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, August Assessment

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Economic Impact of Agricultural Production Value
Losses due to 2008 Tropical Storm Fay, August 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. The full extent of damage for most crops affected cannot be completely determined immediately after the storm. Harvesting of some crops had begun at the time of the storm, but other crops are weeks away from harvest. Crop conditions may improve in some situations, but there is potential for disease and further deteriorating conditions in other situations. This report evaluates production value losses and the economic impacts based on damage assessments one week after the storm. Production value losses in 28 Georgia counties are concentrated in southern areas near the Florida and Alabama borders. Cotton has the greatest losses with $32.2 million which is 24% of expected value for affected counties. Pecans have the second greatest losses of $17.3 million, or 28% of expected production value. Corn production value losses are $10.0 million which is 20% of expected value. Total production value losses for affected counties are $71.7 million, and this is 22% of expected production value. Direct output losses lead to $46.9 million in indirect impacts for total Georgia output impacts of $118.6 million in losses.

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

	Loss $	[1]Expected Value $	[1]Percent, Expected Value
Cotton	32,182,168	131,735,653	24
Peanuts	3,552,149	52,599,085	7
Soybeans	1,216,665	8,519,698	14
Corn	9,994,971	49,990,770	20
Sorghum	68,874	647,543	11
Tobacco	5,856,303	18,844,114	31
Hay	391,492	3,037,522	13
Tomatoes	586,533	2,932,667	20
Squash	592,789	2,461,505	24
Pecans	17,261,298	61,663,971	28
Total[2]	**71,703,242**	**332,432,528**	**22**

[1]Expected value of counties reporting losses.

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Damage Assessment

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. Cotton has the greatest losses with $32.2 million which is 24% of expected value for affected counties. Pecans have the second greatest losses of $17.3 million, or 28% of expected production value. Corn production value losses are $10.0 million which is 20% of expected value. Tobacco has the greatest portion of value losses with 31% of expected value lost. Total production value losses for affected counties are $71.7 million, and this is 22% 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.

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Figure 1 shows that the distribution of losses in 28 Georgia counties is concentrated in southern areas near the Florida and Alabama borders.

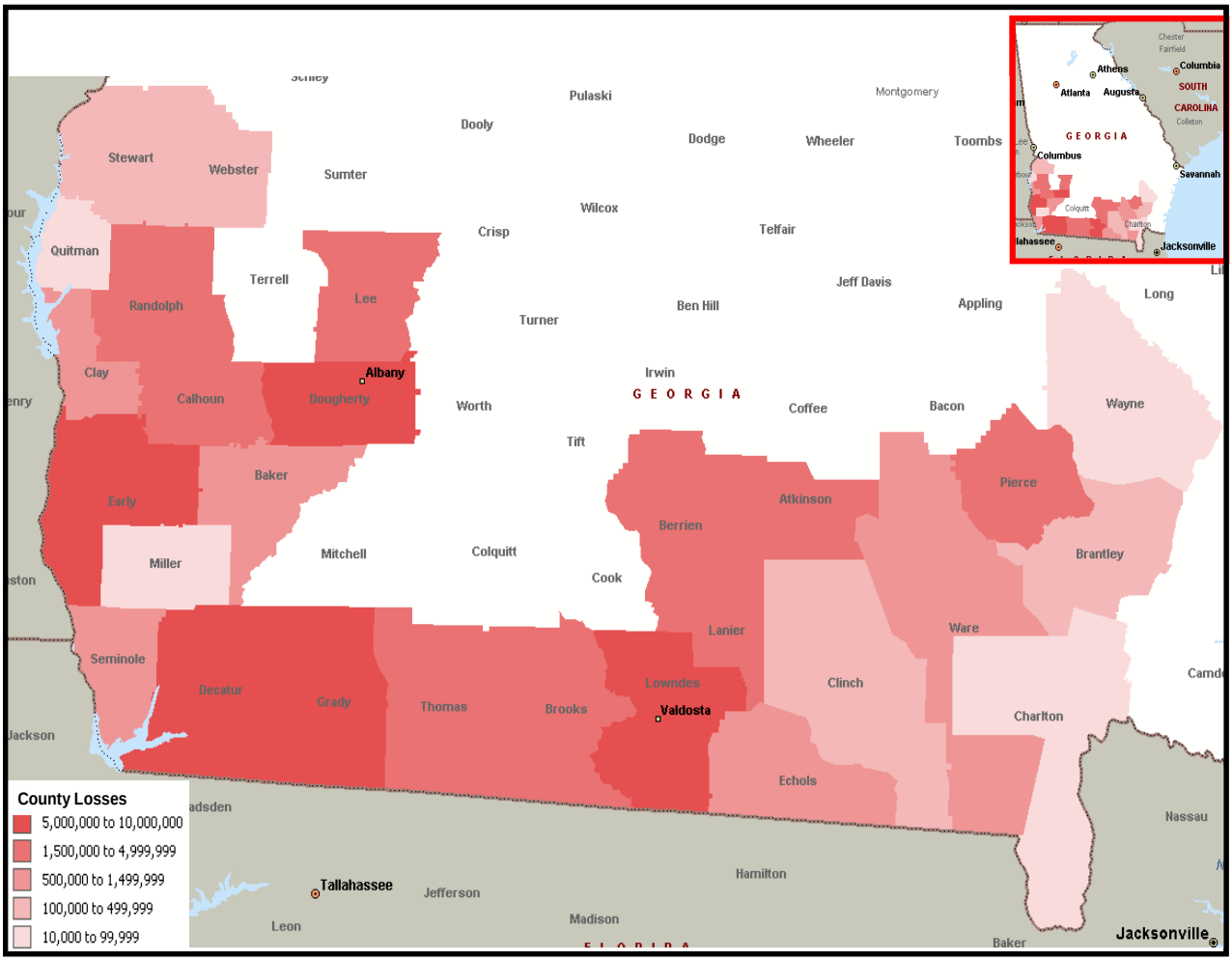

Figure 1. Production Value Losses by County Loss Categories.

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 $71.7 million which leads to $46.9 million in indirect impacts for total output impacts of $118.6 million. Losses in output causes labor income losses for hired employees and proprietors. Direct labor income losses are $25.2 million distributed among 1,201 jobs and job equivalents. Adding indirect labor income impacts results in total labor income losses of $40.3 million for 1,644 jobs. State treasury revenues

decline by $3.2 million dollars. Local tax revenues decline by $2.0 million among all Georgia counties which totals to a $5.2 million decrease in tax collections for all government treasuries.

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

	Direct Impact	Indirect Impact	Total Impact
Output ($)	71,703,242	46,875,871	118,579,113
Labor Income ($)	25,167,540	15,094,817	40,262,357
Employment	1,201	443	1,644
State Taxes ($)			3,189,088
Local Taxes ($)			2,013,516
Sum of Taxes ($)			5,202,604

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, August Assessment

Sector	Output ($)	Labor Income ($)	Employment
Agriculture	75,798,986	28,044,726	1,339
Mining & Construction	329,252	128,082	3
Utilities	1,308,263	287,079	2
Manufacturing	7,609,982	792,042	14
Transportation, Warehousing	1,776,592	769,406	17
Trade	7,137,459	2,796,892	71
Finance, Insurance, & Real Estate	8,611,831	2,030,110	45
Services	11,881,783	5,245,104	148
Government and non-NAICS	4,124,967	168,915	4
Total	118,579,113	40,262,357	1,644

Summary

Rainfall from Tropical Storm Fay resulted in crop damage to 28 Georgia counties. This report evaluates production value losses and the economic impacts based on damage assessments one week after the storm. Cotton has the greatest losses with $32.2 million which is 24% of expected value for affected counties. Pecans have the second greatest losses of $17.3 million, or 28% of expected production value. Corn production value losses are $10.0 million which is 20% of expected value. Direct output losses are $71.7 million which leads to $46.9 million in indirect impacts for total Georgia output impacts of $118.6 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.

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J. Scott Angle, Dean and Director