

**CLIMATE CHANGE WEATHER FORECAST & ITS EFFECTS TO AGRICULTURE
FOR BELIZE
May to July 2018**

LIVESTOCK	Zone	District	Possible Effects and actions to mitigate effect
1	Poultry	North, Central Inland & Central Coastal	<p>Corozal, Orange Walk, Cayo & Belize</p> <p>Increase in newcastle, Avian Influenza and Bronchitis disease outbreak due to low temperature and bird migration. Increase active surveillance for early detection and control measures of poultry diseases. Increase public awareness. Increase biosecurity measures in poultry farms</p>
		South	<p>Stann Creek & Toledo</p> <p>Increase in newcastle and Avian Influenza virus disease outbreak in Southern region; possible bronchitis disease outbreak as well. Implementation of vaccination program against newcastle disease. training of farmer on how to vaccinate against newcastle Public awareness and educational trainings. Increase surveillance (active and passive) for early detection and control measures.</p>
2	Cattle	North, Central Inland & Coastal	<p>Orange Walk, Corozal, Cayo & Belize</p> <p>Can cause an increase in internal and external parasites; as well as increase in rabies outbreak. Recommend timely vaccination against rabies and deworming of animals along with pasture management Increase bat trapping of hematofagous bats Ensure adequate water supply and hay storage or protein banks Can cause an increase in vesicular stomatitis in cattle and horses Increase management practice as well as animal rotation. Increase biosecurity measures. Isolate infected animal to prevent further infection.</p>
		South	<p>Stann Creek & Toledo</p> <p>Elevated risk of rabies transmission in cattle as well as vesicular diseases outbreak Increase surveillance for transboundary diseases. increase rabies vaccination where applicable. Increase in bat trapping program required. Can cause an increase in vesicular stomatitis in cattle and horses Increase management practice as well as animal rotation. Increase biosecurity measures. Isolate infected animal to prevent further infection. Can cause an increase in gastrointestinal infections Start the deworming of animals prior to the rainy season.</p>
3	Pigs	North, Central Inland & Coastal	<p>Corozal, Orange Walk, Cayo & Belize</p> <p>Increase in gastro intestinal and respiratory infections Proper farm management Implement deworming strategies and monitoring of symptoms</p>

		South	Stann Creek & Toledo	Increase in diarrhea infection Proper farm management Increase public awareness
4	Sheep	North, Central Inland & Coastal	Corozal, Orange Walk, Belize & Cayo	Increase in internal and external parasites. Deworming of animals and vitamins shots required Proper farm management
		South	Stann Creek & Toledo	Increase in risk for vesicular and transboundary disease that can potentially enter Belize. Continue surveillance (active and passive) program for these transboundary disease. Proper farm management
5	Bees	North, Central Inland & Coastal	Czl, O.W.; Cyo, Bze	Will favour an increase in small hive beetle population outbreak. Management practice in the control of the pest where it is present (Corozal Dist) Increase monitoring and surveillance
		South	Toledo & Stnn Crk	Can cause an expansion of the presence of the Small hive beetle to these areas Monitoring and surveillance needs to be conducted frequently

AGRICULTURE COMMODITIES

1	Sugarcane	North & Central Inland	Corozal, Orange Walk & Cayo	This condition will not favour the pest population outbreak of the frog hopper and sugar cane borrrers. Continue surveillance and monitoring of the pest
		South	Stann Creek & Toledo	Still poses a possibility of pest population increase of frog hopper. Increase surveillance and monitoring of pest population
2	Citrus	Central Inland	Cayo	Will favour psyllid population growth and posible outbreak. Increase monitoring of population dynamics Initiate area wide control measures Can increase the mite population a vector for the citrus leprosis virus. Miticide spray might be necessary for control.
		South	Stann Creek & Toledo	Will favour psyllid population growth and posible outbreak. Increase monitoring and area wide control measures.
3	Bananas	South	Stann Creek & Toledo	Do not favour increases in outbreak of Sigatoka Continue monitoring and normal preventative control measures.
4	Grains: Corn, Rice, Beans, Soy bean &	North & Central	Corozal, Orange Walk &	This will increase chances of mite population outbreak. Monitoring and preventative spray with miticide. Will favour army worm population outbreak

	Sorghum	Inland	Orange Walk & Cayo	<p>increase monitoring and effective control measures if necessary</p> <p>This will favour the yellow sorghum aphid population increase.</p> <p>Increase surveillance and control where necessary.</p>
		South	Stann Creek & Toledo	<p>This will favour population outbreak of the yellow sorghum aphid and mite population outbreak as well.</p> <p>Increase monitoring and control measures if necessary.</p>
5	Horticulture: Tomatoes, Peppers, Onions, Cabbage, Carrots & Potatoes	North	Corozal, Orange Walk, Cayo & Belize	<p>This will favour white flies, thrips and mite outbreak along with viral diseases.</p> <p><u>Monitoring</u> and implementing effective control measures.</p> <p><u>Cover structure</u> production where possible</p> <p>This will favour increase in population for diamond back moth</p> <p>Increase surveillance and monitoring of the pest and apply insecticide where necessary</p>
		South	Stann Creek & Toledo	<p>This will favour increase in white fly, thrips, leaf minor populations and fungal diseases.</p> <p>increase monitoring and effective control measures</p>
6	Fruits Trees: Coconuts, Avocadoes, Soursop & Cacao	North, Central Inland & Coastal	Corozal, Orange Walk, Cayo & Belize	<p>Will increase red mite population in coconuts.</p> <p>Spray with miticide where possible</p> <p>Increase in white fly population in avocadoes and soursop</p> <p>monitoring and spray with systemic insecticide</p> <p>Possible increase in the wasp population that affects soursop fruits.</p> <p>monitoring of the wasp and insecticide application where necessary followed by bagging of fruits</p> <p>Can increase weevil (<i>Rhynchophorus palmarum</i>) infestations that causes red ring disease</p> <p>Increase monitoring and trapping</p>
		South	Stann Creek & Toledo	<p>This will not favour increase in incidence of phytophthora problems in coconuts.</p> <p>Continue monitoring and control measures where necessary.</p> <p>Will not favour an increase in monilia problems in cacao.</p> <p>Normal monitoring for moniliasis and control measure where necessary</p>