surveillance offices, and collaborate in outbreak investigations.