

- * Environmental changes can cause stress, reduced productivity and increased vulnerability to diseases and pests.
 - Monitor health of your flocks and immediately report any disease cases to your livestock extension officers.
 - Clean shelters regularly.
 - Record keeping as part of good farm management practices.

Waste Management

- * To reduce the impact of animal waste in the environment, greenhouse gas emission and public health:
 - Composting animal manure for use as organic fertilisers in gardens, pastures and fodder plants
 - Fence waterways
 - Integrate sheep and goat in cash crop plantations for value adding and utilising animal waste as organic fertilisers.
 - Encourage rotational pasture grazing to allow recover of pasture and control worms.

giz



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Community

For More Information:

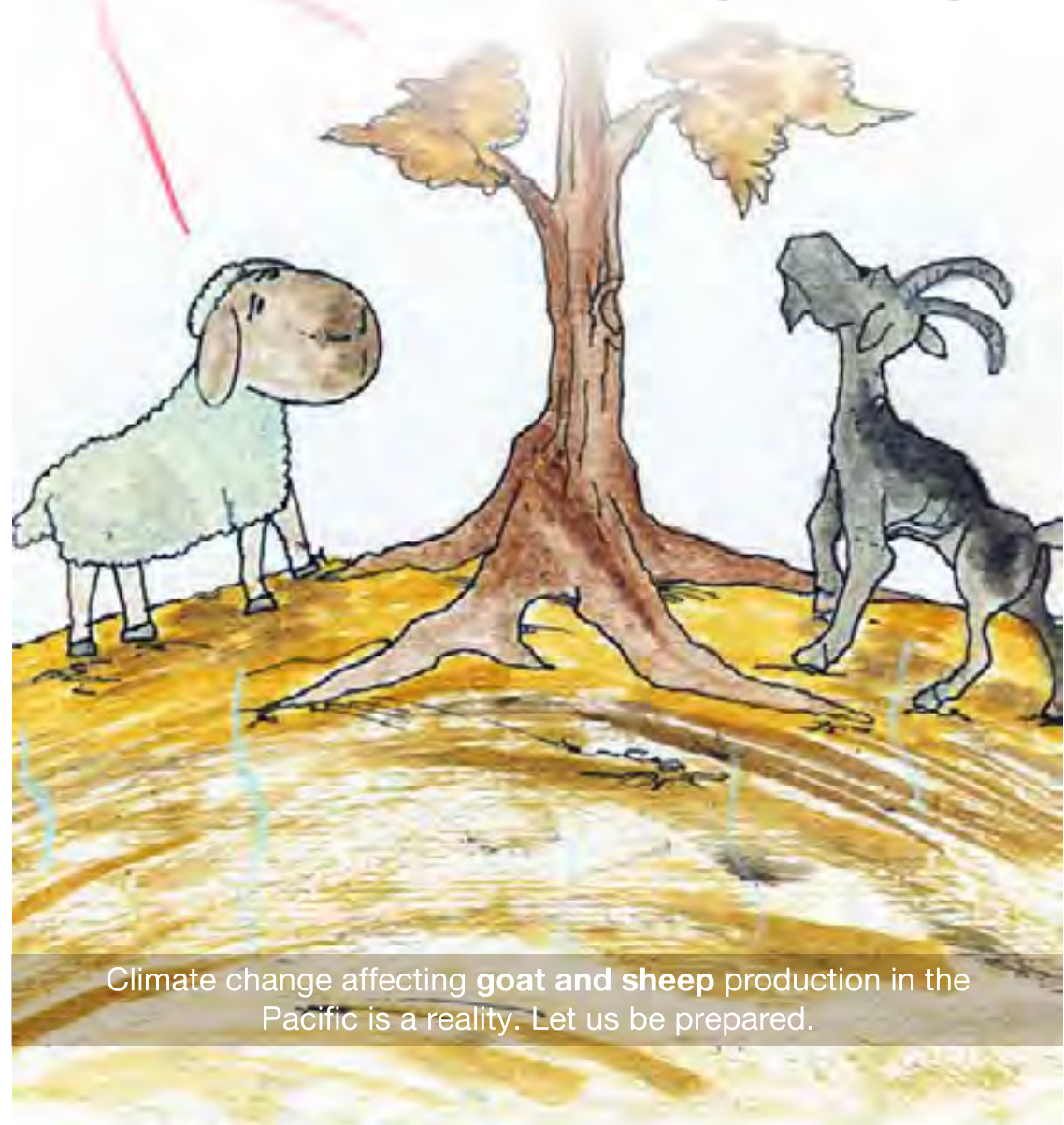
Contact your local animal health extension officer or the Secretariat of the Pacific Community – LRD helpdesk:
lrhelpdesk@spc.int

Produced by the Animal Health and Production Team,
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Coping with Climate Change in the Pacific Island Region Project
(CCCPIR)





Illustrations by John Bryan Mausio

CLIMATE CHANGE ADAPTATION FOR SMALLHOLDER GOAT & SHEEP FARMING IN THE PACIFIC



Climate change affecting **goat and sheep** production in the Pacific is a reality. Let us be prepared.

CLIMATE CHANGE IMPACTS:

Increased Temperature	Drought & Variable Rainfall	Increased Cyclones & Flooding Intensity	Sea Level Rise
 <p>A farmer in a red vest and black boots stands in a dry, yellow landscape. He is holding a large bundle of yellow hay. Several goats are gathered around him, some looking at a trough of water. A bright red sun is in the sky, with red arrows pointing towards the scene, indicating heat.</p>	 <p>A farmer stands in a dry, yellow landscape. A large tree with sparse, yellowing leaves provides shade for several goats. A bright red sun is in the sky, with red arrows pointing towards the scene, indicating heat and drought.</p>	 <p>A farmer is wading through floodwaters, holding a small goat. Several other goats are also in the water. In the background, a farm shed is being blown away by a strong wind, and a tree is leaning over. The sky is blue with white clouds.</p>	 <p>A farmer is wading through floodwaters, holding a small goat. Several other goats are also in the water. In the background, a green hillside is partially submerged, and a farm shed is being blown away by a strong wind. The sky is blue with white clouds.</p>
<ol style="list-style-type: none"> 1. Decreased production (reduced grazing, low body weight, less milk, fewer offspring). 2. Animals become temperamental and difficult to handle. 3. Heat stress. 4. Loss of animals and genetic resources 	<ol style="list-style-type: none"> 1. Poor pasture and fodder quality and reduced quantity. 2. Water shortage. 3. Heat stress. 4. Loss of animal and genetic resources. 5. Fire risks to pasture and structures. 	<ol style="list-style-type: none"> 1. Destruction of farm sheds and pasture cover. 2. Loss of production due to: <ul style="list-style-type: none"> • Increased incidence of pest and diseases. • Shortage of feeds due to flooded pastures. • Loss of animals due to drowning and diseases. 	<ol style="list-style-type: none"> 1. Reduced land area for grazing and natural shelter for cattle. 2. Salt spray damage to pasture and fodder crops. 3. Salt contaminated drinking water.

ADAPTATION OPTIONS:

<ul style="list-style-type: none"> • Select goats and sheep breeds that are tolerant and adapted to high temperatures, example hair sheep. • Plant tree shades in paddocks. • Build open-sided sheds. • Cut and carry to supplement non-grazing period. • Access to a good water source. 	<ul style="list-style-type: none"> • Planting of drought tolerant pasture and fodder species. • Supplement feeding through cut-and-carry grasses and introduce silage. • Provide additional water sources. • Consider use of commercially available stock feeds. • Restrict lighting fires in wide open areas. 	<ul style="list-style-type: none"> • Locating farm sites away from flood-prone areas. • Planting trees to cover and wind breaks. • Have an animal evacuation plan in place. • Organising animals for rapid relocation during floods and cyclones. • Cut and carry during periods of flood and cyclones to supplement feed. 	<ul style="list-style-type: none"> • Locate farm sites on elevated areas. • Planting of salt tolerant pasture and fodder crops. • Adjust stocking rates appropriate for available grazing areas. • Installation of additional rain water harvesting and storage facilities.
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