The University of Georgia

Center for Agribusiness and Economic Development

College of Agricultural and Environmental Sciences

Economic Impact of Agricultural Production Value Losses due to 2008 Tropical Storm Fay, Revised Assessment

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Economic Impact of Agricultural Production Value
Losses due to 2008 Tropical Storm Fay, Revised Assessment

Executive Summary

Tropical Storm Fay moved into southern Georgia during the weekend of August 23-24. Rainfall from the storm brought much needed soil moisture to the region, but accompanying winds and excessive rainfall resulted in crop damage in some counties. Damage assessments and economic impacts are estimated based on damage assessments conducted at the end of September, approximately five weeks after the storm. Rainfall and winds from Tropical Storm Fay resulted in crop damage for 31 Georgia counties that totals to $159.4 million of production value losses. This report evaluates production value losses and the economic impacts based on damage assessments approximately five weeks after the storm. Vegetables have the greatest losses with $54.4 million in losses, or 70% of expected production value for counties reporting losses. Cotton has the second greatest losses with $61.9 million which is 26% of expected value for affected counties. Pecans have the third greatest losses of $21.1 million, or 29% of expected production value. Peanut production value losses are $10.3 million which is 8% of expected value. Direct output losses are $159.4 million which leads to $107.7 million in indirect impacts for total Georgia output impacts of $267.1 million.

Table 1. Georgia Production Value Losses Due to Tropical Storm, by Commodity, Revised Assessment

	Loss $	[1]Expected Value $	[1]Percent, Expected Value
Cotton	61,877,718	235,979,546	26
Peanuts	10,271,017	122,869,978	8
Soybeans	1,255,269	8,519,698	15
Corn	5,512,341	65,502,501	8
Sorghum	84,231	768,860	11
Tobacco	4,819,374	26,168,338	18
Hay	100,778	3,037,522	3
Vegetables	54,416,413	78,105,409	70
Pecans	21,079,575	73,480,362	29
Total	**159,416,716**	**614,432,214**	**26**

[1]Expected value of counties reporting losses.

Economic Impact of Agricultural Production Value Losses due to 2008 Tropical Storm Fay, Revised Assessment

Tropical Storm Fay moved into southern Georgia during the weekend of August 23-24. Rainfall from the storm brought much needed soil moisture to the region, but accompanying winds and excessive rainfall resulted in crop damage in some counties. The Center for Agribusiness and Economic Development at the University of Georgia has previously released a production value loss report based on data available a few days after the storm. It is difficult to determine the full extent of damage for many crops immediately after a weather event such as Tropical Storm Fay. Harvesting of some crops had begun at the time of the storm, but other crops were weeks away from harvest. Crop conditions may improve in some situations, but there is potential for disease and further deteriorating conditions in other situations. The objective of this report is to determine production value losses and the economic impacts of Tropical Storm Fay based on updated damage assessments conducted at the end of September, approximately five weeks after the storm.

Damage Assessment

Production value losses were reported in 31 Georgia counties. Storm damage to agricultural commodities is concentrated in southern counties near the Florida and Alabama borders. Table 1 shows the production value losses for commodities affected by the storm. Expected values for normal production conditions are presented for counties reporting losses. Percentage losses for each commodity based on affected counties are included in Table 1. Vegetables have the greatest losses with $54.4 million which is 70% of expected value for affected counties. Vegetable loss percentages are based on expected values of individual commodities with reported losses. Colquitt County has 98% of all reported vegetable losses. Cotton losses of $61.9 million are 26% of expected value for affected counties. Pecans have the third greatest losses of $21.1 million, or 29% of expected production value. Peanut production value losses are $10.3 million which is 8% of expected value. Tobacco has $4.8 million of value losses, and this represents 18% of expected value for affected counties. Soybean losses are $1.3 million, or 15% of expected value. Hay losses of $100,778 are for grass that had been cut, but was damaged by the storm before it was baled. Total production value losses for affected counties are $159.4 million which is 26% of expected production value. Production value losses in Table 1 are direct economic impacts of storm damage. Losses at the farm level extend throughout the Georgia economy as economic activity is diminished in the state.

Figure 1 shows the distribution of losses is concentrated in southern areas near the Florida and Alabama borders. Figure 2 indicates the distribution of cotton production value losses. County pecan losses are presented in Figure 3.

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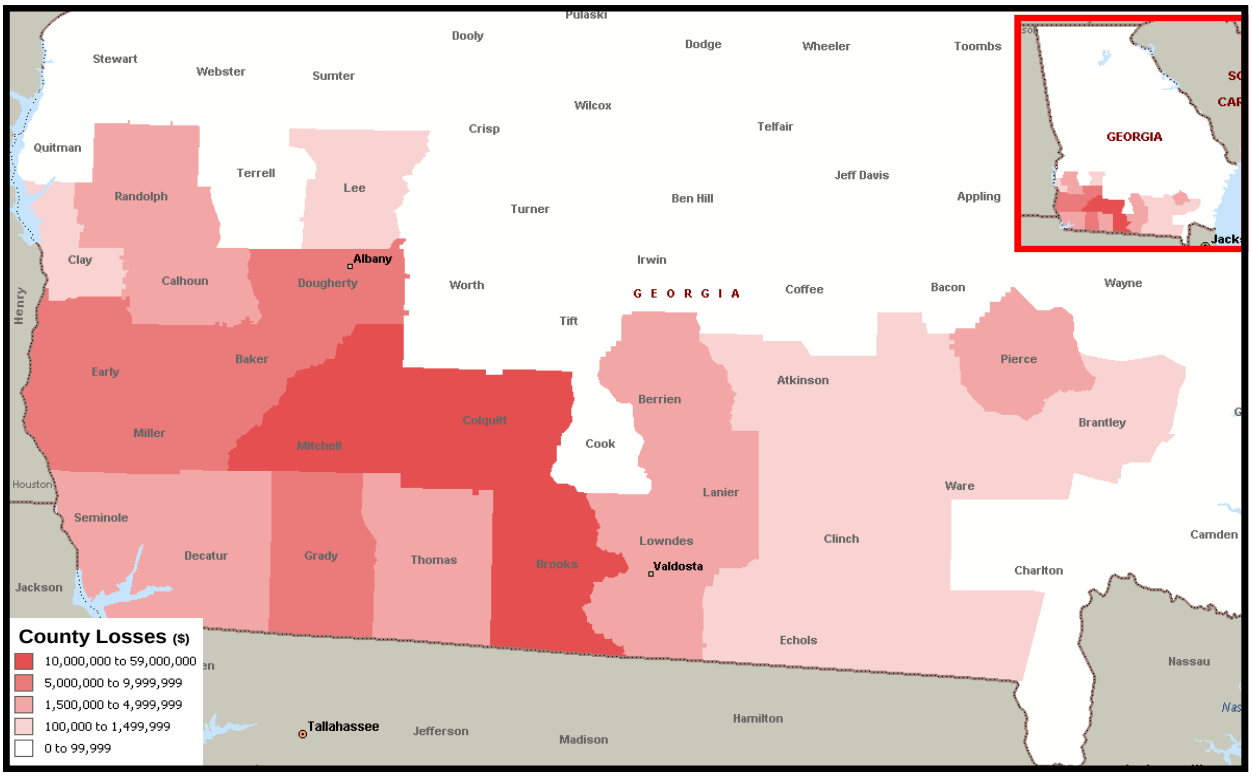

Figure 1. County Total Production Value Losses

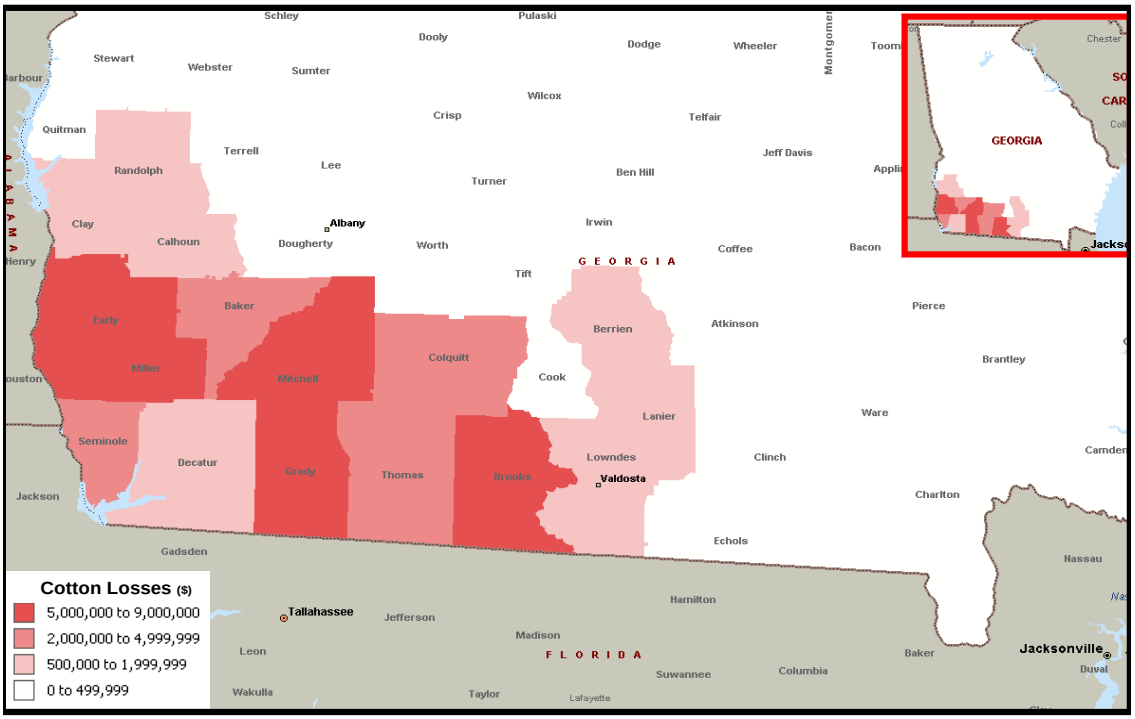

Figure 2. County Cotton Production Value Losses

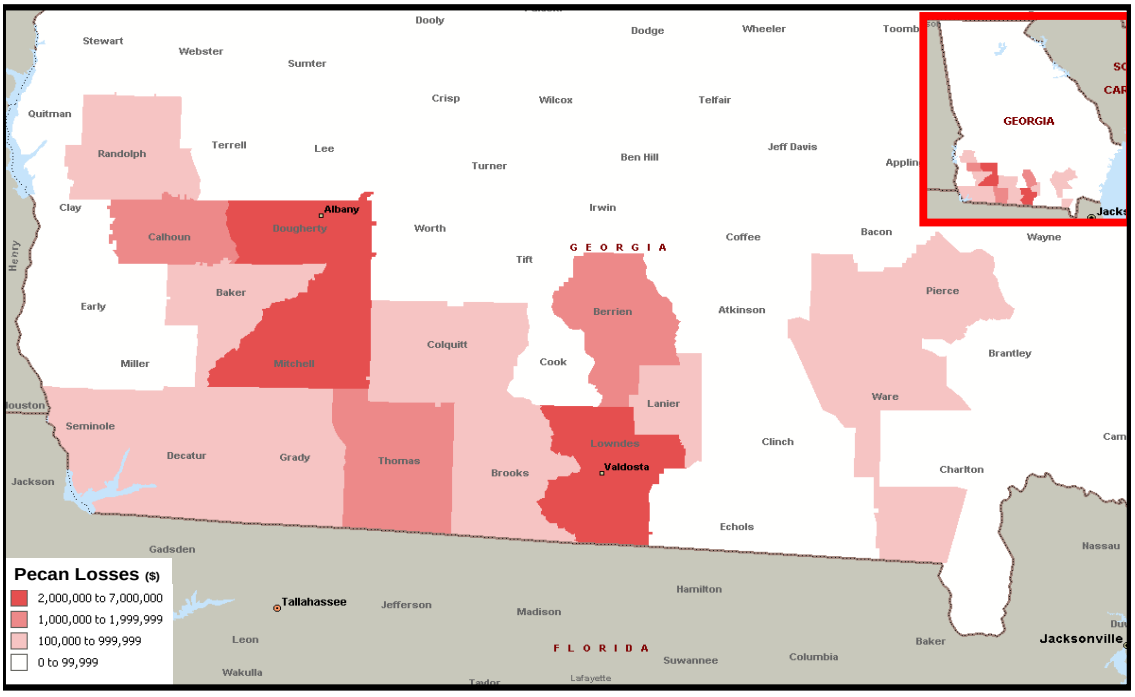

Figure 3. County Pecan Production Value Losses

Economic Impact Analysis

Economic Impact Analysis Background Information

Economic impacts can be estimated with input-output models that separate the economy into various industrial sectors such as agriculture, construction, manufacturing, trade, and services. An input-output model calculates how a change in agricultural production industries changes output, income, and employment in other industries. These changes, or impacts, are expressed in terms of direct and indirect effects. Impacts are interpreted as the contribution of agricultural production industries to the total economy. Direct effects represent the initial impact on agricultural production industries. Indirect effects are changes in other industries caused by direct effects and include changes in household spending due to changes in economic activity. Thus, the total economic impact is the sum of direct and indirect effects. Input-output analysis interprets the effects of an enterprise in a number of ways including output (sales), labor income (employee compensation and proprietary income), employment (jobs), and tax revenue. This analysis utilizes IMPLAN software for input-output analysis of agricultural production industries in Georgia.

Output impacts are a measure of economic activity that results from agricultural production expenditures in a specific industrial sector. Output is equivalent to sales, and the output multiplier indicates how initial economic activity in one sector leads to sales in other sectors. Personal income impacts measure purchasing power that is created due to the output impacts. This impact provides the best measure of how standards of living are affected for residents in the impact area.

Agricultural production industries involve a specified number of employees that is determined by the available technology. Employment multipliers indicate the effect on total state employment resulting from agricultural production industries initiating economic activity. IMPLAN indirect employment includes both full-time and part-time jobs without any distinction. Jobs calculated within an IMPLAN industrial sector are not limited to whole numbers and fractional amounts represent additional hours worked without an additional employee. With no measure of hours involved in employment impacts, IMPLAN summations for industrial sectors which include fractional employment represent both jobs and job equivalents. Since employment may result from some employees working additional hours in existing jobs, instead of terming indirect employment impacts as “creating” jobs, a more accurate term is “involving” jobs or job equivalents. The same reasoning applies to situations in which jobs are lost due to contraction of an industry.

Tropical Storm Agricultural Production Economic Impacts

Table 2 presents the economic impacts to the Georgia economy of agricultural production value losses due to Tropical Storm Fay. Direct output losses are $159.4 million which leads to $107.7 million in indirect impacts for total output impacts of $267.1 million. Losses in output causes labor income losses for hired employees and proprietors. Direct labor income losses are $66.9 million distributed among 2,101 jobs and job equivalents. Adding indirect labor income impacts results in total labor income losses of $101.6 million for 3,107 jobs. State treasury revenues decline by $7.4 million dollars. Local tax revenues decline by $4.4 million among all Georgia

counties which totals to an $11.9 million decrease in tax collections for all government treasuries.

Table 2. Economic Impact of Production Value Losses due to Tropical Storm, Revised Assessment

	Direct Impact	Indirect Impact	Total Impact
Output ($)	159,416,720	107,702,449	267,119,169
Labor Income ($)	66,890,140	34,705,307	101,595,447
Employment	2,101	1,006	3,107
State Taxes ($)			7,437,868
Local Taxes ($)			4,445,319
Sum of Taxes ($)			11,883,187

Table 3 shows the output, labor income, and employment impacts for the major industrial sectors. Most losses occur in the agriculture sector. The service sector has the second most impact losses. Total economic impacts of agricultural production value losses extend to numerous sectors other than agriculture.

Table 3. Economic Impact of Production Value Losses due to Tropical Storm, to Major Sectors, Revised Assessment

Sector	Output ($)	Labor Income ($)	Employment
Agriculture	167,723,792	72,654,520	2,376
Mining & Construction	719,359	281,215	6
Utilities	3,044,072	666,506	5
Manufacturing	16,320,168	1,819,082	32
Transportation, Warehousing	4,115,437	1,774,310	39
Trade	17,039,014	6,688,788	175
Finance, Insurance, & Real Estate	18,989,549	4,537,445	100
Services	28,928,024	12,787,871	364
Government and non-NAICS	10,239,754	385,710	10
Total	267,119,169	101,595,447	3,107

Summary

Rainfall and winds from Tropical Storm Fay resulted in crop damage for 31 Georgia counties that totals to $159.4 million of production value losses. This report evaluates production value losses and the economic impacts based on damage assessments approximately five weeks after the storm. Vegetables have the greatest losses with $54.4 million in losses, or 70% of expected production value for counties reporting losses. Cotton has the second greatest losses with $61.9 million which is 26% of expected value for affected counties. Pecans have the third greatest losses of $21.1 million, or 29% of expected production value. Peanut production value losses are $10.3 million which is 8% of expected value. Direct output losses are $159.4 million which leads to $107.7 million in indirect impacts for total Georgia output impacts of $267.1 million.

The Center for Agribusiness & Economic Development

The Center for Agribusiness and Economic Development is a unit of the College of Agricultural and Environmental Sciences of the University of Georgia, combining the missions of research and extension. The Center has among its objectives:

> To provide feasibility and other short term studies for current or potential Georgia agribusiness firms and/or emerging food and fiber industries.
>
> To provide agricultural, natural resource, and demographic data for private and public decision makers.

To find out more, visit our Web site at: http://www.caed.uga.edu

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J. Scott Angle, Dean and Director