

**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>Increase in newcastle, Avian Influenza and Bronchitis disease outbreak due to low temperature and bird migration.</p> <p>Increase active surveillance for early detection and control measures of poultry diseases.</p> <p>Increase public awareness.</p> <p>Increase biosecurity measures in poultry farms</p>
		South	<p>Increase in newcastle and Avian Influenza virus disease outbreak in Southern region; possible bronchitis disease outbreak as well.</p> <p>Implementation of vaccination program against newcastle disease.</p> <p>training of farmer on how to vaccinate against newcastle</p> <p>Public awareness and educational trainings.</p> <p>Increase surveillance (active and passive) for early detection and control measures.</p>
2	Cattle	North, Central Inland & Coastal	<p>Can cause an increase in internal and external parasites; as well as increase in rabies outbreak.</p> <p>Recommend timely vaccination against rabies and deworming of animals along with pasture management</p> <p>Increase bat trapping of hematofagous bats</p> <p>Ensure adequate water supply and hay storage or protein banks</p> <p>Can cause an increase in vesicular stomatitis in cattle and horses</p> <p>Increase management practice as well as animal rotation.</p> <p>Increase biosecurity measures.</p> <p>Isolate infected animal to prevent further infection.</p>
		South	<p>Elevated risk of rabies transmission in cattle as well as vesicular diseases outbreak</p> <p>Increase surveillance for transboundary diseases.</p> <p>increase rabies vaccination where applicable.</p> <p>Increase in bat trapping program required.</p> <p>Can cause an increase in vesicular stomatitis in cattle and horses</p> <p>Increase management practice as well as animal rotation.</p>

				<p>Increase biosecurity measures.</p> <p>Isolate infected animal to prevent further infection.</p> <p>Can cause an increase in gastrointestinal infections</p> <p>Start the deworming of animals prior to the rainy season.</p>
3	Pigs	NORTH, Central Inland & Coastal	Corozal, Orange Walk, Cayo & Belize	<p>Increase in gastro intestinal and respiratory infections</p> <p>Proper farm management</p> <p>Implement deworming strategies and monitoring of symptoms</p>
		South	Stann Creek & Toledo	<p>Increase in diarrhea infection</p> <p>Proper farm management</p> <p>Increase public awareness</p>
4	Sheep	NORTH, Central Inland & Coastal	Corozal, Orange Walk, Belize & Cayo	<p>Increase in internal and external parasites.</p> <p>Deworming of animals and vitamins shots required</p> <p>Proper farm management</p>
		South	Stann Creek & Toledo	<p>Increase in risk for vesicular and transboundary disease that can potentially enter Belize.</p> <p>Continue surveillance (active and passive) program for these transboundary disease.</p> <p>Proper farm management</p>
5	Bees	North, Central Inland & Coastal	Czl, O.W.; Cyo, Bze	<p>Will favour an increase in small hive beetle population outbreak.</p> <p>Management practice in the control of the pest where it is present (Corozal Dist)</p> <p>Increase monitoring and surveillance</p>
		South	Toledo & Stnn Crk	<p>Can cause an expansion of the presence of the Small hive beetle to these areas</p> <p>Monitoring and surveillance needs to be conducted frequently</p>

AGRICULTURE COMMODITIES

1	Sugarcane	North & Central Inland	Corozal, Orange Walk & Cayo	<p>This condition will not favour the pest population outbreak of the frog hopper and sugar cane borers.</p> <p>Continue surveillance and monitoring of the pest</p>
		South	Stann Creek & Toledo	<p>Still poses a possibility of pest population increase of frog hopper.</p> <p>Increase surveillance and monitoring of pest population</p>

2	Citrus	Central Inland	Cayo	<p>Will favour psyllid population growth and posible outbreak.</p> <p>Increase monitoring of population dynamics</p> <p>Initiate area wide control measures</p> <p>Can increase the mite population a vector for the citrus leprosis virus.</p> <p>Miticide spray might be necessary for control.</p>
		South	Stann Creek & Toledo	<p>Will favour psyllid population growth and posible outbreak.</p> <p>Increase monitoring and area wide control measures.</p>
3	Bananas	South	Stann Creek & Toledo	<p>Do not favour increases in outbreak of Sigatoka</p> <p>Continue monitoring and normal preventative control measures.</p>
4	Grains: Corn, Rice, Beans, Soy bean & Sorghum	North & Central Inland	Corozal, Orange Walk & Cayo	<p>This will increase chances of mite population outbreak.</p> <p>Monitoring and preventative spray with miticide.</p> <p>Will favour army worm population outbreak</p> <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 diamon back moth</p> <p>Increase surveillance and monitoring of the pest and apply insectide 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, Avocados,	North		<p>Will increase red mite population in coconuts.</p> <p>Spray with miticide where possible</p> <p>Increase in white fly population in avocados and soursop</p>

	Soursop & Cacao	North, Central Inland & Coastal	Corozal, Orange Walk, Cayo & Belize	<p>monitoring and spray with systemic insecticide</p> <p>Possible increase in the wasp population that affects soursop fruits. monitoring of the wasp and insecticide application where necessary followed by bagging of fruits</p> <p>Can increase weevil (<i>Rhyncophorus palmarum</i>) infestations that causes red ring disease Increase monitoring and trapping</p>
		South	Stann Creek & Toledo	<p>This will not favour increase in incidence of pythoptora problems in coconuts. Continue monitoring and control measures where necessary.</p> <p>Will not favour an increase in monilia problems in cacao. Normal monitoring for moniliasis and control measure where necessary</p>