

Voluntary Report – Voluntary - Public Distribution

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Report Name: Preliminary Assessment of Eta and Iota Tropical Depressions
Impact on Guatemalan Agriculture

Country: Guatemala

Post: Guatemala City

Report Category: Agricultural Situation, Agriculture in the Economy, National Plan, Policy and Program Announcements, Agriculture in the News, Climate Change/Global Warming/Food Security, Coffee, Fishery Products, Avocado, Canned Deciduous Fruit, Dried Fruit, Fresh Deciduous Fruit, Fresh Fruit, Kiwifruit, Raisins, Stone Fruit, Strawberries, Grain and Feed, Livestock and Products, Oilseeds and Products, Poultry and Products, Vegetables

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Report Highlights:

In November, two category four hurricanes made landfall in Central America. Both reached Guatemala as tropical depressions and had a severe impact on agricultural production. Total known losses to date include 165,000 hectares of affected crops valued at \$4.3 million. Significant losses have been reported in the black bean, corn, rice, rubber, palm oil, coffee, and horticultural crops. In the animal sector, the losses report includes poultry, cattle, swine, horses, small ruminants, and aquaculture fish. The storms affected close to 286,000 farmers.

Executive Summary:

Hurricanes Eta and Iota both passed through Central America within a two-week period and affected an estimated 286,000 farmers in rural Guatemala who depend on agricultural production for both income and food security. The storms affected 108 municipalities, roughly one third of the country, in the departments (a department is like a state) of Peten, Huehuetenango, Quiche, and Alta Verapaz in the North; Izabal, Zacapa, Chiquimula, and El Progreso in the East; and Jutiapa and Santa Rosa in the South East of the country.

Damage assessments are ongoing, as many areas remain flooded, and subsequent rains have complicated efforts to survey the affected areas. Thanks in part to a USDA donation which helped them build a new emergency control room, the Ministry of Agriculture, Livestock, and Feed (MAGA) issued [27 consecutive situational bulletins](#) which reported on estimated losses in the most affected areas, including some villages which were entirely flooded, and one village in Alta Verapaz that was completely buried. On November 6, the Government of Guatemala declared a “state of calamity” in the affected departments.

Of the 165,000 hectares affected by the storms, 101,000 hectares belong to smallholder farmers who produce a wide variety of crops, from basic grains (beans, corn, and rice) to coffee, cardamom, cacao, green beans, broccoli, lemon, fruits, cantaloupe, hibiscus, potato, and other horticultural products. Rainy weather conditions continue in Guatemala, exacerbating the already high rivers water levels which were already above normal before the hurricanes struck. Soils will need another two to three weeks to drain. Total specified losses include 24,000 hectares of beans, 14,500 hectares of flooded palm oil plantations, 2,100 hectares of rubber, at least 630 hectares of coffee, and 420 hectares of commercial rice. In addition, in the animal sector, reported losses are poultry (73,329 birds), cattle (8,421 cows), swine (4,375 pigs), horses (685), small ruminants (3,492), and aquaculture (34,500 fish).

MAGA reports that food prices have started to increase, especially in the local markets. During the last week of November, corn prices nationwide increased 11 percent, and in Izabal were up 25 percent. In the main wholesale markets of Guatemala City, black bean prices are up 4.3 percent, peppers 19 percent, potatoes 14 percent, “guisquil” 49 percent, and lemon 15 percent. These increases reflect reduced food availability due to the storm impacts, such as flooding as well as damage to infrastructure.

TROPICAL STORMS AT THE END OF THE RAINY SEASON IN GUATEMALA

Guatemala’s rainy season runs from the end of April to the end of November, except in the northern part of the country (Peten, Izabal, Alta Verapaz, Quiché, Huehuetenango) where the rainy season begins a bit later and sometimes extends until February. This year’s pattern was affected by the La

Niña phenomenon, which brought additional rain that, combined with an unusual hurricane season, literally resulted in the “perfect storms”.

From September through November of 2020, hurricanes Nana, Eta, and Iota hit Central America, entering from the Caribbean side. The storms degraded to tropical depressions before entering Guatemala, but the cumulative agricultural losses are estimated to exceed \$4.3 million, 2.5 times the agricultural losses reported by hurricane Mitch in October-November of 1998, valued at \$242,000 (not adjusted for inflation).

The Ministry of Agriculture, Livestock, and Feed (MAGA) published [23 situational bulletins on the agricultural impact of ETA](#), and extended to [27 situational bulletins to include Iota impacts](#) thanks to USDA’s donation of an emergency control room, through a Food for Progress Program with Counterpart International. The control room, named the Agricultural Strategic Intelligence Center (CEIA), was equipped with digital technology that permitted GIS specialists to map damages and estimate crop and animal losses through field visit validation by MAGA extension agents (see Figure 1). USDA has a long-standing collaborative history training MAGA extensionists, GIS technicians, and market information specialists.

Figure 1
MAGA Agricultural Strategic Intelligence Center (CEIA) donated by USDA/Counterpart



Source: [MAGA, 2020](#)

Eta hit Guatemala on Nov. 3-5, 2020. On November 6, 2020, the Government of Guatemala published Presidential Decree 20-2020, establishing a State of Calamity for 30 days for the affected departments. At least 189 roads were affected, and 18 roads destroyed. Total bridges affected were 52, with 36 destroyed. Some of the damaged bridges were in: Jupilingo (Camotan, Chiquimula), Santiago (las Verapaces, Baja Verapaz), Sioux (Morales, Izabal), Bailey on Naranjo river (Gualán, Zacapa), Bailey on Chajul (Chajul, Quiché), Uspantán (Uspantán, Quiché), Saquil (Saqil Grande, Nebraska, Quiché), Santiago (Rio Zacapa), Achiotes (Mayuelas, Zacapa), and the CA-9 Panamerican Highway. Figure 2 shows Eta's impacts at the departmental and municipality levels.

Figure 2
Areas affected by Eta tropical depression in Guatemala (orange color)



Source: [MAGA, Bulletin 23, Nov. 17, 2020](#)

Hurricane Iota hit Guatemala on Nov. 17-20 of 2020. Iota was not as damaging as Eta but increased the flooding risks of the following rivers: Motagua (Morales, Izabal and Gualán, Zacapa), La Pasión (La Libertad and Sayache, Peten), San Pedro (San Andres, Petén), Chixoy (Sayaxche, Peten), Usumacinta (La Libertad, Peten), San Pedro (San Luis, Peten), Dulce (Livingston, Izabal) and the Lake Izabal.

Figure 3 below shows the areas affected in Alta Verapaz, Izabal, Huehuetenango, Baja Verapaz, Zacapa, Chiquimula, El Progreso, and Jutiapa. Iota affected roughly 45,000 hectares of corn, beans, cardamom, cacao, green beans, broccoli, lemon, fruits, cantaloupe, hibiscus, potato, and some other minor horticultural crops, which 86,000 farmers depend on for income and food security.

Figure 3

Affected areas by Iota tropical depression in Guatemala (orange area)



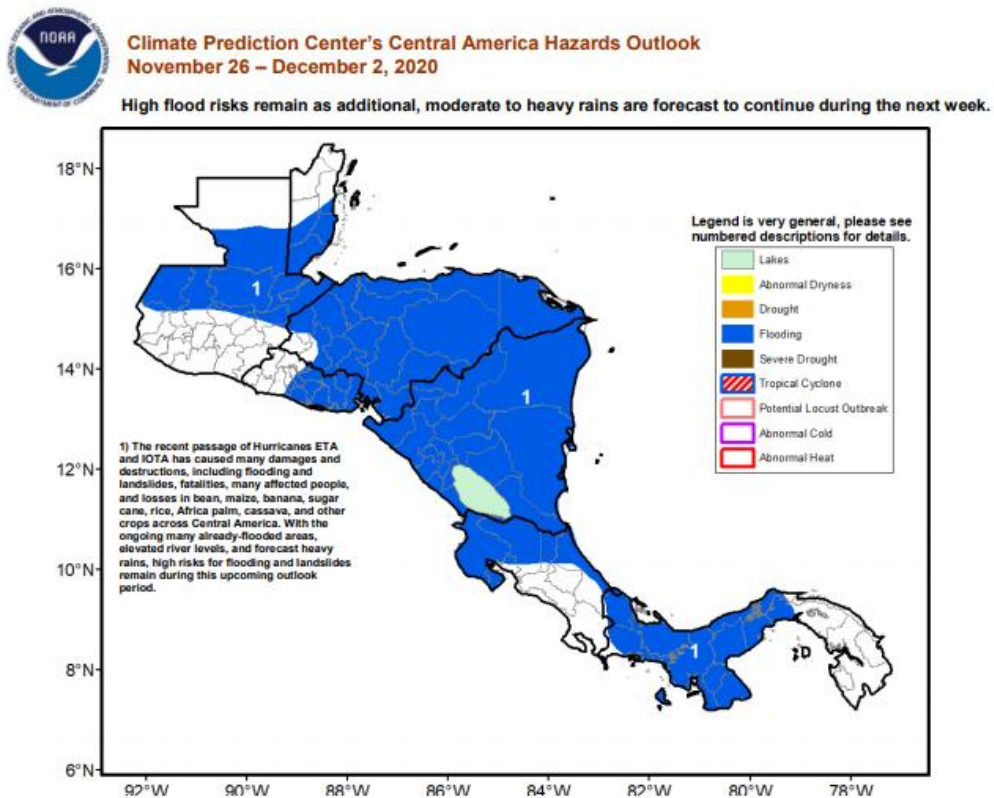
Source: [MAGA, Bulletin 27, Nov. 26, 2020](#)

The departments that were most affected by both storms were Alta Verapaz, Izabal, Chiquimula, Quiché, and Jutiapa. Izabal was the hardest hit in terms of infrastructure, affecting trade at Port Santo Tomas where most containers enter Guatemala from the Atlantic, and Puerto Barrios, the main port used for banana exportation. The land crossings connecting Guatemala and Honduras were shut down, forcing logistical rearrangements to transport cargo to El Salvador and Honduras.

The broken border connection between Guatemala and Honduras resulted in an estimated \$500,000 loss in just the first 6-days, as transportation had to account for additional logistical challenges, which doubled freight costs (+\$236.8 per container).

Damage to highway CA-9 continues to slow traffic to the Atlantic ports. For the week of Nov 26-Dec 2, 2020 the Famine Early Warning System Network (FEWSNet) warned of high flood risks due to moderate rains falling on saturated soil, as shown in Figure 4.

Figure 4
FEWSNet weather warning for Nov.26-Dec. 2, 2020 in Central America



Source: [FEWSNET Weather Alert](#)

The following rivers were reported to have higher-than-expected water levels by the Hydrological, Meteorological, and Vulcanology Institute (INSIVUMEH): Polochic River (Polochic Valley, Alta Verapaz), Los Esclavos River (Cuilapa, Santa Rosa), Motagua River (Gualán, Zacapa), Chixoy River (Chisec, Alta Verapaz), La Pasion River (Las Cruces, Petén), San Pedro River (San Andres, Peten), and Usumacinta River (Las Cruces, Petén).

Table 1 reports the amount of rain in millimeters (mm) reported by some of the meteorological stations in the middle of the storm.

Table 1
Millimeters (mm) of rain reported in the previous 12 hours by the meteorological stations
in Eta affected departments in Guatemala on Nov. 5, 2020

Meteorological Station	Department	Millimeters of Rain in the last 12 Hours
Cahabón	Alta Verapaz	53.1
Cobán	Alta Verapaz	51.1
Camotán	Chiquimula	45.6
Esquipulas	Chiquimula	21.1
Puerto Barrios	Izabal	100.1
Las Vegas	Izabal	101
Maricos	Izabal	21.6
Mundo Maya	Petén	2.8
Poptún	Petén	23.6
Machaquilá	Petén	37.5
Chachaclún	Petén	3.6
Chixoy	Petén	42.1
Melchor	Petén	13.3
Nebaj	Quiché	11.2
La Unión	Zacapa	70
Zacapa	Zacapa	42.1

Source: INSIVUMEH, Nov. 5, 2020

Alta Verapaz was one of hardest hit departments. Photo 1 shows Campur Village in San Pedro Carcha municipality completely flooded, with a pool of standing water 2.5 km in diameter and 25 meters deep.

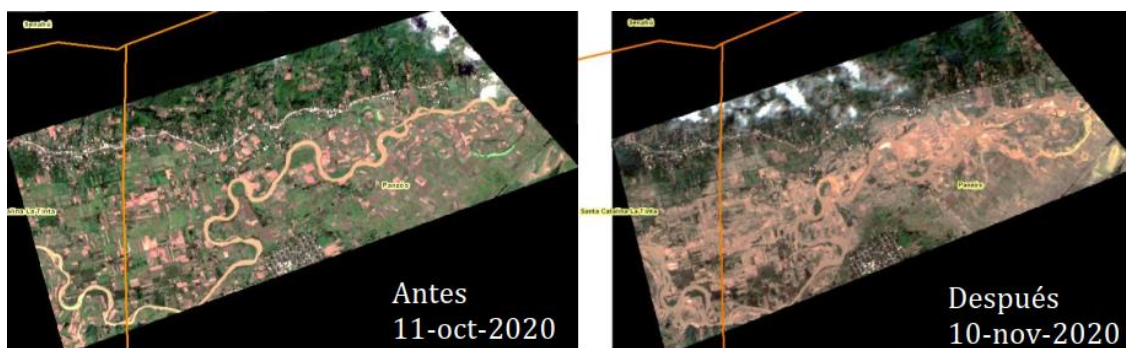
Photo 1
Campur Village in San Pedró Carcha in Alta Verapaz
completely flooded by Eta tropical depression



Source: [MAGA, Bulletin 22 - Nov. 16, 2020](#)

Photo 2 shows the flooding of Panzos and Santa Catalina La Tinta municipalities in Alta Verapaz, which damaged the entire community, cropland, and roads. Panzos and Santa Catalina La Tinta are municipalities in The Polochic Valley in Alta Verapaz, which also includes the municipalities of Tamahú, Tukurú, and Senahú. This valley is very fertile and is irrigated by the Polochic River.

Photo 2
Panzos and Santa Catalina La Tinta destroyed agricultural land in Alta Verapaz
before (left) and after (right) Eta tropical depression in Guatemala



Source: [MAGA, 2020, Bulletin 14, Nov. 12, 2020.](#)

AFFECTED CROPS

Beans

Beans are the main source of protein in the Guatemalan diet, and the commercial black bean production is concentrated in the Eastern region, mainly in Chiquimula, which was hard-hit by both storms. According to MAGA's previous estimate, the national production of beans for marketing year 2021 would reach 116,359 MT, to be harvested from August to December. The storms destroyed roughly 24,000 hectares of beans (see Table 2) out of the 150,000 planted, for a total loss of 18,617 MT (16 percent of the total annual production). Losses may reach up to 75,000 hectares of beans.

Table 2
Destroyed vs. affected areas in bean plantations in Guatemala
after Eta and Iota tropical depressions
(last update Nov. 27, 2020)

CROP	Department	Affected Area (Ha)	Destroyed Area (Ha)
BEANS			
	CHIQUMULA	13,659	9,677
	EL PROGRESO	358	22
	HUEHUETENANGO	49	38
	IZABAL	139	139
	ALTA VERAPAZ	1,012	863
	PETEN	380	365
	QUICHE	242	360
	ZACAPA	433	418
	JUTIAPA	53,466	7,983
	SANTA ROSA	5,329	4,165
TOTAL		75,066	24,028

Source: USDA elaboration with MAGA database

Corn

Corn is planted in every department of Guatemala and is the country's main staple food. Table 3 shows the loss of small production corn plots resulting from the tropical storms, accounting for a total estimated grain loss of roughly 23,000 hectares, with 50,000 families dependent on this crop. Commercial corn losses may increase as a result of the expected *Postrera* harvest for Nov-Dec 2020, which is mainly sourced from Peten and the Franja Transversal del Norte. The *Postrera* harvest accounts for 27 percent of the annual harvest, and the late Jan-Feb *Apante* harvest represents additional 6 percent of the yearly production.

Table 3
Destroyed vs. affected areas of small production plots of corn in Guatemala
resulting from Eta and Iota tropical depressions
(last update Nov. 27, 2020)

CROP	Department	Affected Area (Ha)	Destroyed Area (Ha)
CORN	CHIQUMULA	1,398	
	ALTA VERAPAZ	7,682	6,476
	EL PROGRESO	1,215	83
	HUEHUETENANGO	741	606
	IZABAL	5,085	4,933
	JUTIAPA	1,280	64
	PETEN	5,917	5,119
	QUICHE	2,660	2,231
	SANTA ROSA	3,315	1,576
	ZACAPA	2,036	1,853
TOTAL		29,930	22,941

Source: USDA elaboration with MAGA database

*Note: Potential additional losses of *Postrera* harvest affected

MAGA has reported potential distribution of corn seed to help farmers replant the corn crop lost in the northern and eastern parts of the country. Photo 3 shows corn losses in Alta Verapaz and El Estor, Izabal.

Photo 3

Corn losses in San Cristobal, Alta Verapaz (above) and El Estor, Izabal (bottom)



Source: [MAGA bulletin 24 - Nov. 21, 2020](#)

Photo 4 shows additional pictures of corn losses in Izabal and Zacapa.

Photo 4

Corn losses in Livingston, Izabal (above) and Zacapa (bottom)



Source: [MAGA bulletin 24 - Nov. 21, 2020](#)

Rice

The storms caused a significant rise in the Polochic River, causing the flooding of the valley of the same name, where 420 hectares of commercial rice were lost (Photo 5). Rice in Guatemala is harvested in August-December, and Eta destroyed the equivalent of 1,656 MT or 8.9 percent of the MY2021 production.

Photo 5

Rice plantations destroyed by Eta in the Polochic Valley in Alta Verapaz



Source: ARROZGUA, 2020

Rubber

Total losses in the rubber sector, including damage to infrastructure and inputs, account or \$70,000, with roughly 275 MT of rubber lost (see Table 4) at the beginning of the harvest season. As the rubber sector was previously hurt by the shutdown of the global airplane wheel production facilities from March-August due to the COVID-19 pandemic; this sector faces significant challenges for economic recovery.

Table 4
Rubber trees and rubber losses due to Eta and Iota tropical depressions in Guatemala

DEPARTMENT	Number of Trees Destroyed (unit)	Value (\$)	Rubber (MT)	Value (\$)
Alta Verapaz	2,975	37,090	49.6	70,318
Baja Verapaz	1,245	15,522	20.8	29,427
Quiché	1,190	14,836	19.8	28,127
Izabal	7,687	95,838	128.1	181,693
Petén	3,380	4,218	56.3	79,891
TOTAL	16,477	205,428	274.6	389,456

Source: Guatemalan Rubber Association (Gremial de Huleros de Guatemala), 2020

Palm Oil

GREPALMA, the Palm Oil Association in Guatemala, reported 7,788 hectares of palm oil trees flooded in the Northeastern part of the country. The municipalities of Puerto Barrios, Morales, Livingston in Izabal Department were flooded by the Patuxte River. In addition, 5,530 hectares of palm oil plantations are flooded in the North, mainly in Peten (San Luis municipality), Alta Verapaz (Chisec municipality), and the Franja Transversal del Norte, which extends from Izabal to Huehuetenango. In Chisec, Yalmachac and Playitas municipalities, rivers remain flooded, which has limited access for harvesting. GREPALMA is still estimating total losses. Photo 6 shows palm oil trees flooded by the Polochic River in Alta Verapaz.

Photo 6

Palm oil plantations flooded in the Polochic Valley (Alta Verapaz) as a result from Eta



Source: GREPALMA, 2020

Coffee

Guatemala has 305,000 hectares planted with coffee for marketing year (MY) 2021, of which 260,000 hectares are already undergoing harvest (Sep-Feb). The total production estimate for MY2021 was 3.67 million 60-Kg bags. Eta and Iota destroyed at least 3,463 hectares of small coffee farms (see Table 5). According to ANACAFE, the Coffee National Association, the coffee region that includes Las Verapaces and El Estor, Izabal, produces 8 percent of the national production with 21,000 hectares and a total output of 364,000 60-Kg bags. We anticipate that the coffee harvest in that area might report significant losses, after receiving reports from Samac Cooperative, in Coban, Alta Verapaz, that 40 percent of the coffee area is flooded.

Table 5
Destroyed vs. affected areas of small coffee plantations in Guatemala
resulting from Eta and Iota tropical depressions
(last update Nov. 27, 2020)

CROP	Department	Affected Area (Ha)	Destroyed Area (Ha)
COFFEE	ALTA VERAPAZ	944	805
	CHIQUMULA	50	-
	HUEHUETENANGO	162	112
	JUTIAPA	80	-
	QUICHE	2	2
	SANTA ROSA	3,797	2,365
	ZACAPA	178	178
TOTAL		5,213	3,463

Source: USDA elaboration with MAGA database

Cardamom

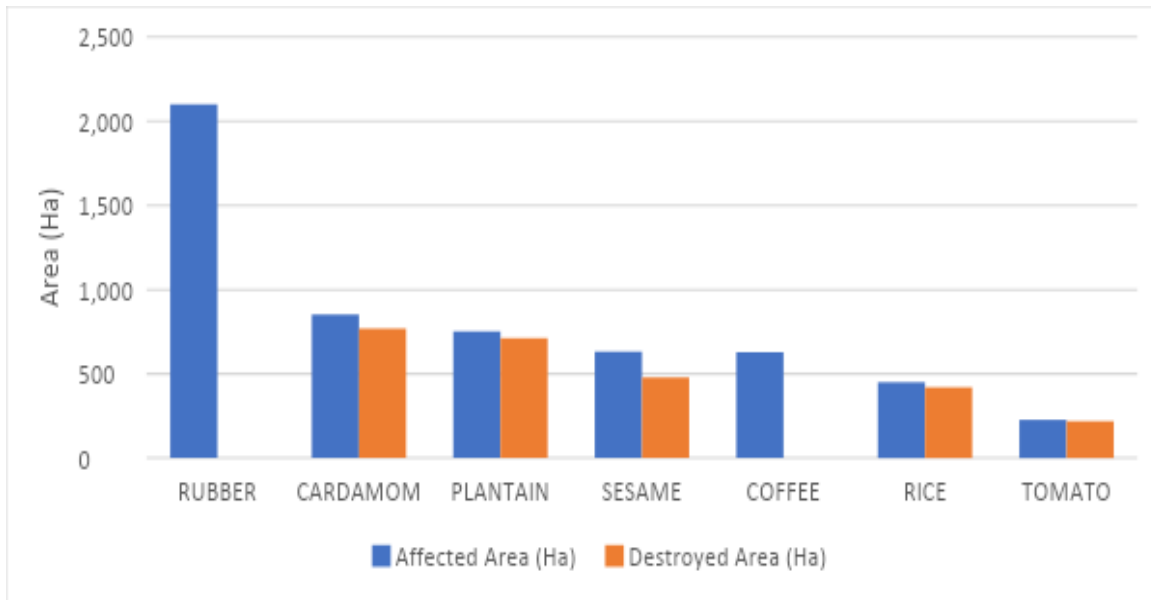
ETA destroyed 769 hectares of cardamom from a total affected area of 851 hectares in Alta Verapaz (479 Ha), Izabal (286 Ha), and Quiche (4 Ha). Cardamom is planted in the Franja Transversal del Norte, with Alta Verapaz accounting for at least 70 percent of national production. Cardamom harvest season goes from July to October, therefore the CY2020 production was not affected. CY2021 harvest will potentially see a reduction of 500 MT, less than 2 percent of the total harvest, estimated at 40,000 MT. Total area planted with cardamom in 2020 is estimated at 75,000 hectares.

Other crops affected

The most affected crops include rubber, corn, beans, cardamom, coffee, rice, and palm oil; minor losses were also reported in lemon, potato, cassava, sweet potato, sugar beet, sugar cane, honey, hibiscus, snow peas, green beans, avocado, onion, garlic, mango, cauliflower, tobacco, lettuce, banana, plantain, tomatoes, peppers, peanuts, and some other horticultural crops ("guisquil"). The total number of affected farmers is estimated as 286,000.

Figure 5 shows important losses in rubber, cardamom, plantain, sesame, coffee, rice, and tomato.

Figure 5
Affected vs. destroyed area in some of the most affected crops
impacted by Eta and Iota tropical depressions in Guatemala
(last update Nov. 27, 2020)



Source: USDA graph using information from MAGA database, Nov. 2020

Photo 7 below shows Iota's impact on pepper and corn in Huehuetenango and Zacapa.

Photo 7

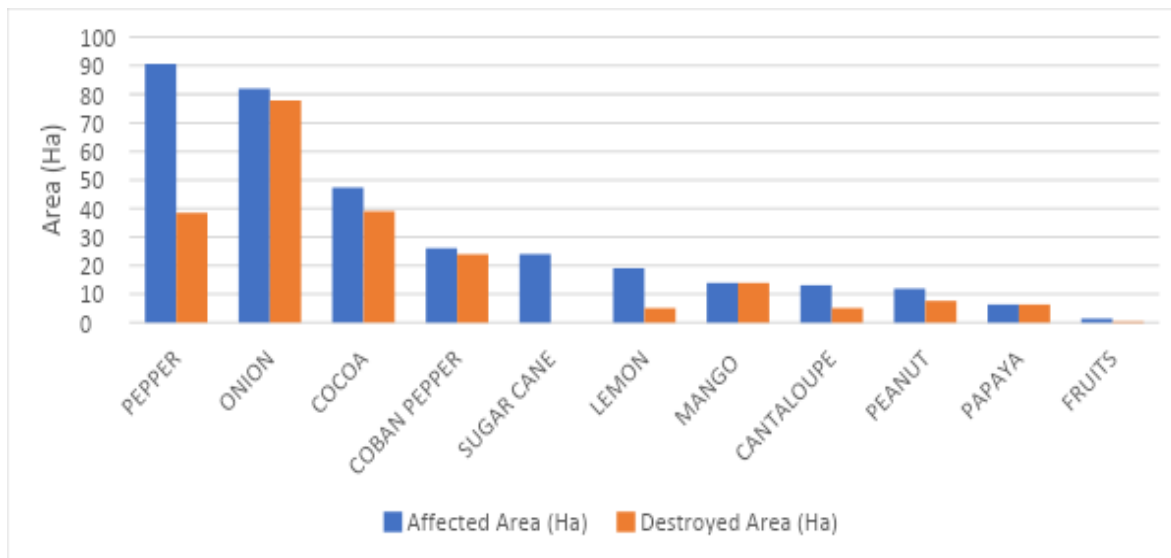
Horticultural crops destroyed by Iota tropical depression in Aguacatan, Huehuetenango (top), pepper destroyed in Zacapa (middle), and corn destroyed in Zacapa, Zacapa



[Source: MAGA Bulletin 27, Nov. 26-2020](#)

Figure 6 shows additional affected and destroyed areas for pepper, onion, cocoa, Coban pepper, sugar cane, lemon, mango, cantaloupe, peanut, papaya, and fruit.

Figure 6
Affected vs. destroyed area of lesser impacted crops
by Eta and Iota tropical depressions in Guatemala
(last update Nov. 27, 2020)



Source: USDA elaboration with MAGA database, Nov. 2020

Photo 8 shows fruit crop losses in San Juan Cotzal municipality in Quiche, where just one hectare of strawberry was destroyed, but it reveals the devastating loss experienced by so many small farmers in Guatemala.

Photo 8
Strawberries field destroyed by Eta Tropical Depression in San Juan Cotzal, Quiche



Source: [MAGA, Bulletin 2 - Nov. 16, 2020](#)

Higher food prices are being reported at the community level, where losses are significant, as shown in Table 6. The Ministry of Agriculture reports the following price increases during the week of Nov. 23-27 of 2020:

Table 6
Average price increase reported for some of the affected crops in local wet markets

PRODUCT	Presentation	Prices in Quetzales (Rate Q7.89 = \$1.0)		
		Week 16-22	Week 23-29	Increase
Corn	1 quintal (45 Kg)	Q 111.25	123.50	11%
Black Beans	1 quintal (45 Kg)	Q437.50	Q456.70	4.3%
Tomato	45-50 pound box	Q96.88	Q98.50	1.6%
Potato	1 quintal (45 Kg)	Q235.00	Q267.00	13.6%
Peppers	100-150 unit box	Q53.13	Q63.50	19%
Guisquil	100 unit box	Q41.25	Q61.50	49%
Lemon	100 unit box	Q200.00	Q230.00	15%
Corn (Izabal)	1 quintal (45 Kg)	Q112.00	Q140	25%

Source: MAGA, Nov. 24, 2020

Animal losses

In addition to the crop losses, animal losses reported include poultry (73,329 birds), cattle (8,421 cows), swine (4,375 pigs), horses (685), small ruminants (3,492), and aquaculture (34,500 fish). Table 7 shows animal count losses per type in each of the departments affected by Eta and Iota tropical depressions. The total animals lost is estimated at 126,735 animals. The animal losses also affected small farmers and increased food insecurity in the rural areas.

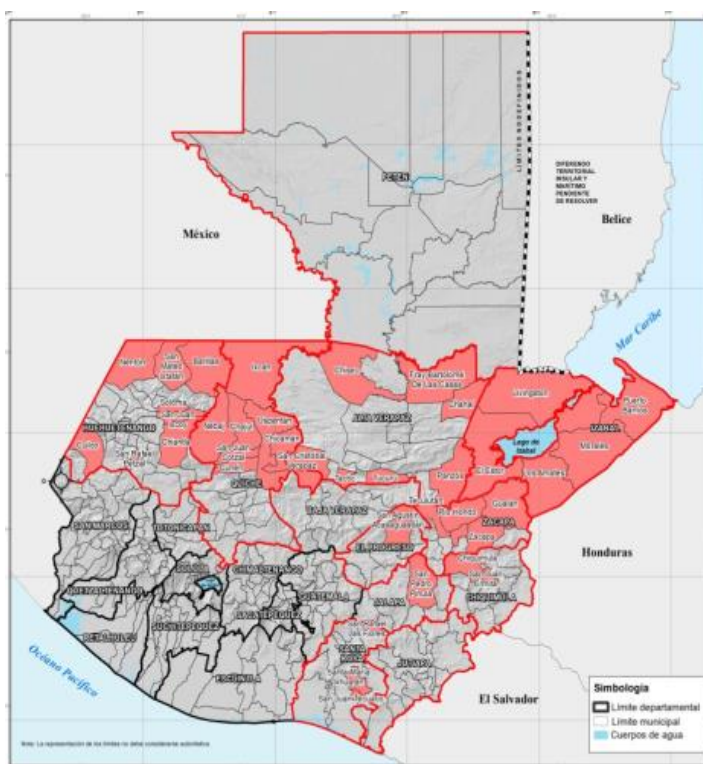
Table 7
Livestock death toll by Eta and Iota tropical depressions in Guatemala
(Updated Nov. 27, 2020)

DEPARTMENT	POULTRY	CATTLE	SWINE	HORSE	SMALL RUMINANTS	AQUACULTURE
ALTA VERAPAZ	11,129	7				15,300
CHIQUIMULA	100					
EL PROGRESO	100	1		1		
HUEHUETENANGO	28,813	312	1,172	387	375	
IZABAL	1,978	4,008	73	45	25	
QUICHE	27,967	2,268	2,890	192	3,092	
SANTA ROSA	84	3	2	0		
ZACAPA	5,158	1,818	238	60	0	19,200
TOTAL	75,329	8,417	4,375	685	3,492	34,500

Source: USDA elaboration with MAGA database, Nov. 2020

Figure 7 shows the animal losses in the affected departments. Major poultry losses were reported in Huehuetenango, Quiche and Alta Verapaz. Cattle losses occurred mostly in Izabal, Quiche, and Zacapa. Losses in the swine sector correspond mainly to Quiche and Huehuetenango. Quiche also reported major losses in small ruminants. The biggest losses in the aquaculture sector are reported in Zacapa and Alta Verapaz, with tilapia being the most important product.

Figure 7
Animal losses due to Eta and Iota Tropical Depressions in Guatemala (red area)



Source: MAGA, 2020

Photo 9 shows Eta damage to cattle ranches in Izabal.

Photo 9
Cattle floating in Izabal flooded zones (left) and flooded ranch (right)



Source: [MAGA, Bulletin 22 - Nov. 16, 2020](#)

Attachments:

No Attachments.